FERMENTING MEMORIES, METABOLIZING CHANGE:

PERSISTENCE OF FERMENTED FISH IN CHANGING LANDSCAPES

by

MELANIE HENSON NARCISO

(Under the Direction of Susan Tanner)

ABSTRACT

Fermented foods are products of biochemical processes that contribute to people and planet healthy diets. Despite their benefits, some fermented foods have disappeared or are marginalized in certain food cultures. To prevent further loss of these sustainable traditions, it is important to study how fermented foods are abandoned, maintained, or altered.

In this dissertation, I examined how fermented food is culturally transmitted in a changing landscape. I focus on *burung asan*, a fermented fish traditionally prepared in the Philippine town of Candaba, where a swamp teeming with fish has allowed buru-making to prosper. Informed by anthropological theories associating landscape, material, memory, and the senses with memory and cognition, I investigated whether the material reconfigurations of the changing landscape have corresponding sensory and memory shifts, and in turn, what their implications are for fermentation practice.

This study focused on the collective agency of changing landscapes on taste and the place-based taste's agency on continuity and change of burung asan. To address these questions, I conducted an ethnographic study in the village of San Agustin from

September 2019 to August 2021. I followed the life histories of its rice, fish, people, and the memories therein and their collective agency on taste and the *buru* tradition.

I found buru-making in San Agustin continuing despite the changed fermentation landscape—characterized by new forms of fish, rice, and major players in buru-making. Key to its persistence is its deliciousness, which, in this case, means clean buru. This standard of deliciousness was created from a memory-charged rice and fish landscape characterized by new forms of ingredients and buru-makers. The clean aesthetic fostered the production and dominance of deodorized and whiter buru and the continuity of the said fermented product in the place.

Buru-making provides food and livelihood that has contributed to a "delicious life" – one that enables the achievement of life aspirations and performance of progressive identities. Overall, these results show the role of the landscape and the memory therein in shaping taste. They also illustrate taste memory's agency in maintaining fermented food traditions in the midst of changes in the landscape.

INDEX WORDS: Fermented Food, Material, Landscape, Memory, Senses, Deliciousness

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DOCTOR OF PHILOSOPHY

ATHENS, GEORGIA

2023

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May 2023

DEDICATION

To God, the Grand Author of my dissertation, PhD journey, and life; the one who makes things beautiful in His own time. To God be all the glory.

ACKNOWLEDGMENTS

It took a global village to write this dissertation. So many helped me in different ways: by connecting me with people, assisting me in the field, reading my work, giving me rides, feeding me, washing my dishes, comforting me, praying for me and much more. In the Georgia fashion I say, Thank y'all!

I would like to take advantage of this little space to express my gratitude to those who have spent so much time and effort in birthing this dissertation. I am very indebted to my advisers: Dr. Susan Tanner and Dr. Virginia Nazarea for the direction and supervision not just for the dissertation but also for the academic life in general. My heartfelt thanks also goes to my amazing committee members, Dr. Bram Tucker, Prof. Cari Goetcheus, and Dr. David Sutton who all gave me guidance, including future directions for my research.This huge endeavor could have not been possible without funding from the National Science Foundation's Doctoral Dissertation Research Improvement Grant and the Southeast Asian Regional Center for Graduate Study and Research in Agriculture's PhD Fellowship. Transplanting myself in my field site and conducting fieldwork, especially during the time of COVID-19, were not easy. I thank all the people in Candaba who shared their houses, their knowledge, their food, and their lives with me.

Doing a PhD is very demanding and nerve-wracking. It takes a community of wonderful and godly friends to help me process things, pick and cheer me up, pray with me, and just be with me even if they also have their own battles to face. Very helpful in

this regard were Angelina Felix, Lowela Padilla-Mughal, Abigail Pabro, Skarlet Velasquez and Brigitte Shewbridge-Farley.

I am very grateful to my family – Dad, Mama, Vin and Issa, for supporting me and being patient with me throughout this academic journey. It is not easy to appreciate the demands and rigors of my academic vocation, especially the PhD, but as always they considered my joy their joy.

Last but definitely not the least, I thank God who gave me this huge assignment, carried me through it, and taught me a lot of things along the way. He proved Himself faithful, turning mourning into dancing, and ashes to beauty.

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CHAPTER 1

INTRODUCTION

How do food traditions survive in evolving ecologies of food? When the material and cultural resource base of the traditions of an area is reconfigured, are the food-making and consumption practices maintained, abandoned, or changed? How?

This dissertation is an anthropological study on how the cultural transmission of traditional food knowledge and practice persists in the context of changing food environments. Cultural transmission is concerned with how culture is reproduced—how knowledge is acquired, maintained, changed, or abandoned. This research interest is motivated by the call for sustainable diets and the disappearance and marginalization of a number of fermented foods.

The Food and Agriculture Organization called for the promotion of sustainable diets in 2010. These are " … diets with low environmental impacts which contribute to food and nutrition security and to healthy life for present and future generations. [They] are protective and respectful of biodiversity and ecosystems, culturally acceptable, accessible, economically fair and affordable; nutritionally adequate, safe and healthy; while optimizing natural and human resources" (Burlingame 2012). Fermented foods may be considered sustainable foods. Fermented foods are products of "the slow decomposition process of organic substances induced by microorganisms, or by complex proteinaceous substances (enzymes) of plant or animal origin" (Chilton 2015). Their resulting biochemical systems foster the maintenance of biocultural reservoirs (César et

al. 2021), the prolongation of the shelf-life of food, the processing of spoiled food into edible food, the increase in the bioavailability of nutrients (K. H. Steinkraus 1994), and the control of overweight, obesity, chronic degenerative diseases (e.g., Mozafarrian et al. 2011; Chen et al. 2014; Park et al. 2014; Anh et al. 2013).

Ironically, while fermented foods are becoming popular among scientific circles and urban consumers–a number of which are even gaining a global following and diversifying–there are also a number of ferments that are fading from the foodscape. For example, kimchi, cheese, kefir, sourdough, and kombucha are being adopted by more consumers, creating new fermented food aficionados. Ferments like dawa-dawa [1], akhuni [2], or shiokara [3] continue to be produced, yet maintain marginal positions in their food cultures (Kikon 2015; Hsiao and Lim 2015). On the other hand, there are those ferments that are no longer fermented (Steinkraus 2004), such as narezushi [4]. Fermentation scholars Dunlop (2010) and Kikon (2015) have documented how fermented foods, by virtue of their smell and taste, are considered old-fashioned, backward, and evocative of poverty. They explain how these flavor issues cause the abandonment or negotiation of the consumption of these foods to avoid social tensions and enact modern identities.

If fermented foods, which can be considered sustainable diets, have the tendency to become unpopular in specific sensory landscapes, it is crucial to know what facilitates and hinders different ferments' adoption or continuity. To address this, I study the

[1] Fermented locust bean paste from Africa
[2] Fermented soybeans from India
[3] Marine products fermented with fish viscera; a Japanese product
[4] Fish fermented with salt and/or rice from Japan

cultural transmission of fermented food within the intersections of landscape, material, memory, and senses. Recent anthropological thinking has theorized these areas as being influential to cognition and cultural memory (Ingold 2011; Seremetakis 1996; Malafouris and Renfrew 2010; Casey 2000; Basso 1996; Sutton 2010; Howes 1991). I specifically investigate whether the material reconfigurations of the landscape have corresponding sensory and memory shifts, and what their implications are for how fermentation is practiced in the area. The crux of my analysis is on the collective agency of changing landscapes on taste and the place-based taste's agency on continuity and change of fermented food. Such a focus on taste engages with the emerging discourse recognizing the powerful role of aesthetics in the pursuit of sustainability (Saito 2007). Taste preferences have been specifically influential in food choices, and consequently in sustainable food practices (Hojlund 2022). On one hand, results of this study provide evidence of place-based taste as a facilitator, deterrent or shaper of traditional, healthy, and sustainable practices as fermentation. On the other hand, it examines and expands the role of the landscape, material, senses, and memory in the anthropological study of cultural transmission.

I studied the case of *burung asan* to examine how fermented foods persist in changing landscapes. This is a fermented fish product prepared and consumed by Kapampangans, an ethnolinguistic group associated with the Philippine province, Pampanga. It is boiled rice fermented with fish and salt, usually served as a condiment for fish-based meals. *Buru* is notorious for its organoleptic properties–first, for its strong smell and second, for its appearance, sometimes perceived as resembling cat's vomit [*sukang pusa*]. Many Kapampangans love it. To date, burung asan has been studied more

through its microbial successions and biochemical changes than its cultural dimensions (e.g., Orillo 1968; Vatana and Del Rosario 1982; Olympia 1992).

Results of this ethnographic study reveal the persistence of burung asan despite the changes in the fermentation landscape, specifically the material forms of the main ingredients and the major players in the buru production. I argue that what retained the practice was the deliciousness of buru. In one sense, buru-making is maintained because it contributes to the delicious life (literally *manyaman a bie* which also means good life). It is a main source of livelihood in San Agustin, and as such, it is instrumental in the achievement of life aspirations. In another sense, it is maintained because buru has continued to be delicious—appealing to the cultural senses. This is a deliciousness equated with its being clean—a new taste memory produced by a new generation of buru-makers' appropriation of a new material-sensory-memory landscape that afforded and privileged non-smelly and whiter burus. This is a material landscape characterized by white commercial rice; live farmed fish; and food, body, and place memories/sensibilities of poverty and marginality.

Such a clean deliciousness standard facilitated the predominance of clean buru production in contemporary San Agustin. In essence, this dissertation reiterates the role of cultural memory in fostering the reproduction of culture despite disturbances. Specifically, this study points out the role of taste memory in keeping fermented food traditions. Considering the productivity of the study's framework in generating insights about fermented food persistence, I suggest the use of human ecological studies that not only look into landscapes and materials but also memories and senses.

A. Theoretical Framework

It is within what I call the ecology of memory (Figure 1.1) that I examine how fermented food persists in changing landscapes. I detail here how I came up with this framework.

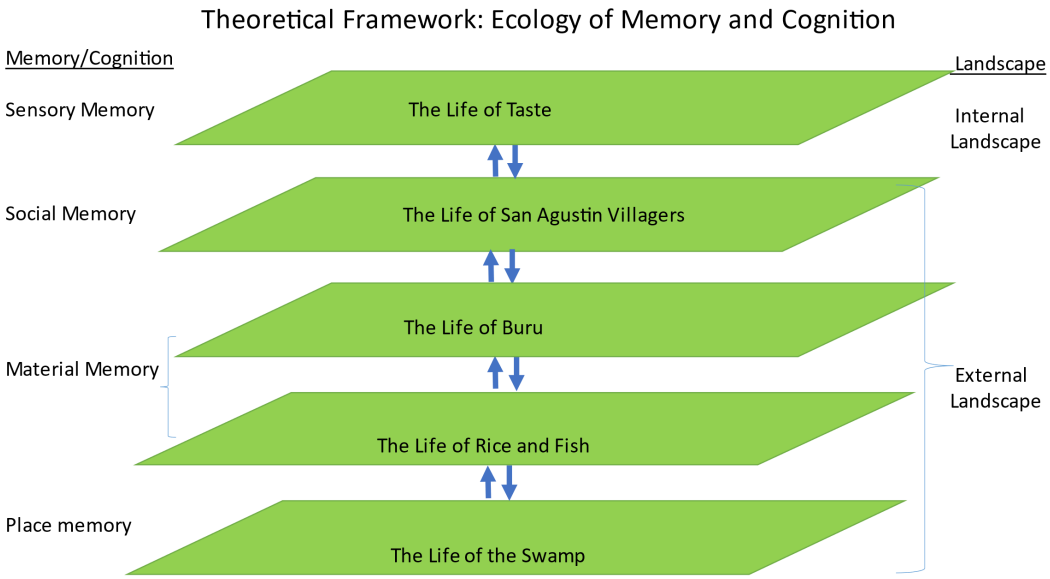


Figure 1.1. Theoretical Framework: The Ecology of Memory and Cognition

Cultural transmission is the anthropological area where cultural reproduction is studied. Work on cultural transmission has frequently focused on singular cultural traits (Ellen, Lycett, and Johns 2013). More recently, more than human analyses, with the inclusion of non-human actors as material, plants, animals and microbes, have paved the way for expanding anthropological analysis of cultural reproduction (e.g., West 2013). In this study, I maintain this encompassing ecological approach using memory as a focal and cross-cutting theme. Memory has been used in the study of cultural transmission

considering its recollective (Halbwachs and Coser 1992), imaginative, and constructive (Kilroy-Marac 2019; Antze and Lambek 1996) functions and processes. This dissertation locates cultural transmission within this broader theorization of memory. Moreover it takes into consideration the situatedness of memory, that memory "emerg[es] through lived experiences, bodies, places, relations and entanglements" (Casey 2000, 313). Landscapes (Basso 1996; Casey 2000), materials (Prown 1982; Jones 2007), bodies (Connerton 1989), and the senses are described as carriers of memory. Considering landscapes as a dynamic system of people, non-humans, economies, technologies, ideas with multiple trajectories and cycles (Jones and Cloake 2008; Ingold 2011), I cluster materials, bodies, and senses as constituents of landscapes. They comprise what I call the ecology of memory.

Many scholars have pointed out the dynamism in landscapes: that landscapes are in flux (Bender as cited by Tilley and Cameron-Daum 2017) and that their component parts interanimate with and co-evolve with each other (Ingold 2011; Basso 1996, Nazarea 2005). Being in engagement with each other, they are entangled (Seremetakis 1994; Basso 1996; Ingold 2011). Memory per se, is described as flowing through these sites (Casey 2000). Recognizing this, I frame landscape, memory, senses, and material as interwoven constituents, interacting with and constituting each other. I highlight the interanimating relationship of the external environment and internal environment, specifically the collective agency of place and material on the senses, and vice versa. Foregrounding the senses in this analysis allows a closer examination of the observed and documented sensory-related aversions to fermented food that have led to the

marginalization of these foods in certain societies (e.g., Kikon 2015; Yamin-Pasternak et al., 2005).

Within this ecology of memory, I utilize a biographical approach. Appadurai's (1986) study "Social Life of Things" attuned scholarship to more than human life histories, initiating the biographical approach in anthropological/archaeological studies. Following the life of something, the biographical approach, recognizes "[o]bjects can have multiple deaths and rebirths, when they are taken away or incorporated back in their relationships with people" (Holtorf 1998 as cited by Joy 2009). As such it allows for the observation of the "continuation of the material form of the artefact" (Joy 2009, 544). Documenting the trajectories of material, and, senses/memory, is in effect a "relational biograph[y]" that follows "the structuring of these relationships as a biography" (Joy 2009, 544). Such biographical approaches pose the advantage of documenting the collective agencies across changing social, material, and sensory regimens. Another productive contribution of the biographical approach is its expansion of the anthropology of the senses into sensory transitions. These are what Howes (2005, 11) describes as the "sensory revolutions" that accompany social revolutions. These are snapshots of the lives of the senses which to date have not been explored widely.

In this research, the physical environment (also place memory) will be studied through the defining feature of Candaba—the swamp. The material environment and memories will be tackled through burung asan and its ingredients: fish and rice. The social environment and memory will be examined through the residents of San Agustin. The senses in this fermentation landscape will be focused on taste and taste memories.

While I use the word taste, I do not exclude other ethnoperceptions of taste, other sensory modalities that interact with/comprise taste like smell and vison [5] (Shepherd 2012)—what may be described as intersensoriality in the anthropology of the sense (Howes 1991).

In view of all these, I came up with these three specific research questions:

a) How did the Candaba fermentation landscape change?

b) How did the fermentation landscape change taste? and;

c) How did taste shape fermented fish practice?

Over-all, these questions intend to clarify and ethnographically substantiate the roles of place of landscape, memory and senses, especially taste, in anthropological thinking of cultural transmission. It explores the potential of following the trajectories of landscape/material, senses/memory in revealing their collective agencies in maintaining local food knowledge.

B. Literature Review

This section elaborates on the theoretical grounding of my research. This focuses on anthropological thinking on the landscape, material, and senses. I have chosen these areas because they all are theorized to have roles in the development of memory and skill and, consequently, knowledge formation and cultural transmission. Here I talk about how landscape, material, and senses intersect with these epistemological functions. But before this, I will talk about how cultural transmission has been studied in the past years and what is known in this regard about fermented foods.

[5] Tasting does not just occur in the mouth – it is a complex of senses involved (orthonasal and retronasal), touch, and ears (Shepherd 2012).

1. Cultural Transmission

Cultural transmission or "the emergence, acquisition, storage, and communication of ideas and practices" (Cohen as cited by Ellen et al. 2013). This section reviews how this human-centric discourse evolved from being a mind-focused conversation to one that extends to the body and place.

Cultural transmission has been studied largely with the assumption that humans are vectors of cultural traits (Ellen 2013). Evolutionary biologists, inspired by microevolution evolution, proposed cultural replication as an accumulation of cultural traits (Brainard 1982). These traits are passed on between parent and child, across generations, from one to many individuals, or from many to one individual (Cavalli-Sforza and Feldman 1981). These are shaped by forces as learning errors, biases, preferences and previous learnings (Boyd and Richerson 1985). On the other hand, classic cognitivists point out mental structures and cognitive processes directing the transmission process. Central in this discourse is the mind and memory. It is posited that information is in the brain and that humans are genetically predisposed to transmit this knowledge via the transfer of mental representations to individuals (Sperber 1996).

Social scientists adopted the idea of memory in their explanation of cultural transmission. Whereas before it was limited to the brain or the mind, they have located memory in society. Initiating this conversation was Halbwachs (1992[1950], 38), who put forward the concept of collective memory or the "sum, or combination of individual recollections of many members of the same society". He explained things are remembered as a function of human selection guided by current values, interests, way of thinking or evaluation system or conventions. With these and other approaches to

transmission, the transfer of cultural traits was often described mediated by social mechanisms as imitation, emulation, and pedagogy (Ellen et al. 2013). Very useful here are language and communication (Halbwachs and Coser 1992; Sperber 1996).

Up to this point in this theoretical development of cultural transmission, cultural traits are seen as knowledge— particularly that which is prone to error and loss. For instance, transfer may be prevented by intergenerational interruptions (Halbwachs and Coser 1992) or variations may occur due to copying errors (Erkens and Lipo 2005). This may be errors committed during instruction and execution (Erkens and Lipo 2005). In the memory discourse, Rigney (2005, 12) calls this theme "original plenitude and subsequent loss' model" or the "... looking at memory as something that is fully formed in the past (it was once 'all there' in the plenitude of experience, as it were) and as something that is subsequently a matter of preserving and keeping alive."

The view of cultural reproduction as knowledge that needs to be transferred shifted to one that was social-constructivist in nature. Contributory to these are memory and skill studies. Memory studies took on this turn with the recognition of memories as "working memories" (Rigney 2005, 12). These are memories "collectively constructed and reconstructed in the present rather than resurrected from the past" (Rigney 2005, 12). It became understood that memories are inherently distorted also because of their social mediation (Schudson 1995). The past is remembered in the way it fits the knowledge, belief, identities, priorities and passions of people (Kirmeyer 1996; Antze and Lambek 1996; Irwin- Zarecka 1994; Samuel 1994). As such it is an agenda rather than a "fully achieved practice" constructed through recycling, bricolage, and the creation of new memory languages (Rigney 2005, 22). Memories are used to obtain justice, liberation,

reconciliation, reparation and healing (Kilroy-Marac 2019) following traumatic experiences and oppression. Out of this discourse, another constructivist-type of memory sprung from. In studying the countermemories of regimens of "forced forgetting" Connerton (1989,) put forward memory that was more performative than cognitive. In addition to inscribing practices (i.e., often written material), he proposed societies also remembered through their body or habit memories— practices that are more unconscious than reflective. These are embodied or more specifically deposited in the different parts of the body by repeated acts of ritual and commemoration.

In all these explanations for cultural transmission, the role of the environment was recognized, however it was always the backdrop with humans at the forefront of cultural trait acquisition. With retheorizations of the environment's centrality in perception and cognition (Gibson 1979; Clark and Chalmers 1998), the role of the landscape was foregrounded. Instrumental was Ingold's (2011) work that argued culture is reproduced through enskillment. Skill is developed by being situated in place, by being guided and attuned to its affordances. This is explained best with his statement: "[t]he novice watches, feels or listens to the movements of the expert, and seeks - through repeated trials - to bring his own bodily movements into line with those of his attention so as to achieve the kind of rhythmic adjustment of perception and action that lies at the heart of fluent performance." From this skill-perspective, cultural transmission, is now seen as both imitative, improvisatory and embodied.

The cultural transmission of food has been studied more under the guise of local/traditional food knowledge or more broadly under traditional ecological knowledge. Focal in these researches are the retention or erosion of knowledge across generations

(e.g., the study of wild food in Sonoran Desert and in North East Thailand by O'Brien 2014, Setalaphruk and Price 2007, Cruz Garcia 2006; and research on traditional food in Malaysia by Nor et al. 2012). These researches were also similar in the sense that they studied cultural transmission within a single food domain. Quite deviant in approach were studies of cheese and cooking by West (2013) and Sutton (2014), respectively. Both were informed by Ingold's concept of enskillment. The former situated the reproduction of the traditional English Stilton cheese within micro and macro environments and processes. Specifically, he investigated the enskillment with cheesemaking abilities at the intersections of a microterroir of cow, milk, microorganisms, chemical compounds and of a broader macroterroir that included cheese consumers and bureaucracies. The latter explored the reproduction of cooking within the memory-sensory landscape of the kitchen.

2. Anthropology of Fermented Foods

What is known about the cultural transmission of fermented foods? This section answers this question exploring available literature. At the same time, it gives the reader some more background about these foods to give a better appreciation for their study.

Fermented foods were considered pre-agricultural adaptive food management strategies (Pollock 1984; Giordano 2018; Amato et al. 2021). In recent times, fermentation is accomplished to preserve food, enrich diets with a variety of flavor, increase the availability of nutrients in food, detoxify food and decrease cooking time and requirements (Steinkraus 1994). Fermented foods made their way as staples in meals, functioning as main dietary starch and protein sources, drinks, condiments, or dipping sauces (Dembińska 1985). Despite their importance, fermented foods have not been

studied widely. The most comprehensive documentation of fermented food to date are of Campbell-Platt's (1987) dictionary and guide to fermented foods of the world and Dirar's (1993) documentation of ingredients, preparation methods, microbiology and uses of 80 fermented foods that capture fermented heritage in Sudan. All the more difficult to obtain are statistics on the production of ferments because they are frequently not reported by smaller companies or underestimated by larger companies (Ruddle and Ishige 2005). It has only been recently that diverse cultures have started conducting inventories and safeguarding their traditional foods, and these inventories and descriptions are not usually quantitative in nature (e.g., Slow Food Ark of Taste). Most other ferments are "uncharted marginal practice" (Kikon 2021, S386) especially in anthropological literature. Much less is known about their cultural transmission.

The cultural transmission of fermented food has been tackled in different ways: through historical and human ecological explanations for their development (Du Bois, Tan, and Mintz 2008; Ruddle and Ishige 2005), their adoptive functions (Pollock 1984; Giordano 2018; Amato et al. 2021); the colonial-industrial underpinnings for shifts in production and consumption (Cwiertka and Moriya 2008; Yamin-Pasternak et al. 2014); fermented food's maintenance because it fits cultural standard of taste (Ozeki 2008); fermented food marginalization and negotiations across geographical and class boundaries (Kikon 2015; Kikon 2021); material histories of fermented products (Hsiao and Lim 2000; Grainger 2021;Eric 2021); fermented foods as a co-evolutionary force (Katz 2010) in the co-evolution with taste (Evans and Lorimer 2021); and their ontological changes with timespace interactions (Rafaetta 2021).

Fermented foods, in general, lend themselves to cultural transmission studies, as their longevity in cultures allow for their extended observations and analyses along with other cultural phenomena. Such longevity may be attributed to their food composition and position in meals. For many cultures, fermented foods are flavoring ingredients, condiments and dipping sauces. They are what Rozin and Rozin (1981) would call "flavor principles" or what Ozeki (2008: 147) would describe as "standard taste." They are mainstay ingredients that produce a range of taste expected and preferred in a particular culinary culture. They are the "…foundation for over-all taste of many dishes…" and "…ground[ing] people's taste judgements" (Ozeki 2008, 147). Fermented foods may be considered core foods (Passin and Bennet 1943) and fringe (Mintz and Nayak 1985). The former refers to the staple food or those necessary for the diet– those that are routinely present in the meal. The latter refers to food that helps get the food through the alimentary canal. Their centrality in meals makes them resistant to abandonment despite the changing times and places.

3. Landscapes of Memory

Landscapes are not just settings where humans live their lives, they are venues of learning and remembering by way of memory, in turn their memories also animate culture. This section details this relationship between landscapes and memory.

Recent retheorization of landscapes shifted a static perception to a more dynamic one. The former thinking sees landscape as a stage or an imprint of human activity. Key in the shift of landscape thinking are phenomenological concepts like "being-in the world" and "dwelling" that rendered mind and body free from Cartesian separation and shows humans and their landscape to be more connected (Ingold 2011). This sets

landscapes into more active, integrative, and constituting/constituted places (Ingold 2011; Casey 1996). With the said phenomenological assumptions, the world was rethought to be “a process totalized”, “a work-in progress (or decline)” and in “a continuous process of becoming (or vanishing)” (Holtorf 2015, 169). This processual and relational nature of landscape paved the way for retheorization of knowledge in place.

Dwelling or the inhabiting of place was seen to produce knowledge. When humans inhabit the place, they move across it, and as they do, they develop perception – one that is not just a sense but an act of knowing (Casey 1996). In effect, the mind is not just in the head but also in the landscape (Bateson and Bateson 2000). This means cognition and remembering are the result of ecological collaborations (Hutchins 1995; Ingold 2011). The landscape allows deposition of memory because of it features: “its inherent variegation, sustaining character and expressiveness” and their containment within specific boundaries or horizons (Casey 2000, 330). Anthropologists agree how dwelling or intimate relations with the environment impregnate the landscape with memories (Ingold 2011; Basso 1996; Nazarea 2005). What is debated is the role of mental processes and meanings in remembering. For instance, Ingold (2011) theorizes that collective memory is produced as people repetitively move around same the paths that others have walked before. He describes its emergence as a developmental process he calls enskillment, an embodiment rather than a mental process. Another group of anthropologists argue the more active role of memory—that memory sits in places, exemplifying evocative, affective and symbolic agencies. For instance, Basso (1996) explains active sensing of the environment entangles and interanimates the human bodies and landscapes facilitating what Nazarea (2005) refers to as a simultaneous

internalization of external landscapes and externalization of internal landscapes. On one hand this means that the physical landscape is sedimented with “field of meanings”, moods, character and spirit” (Feld 1996, 56). A number of ethnographers have demonstrated this through landscapes that evoke danger (Osterhoudt 2017), teach moral lessons (Basso 1996; Kahn 1996), and recall life milestones and histories (Osterhoudt 2017). On the other hand, these interior landscapes are also carried in the mind (Basso 1996) and in the body (Nazarea 2005). These memories do not remain images and gestalt perceptions in the said storage as they are also projected into their new environments. For example, Nazarea’s (2005) ethnography reveals how small-scale farmers and gardeners in the U.S. keep and plant seeds that carry their personal histories to re-territorialize their new or changing landscapes. In a similar vein, Osterhoudt’s (2017) documentation of Malagasy vanilla communities reveal the writing of the locals’ stories in the landscape by planting crops and trees. The Kaluli of New Guinea have embodied the waters of their rainforest home and expressed this in their songwriting and singing practices (Feld 1996). Such examples reiterate the constitutive or placemaking outcomes of human-environment entanglements.

Over-all, this recent theorization of landscapes diverts the anthropocentric and mind-centered discourse of cultural transmission to one that is ecological and embodied. Studying cultural transmission via the landscape and the senses provide a very wide human ecological lens. It is valuable as it allows broader and closer views of fermented foods. But to help provide a middle ground that would also allow more engagement with the senses, a material lens is also useful.

4. Material Memory and Cognitive Agency

Material has also been implied in the formation of memory and cognition. This section focuses on this.

The trajectory of material studies resonates with the landscape as it expanded from being passive to one that is active in constituting humans and being constituted by them. Initially, material were seen as "physical traces of past events which are amenable to the process of reading" (Jones 2007, 1997). In this way, material is a depository of memory. Such a static approach to material shifted to a more biographic one with Appadurai's seminal work on the social life of things (1986) that introduced things having careers or lives. In this edited volume, Appadurai's work looked into different stages of the career of an object within the process of commodification (e.g., how things undergo classification and reclassification, how their value changes in series of exchanges). In this same volume, Koptyoff (1986) expounds materials change just as humans change. This may not only be economic, but also technical and physical. Meaning changes emerge from these forms.

More recent theoretical discussions of that nature of material argued for material not just being inert within its own life history but also with a life history that is "continually generated and dissolved within the fluxes of materials" (Ingold 2007, 1). Also premised within similar phenomenological theories of becoming, material is considered "unfinished" (Ingold 2012), in ontological deprivation (Malafouris and Renfrew 2010) or being part of an enfolding landscape (Ingold 2011) "caught up in the currents of the lifeworld." (Ingold 2007, 1). Material flows into and outward of its porous surfaces (Ingold 2012), it is enacting and enacted on by its surrounding artefact ecology

(Malafouris and Renfrew 2010; Kirsh 2010). Material engagement with the world co-creates novel results like new things, skills and meanings (Ingold 2012).

To date, few scholars have studied the material life of food. This has been also studied within the lens of "economy of qualities" (Callon et al. 2002), that emphasizes the techno-eco-political underpinnings directing material lives. For instance, Atkin's Liquid Materialities (2010) has demonstrated how milk changed its meanings as its material nature was changed by safety and quality regulations.

Because of the affordances of the material, some anthropologists have proposed the need to examine more of the materials per se rather than their materiality (i.e., meanings) in anthropological analysis. Ingold (2011) and Gosden (2005) explain, material studies should not focus only on meaning. Meanings are just meant to open up the subject at hand for further probing (Ingold 2011). On the other hand, with the foregrounding of the role of the material in cultural analysis, some anthropologists have expanded the study of material to its agency. Pivotal was the work of Janet Hoskins (1998) among Kodi in Indonesia that observed the agency of things in the construction of persons. Instrumental here is the elaboration of the notion of agency as capacity to act or produce effects even in the absence of free will or intentionality (Gell, 1998) that allowed ascribing agency among non-humans. The use of material agency as a lens in food studies illuminated the "facticity of food's material components" (Abbots 2016, 2) and in general revealed the interplay of bodies, matter, and food meaning instrumental in both the creation of material and the social construction of food and people.

One of the streams of material agency proposes the "cognitive agency" of material (Knappett and Malafouris 2013). Informed by concepts as the embodied mind,

enactive signification and material agency, Knappet and Malafouris (2013) argue cognition is not an exclusive turf of the mind but rather it is distributed to the body, matter, space, and ideas. The cognitive agency of material has been largely utilized as a lens to study the transmission of artefacts and skills in archaeology (Hodder 2011). The cognitive agency of material's role in the transformation of foodways has been suggested by Kirsh (2010). In talking about how artefacts co-evolve with others in artefact ecologies (e.g., users, practices), he gave a few food examples like how the use of chopsticks changes the nature of the food eaten or how heat-controlled stoves influence not just the nature of cooking but also the profile of those cooking.

5. Sensory Epistemologies

As a highly sensorial matter, this cultural transmission study of fermented food also draws from the anthropology of the senses. This section presents the cognitive aspects of senses.

Anthropologists' view of the senses has also evolved through time. It has been a concern since the 1900s, starting with British anthropologists' measurement of sensory attributes of locals of Oceania (Rivers 1901). Senses then were generally thought of as mere faculty for perception— media to connect with the outside world. Today, this older model of thinking about the role of senses in the human condition has been transformed and linked with epistemological function. Senses are theorized as a way of knowing. Different cultures have varieties of ethnoperception (Howes 1991); there is no one sensory model/sensorium and no one sense for a culture (Howes 2005). Cultures construct and use different combinations of the senses or sensory ratios for adaptation to different environments (Classen 1997; McLuhan et al. 2011). These sensory

combinations are needed to help cultures process their environments. Ong (1991) explains: "[m]an's sensory perceptions are abundant and overwhelming. He cannot attend to all of them at once. In great part a given culture teaches him one or another way of productive specialization. It brings him to organize his sensorium by attending to some types of perception more than others."

The distinguishing, valuing and combining of senses are based on the environment and of the persons' experience of the environment (Howes 2005,143). Such somatic works are also dependent on the denotative and connotative meanings of the environment (Waskul and Vannini 2008). For example, Classen (1997) argues this by noting "[t]he sensory model supported by a society reveals that society's aspirations and preoccupations its divisions, hierarchies, and interrelationships" (Classen 1997:402). Considering the abundance of sensory perceptions possible in man, such sensory combinations appear to be distillations regulated by the interests of cultures (Ong 1991; Classen 1997; Bergson as cited by Feld 1996) which "form culturally competent patterns of meaning" (Howes 2005, 357).

To date, the epistemological function of individual senses has been studied by different scholars. For instance, in the area of audition, Feld (1996: 93) explored what he called acoustemology, or "the potential of acoustic knowing, of sounding as a condition of and for knowing, of sonic presence and awareness as potent shaping forces in how people make sense of experiences." With taste, Sutton (Korsmeyer and Sutton 2011, 469) proposed gustemology or the "gustemic way of knowing, living, interacting". Whereas earlier work on taste highly exemplify distinction (Bourdieu 1984) through their observations on how senses communicate, edify, and discriminate social positions

(Kuipers 1991; Stoller 1989; Adapon 2008; Abarca 2006; Yamin-Pasternak et al. 2014); studies that have taken a gustemological approach, one that looked into the potentialities of sensorial knowledge, revealed more of the agency of individual and social taste in reshaping food and their meanings (Jung and Cisterna 2014). Taste for instance has been shown to change the quality and politico-economic values of food (Takahashi 2014; Jung 2014; Meneley 2014; Fukutomi 2014; Sternsdorff 2014) and impact the maintenance of cooking skills and foodways (Abarca 2005; Sutton 2006; Adapon 2008; Janeja 2010).

Senses are also theorized as memory (Seremetakis 1996). Remembering happens in the senses or in other words memory is deposited in the senses resulting from repetitive performance involving the body (Connerton 1989). Different authors showed this sensory-memory connection through synesthesia, or the bleeding of senses into each other. Synesthesia is thought to facilitate the creation of images, metaphors and messages (Sutton 2000; Howes and Classen 2014). Synesthesia, in turn, accomplishes this through the presence of collective and embodied memory (Howes and Classen 2014; Young 2005). This sensory-memory connection has been demonstrated in food memory studies (Sutton 2001). Food memory is inevitably tackled through the body and the senses. As (Holtzman 2006, 365) explains "the sensuousness of food is central to understanding at least much of its power as a vehicle for memory". A large part of food and memory literature demonstrated how the sight, smells, and other organoleptic properties of food evoke personal histories (Choo 2004; Christensen 2001 as cited by Holtzman 2006) and serve as memorials and mnemonics for remembering especially in the life histories of migrant and other transplanted groups (Ben Ze'ev 2004; Sutton 2001). Consequently, food is seen as an internal map or a sense (Ben Ze'ev 2004; Nazarea 2005; Janeja, 2010)

that re-make people and places to counter and survive the homesickness, nostalgia and other traumas of temporal and spatial displacements (Sutton 2001; Holtzman 2006; Sen 2016).

Last but not the least, senses are also now considered as a learned skillset (Howes 1991). Seremetakis (1996, 9) explains, “memory is internal to each sense “; “[m]emory is the horizon of sensory experiences, storing and restoring the experience of each sensory dimension in another, as well as dispersing and finding sensory records outside the body in a surround of entangling objects and places. Memory and the senses co-mingle in so far as they are equally involuntary experiences.” In other words, while memory is deposited in the senses with repeated action, memory also helps shape perception. In effect, as senses feed memory and memory feed the senses, the sensory and memory possess a reciprocal, reflexive relationship. Such a directive role of the memory on the senses affords the skilling of the senses. This was shown by Grasseni (2007) and Grasseni and Grasseni (2009) in her work on skilled vision. “[S]killed visions orient perception and structure understanding, in other words that they not only convey ideas, meanings and beliefs, but configure them”(Grasseni 2007, 5). Vision is “skilled” through training or apprenticeship in what she calls ecologies of practice, which are made not just of memory and technique but also social relationships, identity and more (Grasseni and Grasseni 2009).

C. Research Site

This study was done in the Philippines (Figure 1.2), in the province of Pampanga, which is historically associated with buru-making. Buru is a collective term for salt-preserved foods in the Kapampangan-speaking world. Some Kapampangans classify buru

as a *pepabuluk*. *Buluk* in the Kapampangan language is a descriptive word for rotten or fetid (Foreman 2019). Thus, being labeled pepabuluk means it is something deliberately made rotten or bad-smelling. Culinary practices known as pickling and fermenting in English are classified under this buru category in the Kampampangan language. For example, there are *burung mustasa* (pickled vegetables), *ebun buru* (salted eggs), burung asan (fermented fish), *burung paro* or *balo-balo* (fermented shrimp), and *burung babi* (fermented pork). In this study, I focus on burung asan. Throughout the dissertation, I will use the term *buru* to refer to the white, fermented fish dish usually made by Kapampangans, unless I indicate otherwise.

I specifically chose the town Candaba because it is the Kapampangan town most popular for buru-making. Buru is currently a major product of the town. It is produced both in commercial and household scales. Candaba folklore links Candaba etymology to buru. It is said that Candaba got its name from a certain *Cang Daba* who was a popular buru-maker. *Cang* was a word used to address an older person and Daba means clay jar. The person was called *Daba* because he was fat like a daba (Aldo ning Capampangan Souvenir Magazine 1991). This lore suggests a long history, or at least a perceived long history of their buru practice.

Candaba is about 50 miles from the national capital Manila and is 11 miles east from San Fernando, the provincial capitol of the province of Pampanga (Figure 1.3). It is bordered by Arayat, Pampanga and Cabiao, Nueva Ecija to the north; by San Miguel and San Ildefonso, Bulacan on the east; by Baliuag, Bulacan on the south; and by San Luis and Sta. Ana, Pampanga on the west.

Candaba is the second largest municipality of Pampanga (MPDO, n.d.) having a land area of 20,370.29 hectares or about 50,000 acres (MPDO, n.d.). It has 33 villages [*barangays*]. Because of its size, it is administered in three regions: the Capampangan, Riverside and Tagalog regions. The Capampangan region is closest to San Miguel, Bulacan. The Tagalog region is closer to Baliuag, Bulacan and San Luis, Pampanga. The Riverside region refers to the areas in proximity to the Pampanga River.

Among the Candaba villages (Figure 1.4), San Agustin was selected as the study site. San Agustin is one of the riverside villages and therefore among the villages that get most of the flood and are most associated with buru-making. Locals claim most buru-makers come from San Agustin. San Agustin is one of the town's larger villages. It makes up 1040.51 hectares of the town. It contains a part of the *población* area and a large part of the inundated portion of the swamp. It comprises seven *puroks* (i.e., areas). In 2016, its population was estimated at 5,946 (MPDO, n.d.).

Figure 1.2. Map of the Philippines. (Wikimedia Commons 2019)

Figure 1.3. Map of Candaba and its neighboring towns, (Wikipedia 2005)

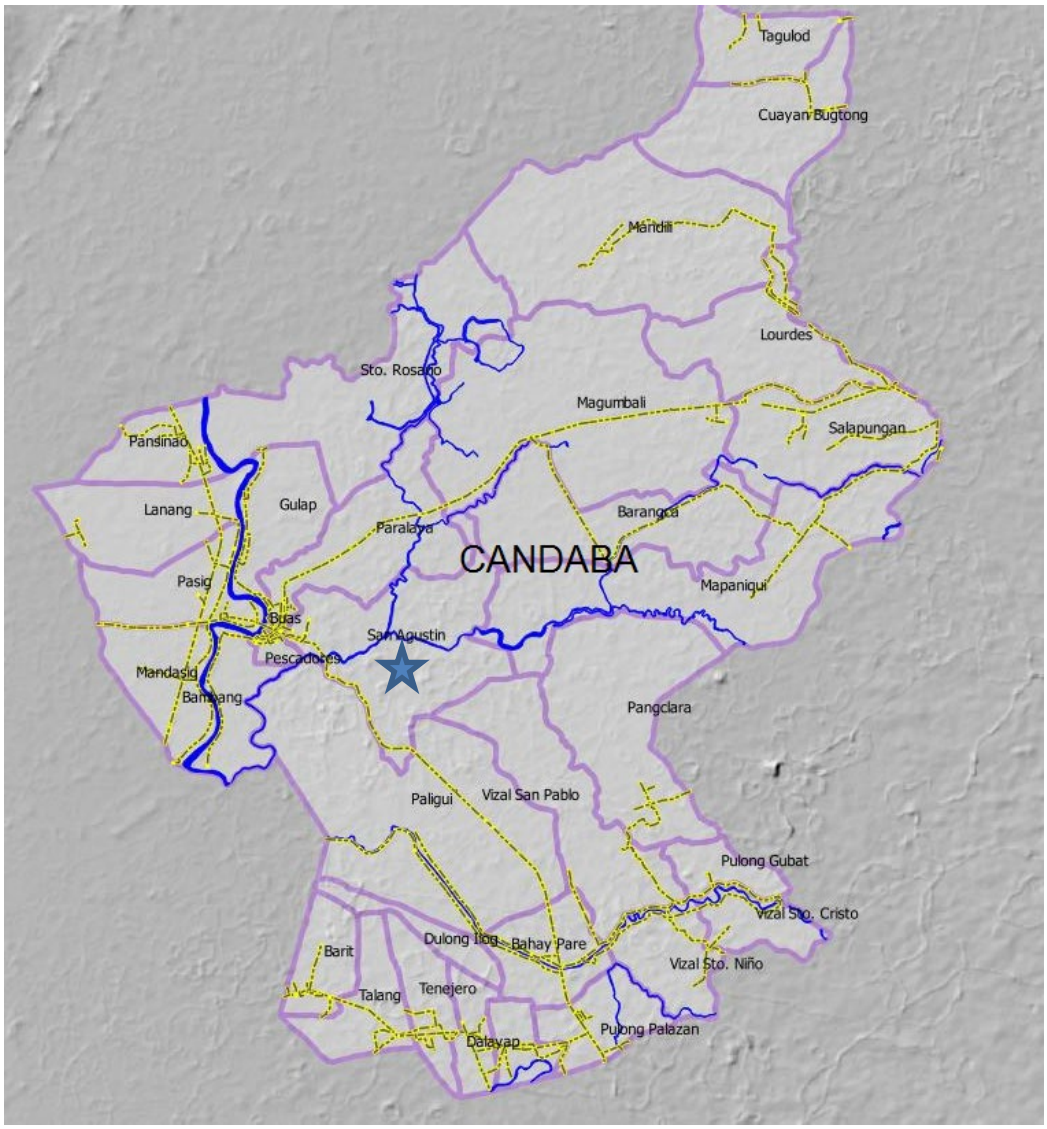


Figure 1.4. Map of Candaba with its villages. San Agustin is indicated by a star. (MPDO, n.d.)

D. Research Methods

My research was conducted from September 2019 to August 2021. It was interrupted by the onslaught of the COVID-19 global pandemic in March 2020. Research activities stopped completely for three months in 2020 and another 1.5 months in 2021 considering the predominantly in-person nature of the research. In the earlier part of the

pandemic, major revisions were made to allow face-to-face data collection when national and local lock-downs/social distancing restrictions were lifted. However, due to the increased COVID-19 cases in the province, and the unpredictability of government enforced lockdowns and restrictions, the research took an opportunistic, hybrid approach. Some methodologies were carried out personally or online, whenever and whichever was possible. The changes in the research protocol are discussed in the following sections.

E. Human Subject Research and COVID-19 Ethical Protocols

The data collection process described in the following section was submitted to and approved by the University of Georgia Institutional Review Board (IRB) and by Central Luzon Health and Research Development Consortium-Ethics Review Committee (ERC) (IRB PROJECT00000362; ERC Protocol Code 2019-18). Modifications were also submitted to the IRB and ERC with the outbreak of the COVID Pandemic (IRB VERSION00000505). This meant that in-person interactions were decreased through reductions in the frequency and length of time of close contact. Where possible, in-person interactions were done via mobile phone and online calls. Precautionary measures such as masking and hand-sanitizing, or the conduct of activities in open air during face-to-face interactions were also commonly employed. Informed consent, that included COVID risk language, was obtained from each participant (except unstructured interview participants during the preliminary activities) midway during their involvement or even later.

F. Data Collection

My first contact with the town, in 2019, was through official and unofficial connections. I initiated official contact with the town through a courtesy call with the

Mayor and Vice Mayor. After this visit, I was (re)introduced to select offices of the local government unit such as the agriculture, health, planning, environment and public employment services, wet market offices as well as village heads. I was able to interview local government office heads on the history of the area along with current agricultural, health/nutrition, flood, economic and buru trade situations. This included an annotated driving tour around what are considered the important parts of town. Most of the government officials I interviewed were newly appointed. To supplement information from this group, I also interviewed non-government affiliated individuals who are considered by many as experts of their culture and food. This includes a retired agriculture technician, a businessman/former government employee, and a pastor.

Archival work in the local government was limited. I was only able to obtain a few documents, a key document being the town's 2017-2026 Comprehensive Land Use Plans (MPDO, n.d.) which in addition to plans for the period covered, describes the socio-demographics of the place and profiles its agricultural, health/nutrition, infrastructure, economic sectors, as well as its potential physical hazards. Records of routine inventories (e.g., identification of indigents, nutritional status) were not available. Many of these they reported were destroyed by flooding, roof leakage, and computer virus infections. I contacted provincial and regional offices for possible data on Candaba, specifically those that related to rice and fish production and distribution, number and profile of fishers, fishpond operators, farmers, rice millers, traders and retailers and reports/pamphlets of agricultural, nutritional and livelihood related interventions, and a general agricultural profile of the area. But this was limited too. The Department of Agriculture Regional office had the same data I had collected from the LGU. Fortunately,

the Bureau of Fisheries and Aquatic resources initiated a stock inventory of fish in the Candaba portion of the Pampanga River in 2018. I was able to obtain data from their 2019 measurements. I was also able to view the resources in the Pampanga Library which included local research reports, souvenir programs and newspaper clippings that were salvaged from the buried offices after the 1991 Mt. Pinatubo eruption. In view of these recordkeeping problems and/or the lack of government personnel with institutional memory, this dissertation is limited in presenting an official history and description of the landscape.

The other stream of introductory activities in the research was through a culture bearer of Pampanga. I was introduced to a transplanted Candaba local who in turn connected me with a Candaba culture bearer and church leader. Without the availability of housing in San Agustin, I lived in the house of this pastor and his family for almost the first half of my stay in Candaba. This was in the village Mandasig, a 10-minute ride from my specific research site. I stayed there until a house became available for rent in San Agustin. Through this pastor and his church members, I was able to identify initial contacts from all over town for more exploratory interviews (i.e., unstructured). These include farmers, fishermen, fishpond operators and buru-makers. Upon informally conversing with them, I was also referred to similar stakeholders

In total, there were about 70 informal conversations carried out at this initial phase. Overall, these exploratory activities introduced me to the locality, specifically to the locals' experience with the different rice varieties, knowledge of buru-making experts and practices. Subsequently these exploratory activities helped in the confirmation of the

specific study site, identification of study participants, and the development of tools for the ensuing data collection activities

1. Market and Other Food Sources Visits

These visits were carried out to characterize the resource base available for buru-making and consumption. Establishing the current food ingredient options buru-makers can choose from was necessary to characterize the material food landscape. These visits were done in the town wet market, rice farms, the San Agustin creek and in fishponds. All of these were in the village of San Agustin except for the fishpond observations which were done in the village of Mandasig in Candaba and village of Sta. Lucia in the nearby town San Luis. The fishpond, now one of the most common sources of fish in the area, was usually operated in non-flood prone areas. The wet market was the main source of food for the locals, including rice and fish. Many also got their fish directly from the *pinak* because it was free or cheaper than the fishponds or wet markets. San Agustin residents went to the *sadsaran* (docking area) of the San Agustin creeks and waited for fishermen there. The fish supply, specifically quantity, diversity and form, was the focus for the market, creek and fishpond observations. The rice supply, specifically names/varieties and quality, was the focus of the market and rice farm visits. The market was visited in four random weekdays and four random weekends for each rice season to document weekly and seasonal patterns. Rice fields and fish pond observations were done during the different stages of rice planting and aquaculture. The creek was visited numerous times as it was the site (close to the site) of many data collection activities.

2. Life History Interviews

Life history interviews provide a community's version of history complementing official archives (Nazarea 1998). Considering the biographic detail needed about the landscape and the lack of historical sources, the lives of locals were used to understand the place material and buru history. These were conducted among two sets of participants: a) Fermented rice landscape stakeholders (i.e., farmers, fishers, traders, millers, retailers), and b) buru-makers (commercial and non-commercial). They were purposively selected from recognized authorities/old timers in their craft. These were done in a series of two to three interviews of varied durations that asked about different life stages and temporally-related stories on rice, fish, and fermented rice. Results from these interviews were collected to reconstruct the trajectories of the fermented foodscape, sensory perceptions, and fermented rice including their changing meanings and intersections as they affect/are affected by broader socio-cultural and politico-economic processes. See interview schedule in Appendix A.

3. Participatory Observations

Participatory observations were used to document the rice, fish and buru landscape. Participatory observations are important in this ethnography not only because they allow "inquisitive observation" (Bestor 2003) but also they facilitate collection of embodied knowledge (Bloch 1998), material-sensory engagements, and flows of information and material ineffectively relayed in interviews (Paxson 2017). Thus, this method was used to follow a) rice and fish activity. Following the material life of rice, I was able to join rice planting preparation, broadcasting of seeds, application of fertilizer,

harvest, milling and retailing for rice chain activities. Following the material life of fish, I observed different techniques fishing and fishpond operations.

4. Household Survey

A household survey was conducted to help describe the village and characterize the state and evolution of rice fermentation practice based on respondent memories. The survey was informed by the earlier exploratory interviews and observations. Questions asked included those on demographics, socio-economic backgrounds, and range of fermented rice preparation (including their frequency, volume, rice/fish varieties used, buru variants) and consumption (frequency, uses, food pairings) practices through time (see questionnaire in Appendix B). Considering the scarcity of data on local rice and fisheries, the survey was also used to identify generational experiences of rice varieties and fish species/kinds. Results were used to select participants for the in-depth study activities.

Considering the large size of San Agustin, complete enumeration was not possible. With the assistance of a statistician based at the University of the Philippines Los Banos, a stratified sampling was designed. A total of 252 households were targeted, to allow the examination of generational memory differences. Sample size determination from each purok was based on the distribution of a total of 481 senior citizens (i.e., 60 years old and above) in all six areas. This number was the only readily available age-group based statistic. It was obtained from the Senior Citizen's organization of the villlage. The use of this figure was advantageous as the senior citizens are the population of interest with fewer members. It was the assumption that visiting all 252 houses and

interviewing individuals belonging to the three age groups would yield representative numbers per group. [6]

Households were randomly selected by counting every sixth house in each purok during the survey. The next house was recruited if nobody was home in the randomly selected house. I conducted the survey with two local enumerators from the *Nanay* Community, a volunteer organization of mothers tapped by the local government for different projects. The survey was pre-tested and local enumerators were trained through test-runs in the nearby village Pescadores.

Most of the analysis of this survey data was done on-site to help in identifying patterns for clarification and further studies. This was initiated by coding and entering the data, cleaning the entries, and returning to the research area for validation of data. Statistical analysis was primarily descriptive. Socio-demographic characteristics, along with rice and buru profiles of the survey population, were described utilizing frequency percentages and measures of central tendency. A total of 252 households were surveyed. These households had 906 members in total.

5. In depth studies on buru practice

Preliminary research results were periodically analyzed on-site (especially during the covid-lockdowns) to assess how the research questions were answered, what themes arose during data collection and how such results agreed/disagreed with my conceptual framework. This preliminary analysis was carried out by reading field notes written after

[6] This statistical design was originally crafted to allow the examination of memories across three generations that have experienced three different rice regimes. This was part of the original protocol that intended to study the persistence of buru in the modernizing rice landscape of Candaba.

each field observation/method, writing summaries on each rice/buru landscape and analyzing survey results. Based on these, my methods were revised and/or new questions were identified. Such a process of simultaneously analyzing data during the data collection process is part of what is called the recursive process of research (Schensul et al., 2013).

Data were filtered by their current buru-making histories and the scale of their buru-making using the program MS Excel. Participants were sorted into what I termed "old timers," "recent buru-makers," or "previous buru-makers" and those that "never" made buru. Such buru-making histories were useful in elucidating the maintenance, quitting, or start of buru-making—the buru-making succession process. Participants were also pre-selected based on their reported commercial and non-commercial buru-making activities. The original intent of this research was to document only the cultural transmission of non-commercial buru recognizing a different dynamic that commercial buru-making may introduce into the study. However, it became clear that including commercial buru-making in the study was inevitable as all participants were involved in commercial buru-making, a major industry of San Agustin at the moment. It was not uncommon for non-commercial buru-makers to have a family history of commercial buru-making or have relations with commercial buru-makers. Stories have been told of locals going commercial (i.e., regularly selling handmade buru) from non-commercial, and non-commercial to commercial buru-making.

Recruitment for the in-depth buru-making portion of the study began with a preliminary listing of more than 100 potential participants. In consultation with a village official and health workers, this list was narrowed down by responsiveness to research

and their internet access. People were then contacted and asked if they would participate in the in-depth study activities such as food elicitation activities, participatory observations, and semi-structured interviews. Internet access was added as part of the inclusion criteria because of the COVID-mediated shift to a hybrid, in-person, and online data collection process in the last few months of the fieldwork. Twenty-six individuals were interviewed as twenty participants were targeted and drop-outs were expected. It should be noted that the same set of individuals were recruited for the semi-structured interviews and the food elicitations. The continuing buru-makers from this group of 20 participated in the observations/video recording of buru-making and consumption. The target number was based on De Munck and Sobo (1998) who suggested 20 participants for an ethnographic sample being enough to reveal similarities and differences. Their participation in a minimum of three activities, also qualified them as long interviews, which usually entail 10 participants (Creswell as cited by Groenewald 2004). The summary of participants is detailed in Table 1.

a. Semi-Structured Interviews of Buru-makers

Semi-structured interviews were utilized to obtain more detailed profiles of the buru-makers and explore themes (i.e., hardship and progressiveness, and cleanliness) that emerged from the earlier data collection activities. Participants were thus interviewed two times to cover the following:

The buru-making lifestyle. This was explored through questions on past and present livelihoods, perceptions/memories of the landscape, landscape

changes and hardship, food procurement, preparation and consumption (covering rice and buru qualities, selection and preparation).

Local science of buru-making. Asked in this section were requirements for successful fermentation; the role of the different fermentation ingredients/implements, the fermentation process, perceptions of new ingredients, techniques and buru smell/cleanliness, standards of good buru, importance and memories of buru.

San Agustin life. This looked into their perceptions, experiences, and the challenges of growing up in this village. It asked about the dreams, aspirations, and life lessons born out of this place.

A total of 22 residents served as in depth study participants in these interviews.

b. Life History Interviews of Buru-makers

To construct the trajectories of the fermented rice landscape, buru-makers were also interviewed to learn about their life histories. This was complementary to the life history interviews of the rice chain stakeholders earlier described. A commercial and non-commercial buru-maker were purposively selected to represent two different buru life experiences.

c. Participatory Observations/Video Recordings

A combination of participatory observations, observations, and video recordings were done to document fermentation recipes, techniques, standards and quality/quantity of finished products, as well as buru usage

in meals. Observations were done in cases where participatory observation was not allowed. Video recording was used considering the impossibility of conducting in-person research at different times within the duration of the fieldwork. Participants were requested to make buru and video-record their preparation and consumption. They were instructed to capture the important parts of the procedure. These were captured using their own phone cameras and submitted to me via Facebook messenger. I asked them to give me samples of their buru.

d. Food-making Inquiry and Olfactory Evaluation

Given the limitations in personally participating in San Agustin life and in the ethnographic research per se because of the pandemic, I incorporated food-making in my study design. This is inspired by Heldke (1992) who argued that foodmaking is a thoughtful practice. This is similar to Brady's (2011, 322) research method "cooking as inquiry" that "recognizes bodies and food as sites of knowledge and engages researchers as researcher-participants in reflexive…study," but deviates from the former's collaborative approach that characterizes the social embeddedness of embodiment. The food making sessions were opportunities for me to partially experience food/buru life of the area. Utilizing autoethnography's techniques of self-observation and self-reflection (Mills et al. 2010) in cooking selected San Agustin recipes including buru, I was also able to gather more insights about the hows and whys of their practices. For instance, the preparation of buru put me in a

similar position as buru-maker apprentices. I experienced what it was like to be taught by other buru-makers, how it takes many decisions to make buru, and how I had to be attentive to the different ways of making it while being attentive to available resources and my personal objectives in making these decisions. In total, I was able to ferment three times in the field and I obtained a total of 11 buru preparations, with only one being successful.

e. Food Elicitations

Food elicitations are tasting sessions inspired by material object analysis (Miller and Deutsch 2009), sensory evaluation, and recipe trials (Dickin et al. 1997). I carried out buru elicitations to know what buru memories evokes or what affordances it possesses. I used buru visual and social prompts to help in characterizing the participants sensoryscape. I visited the informants and asked them to smell three buru samples and view selected photos of buru. They were similarly instructed to describe what memories these materials evoked. In addition to probing what these elicit, they were also asked to evaluate them to see if they were similar to those they grew up with and their expected quality. This was the opportunity for me to validate what participants meant when buru was smelling bad, which could help confirm the suspicion that there is a changing smell preference for buru, or specifically traditional buru now perceived as bad. The buru elicitation and buru-making for video-recording were done in sync to make available a pool of buru samples in

time for the elicitations. I also prepared different treatments of buru. Samples were chosen from this pool of buru made by the participants and me to represent different smell profiles: namely one that I perceived was not sour and had a faint earthy smell, one that had lactic acid smell and minimal fresh fish smell, and one that has a particular stink. Nineteen participants joined this activity.

Table 1.1. Number of Participants and Sessions for the In Depth Study Activities

	Number of Participants					TOTAL Participants per Session
	Continuing Buru-makers		Non-continuing/Not-buru-making			
	Commercial	Non-commercial	Those making buru occasionally	Those who stopped making buru	Those who never made buru	
Semi-structured Interviews	6	6	4	2	4	22
Buru Elicitations	5	5	4	2	4	20
Observations/ Video Recording of Buru-making	6	7				13
Life history interviews		1	1			2

G. Research Documentation

The data collection was carried out in Kapampangan and Filipino, major languages spoken by locals. The different activities were photo/video/audio-documented where allowed and possible. Permissions to take photos/videos were asked for and included in the consent. Proceedings of the different methods employed were

summarized into field notes. Reflections on the research processed were written in a field diary.

H. Data Analysis

The household survey results were analyzed using descriptive statistics. Details are discussed in the preceding section. Selected recordings from the interviews, participatory observations, and food elicitations were transcribed by me and hired transcriptionists. Field notes and transcriptions were read and re-read, and videos watched and reviewed for an increased familiarity with the data and what Harrison (2018) described as "experiential intuitive understanding" of the results. These data were entered and analyzed in the qualitative data analysis program MAXQDA along with archival data, market and farm visit data, video clips, and photographs. Data were thematically indexed using pre-conceived concepts based on the theoretical framework and emergent categories and their related theories. Trajectories of the rice, buru and sensory/memory landscapes were reconstructed by piecing together data collected. From here intersections of these landscapes were identified and the relationships therein were examined.

I. Notes on Identifiers and Translations

Throughout the document, study participants are identified through assigned three-letter initials. Quotes from the participants are translations from Tagalog or Kapampangan to English. Translations reflect their verbatim statements. This means sentences were not significantly edited for clarity. Minor edits included the addition of

words enclosed in brackets to include what participants were describing or reacting to and the dropping of unrelated words/ideas indicated by ellipses.

J. Positionality

I am from the Philippines. I grew up in Angeles City, a locality in the same province where Candaba is located. I speak and identify as Kapampangan, the same ethnic group most residents of Candaba identify with. I have seen myself both as an insider and as an outsider to Candaba life. This comes from a transplanted Filipino personality and positionality constructed through four years of college at the University of the Philippines Los Baños (UPLB) in Laguna, two years of Masters education at the University of Wisconsin Stout, 13 years of being a rice researcher and assistant professor back at UPLB and seven years of doing a PhD in Athens, Georgia. As such, I also identify with the Tagalogs, the ethnolinguistic group to which residents of the province of Laguna belong. Also, I carry predominantly academic lenses, initially those of the hard science of nutrition and later on to the more humanistic anthropology.

My positionality in doing this research is also defined by my exposure to fermented food. As a member of a Kapampangan household, I was exposed to buru early in life. I started only with cooking the fermented fish as a young girl, and then eating and liking it as I got older. That said, I grew up smelling and/or eating the notorious stinky buru. With my maternal roots hailing from Baliti, a barrio in the town of San Fernando Pampanga, the Aslam baliti (Baliti vinegar) also became part of my food culture. My mothers' family made this vinegar. This background made me familiar with the naturally occurring flavors of vinegar and made me aware as well of discriminations of fermented food smell especially among those not familiar with the vinegar-making process.

K. Structure of the Dissertation

This first chapter lays out the rationale, theoretical framework, and methods of the study. The field site introduction is initiated here and continues in Chapter Two. Chapter two introduces the Candaba more deeply by way of its defining geographical feature: the Candaba swamp. The discussion of the swamp helps contextualize the historical abundance and recent depletion of the area's fish—the main resource base for fermentation activity. Chapter three introduces the fermented fish burung asan which is the focus of this study. As it is the intent of the dissertation to track the material life of buru, this chapter presents the state of the art and science of buru consumption and production in San Agustin. This includes a discussion of how the two-step buru-making process predominates buru-making practice. It starts explaining the persistence of buru in the landscape through a biocultural discussion of buru deliciousness. The succeeding chapters, four to five, tackle the question of how the fermentation landscape of San Agustin has changed. Chapter four highlights the reconfiguration of the rice and fish supply of the village resulting from the modernization of these agricultural practices along with climate and anthropogenic factors. It explains how the wild fish supply got depleted and how aquaculture fish dominates the fish landscape. It also tells the story of the rice consumed in the area changing from harvested and/or government subsidized rice to commercial rice. This discussion of the life of fish and rice in San Agustin is followed by the biography of the dwellers of the village. Chapter five zooms in on their life with buru; it specifically describes how commercial buru making grew out of the need for economic improvement–the delicious life. Buru as a livelihood was used to finance the sending of San Agustin children to college. Chapter six and seven tackle how these

landscape changes have altered the taste for buru and consequently how taste directed the buru tradition. Chapter six shows how buru deliciousness was defined by cleanliness, implied by the buru being inodorate and white. This was a sensory transition, the ramification of a landscape of new fish and rice forms, and landscapes charged with memories of poverty and marginality. This was also mediated by western food-safety, personal hygiene, and buru-making skill-attuned sensibilities. Chapter seven describes how buru-making has become a process guided by taste and directed by commodification, differentiation, and heritage making. As such, it reinvented buru into a clean one and elevated commercial buru-making into what locals would consider an "alternate" intelligence or profession. It concludes by providing a prognosis of buru practice: that clean buru, supported by the current landscape of material and memories, would continue growing in its dominance. On the other hand, stinky buru, because of its sensory mismatch in a progressive landscape, is in a vulnerable and forgettable position. Chapter 8 concludes this work with chapter highlights, the theoretical and practical implications of the study, and avenues for future research.

CHAPTER 2

THE BIRTHPLACE OF BURU

"Mabiyasa kang mamuru nung taga San Agustin ka" (You will learn how to ferment fish if you are from San Agustin")- ELN

The landscape is one of the good places to start in studying the continuity and change of food. The landscape has been utilized as a lens to study food considering interconnections of food, people and place— thus the emergence of the discourse on "foodscape" (Adema 2007; Mikkelson 2011) in nutrition, food studies, and health promotion. These all study how the food environment shapes people's food choice and behavior (Mikkelsen 2011). The environment, as a place, is not just a food's setting and material resources but one that explains meanings (Kolen 2010), attachments (Papmehl-Dufay 2015), and identities (Feld and Basso 1996).

There are many ways of examining a landscape in the study of food. In this dissertation, I begin to engage with this complex concept by thinking of a landscape as the interface between the environment and human activity. As Casey puts it: "[p]lace is what takes place between body and landscape" (Casey 2009: 29). He explains "just as there are no places without the bodies that sustain and vivify them, so there are no places without the places they inhabit and traverse" (Casey 1996, 24). This chapter introduces the readers to the landscape of Candaba, contextualizing and situating Candaba life and *buru* practice through the characterization of physical environment, and the humans that interact and co-constitute the place.

A place gathers or holds different entities like animate and inanimate objects, people, events, ideas and more for a "common engagement" (26). These are kept in place by something that holds them together, which Casey put as "the hold [being] held". He attributes this gathering ability to the configuration of the landscape. Thus, the first part of the chapter focuses on the environment. It highlights the layout of the landscape, specifically the Candaba swamp where the town was built. It is both a thoroughfare and barrier for its living constituents. That said, this section also gives a glimpse of the assemblages that the swamp has gathered through time: the biodiverse ecosystem and the people that made this swamp ecology their home. This includes a description of the *pinak* (swamp) culture and life, a part of which is a sensory account of my life in the community inspired by anthropologists Stoller (1997) and Seremetakis (1996) who encouraged ethnographers to attune themselves to a culture's senses to allow digging deeper into their lives. This was a specifically important approach as this research foregrounds material, memory and the senses in its critical analysis of cultural transmission. Overall, this chapter reveals the swamp and its waterways' constitution of the birthplace of *buru*.

A. Candaba Swamp: Holding the Held

Drawing from Casey (1996), the physical features of a place hold its landscape constituents in place. Physical features like mountains, rivers, and vegetation decide what goes in and goes out of an environment—what the place gathers and keeps. This section introduces the unique geographic feature of Candaba, the swamp, as that gathering or holding feature of the town.

1. The Candaba Swamp

A large part of Candaba lies on the Candaba swamp. The Candaba swamp is a 32,000 hectare "complex of freshwater ponds, swamps and marshes with surrounding areas of seasonally flooded grassland, arable land and palm savanna on a vast alluvial flood plain" (PAWB 2013) straddling the provinces of Bulacan and Pampanga. As a town that is believed to have been coastal in the past, Candaba is thought to have been formed as a result of volcanic eruptions and the subsequent lahar flows that extended its land mass (Pangilinan 2004).

The *pinak,* as they call the swamp, is a catch basin with a natural retention capacity estimated at approximately 1.5 billion cubic meters (PAWB 2013) The floodwaters that inundate Candaba come from the Pampanga River Basin (Figure 2.1), the fourth largest river basin in Luzon. This river system is 260 km long (Reyes et al. 2019). It emanates from the Caraballo mountains, traverses Central Luzon in a southwestern direction, and flows into the Pantabangan dam. Waters collect in the alluvial plains of Candaba and San Antonio until they drain off into Manila Bay (Naguno and Sawano 2016). These floodwaters are overflows from the rivers Maasim River, San Miguel River, Garlang River, Penaranda River and Pampanga River flooding the swamp (Lace et al. 2017). Locals explain such phenomena being the meeting of two rivers: the Pampanga River (Rio del Grande) and the Chico River coming from the provinces of Nueva Ecija and Aurora. The resulting sea of water formed is what they refer to as *"maragul ing danum"* (literally "the water is big").

Figure 2.1. The Pampanga River Basin (PAG-ASA n.d.)

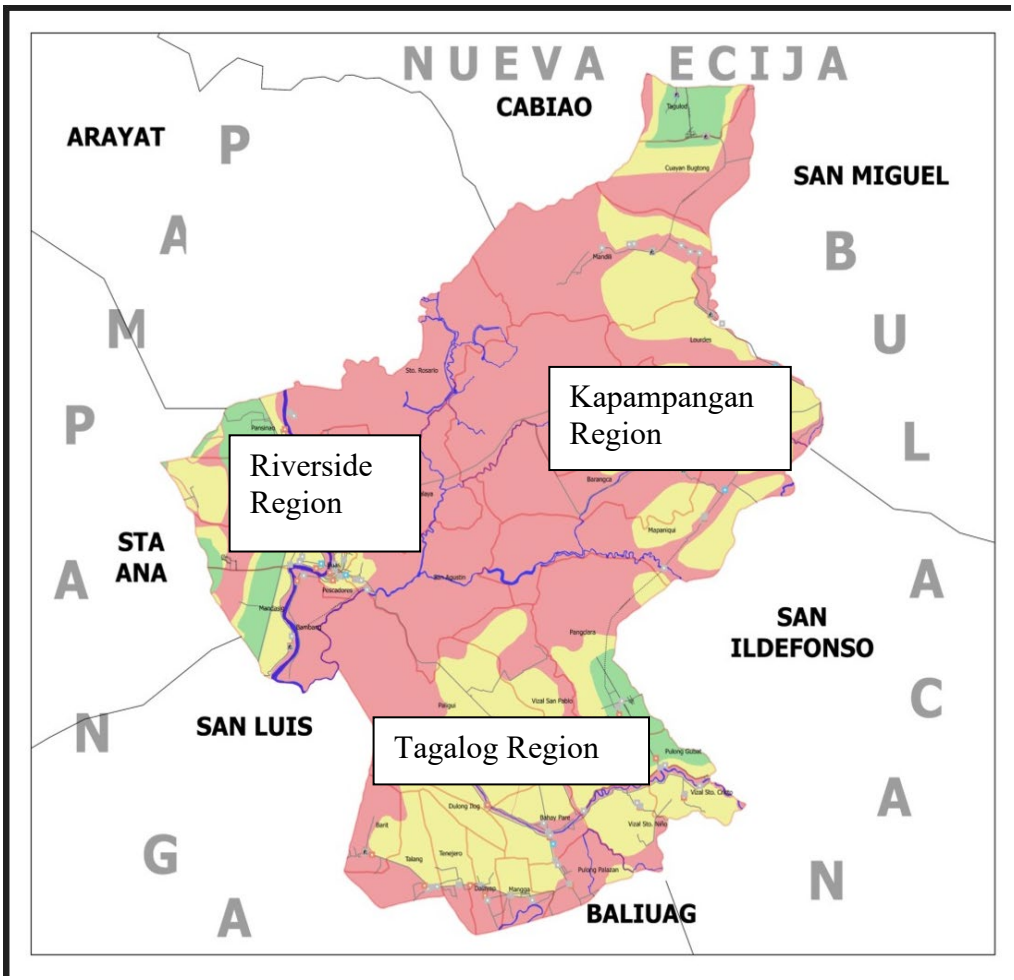


Figure 2.2. Flood map of Candaba. The green areas are those with low flood risk (flood depth below 1 meter); the yellow ones are those that are with moderate risk (1 to 5 meters) and those in pink are with severe risk (above 5 meters). (MPDO, n.d.)

Figure 2.3. San Agustin: A sea during rainy seasons. (GMA News, October 22, 2020)

Historically, the flooding of the swamp has been an annual occurrence. During the rainy seasons, 330km^2 of the swampland is regularly inundated (NWRB 2011). Flood depth has ranged from one to five meters, varying according to area (MPDO, n.d.; DENR-PAWB 2005)(Figures 2.2 and 2.3).

Locals say most of the town was usually under water from July to December. The duration of seasonal floods depends on the water level of the Pampanga River that drains off to the Manila Bay. From Candaba, water flows to the towns of San Luis, San Simon, and Apalit then onto Masantol and Macabebe, and finally Manila Bay (Cabusao 2003). A number of elderly community members shared with me how floodings in the swamp

were exacerbated by the building of the Arnedo Dike and set-back levee by the Americans between 1940 to 1970s. These were constructed to divert flood waters from the more populated Pampanga towns. Locals claimed this was to control flooding and protect Clark Air Base and the nearby metropolis, Angeles City. Candaba, along with the towns of Arayat, San Luis, and Masantul, were "sacrificed" (Naguno and Sawano 2016), getting the brunt of the flood.

But the swamp, the distinguishing feature of Candaba, has ceased to be a full-time swamp. A swamp is defined by its water collecting capacity. However, during my research, people often said "ali na daragul ing danum" ["water doesn't build up anymore"]. They referred to the swamp not flooding the way it used to. Before, they explained the town turned into a sea of water for half of the year. Nowadays, the reported floods are less frequent and shorter in duration. Naguno and Sawano, who documented Candaba floodwaters in 2016, reported inundation lasting for two to three months only. When I arrived there in 2019, locals recalled that the last major flooding (maragul danum) had occurred sometime between 2005 and 2010. For the duration of my fieldwork (i.e., 2019 to 2021), I witnessed two episodes of flooding in 2020, both having inundated my side of town (San Agustin *población* area) for about three days only.

Local linked such flood water irregularities to climate change. There is good reason to agree that climate change was contributory to it, but I speculate anthropogenic activity from household to institutional levels also facilitated it. Literature demonstrates how climate change, along with infrastructures (e.g., dams, land development), and excessive water withdrawals may increase or decrease floodwaters (Palmer et al. 2008). All these disturbances mark the history of the pinak's watershed, the Pampanga River

Basin. Earlier hydrometeorological-based forecasts suggested climate change bringing both flooding and droughts to the Pampanga River Basin (Matsumura et al. 2013). Existing literature highlights how climate change increased inundation and flooding possibilities in different parts of the river system (e.g., Rodolfo and Siringan 2006; Macalalad et al. 2021). Further complicating the situation, the 1991 Mt. Pinatubo eruption facilitated more flooding as it increased siltation in the basin. It was also said to have changed the course of hydrological movement (DENR-NWRB, n.d.), but what those changes were is unclear. On the contrary, droughts have been reported in Pampanga in the last three decades (Gusyev et al. 2015). Reductions in water flow important for fish migration were documented for different parts of the Pampanga River Basin. For instance, basin water discharge was reduced since the Pantabagan Dam was built, presumably due to its servicing of irrigated rice production (JICA 2011). The Pampanga Delta River Irrigation System (delta) diverted water from Pampanga River through the Cong Dadong Dam in the Arayat area. The delta was completed in 2002. It was meant to irrigate farming although water was also withdrawn for industrial and residential developments (Tabios III and de Leon 2020). [7]

2. A Gathering Place of Biodiversity

"Sasabian da ring mamalita a agyang nanu yang bini ing isalbag mu king pinak pihung tumubu ya uling balu rang mataba ya gabun ing Pinak." ["It's been said that whatever seed is tossed into the pinak will grow because they know the soil in the pinak is fertile"] (Cabusao 2003,55)

[7] I heard of some farmers not being able to plant rice during one of the dry seasons I was there because there was not enough water. As one farmer explained, water was diverted to Manila.

As the holder of the place or the force keeping things in place, what did the pinak gather? This section talks about pinak collecting a plethora of organisms because of its water regime—such biodiversity being the material base of the town's fermentation landscape.

Candaba is considered a wetland; in fact, the Philippine Department of Environment and Natural Resources considers it one of three most important wetlands in the Philippines (Sunstar 2005). "Wetlands are areas where the environment and the associated plant and animal life are mainly controlled by water" (PAWB 2013, 1). In the case of Candaba, freshwater/inland waters regulate the life contained in the swamp. As such, it is where several microorganisms, reptiles, amphibians, fish, birds and mammals inhabit (PAWB 2013). More than a source of organisms that can be used as food, fuel, fiber, genetic and other materials, wetlands facilitate other processes necessary for survival and development like soil formation, nutrient cycling, climate, water and natural hazard regulation, pollination, and erosion (Millenium Ecosystem Assessment as cited by PAWB 2013).

The biodiverse history of pinak is evidenced by locals' claims that everywhere they went in the past, there was something to harvest. For instance, informants talked about having an assortment of fruit trees surrounding their houses (e.g, *talang* [*Diospyros discolor*], *manga* [*Mangifera Indica*], *biabas* [*Psidium guajava*], *dalayap* [*Citrus x davaoensis (Wester) Yu.Tanaka*], *tangle* [*Premna odorata*]). They would find *sibaong* (a kind of beetle; scientific name not known) and *talangka* (*Varuna litterata*) from the *sapa.* They could plant and pick corn, cantaloupe, melons, and vegetables (e.g., eggplants [*Solanum melongena*], *mustasa* [*Brassica integrifolia*], *kamatis* [*Solanum lycopersicum*],

bule [a kind of bean; scientific name not known). In the field they could also catch *tugak* (frogs; unknown scientific name) and *dagis pale* (field mouse; unknown scientific name). From watery patches, they could harvest *kangkong* [swamp cabbage] and *tukal* [a lotus-like water plant]. After raining, there would be a lot of camaru (*Grylloptalpa brachyptera*) to collect. Author Cabusao (2003), also reported game like deer and *dumara* [wild ducks] being abundant in the area.

Candaba, being a bountiful fish resource, has been well-documented. Pampanga historian Larkin (1993) mentioned the town producing large volumes of fish which made their way to Manila markets (Larkin, 1993) in the 1800s. Another Pampanga historian Henson (1953) specifically reported how the town could sufficiently supply the catfish and mudfish needs of the whole province of Pampanga.

Why were there so many fish in the swamp? Many studies have documented the importance of wetlands as reproduction and nursery habitats (Barbier 2011). These wetlands are conducive for wild fish growth considering the amount of detritus available for fish to feed on. These are small particles of organic matter generated through the decaying of plant materials when leaves and stems are immersed in water (EPA). In San Agustin, most of these (particles) came from melons and watermelons prior to the 1970s and later from rice agriculture refuse. Furthermore, the wetlands, through the confluence of natural elements, created favorable water level temperatures, along with levels of dissolved oxygen, acidity and unionized ammonia beneficial for fish growth (Halwart and Gupta 2004).

Local fishermen explain that fish migrate upstream from the Pampanga River to the creeks (i.e., sapa). The fish stay in Candaba because the swamp is rich with food.

Fish stay until they spawn (approximately four to five months), then swim back to their original habitats. However, some fish remain in the rice fields, irrigation canals, *plaisdan* (excavated fish traps) and even around the neighborhoods as the floodwaters recede. Such migration patterns are consistent with the patterns of most fish. They move during the wet seasons when water flow is higher, in search of suitable spawning grounds, then return downstream as water flow is reduced (Makrakis 2012).

The richness of Candaba's swamp ecosystem has also attracted thousands of migratory birds (Figure 2.4). These are birds escaping the harsh winters in China, especially in October and November. During this period, the pinak regularly hosts 5,000 to 10,000 birds (Ong et al. 2005). These include grebes, herons, egrets, rails, gallinules, coots, fin, foot, jacanas, shorebird-waders, kingfishers, gulls, terns, skimmers, sparrows and other water birds (Sunstar 2005). Also noteworthy among its avian visitors are Streaked reed warblers (*Acrocephalus sorghophilus*), Philippine ducks (*Anas luzonica*), Black-faced spoonbills (*Platalea minor*), and Spot-billed pelicans (*Pelecanus philippensis*)— all endangered species (Martinez et al 2017).

Figure 2.4. Migratory birds in the Candaba Swamp. (Niño Jesus Orbeta 2020).

3. A Gathering of People and History

In addition to a rich non-human assemblage, the pinak has also gathered people through time. This section discusses those who, at different points in time, called Candaba home. Recognizing the constitutive effects of people on a place, this section also presents major activities of different settlers that reconfigured the landscape drawing largely from general Philippine history.

The first known settlers of Candaba were the Muslim royalties from Borneo Prinsipe Malang Balagtas and Araw Malansic who arrived in their *balanghais* (boats) between 1350-1400AD and founded their kingdom in what is now the Candaba village

Mandasig (Beyer as cited by Henson, 1955; Cabusao 2003). Prinsipe Balagtas is grandson of the Madjapahit empire rulers Noble Araw and Lady Maylag of Borneo. He came and settled in the Kingdom of Lusong [8] to strengthen their imperial power in the region (Beyer as cited by Henson 1955).

The Spanish colonized the Philippines in 1521 (Boquet 2017). They carved out the province of Pampanga from the Kingdom of Lusong (Michael Raymon Pangilinan, personal communication, August 6, 2019). Candaba, at that time a prosperous settlement, was the first municipality the Spanish founded in the new province in 1572 (Henson 1955). The Spanish were in the Philippines for about 300 years until they ceded the country to the United States in 1898 (Boquet 2017).

Much has been attributed to the Spanish in terms of their alterations of the physical and social landscape of Candaba. This they did by modifying boundaries and settlement patterns. Their implementation of the Encomienda system from the 17th to 18th centuries resulted in the bestowing of large tracts of land to illustrious men who served the Spanish crown well (Santiago 1990). Across the Spanish period, many uprisings occurred in resistance to the foreigner's rules. Rebels took refuge in the Candaba swamp. During that time, the pinak was an expanse of land favorable for hiding. By the 1700s, the Spanish had redefined Pampanga's boundaries to make it more convenient to monitor insurrection-related activities. This positioned Candaba as the easternmost town of present-day Pampanga and reassigned Candaba's easternmost town San Miguel de Mayumu to the province of Bulacan (Larkin 1972).

[8]Areas in present-day Luzon Island surrounding Manila Bay (Pangilinan, personal communication, August 6, 2019).

The Spanish changed the landscape with their agricultural interventions in the country. In the 1700s, during the administration of Governor Anda, the town planted sugarcane. Because of the large volume of production, Tagalog families had to be relocated there to work the fields. This event consequently formed what is now known as the Tagalog Region (Cabusao 2003). Rice was also grown during the Spanish colonial period. Local Candaba historian Manuel Gatbonton (1988), reports rice planting in Candaba in the 1800s and a boom in its cultivation in the 1900s during the administration of Dr. Esteban Arrroyo. Rice may have been planted in town earlier considering how the Spanish intensified rice agriculture in the Philippines in the 16th century (Acabado 2012).

The American colony started in the Philippines in the late 19th century but was interrupted when the Japanese Imperial forces occupied the Philippines in 1942 and throughout World War II. Americans resumed their administration after World War II and it was maintained until liberation in 1946. In total, the American colonial regime lasted for 50 years (Boquet 2017).

Apart from agricultural changes, the Americans introduced many educational and technological reforms (Cabusao 2003). Among these are the fielding of 25 American teachers (Thomasites) to the town in 1901 (Cabusao 2003), the introduction of watermelons and cantaloupes in 1912 (Gatbonton 1933), the town gaining access to the Philippine railway[9] in 1913 (Cabusao 2003), and the construction of the first ice and electric manufacturing plants in Candaba in 1924 and 1926, respectively.

[9] This was via the San Fernando to Arayat route that passed through Candaba's neighboring town Sta. Ana.

When the brief Japanese occupation (1942-1945) (Boquet 2017) brought unrest in the entire country, Candaba was central to these battles. The pinak was the site of Japanese-American battles during World War II and was the birthplace and the refuge for the Hukbo ng Bayan Laban sa Hapon (People's Party Against the Japanese also known as the Huks (Candaba, Huks, Watermelons 1956)) and several different guerilla organizations that followed. Even after the Japanese colonial forces left the country, unrest continued in the swamp with the government pursuing the Huk rebels for eight years (Candaba, Huks, Watermelons 1956). During this time (1946), it was a refuge for the Hukbong Mapagpalaya ng Bayan (People's Liberation Army or HMB, also called Huks) (Pangilinan 2004), who were fighting against the perceived abuse of tenants by their landowners (Larkin 1972). Later, the government also had to deal with five breakaway groups in the area (Crisostomo Martin, personal communication, September 8, 2019). The rebels hid in Candaba as it was strategic for going back and forth to Bulacan. During that time, there were no roads connecting the two places. Huks activity was reported to have ceased when economic situations improved in town.

4. Traffic in the Pinak

The dynamism of a place is a function of its motion. It is movements, by way of living bodies, that facilitate emplacement (Casey 1996). Understandably what can get in would only be able to stay in and make its mark in the landscape. Having described the swamp in the previous sections, this section delves on the swamp-defined accessibility in the area and its implications on movement and subsequently emplacement.

In the first official town event I attended, no less than the town mayor introduced me to Candaba as a far place. He described Candaba in his speech as "marayu" [far]. It

was the celebration of the turnover of new medical equipment from a corporate donor to the town's infirmary. He was thanking the benefactors that came that far, expressing appreciation as donations were uncommon for far, far away Candaba. This was a striking introduction to the town. Distance-wise, Candaba is not really that far— not so distant from the Pampanga-originating donors, nor far from what we refer to in local lingo as *sibilisasyun* (i.e., urban centers like Manila and San Fernando).

The perceived far distance has to do with the place's inaccessibility. The annual floods characteristic of the swamp disconnects Candaba from its neighboring towns and from its own villages. During the rainy seasons, the Pampanga River swells flooding the roads and bridges connecting Candaba with the rest of Pampanga. The sea of water that fills the space between regions similarly renders roads and bridges unpassable to the Kapampangan Region, Tagalog Region and Bulacan and Nueva Ecija. These make land-based transportation impossible or extremely difficult. One of the options for travel during this time is to reroute land travel to the more elevated, peripheral areas of town. This, however, takes several hours longer. Immediately after the floods, travel remains difficult as roads are muddy.

The perception of Candaba being far also comes from the history of Candaba being a dead-end. Even without the floods, it was difficult to travel to Candaba because there were no cemented roads connecting it to neighboring towns. While Candaba is already very close to Bulacan, it has not been easy getting to and from the two provinces in the past. In this expanse, there were only trails accessible to humans. It was only in the 1980s, during the Martin local government administration, that roads were cemented. The paved road network remained discontinuous until recently.

Inaccessibility, however, seems to be a recent problem. *Bangkas* [boats] were the major transportation in Candaba in the earlier years (Crisostomo Martin, personal communication, October 9, 2019) just like the rest of Pampanga. Rivers and other waterways were the highways. Boats were replaced when animal-driven carts and carriages (i.e., *gareta* and *kalesas*) became the fashion. The latter were replaced when vehicles became in vogue (Crisostomo Martin, personal communication, October 9, 2019). However, vehicles were expensive and many people living in Candaba were not able to purchase vehicles. This lack of motor vehicles and roads in an increasingly car-dominated country created the impression that the town is inaccessible. Furthermore, the uncemented roads made travel a travail because they became very dusty [*maalikabok*] during the dry seasons.

B. Culture in the Pinak

Culture is inherent in places. Places have culture because they have perceiving and knowing bodies that bring culture into a place (Casey 1996). Having discussed the major physical feature of Candaba and what inhabitants it has gathered in place, this section now discusses the resulting reconfiguration of society at present time. This covers Candaba society, economics and a virtual tour of the field site— the village San Agustin.

1. The Pinak Society

What are the Candabeños like? Candabeño is the name used to refer to residents of the town. The 2020 census estimates a population of 119,497 people (NSO, n.d.) living in about 25,131 households (MHO as cited by Municipality of Candaba 2021)[10].

[10] Average household size is 5 (MHO 2020)

There are more males (63,573) than females (62,025). They trace their ancestry to Indonesians, Spanish and Chinese. [11] Most residents identify as Kapampangans (63%) (NSO, n.d.). The next largest ethnolinguistic group is the Tagalog people (34%) (NSO, n.d.).

Education in Candaba follows the Philippine K-12 system. Each village has one or more government-operated elementary schools and a day care center except for the affluent village Pescadores which does not have an elementary school. There is a total of five public high schools. There are also private elementary and high schools in the area. During the course of my research, they built their first tertiary level school, the Don Honorio Ventura State University. Most of the population attended public grade school (21,133 or 28%) and high school (37,393 or 50%) (NSO, n.d.). In 2000, town records indicated that there were 1,575 college and 182 postgraduate degree holders. These account for 2% and 0.2% of the population, respectively (NSO, n.d.).

Catholicism, a legacy of Spanish colonial rule, has a large presence in town. Most (94%) residents are Roman Catholic (MPDO, n.d.). At the center of the town is the parish of Saint Andrews, and each of the different villages has its own *visitas* or chapels. Households also commonly have their own altars with venerated statues. Liturgical services include eucharistic masses, novenas, praying of the rosary and processions. Many town traditions are of Catholic roots like the Sta. Cruzan and fiestas. The town, and each village within it, celebrates fiestas in honor of their patron saints.

[11] Such roots are backed up by extant surnames. For instance, those with last names Balagtas are said to be of Indonesian origin, the Honzayko, Limjoco, Tecson of Chinese ancestry.

Candaba locals are family-oriented. Getting married is the norm rather than staying single. In a typical family, the husband works outside the home to earn an income. The wife stays at home; she may or may not work from home and earn much income. Apart from this, there is a strong "sense of family" that extends to non-family/household members. As such, extended family households are common. Candabeños are very welcoming to people they do not know and quickly consider them their family. There is a predisposition to make allies [*kampi-kampi]*, which becomes apparent especially when conflicts arise (including political ones).

Candabeños are hospitable and take pride in this hospitality. As mentioned, they easily engage with strangers. They entertain guests even if they come unannounced or uninvited. They are quick to offer whatever they have in their homes. If guests unexpectedly arrive during mealtimes, Candaba locals will offer their lunch. If neighbors or relatives would ask for food, they would give theirs even if it means they would not have much left for themselves.

Reciprocity is evident in everyday life. Reciprocity is practiced through what is called *pamakyabe*[12]. Pamakyabe is a value and a skill. When one knows how to do pamakyabe, one knows "how to do life with others." It may mean giving something in exchange for an object or favor given earlier, or giving something knowing it will be paid back at some point in a similar or different form. This facilitates and reinforces their practice of kindness, generosity, and considerateness.

[12] similar to the *pakikisama* of the Tagalogs

2. Swamp Economy

Candaba is a first-class municipality, meaning it has been generating PHP30 million of average income per year (Republic of the Philippines 1987). This is most likely from income generated through rice farms and fish ponds. The Municipal Planning and Development Office (MPDO, n.d.) estimates 92% of its agricultural land (17,457.47 hectares) is used for rice production. This is followed by fish production (370.7 hectares) or 1.95% of the land area; the rest of the land area is devoted to livestock. Other agricultural activities include hog raising, poultry, meat and egg production and cultivation of crops including corn, vegetables, peanuts, cantaloupes, and watermelons (MPDO, n.d.).

Fishing and farming are very common livelihoods in the region and a common source of income and labor among men. Locals claim these have been the historically predominant occupations in the pinak. Fishing is common during the wet season and farming during the dry season.

Currently, there are more non-agricultural sectors that employ locals in town. Candaba has a total of 574 business entities[13] employing 1,212 workers. This includes seven financial institutions (one rural bank, one money transmittal enterprise, and several pawnshops) (MPDO, n.d.). There are also three public markets (called *palengke*). These are roofed and semi-enclosed structures housing multiple vendors. For instance, the market in the town center has permanent stalls selling meats, produce and other ingredients. There is

[13] It is not clear if this number of businesses includes the entities in the ensuing discussion. It is likely that many other businesses were not included in this number considering the flourishing underground economy.

also a small drugstore, several commercial grocery stores, barber shops, beauty salons, printing shops, school supplies, footwear, cleaning supplies, and even some small food services such as street food, snack and bubble tea stalls and *carinderias* (local restaurant). Around the main wet market building are itinerant vendors selling an assortment of wares from flat baskets to *banyeras* [tubs]. Before the COVID-19 pandemic restrictions began to be enforced in March 2020, vendors from other towns came on Saturdays and occupied the streets and parking surrounding the palengke. These weekend markets brought to Candaba shoppers a wide variety of products such as kitchen utensils, linens, curtains and bed sheets, clothes and toys. In addition to the vendors, there were also amusement booths and rides all cramped up in the palengke's parking lot.

Figure 2.5. A scene from the market. A typical eatery in the market. (Photo by author).

In addition to the stalls and vendors in the palengke, Candaba has other stores scattered around the community. For example, there are *sari-sari s*tores[14], small restaurants, and small to medium shopping complexes all over town. In the center of town, there are national chain establishments: two drugstores, the supermarket Puregold, and the convenience store 7-11. Farther from the center are a few resorts and hotels usually utilized for short-term events like parties, team building activities, local seminars and government functions. Unlike many Pampanga towns, Candaba has no malls, movie houses, or large supermarkets. During my research, people were looking forward to a Jollibee opening in the vicinity soon. In local Filipino culture, the presence of the fast-food giant Jollibee is a sign of urban development.

The healthcare infrastructure in the municipality consists of three rural health units, 30 village health stations and two birth stations. Recently, Candaba built an infirmary, an emergency hospital that was described by the current mayor as a "dream come true." Prior to the establishment of this healthcare facility, patients had to rush to hospitals in nearby towns in Bulacan, Nueva Ecija and Pampanga. These trips could take several hours.

The transportation infrastructure in the area has grown since the construction of the first roads in the 1980s. After this, more roads and bridges were made, and by the time this research began, three major thoroughfares had all been cemented and built up to increase their height and minimize road flooding. Also cemented were the *kanal damulag* [spaces along residents' houses just wide enough for water buffaloes or bikes

[14] Small convenience stores found in neighborhoods selling a variety of items (sari-sari means variety)

and pedestrians to pass]. In 2020, many households owned vehicles, which were predominantly tricycles (a roofed motorcycle with a sidecar attached).

More road constructions are underway under the current local administration. Public transportation in the form of tricycles and jeepneys [15] are available from the town center and terminals across town. The former ferry passengers to different parts of town and to nearby towns (e.g., Sta. Ana). The jeepney brought passengers to San Fernando. From Sta. Ana or San Fernando, other transportation options are available for travel to other parts of Pampanga and other provinces (e.g., Nueva Ecija, Manila).

The swamp and its floods are not desired by everyone. One of the previous town mayors always spoke about the pinak this way: "*ing Pinak yang simbulu na ning kékatámung kakaluluan*" ["The swamp is the symbol of our poverty"] (Michael Raymon Pangilinan, personal communication, August 2019). The swamp is thought of as a non-conducive environment for economic growth. This is articulated in the town's official hymn:

> Candawe in the eastern portion
> Abode of beauty and hardwork
> The Kapampangan and the Tagalog Region
> Peacefully coexist
> Prosperous are your sources of livelihood
> Field of cantaloupes and watermelons
> Waters teem with fishes
> Earthen jar of delectable fermented rice
> We are great-loving citizens of Candaba
> We are warm and affectionate neighbors in Pampanga
> **Though marshy our location and situation**
> Exalted though our honor and pride
> You're the next of shelter and protection
> Of our exceptionally blessed townspeople

[15] Jeepneys are a common a public utility vehicle in the Philippines; their design is a legacy of the customization of the American military jeep for public transport

Refreshing sanctuary
Of migratory birds from afar
We are great-loving citizens of Candaba
We are warm and affectionate neighbors in Pampanga
Though marshy our location and situation
Exalted though our honor and pride
Oh Candabeño of truly noble blood
You are a dignified and honorable Pampangueño
Your love for the town overflows
May God grant you a very long life
We are great-loving citizens of Candaba
We are warm and affectionate neighbors in Pampanga
Though marshy our location and situation
Exalted though our honor and pride
Hail Candaba our birthplace
I hold and treasure you so dearly!

The interspersing of lines of the challenging swamp environment with lines that praised the beauty and bounty of the town spoke of the Candaba appreciation for the bounty and the beauty that the pinak brought but not the flood waters that brought it. The repetition of the contrast between good, loving and dignified people against the deplorable swamp environment emphasizes how the Candabenos have become great people despite their lowly condition.

People regularly talked with me about the challenges of living near the swamp.Its unpredictable floods destroyed crops and other property. For those studying or working, flooding makes transportation difficult. For those conducting business, they could not proceed with transactions like moving their goods and services across impassable roads. For the municipal government, the swamp and its floods prevented investors building their businesses in the locality (MPDO, n.d.). For one of the past local administrations, the swamp was seen as a complex of idle lands that can be/should be put to better use (Michael Raymon Pangilinan, personal communication, July 28, 2022).

Because the floods deterred economic activity in town, the swamp became a symbol of underdevelopment. In the development discourse "[m]aterial objects, knowledge, ways of behaving and social categories all take on symbolic value... This is layered and dynamic such that certain material objects (for example uniform) can signal inclusion in certain categories (such as "teacher") which in turn signals other broader, social categories (such as the "modern")" (Bulloch 2017: 17). Such a negative symbolic meaning of the pinak and its waters is quite ironic as water has been a source of power. For many societies, water sources have facilitated productivity and livelihood (Rassmussen and Orlove, n.d.). For instance, water has been implicated in the rise of early civilizations; whoever controlled water also controlled irrigation, food production, and economic stratification (e.g., Steward 1949).

Possibly furthering this concept of underdevelopment is the lack of accessibility. Inaccessibility, particularly the absence of roads, is commonly associated with poor economic growth by government and aid agencies (Johnston 2007). It is believed that roads support the production and trade of resources (Trombulak & Frissell 2000). Roads have been observed particularly to help fisheries and other industries through increased investments in the production to trade chain (Olsson 2010).

A local culture bearer told me, the swamp was a "curse" but it was a "blessing." He elaborated "*Patse daratang iyan siyempre ing kabiyayan mi masasalanta. Although ing metung a barangay na magrejoice patse lalbug itang barangay da king San Agustin."* ["when the floods arrive of course our livelihood is destroyed. Although there is one village that rejoices when it floods, it's barangay San Agustin"]. San Agustin is the village under study in this dissertation. What is different about San Agustin, what is it

like? Having covered the broader landscapes of Candaba, we now transition to the field site San Agustin.

3. Virtual Sensory Tour of San Agustin

At 1,040.51 hectares in size, San Agustin is one of the larger villages of Candaba and largest in Riverside/Poblacion Region (MPDO, n.d.). As such, it gets the brunt of the flooding in the area. Census records from 2015 indicate that there are 5,068 people living in San Augustin (4.5% of the Candaba population) (PSA 2018).

Prior to being named San Agustin after the village's patron saint, the area was referred to as Punta. Locals claim first settlers here were migrants from the nearby Pampanga town San Luis. These settlers were fishermen. As such they may be the ones who built up the fishing industry in San Agustin that the village has long been associated with. Residents consistently reported that most villagers are related.

There are two distinct areas of San Agustin: one characterized by its proximity to the población (town center) and the other by its proximity to the nearby town Baliuag in the province of Bulacan. Closer to the población (center), houses and commercial stalls line the streets interrupted by narrow, concrete roads and walkways opening to a network of smaller, winding streets leading to the belly of the San Agustin. As one goes farther from the población (center), houses become more spaced out. The last *purok* [term for a smaller village cluster)] opens up to the fields, predominantly planted with rice.

Houses vary in size and material composition: small to big, wooden and/or concrete, walled or open. Houses are mostly elevated, with some being stilt houses. One would know that there is some activity inside the houses when water gushes from the kitchens and bathrooms of the upper floors. While they have plumbing for water to get to

the house, they only have the *pitak* or open drains that operate via gravity. Outside or underneath their houses are household animals like carabaos, pigs, and ducks that are usually kept under their houses. (Figure 2.6)

Figure 2.6. San Agustin houses. Photo by author.

The main road of San Agustin bustles with pedestrians and vehicles going to and from work, business, classes, market and other destinations. Throughout the day, locals can often be seen hanging out outside the houses with their neighbors. This peaks in the afternoon, as they congregate to gamble by playing bingo and card games such as *tong-its* and *cuajo*.

A day in my life in San Agustin started as early as 4:30 am. I would wake up not to the sound of crowing roosters but to the chorus of the coconut brooms (*walis tingting)* that my neighbors would use to clean their front yards. On Sundays, it was the neighbor's radio playing retro (specifically from the 1950s) music that would wake me, and from September through December, the soundscape was to be drowned by Christmas songs played by the other neighbors.

Shortly after, the *pandesal* [local morning bread] vendor would make his rounds, announced by its "potpot" sound. The smell of *tuyo* (dried fish) cooked by the neighbors would sneak into my house, prompting me to make my own breakfast. I would come out into the kitchen, see fresh rat droppings, clean them, and cook.

If I did not have to go out for research activities, I stayed close to the kitchen the rest of the day. I lived along the San Agustin-Baliwag road, a thoroughfare connecting the center of Candaba with the Tagalog Region and, if one were to go farther, to the province of Bulacan. Moving to the living room, a few feet away from the street, meant that I would hear the ever-intensifying volume of the speeding tricycles outside. Tricycles are three-wheeled motorcycles with sidecar attachments that reign over the streets of Candaba. Other than being relatively affordable, their small size means they can easily navigate the narrow areas around houses (*kanal damulag*) and flooded areas.

These tricycles would be muted temporarily as I worked. But I would later find it easy to get zapped out of my concentration, with cigarette smoke coming in from the neighbor's house and the vibration of trucks passing by my wooden house.

Time passed slowly in San Agustin, and the day is marked by all sorts of *merienda* [snacks] and services peddled in the streets by the *talang* [ebony] lady, the *kulti* [hominy] biker and the ice cream man. I knew that it was getting late in the afternoon when the parents next door would begin their cussing-punctuated reprimands of their kids and when the small-town lottery [*jueteng*] agent would shout out the winning numbers for the day. Nighttime is capped by karaoke playing or by the very animated chats of men drinking nearby. All this cacophony of sounds faded into the background rather early, at about 9:00-10:00 in the evening, only to start again at about 4:00 am.

In November 2020, during my 16th month in the field, the floodwaters that defined San Agustin finally arrived. "Welcome to San Agustin," my landlord said as I waded in the cool, thigh-high floods outside my rented house. This flooding was anticipated as two typhoons battered the region in consecutive weeks. Days before flooding, I heard people in the streets commenting how water had been "growing" in the farther and lower parts of the pinak. I was nervous and afraid, not knowing what to expect. I knew from my Flood 101 education from my landlords that it takes a day or two after heavy rains for floodwaters from nearby provinces to get to Candaba. That meant that I could get out of the house in case of an emergency. "People have boats,"—I was assured. True enough, water came inside the house and flooded the first floor a day after the last typhoon left. The water level rose gradually and stopped when it was about one

foot away from the second floor where I was staying. This meant that the *puroks*[16] further from the población were submerged in deep water.

Days into the flood, I realized I was the only one who was very paranoid and worried about a possible evacuation, not to mention possible leptospirosis infections. Everyone outside my house seemed to be going about their normal routine. I could easily hear their water activity and conversations outside. In their boats, people went to and from the town center to buy their groceries and other necessities. People, young and old, men and women, paddled manually or operated their motorboats. Street hawkers continued selling their wares just like the small-town lottery *cobrador* (collector) resumed collecting their patrons' entries for the day's drawing and announcing the winning numbers throughout the day. People set up seats and tables on their roofs so they could hang out and watch passersby as usual. It was an exciting time in San Agustin, as locals are, as one resident described, "*sabik keng danum*" [avid fans of the floodwaters]. (Figures 2.7 and 2.8)

At the height of the flood, a local advised me to have fun wading ["*magtawak*"] in the floods, which I was very reluctant to do. I was discouraged by the dark water, the trash, and my wild imagination. Everybody else was having fun. Kids and adults alike were splashing around, swimming and diving in the flooded road. Several groups took this to a higher-level with boating, swimming, and picnic excursions in the swamp. There were even floating drinking sessions to join. I overheard a neighbor talking to somebody over the phone complaining why he had not come home yet to join the fun. While the rest

[16] Refers to sub-sections of a village.

were playing hard, the fishermen took advantage, harvesting the fish brought by the floods.

Figure 2.7. Life goes on in San Agustin during the floods. (GMA News, Oct 22 2020, 3:30am)

Figure 2.8. Excursion in the flooded swamp. (Zil, Jenn, Nov 18 2020, 6:28am).

C. Conclusion

This chapter sought to characterize the Candaba landscape in order to contextualize the buru tradition. It approached Candaba as a place that is framed as the product of interactions of co-evolving physical environment and humans. It used the Candaba swamp, the unique geographic feature of the landscape, as a starting point for looking at how the place was constituted.

By virtue of its water regime, the pinak's agency included its being a gathering place and a regulation of motion. The seasonal floods brought together fish, plants, people, history, and more in the ecosystem. Within the context of automotive transportation, local movement is to, from, and around the town because of flooding during the rainy seasons and lack of cemented roads during the dry season. But the pinak changed its nature. It stopped being a full-time swamp because of the anthropogenic

factors interacting (e.g., water use, agriculture) with natural factors like the climate and water cycles.

How did the pinak define society? This landscape also brought different groups of settlers, including fishermen migrants from San Luis, Pampanga. It created a bounty of food for survival (specially fish) or, specifically, ingredients for people to create their own local cuisine—including fermented food.

Having discussed the setting of Candaba and San Agustin, the following chapter introduces the reader to current buru practice in San Agustin.

CHAPTER 3

BURU: MAKING LIFE DELICIOUS

The chapter introduces *buru* consumption and production praxis in San Agustin. Framed within the context of an enfolding landscape and cognizant of material biographies, this examines buru as a "momentary synthesis" (De Jong 2015) of a dynamic fermentation landscape of San Agustin. It further examines buru practice through the lens of deliciousness. Deliciousness has been suggested as a key factor in human food-seeking practices (Dunn and Sanchez 2021).

This chapter reveals buru as a thriving tradition in Candaba. Part of why it stays in place is, buru makes meals delicious. To demonstrate buru persistence, I describe the state of the art of consumption and production. This is followed by the roles of buru in the meals of San Agustin. This chapter is informed by exploratory interviews with San Agustin residents and participatory observations, semi-structured and life history interviews with in-depth study participants.

A. The State of the Art and Science of San Agustin Buru

"Ali ya mako ing buru" [Buru won't go away]

This is how some locals responded to me when I introduced my research to them, as I told them how I am studying if buru is still around, disappearing, if it is changing and why. Such a perceived certainty of buru's persistence in town is understandable given buru's ubiquity in their material life.

1. Buru consumption today

The buru tradition is thriving in Agustin. Ask someone about buru and they would definitely know it and have something to say about it. Almost everybody eats buru in San Agustin. When I set out to learn how many households had recently eaten buru, 254 out of 255 households reported having eaten buru. The few I encountered that had not eaten buru explained they could not eat it because of health issues. Buru is known to have a lot of salt and thus it can be bad for the kidneys or those with high blood pressure.

It is common to find buru in the locality (Figure 3.1). In the *palengke* (wet market), the plastic boxes of buru laid in vendors' tables are easy to see. Buru is also commonly eaten during regular meals at home. It was part of the food spread of local government events, fiesta celebrations and parties I was invited to.

Figure 3.1. The ubiquitous buru. Buru is found in many different gatherings like reunions/get-togethers and fiestas. (Photo by author)

Buru is actually a sought after *fiesta* food. ELN shared how guests coming from the national capital Manila usually looked for it. In anticipation of this, it is prepared days before the celebrations. This is not to say that buru was not as interesting among locals. A local official shared with fascination how locals still get excited with buru despite this being commonly eaten in town. She shared:

> "Actually, when there's an [occasion], let's say fiesta, birthday or whatever it's like people expect that there's buru. I get amused, of course because people here are from Candaba so they should not crave for buru, right? But especially when I had guests, like…when there was a medical mission or guests from PhilHealth. Of course our visitors from San Fernando, from another place, I prepared for them buru, vegetables and fish. Then there's also fish and chicken. I was surprised how the ones from Candaba are also crowding around the buru. I said, I thought this locals would not want to be excited for it anymore.

Buru is usually served in its cooked form. Once fermented, it is sauteed in oil, with garlic and onion before serving. They say *"mas manyaman ya ing gagato keng taba"* [It's more delicious when it floats in oil]. Some add tomatoes, but others use tomato sauce because it is cheaper. Others add ginger to remove the *lansa* [fishy taste]. More recently, some locals seasoned buru with commercial flavorings like Knorr bouillon™ cubes, Magic sarap™. Following a basic cooking principle understood to make their recipes delicious, they cook buru until it is *"manangnang"* [reduced][17].

Once cooked, buru is commonly served as a dipping sauce [*tiltilan*]. Everyday meals that contained buru are usually comprised of *nasi* (plain boiled rice), *prito/derang asan* (fried/grilled fish) and/or a few *gule* (vegetables). Fish used were usually freshwater ones like tilapia, African *hitu*, *dalag,* and/or other wild fish from the swamp. Common

[17]It is common among Kapampangans to cook food longer with low heat until it is reduced (i.e., less liquid, slightly thicker). This is a technique to prevent food spoilage.

vegetable options were *balasenas* (eggplants), *mustasa* (brown mustard), *okra*, *kamote* tops (sweet potato tops). Buru assemblages for special occasions were the same or were a larger and fancier set of fish and vegetables.

While buru is usually consumed as an accompanying side dish or dip in regular meals, it can also be eaten in other ways. Less common is the use of buru as *pulutan* and as tiltilan for other dishes like adobo. Some also reported using it as sandwich filling or for flavoring their dishes.

2. Buru production today

Buru-making is something that residents are very familiar with. They have seen it made by their parents, grandparents, other relatives, neighbors and friends. After asking them about buru, I found that they can easily narrate the steps in how buru is fermented. They talked about *pamanggawa* [cleaning the fish], *pamagsaksak* [fermenting the fish with the rice], and *pamaglelut* [adding more soft-cooked rice]. Then they mentioned how it should be clean and spoke about how to go about this.

But how many really made buru? The survey I conducted revealed that about 45% (115 of 255) of the households are currently involved in buru-making. In these households, usually there was one member who made the buru. Among those households that reported not making buru, there were those who never made it and those who stopped making it. Those who stopped making it reasoned there was no longer wild fish in the *pinak* and that buru is widely available in the market. They raised rhetorical questions: Why should they still tire themselves out, making it if it is already commercially available anyway? But instrumental in this dependence on commercial buru is the fact that these locals found jobs and have income to spend. It should be noted

that it was not unusual to encounter former buru-makers who stopped fermenting fish once they had already finished college and had jobs. Some elders mentioned they no longer make buru because their children do not want them to engage in household work[18].

Of those households who reported making buru, about 60% (72 of 115) reported they made buru for family use, 13% (15 of 115) reported that they regularly sell their buru, and 24% (28 of 115) reported that they occasionally sell the fermented product. Irregular sellers include the occasional buru-makers that sold buru when they happened to have too much fish and were able to make more than enough buru for their households. Regular buru-makers, or those I refer to as commercial buru-makers in this dissertation, make larger volumes of buru to sell regularly either from their home or at stand in the palengke. All buru is hand-made.

In 2020, there were six regular buru vendors with *puestos* [designated stalls] in the wet market. Most of them were from San Agustin. Other commercial buru-makers were home-based and either sold their buru to other towns or *biyaheros* (traveling traders) would come directly to their houses to buy or pick up buru orders. (Figure 3.2)

[18]It is also a common aspiration for locals in San Agustin to relieve their parents from hard work.

Figure 3.2. Fish and buru section in Candaba's main public market.

The scale of production varies. The survey results revealed more than half of buru-makers (57% or 66 of 115) processed less than 10kg of fish. The remaining 43% produced 10kg of more. Most of them were commercial buru-makers (78% or 36 of 46). Thus, it was common to hear non-commercial makers quantify their buru production by the *garapun* [bottles] and commercial buru-makers by the *timba* [pails]. Commercial buru-makers produce buru based on orders, their forecasts of market demand, and fish availability. The size of household buru-making was primarily dependent on what fish were available at that time. They only fermented small fish, the size of two fingers, that they referred to as *buburuan* (the fish made into buru). If they did not find small fish, they did not make buru.

There are two styles of buru found in San Agustin. The rarer and more expensive style is the *takup* or *tekupan* [literally meaning paired]. This is a buru I only found in

Candaba. It is a whole fish stuffed and layered with cooked rice, salted and left to ferment for a variable number of days. *Takup/tekupan* uses a medium to large fish like *hitu* (catfish; *Clarias gariepinus*) or dalag (mudfish; *Channa striata)* which is split longitudinally and stuffed with rice. Larger fish may also be folded in half and rice is placed in between the halves. Medium fish can also be paired with other medium fish and stuffed with rice in between the fish pair. The second kind of buru is common. It is made by mixing small fish (or bigger fish cut into smaller pieces), cooked rice, and salt. It is left to ferment for a variable number of days. Its finished products resemble a porridge [19]

In the palengke, vendors usually sell the porridge type. The buru sold there are usually made of one type of fish or a mix of fish types. Often, they include tilapia, common, *gurami*, *pararak*, *rohu*, tie fish, *hitu*, and *dalag*. Buru made from dalag fetches the highest price at about PHP100 per piece. The rest are sold at about PHP80 per kilo. Vendors usually have 20 pesos worth of buru (about ¼ kg) pre-packaged in small, transparent plastic bags.

Buru produced in San Agustin is consumed in and out of Candaba. Buru made by commercial buru-makers is sold locally, in the palengke and other Candaba villages. It also gets to other Philippine provinces via *biyaheros* or persons traveling all the way to Candaba for the famed buru. Locals proudly told me that presidents of the Philippines like Presidents Marcos and Macapagal had sourced *tapayans* (clay jars) of buru from popular San Agustin-based buru-makers. Commercial and non-commercial buru also gets to other provinces or countries as *pasalubong* [a term used for gifts brought from other

[19] Whereas the takup/tekupan has its name, this mixed type of buru does not have a name.

places] or care packages. Locals usually get requests from their non-Candaba friends and colleagues to bring buru when they visit them.

B. The Contemporary Buru-Making Processes

Buru-making practices vary across people, but they are clustered around a set of two to three similar major steps. Among the 22 participants in the in-depth portion of my research, 13 were active buru-makers. I documented their buru-making procedures through a combination of in-person observations and video recordings from the participants. This documentation revealed two techniques of preparing buru. The first one, what I refer to as the basic recipe, was observed from three non-commercial buru-makers. The second one, which I call the twice-fermented buru, was observed from eight participants that included a mix of commercial and non-commercial buru-makers.

The two styles both started with pamanggawa but diverged in the next steps, in terms of ingredient proportions and number of fermentations (Figure 3.3). Pamanggawa is the collective word for the killing, cutting and cleaning of fish. After killing the fish, they removed the innards [*botikasan*], scales [*kaliskisan*], and head (for bigger fish). They then cut the fins off the fish and sliced the fish into desired cuts. Some sliced the fish longitudinally (i.e., butterfly style) and others chopped them across sectionally. They cleaned the fish in a variety of ways. Some removed the blood by rinsing the fish multiple times and draining the fish. Others used toothbrushes to clear the blood lining the bones (particularly of tilapia), scrubbed the fish with a *skoba* [bigger brush], or rubbed the fish against concrete to remove the blood and make it white. I heard that some also prick the eyes of the fish to drain its blood. In addition, some dredged the fish in salt

or immersed it in salt water for a variable number of hours (up to overnight or 24 hours) after processing. Others added prague powder in this initial salting-cleaning process.

Figure 3.3. Pamanggawa (Preparing fish)

The second step is called pamagsaksak. This involves *pamanasin* (salting) and stuffing/layering the fish with rice. Informants salted fish by either sprinkling or dredging the fish in salt or mixing salt with cooled, cooked rice. Some of them added prague powder or *salitre*[20] to the rice, or rice and salt mixture at this stage, rather than during the earlier cleaning process. Others also added crushed garlic and Magic Sarap™[21]. Among household makers, fish were stuffed and/or layered with the cooked rice in plastic bottles,

[20] Prague powder and salitre (saltpeter) are both curing salts of varying chemical compositions. The latter was banned by the Philippine Food and Drug Administration. It continues to be in use, though many locals recognize it is banned and it causes cancer. These are used to make the fish meat "malare". Malare means having some color. Visually, fish flesh appears pink when applied with this chemical

[21] It is a proprietary flavor granules mix from the company Nestle; the brand name literally means "magic delicious"

ice cream gallons, or other containers (originally food packaging). They ensured that these mixtures were tightly packed. For commercial buru-makers, the salt-rice-fish mixtures were transferred into transparent plastic bags, tied, and then stored in pails of varying sizes. The basic step and twice-fermented buru differed in the amounts of salt and rice used. These are hard to quantify considering they are prepared without the help of any measuring tools. The basic buru was produced with more rice and less salt (Figures 3.4 and 3.5). It appeared to be mostly rice. The twice-fermented buru had less rice and more salt (Figure 3.6). It appeared to be mostly fish.

a) Salting fish

b) Mashing of Rice, Mixing with other ingredients (e.g., Saltpeter)

c) Stuffing of fish with rice

Figure 3.4. Basic Recipe: Pamagsaksak (Part 1: Salting)

a) Layering Fish and Rice Mixture

b) Pressing Mixture

c) Sealing and Leaving Mixture to Ferment

Figure 3.5. Basic Recipe: Pamagsaksak (Part 2: Layering of fish)

Figure 3.6. Two Step Method: Pamagsaksak (Salting and Layering of Fish)

The third step involved the fermentation of these mixtures. The duration of fermentation depended on the salt content. The more concentrated the mixture was, the longer it was fermented. The basic recipes, given their lower salt content, were fermented for seven days to 21 days. Between the initiation and termination of fermentation, pamanimid [pressing] was done. Two informants pressed the buru with a *sandok* [ladle] a few times to release the *lagua*, or the liquid produced as the fish breaks down. One even put a wooden chopping board on top of the mixture to facilitate the release of this liquid. The buru is deemed ready when it achieves the desired taste. The *balaksina* or the salt-rice-fish mixture of the twice fermented buru was fermented for a month to a year.

The twice fermented buru required a fourth step, pamaglelut (addition of cooked rice) (Figure 3.7). After a month or a year, the buru-makers separated the fish from what has become a watery *balaksina*. They drained or pressed the fish to remove the liquid. They cooked rice either the traditional way (albeit with more water than table rice) or by

combining water and rice and allowing it to boil while stirring. Upon cooling, the *lelut* [soft-cooked rice] was mixed with the fermented fish. They allowed the buru to ferment for another two to three days.

Figure 3.7. Two Step Method: Pamaglelut (Addition of Soft-Cooked Rice)

Figure 3.8. Finished products

C. The Delicious Role of Buru in San Agustin Meals

As described earlier, buru is a fermented food acknowledged as a very old tradition. How has this tradition continued? I argue that it stays because it is delicious. This section demonstrates this, first through the inherent deliciousness of buru as a ferment. Then I show how being strong flavored, it has its agency that keeps meals even satisfying and satiating.

1. Buru: A Delicious Adoptive Food Management Strategy

Locals' explanations of how buru came to be always revolved around this: there was a lot of fish in the *pinak* (whether alive, dead or rotten), locals did not want to waste them, and so they made them into buru. Or sometimes, it was about "recycling" left-overs of rice and their unsold fish. Without much historical information about the ferment, how it became food may be explained through the experiences of other cultural traditions. Fermentations and other food technologies as nixtamalization and fava bean consumption have been documented to be adaptive as they provided food management strategies useful for food security (Pollock 1988; Giordano 2017; Katz 2000; Katz 1987). All of these provided food but also other benefits. Fermentation provided storage provisions (Pollock 1988). Nixtamalization made niacin available to corn-dependent populations, who may have succumbed to the deadly disease pellagra (niacin deficiency) if not for this said technique (Katz 2000). Fava bean consumption caused favism or a G6PD deficiency, which was protective against malaria (Katz 1987). In the case of San Agustin, buru extends the life of fish, allowing even rotten fish a second life as food.

But buru was not just food. It was delicious. Taste science explains buru as inherently delicious because it is a fermented product. As a fermented product, it is a

product of the breakdown of complex compounds into simpler, more flavorful compounds via biological and physicochemical processes. In buru's case, this is a succession of events starting with the substrates rice and fish. In the absence of oxygen during fermentation, rice starch is broken down into lactic acid. This lactic acid produces a low pH (i.e., acidic) environment that promotes lactic acid bacteria growth that deters spoilage or pathogenic microorganism populations from thriving in the mixtures. The acid also hydrolyzes the fish protein breaking it down into simpler compounds. In a separate process called autolysis, enzymes from the fish viscera also facilitate the digestion of protein (Grainger 2010). The resulting compounds give the umami taste. This is the savory taste redolent in fish, meats, milk and vegetables (Leslie and McCabe 2006). Umami is associated with the taste of deliciousness and behind the rich flavors of several cuisines (Tracy 2018; Leslie and McCabe 2006). Because of the large amounts of glutamate in fermented fish, the umami flavor is also intense (Buccini 2010). The complexity of flavor, indicated by stronger smells and tastes, varies depending on the freshness of the fish and the extent of the removal of the fish blood and viscera. The more advanced the fish is in its decomposition, and the more blood and viscera it contains, the more intense the flavor will be.

The deliciousness of buru from these breakdown products may even be responsible for its adoption as food in town. Literature from evolutionary biology talk about how humans look for salty, sour and umami foods possibly because of their need for sodium, Vitamin C, and protein, respectively (Breslin 2013).

2. The Strong Buru Flavor: The Delicious Meal-Maker

On top of buro being delicious on its own, its strong flavor makes meals more satiating and satisfying. The very strong flavor of buru qualified itself as a tiltilan. Buru is one of a plethora of traditional dipping sauces eaten by locals to make their meals more pleasurable. For instance, it is alternated with *baguk* and *aslam* (shrimp paste and vinegar), *dalayap* and *toyo* (Philippine lime and soy sauce), boiled and mashed *sampalok* (tamarind) as a fish accompaniment. Food scholar Doreen Fernandez explains that the use of dipping sauces is a way for Filipinos to partake of the food preparation at the table, customizing food to the taste of the diners. A Kapampangan would add, eating meals with dipping sauces, especially buru, increases *gana* (appetite) and make them what they would describe as *"manyaman mangan"* [literally meaning eat deliciously, which means eating with gusto or eating more]. The appetite-inducing nature of buru also draws from its flavor profile. Taste and consumption research studies have shown the role of taste in regulating appetite and intake. Umami was specifically observed to effect short-term appetite enhancement and satiation (Tepper and Yeomans 2014).

Examining the usual components of local meals, it is plausible buru is used as a dipping sauce because of its mix of salty, sour and fishy taste. Such strong flavor makes it a good foil for the blandness of plain boiled rice, and steamed, boiled or fried vegetables. It also lends its flavor to the wild swamp fish. These fish are bland; locals call them *tabang* [bland] to distinguish them from the more flavorful fish from salt waters.

In times of scarcity, because of its strong flavor, buru passes off as a main dish (*ulam*). A Filipino meal typically must have rice and an ulam to qualify as a proper meal or real food. Observers of this principle, several locals I conversed with are amused with

and laugh at their survival and austerity measure of eating rice with buru. For instance, a Candaba local jokingly put it: *"Nokarin na ka. Menakit nasi na ing kakanan mu, nasi pa ing ulam mu"* ["where will you find this kind of meal, you already have rice to accompany your main course, and then your ulam is still rice"].

But how would a rice and rice combination pass off as a delicious, appetizing meal when normative Filipino meal patterns call for rice and a protein and/or vegetable dish? This brings to mind Mintz and Nayak's (1985) observation of cultures having core and fringe food. They define core foods as the major starch that is central to meals and life of societies. It is eaten in large quantities, but it cannot be eaten on its own. It needs a fringe food to accompany it. The starch is usually soft, gritty, bland, and dry. Fringe foods are usually (semi) liquid, usually oily and possibly (with solids) eaten in smaller amounts, but never on their own. Mintz and Nayak pointed out fermented and slightly putrefying foods, like those that have been cured, smoked, or salted are what may be considered fringe foods. "Commonly they sting, burn, intensify thirst, stimulate salivation, cause tearing, or irritate the mucus membranes. They can be bitter, sour, salty or sweet" (Mintz and Nayak 1985, 199). There is a sharp contrast between core and fringe foods. Such flavor difference of the fringe makes it possible to eat more of the core. In this framework, buru can be thought of as a fringe food due to the flavor of fermentation. In the case of buru, the buru flavor provides a sensory contrast with plain boiled rice that allows continued consumption of the meal. In this regard, buru is in the same category as salt, soy sauce, cooking oil, as survival foods. Like buru, these condiments are also used as ulam during times people are "*sayad"* ["down to their last set of provisions"]. These and rice all make tasty meals.

Conclusion

This chapter described how buru practice remains a strong practice in San Agustin. It also points out the role of deliciousness in making it a way of the table and in making buru stay in the place. The proceeding chapters will look into the landscape constituents that shaped buru into what is today. The role of deliciousnesss will be reiterated in the maintenance of buru, however will also show how deliciousness as a shifting sense and memory also changes buru materiality.

CHAPTER 4

PINAK IN FLUX: THE MAKINGS OF A COSTLY LANDSCAPE

"Tuloy po kayo sa Candaba. Bayan ng mga matatamis na pakwan at milun, masisipag na magsasaka, mayuyuming dilag" ["Welcome to Candaba. The land of very sweet watermelons and cantaloupes, industrious farmers and gentle maidens"].

This was written on the old welcome sign put up by Mayor Gonzalo Martin during his term as Candaba town mayor in the 1980s. Just as the old sign is gone, so are the cantaloupes and watermelons when I arrived there in 2019. As I stayed longer for ethnographic work, I learned how Candaba is not the same Candaba I heard and read about in school. This chapter will use landscape changes to illustrate the continuity and change of buru's material and memory resource. It assumes the continuity of buru as a reflection of the landscape made and unmade. Landscapes have been theorized and substantiated as living, in the constant process of becoming (or vanishing), (Holtorf as cited by Tilley and Cameron-Daun 2017) and always made and unmade (Relph 1976). This dynamicity is attributed to its collective of people, non-humans, economies, technologies, and ideas with multiple trajectories and cycles (Ingold 2011; Jones and Cloak 2008). Because the co-transforming activities in the landscape are continuous, the landscape is a "work in progress" (Ingold 2011, 199). Recognizing this, if landscapes evolve, food traditions embedded in such environments are likely to change. But how?

If buru is a reflection of landscape, what then is its landscape? This initiates the description of the fermentation landscape or the ecology of memory. This chapter starts

with a focus on the physical environment. To reveal the fermentation landscape of San Agustin as a material and memory resource, requires an initial characterization of the site focusing on its material features and sensory qualities. Attention to materials and their quality in anthropological analysis is productive to telling more nuanced human stories (Ingold 2007). Casey (2009: 330) states "the landscape operates to anchor memories, because of its inherent variegation, sustaining character and expressiveness." Considering how quality has also been associated with the synesthetic potentials of food (Sutton 2000), documenting qualities within the foodscape can reveal a diverse ecology of memories and sensory experiences that possibly power local fermentation practice. Thus, I followed the material and sensory lives of the fermentation landscape not only to present the shifting material resources available for buru production but also the variegated material base that memories can latch onto.

I focused on the main ingredients: fish and rice. Rice and fish, in chemistry lingo, are the substrates in buru fermentation [22]. Examining the life histories and work of rice and fish across time meant interviews with stakeholders in the rice and fish industry supplemented by interviews and informal conversations with other informants and community members. It also involved my observations of the fish and rice landscapes (e.g., farm and market visits and archival work on the rice and fish situation in the national and global scene).

In this dissertation, I argue buru practice persists despite the changing landscape. This chapter presents the different iterations of the rice and fish material landscape. I

[22] While salt regulates fermentation, and thus is key in the fermentation process, it has not been included in this discussion as it has not been historically produced in Candaba.

highlight the wild fish depletion, the rise of aquaculture fish, and the delocalization of rice brought about by more than human processes. I describe sensory counterparts of these phenomena: decreased rotten fish and increased live fish and whiter rice.

A. The Life of Fish in San Agustin

This describes the provenance of San Agustin's fishscape that makes buru-making possible in the past and present. It illustrates the remaking of the fish landscape at two levels. It is a story of wild fish bounty supplanted by a new story of wild fish loss, redeemed (and aggravated) by aquaculture. This also reconfigured a predominantly live and rotten fishscape to a predominantly live one.

1. The Rich Fish Landscape of the Past

San Agustin's fish landscape was often described by locals with a discourse of abundance. The following interview with two informants in their late 40s or early 50s gives a good example of past fishscape conversations.

> GIK said: *"saku-saku la"* ["There were sacks of fish"]
> MCB reiterated: *"deng asan kanita sobra-sobra la"*. ["Fish then were in excess"]
> GIK repeated: *"sobra-sobra la"*. ["They were really a lot"]
> MCB expounded: *"sobra-sobra la…atin na kang pangpamangan atin ka pang pamisali…tang sobra-sobra da pang asan"* ["They were so much…you already have something to eat, you still have something to sell…they still have excess fish"]

Fish abundance was also discussed through talk on diversity of fish during their growing up years. Fishers and non-fishers alike were able to identify many fish names they knew during interviews and casual conversations (Table 4.1).

Table 4.1. Fish Available in the Swamp during Survey Participants' Growing Up Years

Common Name	Scientific Name[1]
Liwalu	*Anabas testudineus*
	Arius dispar
Kanduli	*Arius manillensis*
Karpa	*possibly Aristichthys nobilis*
Pararak	*Carassius Carassius*
Dalag	*Channa striata*
Balikabayan Hitu	*Possibly Clarias batrachus*
African Hitu	*Clarias gariepinus*
Common	*Cyprinus carpio*
	Glossogobius aureus
Biya	*Glossogobius giurus*
Katkat	*Hypophthalmichthys molitrix*
Tie Fish	*Hypophthalmichthys nobilis*
Rohu	*Labeo rohita*
Silver/Ayungin	*Possibly Leiopotherapon plumbeus*
Buan buan	*Megalops cyprinoides*
Tilapia	*Oreochromis niloticus*
Gurami	*Trichopodus pectoralis*
Fighting fish	
Native hito	*Clarias macrocephalus*
Licauc	
Samara	
Adad	
Talunasan	*Anguilla marmorata*
Talilong	*Crenimugil seheli*
Apap	*Lates calcarifer*
Pingo	*Scatophagus argus*

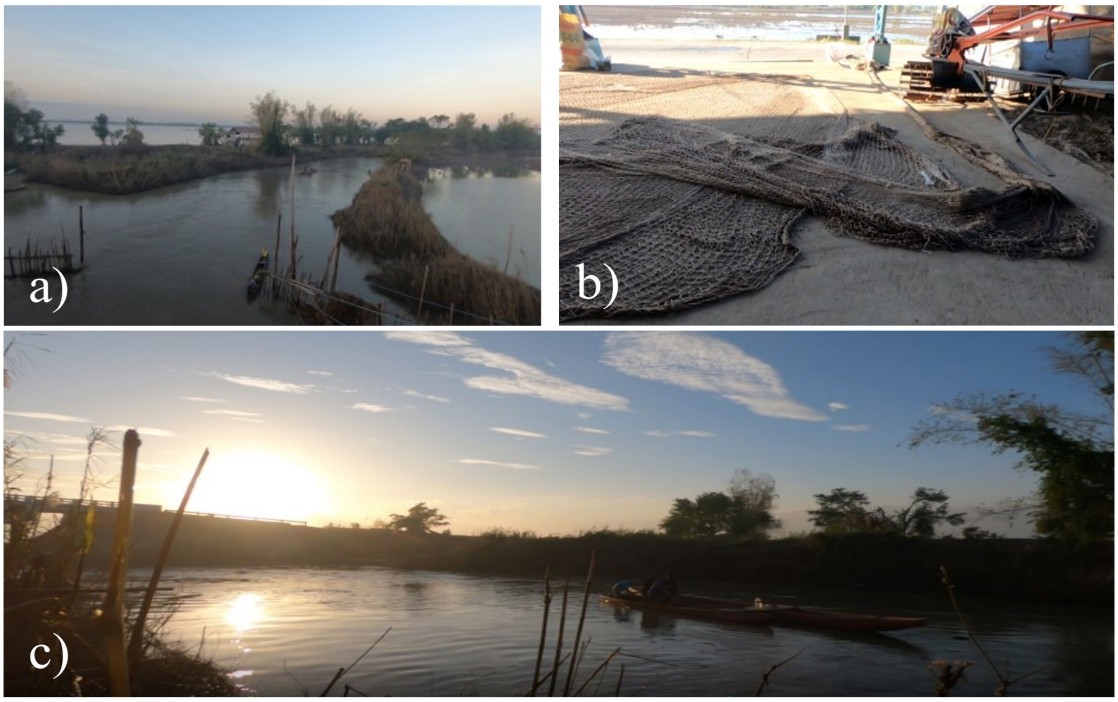
[1]Scientific names were identified based on Mallari et al. 2020; Guerrero IV; Fishbase.se 2023

Locals not only talked about the huge quantity and diversity of seasonal fish but also their ubiquity. For example, a number of locals described how they could easily spot and catch fish from their houses. While the fish bounty was attributed to the swamp floodwaters, credit is also given to the fishers of San Agustin. San Agustin locals were recognized town-wide as the fishing specialists— as they say in contemporary popular lingo, "*kinareer da ing pamagasan*" ["they made a career of fishing"]. San Agustin residents joke that fish cannot escape them. As one fisher said: "*E da balu deng asan nokarin la munta. Munta la keng lele makuryente la. Munta la libutad, mabukatut la, munta la keng lungga, madampot yang manyungab*." ["The fish don't know where to go. If they go to the shallow waters, they will be caught by electric fishers. If they go to the middle of the river, they will be caught by the fyke net, if they go to crevices, they will be picked up by the manyungab"]. As implied by the fishermen, there are many techniques and tools developed by locals to take advantage of the harvest. When there is a slow current in the creek, fisherman rely on traps. Fish food is put inside traps of various sizes and configurations, and a baited trap is deposited in the waters and retrieved after several hours. When there is a strong current, net-based fishing techniques are used. These mainly vary according to the size of the net and size of the net holes. Table 4.2 shows that the majority of fishing techniques rely on either fish traps or nets. The most high-yielding of their techniques is the *bukatut*. Bukatut operators set up fyke-like nets in different sections of the San Agustin Creek to intercept fish swimming upstream from the Pampanga River. This is a very long net set-up on bamboo poles to intercept fish swimming upstream (Figure 4.1) when there is *bulus* (increased water flow). Fishermen set this up by lining up bamboo poles across the width of the creek, leaving a small

opening of a few meters wide where they set up a very long net. Fishermen on one to two boats cast the net and pull it out to unload its contents in different time intervals (depending on how quickly the net fills). Fishers say that in very productive seasons, this method yields boatloads of fish around the clock. The largest amount of harvest I heard was six tons of fish for 24 hours of bukatut operations.

Table 4.2. Current Fishing Specializations in San Agustin

Specialization	Tools	Catch
Angling		
Mangitad	Fishing line (shallow waters)	Large fish and frogs
Hand-gathering		
Manyisid	None; this involves fishing while swimming under water	
Trapping		
Magskylab	Rectangular-shaped steel wire mesh; about four feet long	Large fish
Magscreen	Cube-shaped steel wire mesh; about two feet long	Large fish
Magsalandra		
Mangimput	Bamboo or more recently PVC traps	Shrimps
Netting		
Mamukatut	Very long net	Large and small fish
Mangitig/Magpanti	Net (size 3-6.5)	Depends on the size of the net used
Magdala	Net	
Magsalap	Nylon net in irrigation canals	Shrimps
Others		
Mangoriente	Motor battery powered electrocuting device fish in shallow waters or close to the creek banks.	



a) The bukatut set-up at the San Agustin Creek; b) The actual Bukatut net used; c) Fishers pulling the net out of the water

Figure 4.1. The bukatut fishing technique. Photo by author.

In the past, fishing and non-fishing households alike enjoyed the fish bounty of San Agustin. Fishers sold their catch in the neighborhood, in the palengke or *bakuleras*. It was not a common practice then to sell their harvest beyond these outlets. They kept some fish for their households and gave it to relatives and friends. They preserved what they could into *daing* (dried fish) and buro. This way of dealing with abundance is expressed in this exchange between middle-aged village officials MCB and GIK:

> MCB: Here in San Agustin, you are just at the house you can harvest fish.
> GIK: And that's not all, when your neighbor fishes, expect to have ulam. You would get basins of fish. Of course, you cannot consume them all. What you do is you ferment them, so they don't go into waste. Or give them away to relatives who visit."

But despite such fish management in such an abundant past, residents still had an excessive amount of fish. There was only so much they could keep as they did not have storage facilities. There was also only so much the local market could absorb. Even buru-makers, who took advantage of the harvest, had to reject fish because they could not keep up with the supply.

It was common to just leave fish in the *pinak* to rot. One of my younger informants, JAN, recalled how, during his childhood, it smelled so much of dead fish in the pinak.

2. Aquaculture Interventions: Remaking the Fishscape

Aquaculture technology was adopted in the country in the 1950s. This was a national effort to improve food security. Initially, this involved the raising of fish in brackish water ponds. It expanded to fish raising in freshwater ponds, pens, and cages upon the introduction of the tilapia in the 1970s (Aypa 1994).

Advancements in tilapia breeding paved the way for fishpond aquaculture. Key in its development was the cross-breeding of African tilapia species cross-bred with Asian and Middle-Eastern species, which created the Genetically Improved Farmed-Tilapia (i.e., GIFT) — a fast-growing aquaculture fish (Aypa 1994). Fishpond-raising of catfish came in later in the early 1990s (Aypa 1994). Between the African *hito* and tilapia, the latter is preferred by fishpond operators. The latter are harvested after three to four months. Hito growing has a steeper learning curve and they take longer to harvest (i.e., five to six months). Recently, however, because of previous fish kills, there has been an increasing preference for hito as they are hardier for warmer temperatures.

The country adopted aquaculture slowly not only because of the capital-intensive requirements of setting them up but also because aquaculture was not as necessary because of the large fish harvests in the country (Yap, 1999). Once fish stocks began to decline in the 1980s, its appeal as a business venture changed. During that decade Pampanga, along with other Central Luzon provinces, became large producers of farm-raised fish (ADB 2005).

In Candaba, fishponds were the main form of aquaculture (Figure 4.2). Fish ponds are "artificially constructed pond[s] for raising fish from fry of any species and stage to marketable size or a natural pond where fishes are impounded for similar purpose" (Bureau of Fisheries 1960). Fishpond operation was an attractive business venture because of their fast turnovers and large profits amounting to as high as millions of pesos (more than US$19,000). Despite this, the large capital outlay and the fish kills during harvests, with both easily amounting to millions of pesos, also pushed some new converts back to rice farming. In 2016, the estimated production from Candaba fishponds was 3,712 metric tons of fish (MPDO n.d.). Most of this was harvested from the more elevated villages Mangumbali, Mandasig, Lanang, Mandili and Pasig.

Figure 4.2. An example of a fishpond in the village of Mandasig in Candaba. Photo was taken during the harvesting of tilapia. Photo by author.

3. When Fish Distanced Themselves in the Present

"Before we would just harvest clams, among fish many were lost, the only ones left were hitu, bulig, pararark, likauk, but the liwalu, bakuku there are disappearing, katkat, talilung, they're gone."-MAR

Migpandemic la reng asan! [The fish are in a pandemic!] In stark contrast to the memories of bounty, the last thing I heard people saying about the wild fish landscape was this. Having first-hand experience of the COVID-19 mediated social distancing measures, they say this phrase as an iteration of the common remark *"ala ng asan"* ["there is no more fish"].

Wild fish are not necessarily absent in San Agustin. The 2019 Bureau of Fisheries and Agricultural Resources measurement of fish stock recorded 67.91 metric tons of fish harvested in the San Agustin creek. These were predominantly common fish, tie fish and rohu (in decreasing abundance) (BFAR Region III). Table 4.3 identifies the fish found in

the San Agustin creek in 2019-2020. This includes data from BFAR's year-long fish surveillance in 2019 and from Mallari et al.'s (2020) one time-inventory in 2020.

The sharp contrast between locals' memories and current realities in both dry and wet seasons is why people say there are no more fish. It used to be common to hear locals saying they did not have to leave their houses to catch fish. This is not the case today.

Locals talk about it this way. This is from a conversation between two elders.

> BRO: During that time, there was water below our house, you can see the fish under the house. But now, that's not happening anymore.
> VIN: Oy I experienced that…you're on the stairs, you sit there, from there you can scoop fish out of the water…You would see *karpa*, they have broad bodies, there are also *gurami* swimming around. But now that's gone.

The lack of fish is also evident in the increased difficulty of obtaining fish during fishing. One fisher I asked mentioned that, in the past, they could catch a range of 10 to 15 kilograms of fish in only two hours. Nowadays, they catch a few kilos, about P200 worth (or about five to six kilograms), in about the same time.

Table 4.3. Fish Inventoried in Candaba Swamp

Fish Species	Year 2019[1]	Year 2020[2]
Anabas testudineus (liwalu)	/	/
Arius dispar		/
Arius manillensis	/	
Carassius Carassius (pararak)	/	/
Channa striata	/	
Clarias batrachus (hitu)	/	/
Cyprinus carpio (common)	/	/
Elops hawaiensis (bidbid)		/
Glossogobius aureus	/	
Glossogobius giurus (biya)		/
Hypophthalmichthys molitrix (katkat)	/	
Hypophthalmichthys nobilis (tie fish)	/	/
Hypostomus Plecostomus (Janitor fish)		/
Labeo rohita (rohu)	/	/
Leiopotherapon plumbeus	/	
Macrobrachium lar	/	
Macrobrachium rosenbergii	/	
Megalops cyprinoides (buan buan)		/
Oreochromis niloticus	/	/
Pterygoplichthys disjunctivus	/	
Sarotherodon melanotheron	/	
Trichogaster pectoralis	/	
Trichopodus pectoralis (gurami)		/

[1]BFAR 2019
[2]Mallari et al. 2020

Also telling of the fish problem is the cessation of bukatut operations. A septuagenarian bukatut operator estimates fewer than 10 of the 30 operators he knew from his generation remain alive or remain fishing/practicing the bukatut. The large scale of bukatut fishing also speaks of its large capital outlay. With the lower fish volumes, it was no longer cost-effective to pay for both the rights of the site or the *puesto,* which was reported to cost between PHP600,000 to PHP1 million pesos (US$12,000 to US$20,000), and the other implements such as long nets, boats, labor and other expenses.

This perceived decline does not veer far from the observed decrease of fish stock in the Philippines. For instance, in the 1960s, the National Economic Council (1962) reported anecdotal evidence about freshwater fish sources' depletion. A long-term study of total fish production in the Philippines pointed out reductions in total landed fish catch volume after 2010. With aquaculture contributing most of such fish catch volumes, authors pointed out the likeliness of diminishing wild fish stock in the country (Anticamara and Go 2016). The earliest estimate of depletion of fish in San Agustin was in the 1980s though more locals associate the issue with the more recent erratic seasonal flooding patterns. Locals recalled the last major flooding (*maragul danum*) in different years of the 2000s.

Local conditions echoed the overfishing and anthropogenic disturbances causing fish stock declines at the global scale (Anticamara and Go 2016). Some locals pointed out the increased fisher population and destructive practices causing the dwindling fish supply. The bukatut was potentially problematic. Very vocal about her bukatut apprehensions was CES, a senior citizen informant who came from a fishing household. She said: "That is what is not good here, for me, before there was a lot of fish, there was

a lot. They can also be a lot now but now what happens is those fishing by bukatut during the bukatut season, even this size (pointing to her fingers) the bukatut catches. Now because they do not get as much of the big fish, they do not toss the fish back into the waters anymore…I was telling the mayor, if it's possible that they put filters on the bukatut net so the small fish can get out…So that [the fish] would return. "She elaborated "This is what I observed, during the time that we were fishing there was a lot of fish, fish were big. But now fish do not get to grow, that's why there are less now. Their fingerlings die. What else will grow if the fingerlings die…".

The use of small fish increased recently. Small fish the size of three fingers[23] were the ones that were made into buru (thus called *buburan* or fish for buru-making). Smaller fish as well as rotten ones were sold to duck and hito raisers as feed. They are bought at PHP100 (US$2) per sack. This increased use of small fish suggests buru-making and aquaculture might potentially be detrimental to the fish landscape.

Pollution from agricultural activities was also commonly pointed out by locals as a culprit for the wild fish decline. Analytical tests of water samples from Pampanga River confirm the polluted state of the swamp due to agricultural and other sources. Heavy metals like lead, copper, cadmium were detected beyond safe levels in 2015 and 2017 (Esteban, Canaria and de Guzman as cited by Bostre and Garcilla 2015; Lace et al 2017). Additionally, researchers have documented that local fish had toxic substance-related histopathological manifestations and chromosomal abnormalities (Lace et al. 2017, Bostre and Garcilla 2015; Gracilla and Baguno 2011).

[23] In San Agustin, it is common to use the hands/fingers to describe the size of the fish.

Biological pollution was also a recognized factor for the declining fish situation. People reported that the janitor fish (*Pterygoplichthys disjunctivus* and *Pterygoplichthys pardalis)* that eroded fish diversity in southern Philippines (Nguyen and De Silva, 2006; De Silva et al., 2007) had also been wreaking havoc in San Agustin fishing. Fishers reported that because of their sharp scales, not only has the janitor fish damaged the other fish harvest but also their nets.

A final factor unique to Candaba that substantially reduced fish supply was the infrequent and shorter flooding periods during this research. Because the swamp waters did not swell as frequently and as much as before, San Agustin fish harvests became more accessible, transportable and marketable. Further facilitating the selling of fish outside town are the construction of higher bridge/roads and locals venturing into the fish trading business.

4. Fish Transition in the Foodscape

The decline of wild fish and the rise of aquaculture in Candaba is expressed in the local fish supply. Wild fish were not consistently offered in the San Agustin market during my research. Swamp fish that appeared the most are gurami, common, dalag and tie fish. I also saw *liwalu*, *licauc*, *native hitu* one or two times in the markets during my research from 2019-2021. Rare fish like these do not make it to the market because fishermen bring them home to their families or buyers buy them directly from the fishermen in the *sadsaran* (docking areas) or buying centers in the swamp. It is common practice for locals to go and wait for fishermen in the said places, as they can buy these fish for cheaper prices directly from the fishers. Locals also told me if I wanted to see the rarities like native hitu, *bidbid*, *biya*, *buan*, *kat-kat*, I should watch when fishponds (i.e.,

paglimas) were drained and cleaned because sometimes wild fish get mixed up with these farmed ones.

What is now ever-present in the *palengke* (wet market) are the African hito and tilapia. Other fish routinely sold in the market, particularly during Saturdays, are saltwater fish coming from the Malabon and Navotas ports in the National Capital Region. These include *galunggong* [round scad], *bangus* [milkfish], *pusit* [squid], *dalagang bukid* [yellow tail fusilier], a range of saltwater shrimps, *suliv* [mussels]. The imported fish, salmon (heads only), are also available.

In terms of form, fish from the area, wild or farmed are usually sold alive. The rotten fish are no longer common.

B. The Life of Rice in the Pinak

This part continues following the material bases of buru, this time focusing on the life of rice in the pinak. This is a rice modernization story that led to San Agustin producing a rice landscape that is, in 2019-2021, white. However, this is not a story where improved rice varieties of better quality were adopted which "improved" the rice in the community. Instead, it is about the adoption of modern rice technology which promoted rice delocalization and subsequently the remaking of the rice grain in the hands of rice traders and millers.

1. The Melon to Rice and to More Rice Transition

Ask any person in San Agustin about the past agricultural life of the village, most likely he/she would tell you: "*milun yan ngan kanita*" [that's all melons before"]. But ask how the pinak is now, people would likely say "*pale na ngan ngeni*" ["it's all rice now"].

This section describes how initially the melon and later the rice landscape was altered. It largely describes how modern rice was adopted and became one of the main livelihoods of San Agustin. This will help contextualize the corresponding shift in the foodscape, specifically the rice quality, in recent years.

Figure 4.3. Watermelon and cantaloupe fields. (Photo Courtesy of Boy Pelayo)

While the rest of Candaba was planted with rice prior to the 1970s, San Agustin was not. Instead, its non-residential areas were predominantly planted to watermelons, honey dew melons and cantaloupes (Figure 4.3). For a time, everyone considered these crops to be most suitable for the land as evidenced by the bounty of their yearly harvests and their being touted as the sweetest in the country (Mananghaya 2003). Farmers engaged in melon farming because these crops could be harvested 90 days after planting, in contrast to the 180 days required of the traditional rice. But this was not just a matter

of a quicker harvest and return on investment; they did not have a choice. Traditional rice varieties available then could not be planted in San Agustin.[24] San Agustin was flooded from July until December. This flooding period intersected with the June/July to December/January planting season.

Modern rice came to Candaba via the national government program "Masagana 99" in the 1970s. This intervention, literally meaning "prosperous 99," was intended to increase rice production to 99 cavans (or five tons) per hectare. This program was developed to address national rice shortages resulting from a series of typhoons, floods and pests (i.e., tungro) that destroyed the country's rice from 1970 to 1973 and to keep the prices of imported rice low (Halos, 2005; Castillo, 1975). The program fielded thousands of technicians in villages throughout the country to introduce high yielding and fast maturing rice varieties. Technicians also were there to assist farmers with the improved rice's technical requirements and applications for the necessary loans to buy chemical inputs and finance irrigation (Halos 2005).

Modern rice farming flourished in San Agustin because it came at the right time (Figure 4.4). Research participants remembered that it was promoted when melons started to be infested with thrips, insects of the order Thysanoptera locally called *hanip*. Struggling with melon and watermelon with pest infestations, participants remembered how farmers shifted to rice. Farmers and non-farmers alike pinpoint 1975 as the year rice was adopted in San Agustin. I suggest, however, that this may not necessarily be a wholesale adoption of the crop village-wide.

[24] Traditional rice varieties are photosensitive; they need longer nights (and shorter days) of the tail-end of the June to December planting calendar for them to flower.

Literature on Pampanga agriculture and my ethnographic observations of current rice practices of San Agustin farmers point out that farmers shifted back and forth between crops and varieties since the 1970's. Larkin (1972) observed this shifting pattern in his historical account of Pampanga spanning the Spanish and American colonial administrations. Specifically, he documents how farmers vacillate between the planting of rice and sugarcane, deciding which to plant and harvest based on the price of sugarcane in the world market. Castillo (1975) talks about Filipino farmers having an experimental, wait and see stance in their rice varietal selection. This is similar to the practice farmer ARR explained to me as I interviewed him on how they selected rice when confronted with new rice varieties. He described the selection process as starting with observing the popular varieties in other farmers' fields. If they observed that the rice and harvest were promising, farmers did not immediately purchase or replant these new varieties. They first requested seeds from other farmers to try for themselves. Rice varieties with an unfavorable evaluation after their first planting were either not planted again or tested for another one or two seasons. After this period, if the rice still did not meet their criteria, ARR concluded that the farmers would revert to their tried and tested variety.

Eventually rice replaced melon in the pinak. Table 4.4 shows how melons and watermelons do not figure as much as rice in the current Candaba landscape, a contrast to what was described as a melon landscape before.

Figure 4.4. The rice landscape of San Agustin. Seen in the photo is a vegetable garden tended by one of the farmers. (Photo by author)

Table 4.4. Agricultural Produce of Candaba (Municipal Agriculture Profile 2016)

Municipality / Major Commodity	Area Planted (ha)	Area harvested (ha)	Volume of Production (mt)	Yield (mt/ ha)	Number of Engaged Farmers
RICE	24,378.55	14,527.17	75,105.5206	5.17	6,502
Irrigated					
Rainfed					
Upland					
CORN					
Green Corn	117.84	98.45	541.475	5.5	94
Yellow Corn	93.5	78.9	394.5	5.0	63
MELON & WATERMELON	195.5	143.4	1,075.5	7.5	146
PEPPER	4.5	3.7	55.5	15.0	11
SQUASH	15.0	8.5	59.5	7.0	24
EGGPLANT	18.45	18.45	147.6	8.0	42
BITTERGOURD	40.0	15.0	225.0	15.0	36
LADY'S FINGER	7.35	7.35	29.4	4.0	22
TOMATO	30.0	23.0	27.6	12.0	48
POLE SITAO	8.5	8.5	102	12.0	18

Now several farmers say "*Kapad na ning pale ing gabun*" [Rice suits the soil here]. This was what they said about melons before. What firmed up modern rice's position as favorite crop? "It's all rice [now]", a village official explains, "…because rice is sure ball. When you plant it, you are sure to harvest." This is, of course, true if floodwaters did not damage their crops. Averaging about 100 cavans per hectare could mean more or less PHP100,000 (US$2,000) per hectare. Considering the expenses and loans that go into it, rice was more profitable for planters who owned the land and had multiple land holdings and other businesses to finance their rice ventures. But for others, it was not the profit that kept them rice farming because they were not really earning substantial amounts of money. For instance, farmer ARR and wife ELN shared how they

did not have much of a choice. ELN said "*yan ing usu ngen*i" ["it is what is in fashion now"]. She expounds that they cannot go back to melons anymore. ARR explained by asking me "*nanung gawan mi keng gabun mi*" ["what should we do with our land?"].

2. Hard Rice, Hard Life: The Costly Rice Lifestyle in the Swamp

Modern rice farming is expensive. This is the focus of this section. As such it presents the factors and processes that increased the costs of modern rice variety farming. This costly modern rice experience is key in understanding the rice landscape as it would have a direct impact on rice consumption, trade and processing.

The high costs of modern rice start with the modern rice's design. Modern varieties, having been manipulated physiologically and morphologically for higher yield and hastening maturation (Estudillo and Otsuka 2006), require fertilizers and more irrigation to support their fast growth. Modern varieties are shorter and these stunted heights have made them more vulnerable to pest infestation, thus requiring pesticides and other chemical treatments. All of this requires a larger capital outlay than when planting traditional varieties of rice.

Rice proved to be a high maintenance crop, thus labor-intensive. One farmer informant said "maprosesu ya ing pale" [rice planting requires a lot of processes]. With traditional rice, they just sowed the seeds then returned for them during the harvest period. There may have been occasional field visits to check rice for pests and weeds. In contrast, with modern rice varieties, farmers told me they had to make more trips to the rice fields for land and paddy preparation, sowing of seeds, application of fertilizer, pesticides, herbicides, and harvest. Multiple visits were also necessary to apply chemical fertilizer or pesticides. Irrigation was particularly labor intensive during the earlier

period of adoption. As a government irrigation system was not available in the area yet, they had to wheel drums of water from the creeks to their farmland. More recently, they began to use gas-operated pumps to draw water from the irrigation canals around their fields. As national irrigation became more available and farmers were able to purchase water for irrigation, this also added irrigation costs to the farming expenses (Figure 4.5).

Figure 4.5. Some rice farming inputs used in San Agustin. (Photos by author)

Because of the labor-intensive nature of modern rice farming and its promise of high profits, farmers learned to make their craft more efficient. Choosing the right seed was important. Whereas fast maturation and high yield are usual preferences of Filipino

farmers along with plant health and grain recovery, these traits were even more crucial to maximize their lands for the short window of time to use them. Yearly, the NSIC releases new varieties developed by member organizations of the country's Rice Varietal Improvement Program. But not all these rice varieties make it to the pinak (Laborte et al. 2015). Farmers maintained different favorite varieties across the years. In San Agustin, these were IR36 and C10. IR36, a modern variety released in 1976, was the earlier favorite. It is harvested after 100 days only[25]—shorter than the 120 day maturation time of other popular modern varieties that time and the 150 day cycle of one of the faster maturing and preferred tradvar (i.e., Burma) planted in other parts of Candaba. Production wise, its published yield is 4.9 tons/ha (about 90 cavans) which is about five times the yield of the popular tradvars (PhilRice, 1997). When PSB Rc10 or C10 was released in 1992, this became the new favorite, the fashion and gold standard. It replaced IR36. Farmers claim C10 can be harvested after 90 days; IR36 can only be harvested after 100 days. These extra 10 days were undesirable for the local farmers. Furthermore, C10 yielded even more. Published average yield is 5 tons/ha (90 cavans/ha), similar to IR36, but C10[26] can go up to 7tons/ha (126 cavans/ha) (PhilRice, 1997). Farmers have much more praise for C10 beyond yield and maturation time. Farming wise, it is well suited to the soil (*kapad ni ing gabun*) and disease resistant (*matibay sa sakit*). After harvest, it yields heavy paddy (*mabayat ya keng saku*), and gets high milling recovery (*marecover ya abias*).

[25] 1997 PhilRice published growth duration is 110 days
[26] published average growth duration of C10 is also slightly higher than the published maturation time of 106 days

As part of the Green Revolution package, machinery was developed and introduced in the rice fields to support the increased scale and speed of production (Bautista and Javier 2005). San Agustin farmers adopted these farming implements as well. Participants told me how water buffaloes used for land preparation were replaced with hand tractors and rotavators. Upon my arrival in Candaba, the talk of the town was the combined harvester that had been introduced into the area between 2001 and 2005. Farmers locally referred to this as the vacuum, *halimaw* or *curimao*. Farmers claim how efficient it is as it cuts, threshes and packs the rice in sacks— all in one pass. It reduced the need to hire laborers during harvest. Until before these curimao were introduced, harvesting was done by hand by harvest laborers called "papalot." The curimao gets the work done faster, not to mention that it does not leave any paddy on the rice plant. One curimao is able to harvest one hectare within 1.5 hours. What usually got done in a day by manual labor was usually completed within a few hours using the curimao. As such, this harvester gave them a bit more assurance (and less stress) that they could harvest their rice before the unpredictable floods would get to the field. Also, this gave them a quicker turnaround for the next planting season as the curimao leaves less rice refuse to clean.

Some of these equipment were obtained through farmer cooperatives and some were rented out from private equipment owners. These further increased rice farming expenses. Farmers did not have a choice but to adopt these technologies and their added costs. The efficiency they brought into rice farming was very important for them in San Agustin because of the erratic arrival of floodwaters in the area. Many farming households had their own stories of floods damaging their harvests. I heard of a number

lamenting how "*mupul na mu, muran*", "mupul namu, lumbug pa", "mupul namu, masapad pa" ["just when it's time to harvest, it either rains, floods or the rice lodges"].

In view of all these, contemporary rice farming requires much capital outlay. Table 4.5 illustrates a typical example of expenses shared by farmer ARR incurred on a three-hectare farmland over one planting season (ie., three months). Based on this computation, a farmer can earn around P30,000 (US$600) net income per hectare per planting season. But this amount can be further reduced significantly. ARR for instance had to divide the net income among his 11 siblings who he shared the land with. [27]He gets PHP9,000 (US$180) for his three months' worth of work.

This case is not an exception but rather the rule. Usually, farmers only break even or earn a little bit more than their expenses. Why this reality? One would think expenses like these should be considered in determining the selling price of goods. The problem is the farmers are not the ones setting the farmgate price. It is the traders who set buying and selling prices based on supply. This speculated rice price control emanates from a rice cartel based in Manila and Bulacan (Briones 2019) that controls 90% of the rice supply (Tadem 2002). Based on this, middlemen (e.g., agents, distributors) would have to calculate backwards to determine prices they would buy/sell rice. They would have to budget for their transportation, drying and labor expenses as well as their profit. Consequently, this leads to a reduced farmgate price.

[27]Because transferring land titles from parents to children was expensive, it was common practice in the village for all siblings of their deceased parents to collectively own the land. To profit from the land, siblings take turns cultivating it and share the income with others.

Table 4.5. Rice Farming Expenses for a Three Hectare Farmland

	Philippine Pesos
Seeds	25,000
Fertilizer	21,600
Rotovator rental	7,500
Hand tractor rental	12,000
Herbicides	4,950
Insecticide	8,250
Molluscicide	3,000
Irrigation pump rental	21,000
Diesel for Irrigation	7,800
Laborer for broadcasting seeds	6,000
Laborer for spraying chemical inputs	4,000
Combined harvester rental	30,000
Hauling expenses (water buffaloes)	9000
Farmer Fee	45,000
TOTAL EXPENSE	205,100
NET INCOME	94,900

Castillo (1985) discusses how the Masagana 99 package included loan assistance to help farmers with the additional costs of modern rice adoption, however this was only for the first years of the program. She explains that farmers had to pay for the increased costs by themselves after the first years. For San Agustin farmers, this meant borrowing money from different sources to fund rice planting. The very expensive rice farming inputs and the very low income has produced for locals a lifestyle of debt. JUH spoke of such a lifestyle in this quote: "We didn't have capital, what happens to us, my dad loans. Then after the harvest, [he] pays. Even before he harvested and got the money, he has already used the money by loaning [for our other needs]. This way of doing life they call *"utang-takap-utang"* [loaning-paying-loaning]

3. Rice Delocalization and Improvement

What are the material and sensory implications of this rice farming system? This section describes post-harvest processes that more directly affect the materiality of rice in the area. Thus, from the broader rice landscape, this discussion takes the conversation to the micro level food landscape, that of the rice grain. What may be seen is a ripple effect of the larger Green Revolution into the rice supply- San Agustin style!

Two traditions were recalled by locals as their common rice procurement practice. One of them was the use of the small-scale mills called *kiskisan* or *kono*. These local mills have *bodegas* that allow safekeeping of harvested rice for safekeeping and for on-demand, on-site milling. Earlier they used the kiskisan, a "robust cast iron construction where a screw action forces the grain into the milling chamber from one end. The husks and bran layers are removed by friction of the grain rubbing against each other inside the chamber" (Bautista and Javier, 2005; 62). The semi-cono/cono was a technology which used instead rubber rollers for removing the hull and bran of *palay* [paddy rice] and had a whitener (Bautista and Javier 2005; PNS 2015).

The other rice tradition was their purchase of NFA rice. In good years, some farmers were able to harvest rice sufficient to feed their families for a year. But in not so good ones, they had to supplement their harvested rice with purchased NFA rice. For laborers and rice harvesters who received only a fraction of a harvest as pay, buying rice was crucial. NFA rice is government-subsidized rice bought from accredited market vendors. Locals told me they bought this because it was the cheapest available. While they relied on NFA rice, they did not find the quality of the rice very appealing. A number of locals claimed the rice they bought was inconsistent and poor in quality for the

most part. Sometimes, there were long grains, sometimes they were broken. It was not always white, but could instead be yellowish or black and smelling like insects or fish. People regularly described it to me as "*matuling*" (black) and "*meun*" (smelling old). The bad quality of NFA is commonly perceived as an effect of long storage and then milling of old grains.

These rice procurement traditions changed in recent years. There were two small-scale mills operating in the vicinity when I arrived in 2019 where farmers could process their harvests so that they could eat it in their households or sell it locally. In 2021, one of them closed. A middle-aged local who used to be in the business said they used to have eight mills in Candaba. The closure of mills indicates the reduced dependence on these mills for rice storage and processing, which also suggests there was a decreased consumption of local harvest. One of the possible reasons is the recent adoption of the curimao in the 2000s which displaced laborers from their rice harvesting jobs. The removal of such seasonal employment reduced harvested rice circulating (and eaten) among locals. Another factor for the decreased harvest consumption was the current and common practice of selling harvested rice directly to traders instead of keeping it for household use. Farmers reported this gave a quick return of investment and a more cost-effective than milling their harvest in a local mill. Several farmers explained to me that it was common to seek financing from what they call the *kapitalistas*. These kapitalistas, or traders, provide the seeds or other services that farmers need (i.e., use of the combined harvester). In exchange, in unwritten yet "sacred" fashion, the farmers were obligated to sell their rice to the kapitalista that had provided the financing exclusively during harvest

time. Immediate payments for rice harvest also allowed them to settle loans incurred for the planting season.

With much rice leaving San Agustin, where does it go? In the end, it enters the broader rice marketing system. From the traders, rice moves forward to the millers, the wholesalers then the retailers (Briones and de La Pena 2015)[28]. This can be described as a delocalized system founded on the consolidation of rice stock for distribution to small to large distributors, retailers or institutional buyers beyond the rice's place of origin. For instance, Intercity[29], a complex of rice mills in the nearby province of Bulacan in Central Luzon, obtains its rice from all over Luzon (including Candaba). It sells rice mostly to retailers in the northwest part of Metro Manila (Briones 2019). My research did not actually follow rice beyond San Agustin; therefore, it is unclear where exactly San Agustin rice goes.

What rice is consumed in the village? For the longest time, NFA rice was the recourse of locals; however, this came to a stop when commercial rice (or non NFA rice) became cheaper. This shift may have been in 2008 when NFA rice cost was at its highest (Intal et al. 2012). Locals said they shifted to commercial rice because, for a few more pesos, they received better quality rice–that is, white rice—different from their darker NFA rice or the darker and harder rice they harvested. This led to the closure of NFA

[28] This is a rather simplistic way of describing the marketing system. There are many participants and channels that direct how rice circulates in the market (Briones and de la Pena 2015).
[29] This was developed as an industrial complex mainly for rice milling in the 1990s to facilitate the wholesale rice buying and selling (Briones 2019).

accredited stores in San Agustin. By the time I got there, nobody was selling NFA rice anymore.

The shift from NFA or harvested rice to commercial rice provided a more consistently whiter set of market varieties. As earlier mentioned, NFA rice is on the darker side because of storage conditions. Quality differences between locally harvested rice and merchant-processed rice may be due to the equipment that is used. Large-scale distributors own multi-pass mills (Miclat-Teves, n.d). Bigger mills like these tend to be more efficient (Briones 2019). These mills also have two or more whitening/polishing machines (PNS 2015) that can render grains white or as MAS described it, "*brillo*." In contrast, the village-level mills kiskisan and cono produced darker rice. The kiskisan does not entirely remove the bran in the milling process. The local cono were less powerful than the large-scale mills (Figure 4.6).

Figure 4.6. Rice sold in the market is usually sold by price. (Note: this is not NFA rice, they just use previous NFA rice bins) (Photo by author)

C. Conclusion

This chapter investigated the trajectories of the rice and fish landscape to follow the material resource base of buru. Comparing historical accounts and memories of the past in Candaba with the current San Agustin landscape reveals changes in its defining characteristics. Candaba has always been depicted as an annually flooded swamp and a bountiful source of fish and melons, but this chapter considers this past and today's realities. It is now a recreated landscape characterized by aquaculture and rice plantations. Fish and rice landscapes were reconfigured, directed by physical environment occurrences and disturbances, fish and rice physiologies, new technologies, government policy, entrepreneurs, among others. These processes continued fish and rice production in the place albeit these resulted in different forms: live fish and white rice.

These landscape alterations reiterate literature that argues for the dynamicity of the landscape, that is that a landscape is a work in progress, made or unmade, generative or regenerative, becoming or more specifically a blasted landscape (Hermans et al. 2015; Ingold 2011; Casey 1996; Tsing 2015). Such a macro level landscape flux was also reflected in the micro level; that is, fish and rice supply changed. The free/cheap wild fish are no longer as bountiful as in the past and aquaculture fish replaced them. As such, rotten fish were also no longer abundant. The rice supply, and what people ate, in San Agustin, shifted from either locally harvested or government-subsidized rice to commercial rice. This also meant a corresponding shift from darker to whiter rice. Such material and sensory changes accompanying the adoption of Blue and Green Revolution technologies in town further substantiate the theory that social revolutions are accompanied by spatial and sensory revolutions (De Jong 2015, Howes 2005; Seremetakis 1996). Later discussions will show how these sensory ramifications have agencies and meanings relevant to the reinvention of buru-making.

This chapter initiated discussions on what comprises the fermentation landscape of San Agustin by focusing on the material landscape. The next chapter continues examining the landscape through the lives of its human inhabitants.

CHAPTER 5

THE CO-MAKING OF PROFESSIONALS AND A COMMERCIAL BURU INDUSTRY

This chapter continues with the characterization of the landscape of San Agustin or what I describe as an ecology of memory. This time the focus is on its resident humans. Humans dwell in the landscape (Ingold 2011) and animate them (Basso 1996). They "become with" the landscape (Haraway 2016) and the landscape becomes part of them (Basso 1996). As the examination of the memory of the landscape is central in this dissertation, its human carriers and creators should also be studied.

A place is said to be defined by the activity therein (Relph 1976). As Casey (1996) pointed out, it is the movement that creates perception and knowledge in place. In Ingold's (2011) parlance, dwelling or the process by which people go about doing their activities in a landscape, is the manner by which they react to the sensory stimuli that the landscape affords and consequently embody skills (i.e., enskillment). This chapter shows how buru-making became a skill and way of life in San Agustin as villagers navigated, engaged with, and disengaged with their changing fish and rice landscapes. It argues how along with the change in the swamp landscape, buru-making transitioned from a predominantly household to commercial endeavor. Central to this shift is the cultural dream of living the good life by way of a college degree. The story starts with discussions on the nuances of hardship, aspirations and inspirations in the fermentation

landscape. Such trajectory of buru is constructed primarily from life history and semi-structured interviews.

A. The Nuances of a Hard Life

"Nung isake mu ing gang kasakitang delanan na, kulang ya ing truck." ["If you would load all the hardship she went through in life, a truck is not enough to carry it all"]

During my research, *kasakitan* or hardship was one of the most frequently mentioned words among research participants. The statement above was the most creative way I heard a local describe a co-villager's suffering. I was interviewing a senior citizen informant about buru, her contemporary came, and voila, she mentioned it. This was quickly followed up by the words, "*megtiyaga ya*" ["she persevered"] – implying how the lady got through her travails. Such conversations were very common during my time living in San Agustin. This section describes these different hardships experienced in the village. These experiences are part of a landscape that pushed them into seeking greener pastures and that propelled them to commercial buru-making. While locals think of their simple agricultural life in the past with much nostalgia, they did not deny its challenges. The predominantly agricultural work and lifestyle were hard and left some wounds and marks on their minds, bodies and minds. Thus, nuances of the hardship in the past *pinak* will be discussed through their memories of hunger, exhaustion and woundedness.

1. Hunger Memories and Sensibilities

> "Sometimes we eat, sometimes we don't. If you don't work, you won't eat. If you are lazy, you will get hungry…Our family had to work together so we don't get hungry" -REV

> "…When we left the house…when we were younger…if we were lucky to eat lunch, we will no longer eat supper…we would just bear it. Whatever we ate for

> lunch we would extend that until supper…Of course our stomach aches but we just bear it…We just drink a lot of water. It is hard." -BRO
>
> "We really got hungry, we got so hungry when we were young. Especially me, my mom died when I was three. My dad was just a carpenter. He would leave for work in the morning. My siblings also worked in the field. I was the only one left at home. I would go to school in the morning without eating breakfast. When I get home, I won't have anything to eat. I would just sit on our ladder…If I had five cents, I would buy taffy. I would soak this in water then pour it over rice. That would be my main dish. I also experienced eating rice with salt…" -TET

This section focuses on hunger—a common theme that arose among San Agustin locals when we talked about food. Ironically, hunger was a common phenomenon in a bountiful swamp. Locals explained *meranup la* or they got hungry because there were times food was not available. When it flooded, traditional food sources from the swamp and/or commodities from the market were not available. Many times, locals shared about the rice shortages they experienced and that they had to line up for rations. They also remembered times that they did not have money to buy essential goods, especially rice.

Different locals would have different strategies to stave off hunger. One informant shared how their family would split one fish among many partakers. Another shared how to last the day doing heavy farm labor he ate *pandesal* (bread) in the morning, milk in the afternoon and pineapple juice in the evening. In between, when in the rice fields, he would eat *pakombu* (sugar product).

Buru was a lifeline for many. They ate it as *ulam*. Whatever food was cooked for lunch was, if possible, extended until supper time.

Usually when there was rice, they were secure. In the village, this was emphasized to me by ELN as she said "…from what I remember, when we didn't run out of rice, I was already happy. Because life then was hard. We didn't have ulam. So when

there is raw rice, we are already happy, we will already have cooked rice. When I came from school, even if I just eat soy sauce when he have rice, we can eat. Because life was hard then, we didn't have ulam. But we had to have rice. That's why I can't forget rice." Rice is a defining characteristic of Filipino meals. It makes a meal "proper" (Douglas 1972). But in this economy, where food is scarce and unpredictable, it becomes even more important.

As long as rice is available they can craft different kinds of meals. They can have rice and salt, rice and water, rice and soy sauce and oil (called *toyotika*) and rice and sweetened water (usually with pakombu). Many informants also talked about resorting to *kisa*, or rice extended with corn or sweet potato during rice shortages.

When I asked participants what their favorite food was, I usually got two typical responses. They either said nothing because they had to eat everything or, as one informant said, "for us poor, everything's our favorite". Eating chicken, beef or pork were occasional events that many people said they looked forward to. They didn't have the luxury to choose their food or plan for meals. CES explains "We didn't dream of saying 'later we will have sigang' not like today when we can say 'tonight let's cook *sigang*'. We just eat whatever was available. For example, my mom would go home [from selling fish] and she is bringing fish to fry, then we will fry fish. When she has unsold fish, she would exchange this with those selling cured water buffalo." Participants also did not seem to be concerned with the quality of the foods they ate. The poster child for this situation is the rice C10. As mentioned earlier, this is a prevailing variety planted in San Agustin because of its high yield, fast maturation, high rice recovery and less sickly body. As such, this was the rice most available to locals.

Therefore, C10 is both notorious and well-loved in the village. The mention of it always evoked its signature traits— it's hardness and jokes about the variety. C10 jokes sound like this: "We are forcing ourselves to eat C10 these days. When C10 is cooked, if you don't eat it at once, a few hours later it can be used to hit somebody. It is good as long as it is warm. We have to finish it while it's warm."

Despite its hardness, many locals expressed positive sentiments about the C10 variety. For instance, one local said: "I can still remember its taste, it's not as good, but because it was the rice we had then…For others it is not good…If this was not my rice then, I could have gotten hungry. Whether its delicious or not, I had to eat it so you don't get hungry". Another shared: "C10 in fried rice is good. It doesn't spoil easily. It's always hard. It's not like soft fried rice that becomes watery after about 10 hours. C10 doesn't, many other varieties get watery like R5…R8, 215, 216."

The benefits of C10 included extending meals through its sheer volume expansion, reduced tendency to spoil, and satiation effect. Participants also remembered that they had to purchase government subsidized rice (i.e., NFA) because that was within their budget in the past. Conversations about this rice in 2021 bring about memories of poverty linked to standing in lines for what they felt was lower quality rice. Participants recalled lining up just to buy NFA rice. Older locals recall they had to get this variety from a truck that would arrive in town. Younger ones mentioned queuing outside the NFA stores and recalled knowing that the others in line to purchase NFA rice were as poor as they were. It was not only lining up that rubbed in their feelings of poverty but also the rice quality. As mentioned, NFA rice does not have a consistent quality. They recognized that this rice was dark because it was *luma* (stored for a long time before it

was milled) and, thus, inferior. It evoked strong smell memories for two participants, comparing the smell to that of cockroach or *kutu* (lice).

San Agustin locals did not grow up to be choosy but sometimes they also had to force themselves to eat what was not acceptable. This was the case of JUH. She shared: "One time when my father was harvesting, it rained. He was not able to sell his share of the harvest because it got wet, so instead he brought the harvest to the house and spread it to dry. The smell of that rice was like feces. It smelled so bad. Because life was hard. I want to cry now. We didn't have a choice. That was the only thing we could eat. My dad had it milled. It is not really good for eating. Because the smell and taste is different…[When it got milled] some of the bad smell and taste was removed, when we boiled it, we sensed it wasn't really good to eat." Rice that lodged or soaked in water, when harvested gives a characteristic dark color.

2. Of Hard Corps and Hardwiring

An informant pointed out: "Life was hard because they had to find food today, then find some again the next day. It was just the same over and over. Life just repeated itself". Spending much of their time working in the swamp, the landscape has imprinted itself in residents' bodies. Many participants shared that they had been wounded and scarred as their bodies have been exposed to the elements, including the dangers of swamp agricultural life.

Accidents big and small happen in the *pinak*. Minor accidents include falling bamboo bridges as they crossed irrigation canals—which many looked back to with much humor (Figure 5.1). Fishermen talked about how a number of them had bleeding ears as

they set-up their *bukatut* implements. Fishers, fish vendors and buru-makers alike talk about having fever and getting paralyzed when struck by the fins of the *balikbayan* kind of catfish. Worse, I have heard of a number of farmers and fishermen struck by lightning and drowned when the current was strong in the rivers. In one's lifespan, the possibilities of danger are endless. To illustrate my point, I share here a few of many challenges or mishaps that DAF, one of my elder interlocutors experienced.

Figure 5.1. Typical human bridge in the fields. These are used to cross over irrigation canals to go to the fields. This is also the path taken when carrying banyeras of fish and farming machinery. (Photo by author)

After more than 60 years of fishing and farming in the pinak, DAF had experienced all sorts of wounds and stitches that are now permanent scars in his body. He had *alipunga* [athlete's foot] that extended to his knees. He accidentally skewered his fingers on one hand as he was making a rat trap. He got his thighs punctured with the tilling attachment of a hand tractor while tilling the land. The tractor collided with the paddy; the impact threw the hand tractor and the sharp edges of the attachment on top of him and left holes in his thighs. He almost died one time when he was spraying chemicals on his rice field. He was carrying a chemical (possibly Fumaran™) on his back and it leaked, spilling onto a large area of his skin. There was also a time when he had his hands burned when he was trying to save their burning house. Almost in his 70s, one thing he desired is to have the same strength he had when he was young. This was a common sentiment among older participants. Years of hard work have maxed their strength out. It is the onset of body weakness that they compete with to maintain their living.

3. Wounded Souls of a Poor Agricultural Past

Hardship was not just physical for San Agustin residents, it was also emotional. San Agustin villagers recalled a history of being perceived inferior by their townmates because of their poverty and lack of education. This dates to the times when the village was called Punta. The first settlers there were fishermen from the Pampanga town San Luis. The place has become identified with people who were either *mamalakaya* [fishers] or *mamumuru* [buru-makers]. Both *malansa* [fishy] occupations were looked down on.

Fishermen were also called derogatively "*mamulati*" [worm diggers]. Digging for worms was part of their job as fishermen. Worms were used as baits for fish. However,

this valued resource and activity was given other meaning and taken against them. BRO told me how he would hear statements such as this spoken about San Agustin villagers: *"O nanan mo ren, ara, mangulkul lang bulati ren"* [What would you do with those, they just dig and look for worms]. As a fisherman, BRO experienced much discrimination. This was much more felt when he got married. He shared:

> "If we talk about our life…It's all about hardship…Because the truth is, my in-law and I did not speak for 20 years…Because they did not like me, because I was poor, they judged me…They are also from Candaba but from Mandili…My life then, it was not embarrassing …You know fishermen, we catch fish…That's what I grew up with. I would collect worms…We will use them as bait…My in-laws, because they heard what I do and they see what I'm doing…They thought their daughter will not be well taken care of…Twenty years we were not talking…Because I am not dumb, I showed her family how I love my wife. How they love her, that's how I love her…Because she followed me and left her family. That's the hardship we experienced. Until the time my in-law got old…Before he died, we arranged that he stay with us…He was with us for more than a month. We took care of him. In God's grace he was happy with us. Even if we were just poor but the service we extended to him was something he didn't get from his family. We really took care of him so well."

Apparently, for him, hardship didn't start with fishing and end with the animosity between him and his in-law. It continued on as he tried to earn his in-laws respect for 20 years.

Buru-makers also experienced this discrimination; this affected their relationships. For instance, DIB had to give up on-going relationships because of the discrimination. He shared "Because I was only a buru-maker. When I was in high school because that was our business. My girlfriend's sister told me, this was according to another sister. I was told his sister didn't like me… So I talked to my girlfriend, I told her

we have to break up and act as if nothing happened. She cried. Because your eldest sister belittled me."

In addition to their occupational stigma, San Agustin residents had a reputation of being unschooled. San Agustin lagged behind other Candaba villages when sending children to college became a fashion. Martin (personal communication, October 16, 2019) explains, this fashion came to town as Candaba forebears pursued education after some migrants tricked them and stole their land. Locals point out to different possible years this started. But if accessible schools were to be used as bases, this trend of sending children to school may have been in the 1960s when colleges as Holy Angel University and University of Assumption were established in nearby Angeles City and San Fernando (Holy Angel University Website; University of Assumption Website). Characteristics locals are known for as *magulu* (rowdy) and *mabuluk* (stinky) were attributed to lack of education. Insiders and outsiders of the village alike know nobody should mess with a resident of San Agustin. RET, a San Agustin resident explains: "when we were young, if you happened to have a fight [with a San Agustin] in the town center, don't run to San Agustin because everyone will gang up on you…you will be doomed…", PRP, who did not grow up in San Agustin, also shared "…when there was a basketball competition back when I was young. We had an inter-village competition. People would usually say, 'we are fighting against San Agustin, do not watch because if they lose, they will lose it (laugh)'…Or they will throw tomatoes or rotten fish at you". The village was notorious for being littered with excrement. CES, one of my almost septuagenarian locals shared "…When we were young San Agustin locals were heavily criticized. They said there is feces everywhere…It's stinky. It's really stinky. They would defecate everywhere…We

know this, we did it ourselves. We can smell it; it smells like feces". A younger interlocutor (in her 30s), also experienced this excremental past. She told me "…When we were young, San Agustin was known to have a lot of feces around…It's because San Agustin was not modern before. Each house didn't have a toilet. Then when you had a toilet, you are rich. So kids then… would have to go to the field to defecate. Probably that's why they called San Agustin dirty."

San Agustin locals were bullied. Participants can still recall stereotypes and jokes made about them in the past. An example that was provided included the widely circulating joke that anyone traveling through Candaba would awaken by the time they entered San Agustin. This was because the stench would be so strong that it could passersby from their sleep. Middle-aged locals from San Agustin shared how they were bullied in school. For instance, GAK shared how one time when she introduced herself in class, during the part she described she was from San Agustin, her classmates would giggle.

B. Commercial Buru-Making: Where Aspirations, Inspiration and Perspiration Meet

"…they really look down on San Agustin residents. I get affected. It hurts. But that's how it is. As for me, I would work and earn money".

This is middle-age informant COM's conclusion to her memories of her school teacher bullying her villagemates. This voices the common sentiment that participants talked about when reflecting on their want to improve their lives. To finish schooling specifically was what was dreamed of. This section details the importance of a college degree, how locals strived to send their kids to school and how buru-making was part of this endeavor.

1. The College Degree: The Common Aspiration

To San Agustin locals, a college degree was the passport to being a "professional". To be a professional is highly valued in this society. This is very much felt in conversations and in the sensory scape. Almost everyone I spoke with would make sure they mentioned their child/children and the colleges they were in or the degrees they completed. For instance, when I was asking informant ADD about her buru-making practice, before she answered me, she talked about her kids and their college degrees. These intangible expressions of successes had their physical expressions. Inside the homes, certificates, medals and trophies from all grade and year levels are displayed (Figure 5.2).

Figure 5.2. A display of school achievements in the home

During my research, their successes in sending their kids to school were also communicated in the neighborhood through tarpaulin congratulatory posters with the graduation photo of their children, their names, school and their degree. Having a profession was also the means they knew so they could thrive anywhere and not be *mangmang* (stupid), have a good job, more money and thus the ability to fund their life

improvement projects including: building their concrete houses (Figure 5.3). To have big concrete houses was a dream of every resident, a priority in their budget, and prayer. MCB talked about it this way: “Those that I observe, when they have money, they prioritize the house: they renovate the house to make it bigger, they buy new pans, ladles, curtains, clothes…[they prioritize the house] because it floods.” DIB shared when he took his oath as policeman to have a house was his prayer. He prayed “Answer my prayer God. I will have a house built, a big one. None of my siblings ever had a concrete house”.

Figure 5.3. Examples of big houses in San Agustin

Why were big, concrete houses important to many locals? The preference for these large, concrete houses is motivated by both safety from flooding. Traditional houses made of bamboo and nipa palm leaves were not strong enough to resist water currents during heavy flooding. There were a number of horror stories of homes being washed away. Building big and cemented houses in the swamp secured their safety.

Considering food on the table, financial freedom and the comfort of a durable house, buru-making can produce *manyaman a bie*. This literally means delicious life; this is how a Kapampangan would usually describe a good life.

2. Hard Work Ecosystems in the Pursuit of a Degree

Investing on children's education was a very intimidating endeavor for San Agustin residents. Schooling is not affordable for most farmers and fishermen, in addition sending kids to school reduces the hands available for farm labor. But what seemed impossible became more doable through time. The success of a few resident families in in sending children to school showed the village that it was possible after all. For GIK's circle for example, she recalled being inspired to study by one family. They saw how the family was very poor but through perseverance was able to send one child to school, who in turn was able to go to Canada and was able to petition his siblings to migrate there.

Locals say sending kids to school, like any endeavor, is a matter of *"sikanan mung lub"* ["mustering courage"]. A lot of guts are needed to enter a long cycle of making and paying loans as their incomes are never enough to pay for all school fees. I detail here the strategies and hard work they put in to succeed in this area. The first challenge for a family wanting to give their children a college education was to have their children complete their grade school and high school education. Each parent wanted their child to go to St. Andrews, the first private school in town (Cabusao 2003). It was very popular because of the good repute of its teachers. A usual solution in many Philippine schools, including St. Andrews, is to allow families who cannot matriculate in full to pay their tuition fees prior to their quarterly tests. It was therefore the aim of each San Agustin family to have that amount at that time. This meant borrowing money from all

different sources, promising to have the money back by a certain time. It was important that they pay their loans on time so they can borrow again. This meant a lot of pressure not only because of the financial obligations, but also because their reputation was at stake. One of the top values my informants communicate with me is the need to be a good payor. One could easily earn the derogatory nickname *balasubas* for not paying their debts.

The second challenge for parents was to send their children to college. This was more difficult because this was more expensive than grade school. For one, there were courses like Nursing that have become the fashion and were more expensive than others. The closest preferred schools were in San Fernando and Angeles City. Those who were more ambitious aimed for the bigger universities in Manila. This required more money for transportation and lodging. For some this meant selling or pawning their lands and their farm animals.

For many, they had to borrow money perennially. The technique to make it was, in the words of a woman who sent four kids to college, *"utang-takap, utang-takap"* [take out loans-pay-take out loans-pay]. This continuous borrowing necessitated parents to maintain and build social relationships, or *pamakyabe* in the local lingo. WIW described how when he was a student and needed money for commuting to his school in Angeles, his mom would go very early in the morning to one of the wealthy families. She would sweep their yard so she could gain some favor prior to asking for some money. ELN had to be nice and give favors to one of the officials of her kids' school as she would always ask for payment extensions every matriculation time.

Parents had to work harder to pay for their obligations. It was not easy to pay off school expenses with their harvests. Just to illustrate, the current tuition fee in a popular college in San Fernando is PHP50,000 to PHP70,000 per year or US$950 to US$1,330 (Find University, n.d.). In Manila, tuition fees range from PHP24,000 to PHP330,000 or US$45 to US$6,300 (Ecompare mo, 2019). This does not include supplies or living allowance. The 2021 daily income of current fishermen ranges from Php100 to Php1,500 (US$2 to 30). This totals to PHP1,000 to PHP10,000 (US$20 to US$200) for the entire wet season (Mallari et al., 2020). Clearly, this was not enough, not even enough for their food. As such, it was the norm for the entire family, especially the parents, to engage in multiple occupations to earn more money and to get loans for their children's education. They engaged in whatever job was in fashion. For example, WIW, being more business minded, contracted the clearing of fishponds [*maglimas*], engaged in buy and sell of rice. DAF, like other members of the community who were less skilled, tried doing a different set of tasks like harvesting swamp cabbage, mole crickets, rice farming, fishing and helping clear fishponds.

Sending kids to college was a family affair and everyone, even children, had to pitch in. One way was for the students to study part-time and work long hours in the pinak, in buru-making or in blue-collar jobs. It was not easy. It was a struggle against the depletion of physical strength as well as morale. For instance, WIW was studying Electrical Engineering in Angeles City. It was especially hard for his family because he was studying at the same time as his other two siblings. They had to take turns going to class or taking tests based on how much money was available. In addition to transportation and allowance issues, he felt so bad not having the basic tools needed for

his courses unlike the other students. He also felt he wasn't so much prepared intellectually given his very limited diet. He shared his experience: "even if one is a working student, it is still hard. The working student is really working. Almost half the day I was in school. Then when I go home and try to study…I couldn't learn anything because I already spent half the day working at school."

GIR couldn't help but say again and again how hard life was for him in the past. As a working student, he couldn't work or study well because he was so tired, lacking sleep and food. He shared: "I was a working student at Chowking [another fast-food chain]. It was so hard. When I eat and see others eating, I get envious because I cannot do what they are doing…Because I was just a working student, I would hide the customers' left-overs. Life was so hard before…I would reason, probably the customer doesn't have bacteria…"

Other family members tried their luck abroad to support their families (including funding their family members' schooling). In the 1970s, it became the fashion for Filipinos to work abroad as overseas contract workers. This was in response to the national government's promotion of work abroad to counter unemployment. The government formalized these through agreements with a number of countries like Japan and Germany (Seeman and Fischer. 2015). Many Filipinos were able to secure jobs in Saudi Arabia and Hong Kong. The Filipino diaspora continues to present time to pursue greener pastures. In 2010, top destinations were USA, Saudi Arabia, Canada and Malaysia (Seeman and Fischer 2015).

3. Commercial Buru-making Rising: Fermentation of Hope

Making *buru* to finance their kids' or their own college schooling was a norm in San Agustin. My interlocutors would usually say *"dinagul kami keng buru"* ["we grew up on buru"] or "*meyari kami keng buru"* ["we finished school because of buru"]. It is not uncommon to hear stories as that of DAF that I share below. Spoken in Kapampangan, these sentences were replete with the word *"rugu"*, to indicate how it was a very difficult time for them.

> "I will tell you our story of hardship here in Malisik… What my wife and I did when my kids were young. We would… use the bukatut there…We were then sending our children to school. Because we were not able to finish school. I just reached up until grade 5. She just finished grade 4. We dreamt that we would be able to allow our children to finish college. Whenever we heard there was a typhoon, we would go to Malisik… It's a creek that flows into the pinak. The water comes from Bulacan. Then my wife would ferment the small fish….She would ferment them so when our kids would have to take their tests, she would obtain some of it so our kids [can pay their tuition] and be allowed to take their test."

This practice was inspired by commercial buru-making becoming a fashion in San Agustin. This section talks about the events, specifically the people that laid the foundations of commercial buru-making and paved the way for its growth in Candaba.

Regular commercial buru-making was only started after World War II as it was started by Martha "Apung Malta" Atencio, a dressmaker from the neighboring village Pescadores (Figure 5.4). Prior to this, household buru-makers would sell buru whenever they had excess amounts of the ferment.

Apong Malta's story is, as a relative said, a "rags to buru" story. Because of buru-making, she was able to send her children to universities in Manila, bought land, and started other businesses (i.e., boutique and drugstore in the *palengke*). They were one of the well-off families during her lifetime. They were one of the first families to own a television and people flocked around their house to watch.

Figure 5.4. Apung Malta Atencio and her house that buru built. (Photo by author)

Another woman that rose to popularity because of buru selling was Apung Simang Manapol of the village Paralaya. A few informants pointed out Apung Malta's customers were the well-heeled customers in cars. Thus, she was referred to as "royal blood" buru-maker by one of my informants. Apung Simang's customers were the masses. But both of them became very well respected. They are known to have sold buru to the different presidents of the country. I even heard Apung Simang made it to a newspaper article [*mediyaryu ya*].

Other homemakers apparently followed these two women's lead, peddling their buru in different barrios in and out of town. For example, participants recalled Apung Garing of Buas, Onding Parungao of Paralaya, Naty Vinuya of Pescadores and more. Each of these women took advantage of a life skill and the resources that the pinak had to offer monetizing them through selling the fermented product. Wild swamp fish was cheap if not free. For the fish vendors, buru-making allowed them to monetize even their rotten fish. Buru-making was a normal recourse to salvage fish. Husbands fished and the wives preserved it. Buru-making was also a favorable business because wives did not need to leave their homes and families. Nothing was wasted. If their buru got sour, they threw away the rice that the fish came with, then just added more rice. As one vendor said *"alang masasayang"* ["nothing is wasted"]. In the sustainable business discourse, it is a closed loop system, one that allows the use of resources over and over again. Buru-making became a popular stream of income because buru meant money--the process of fermentation turns fish into money. ESE, an octogenarian interlocutor, shared how her mother ingrained in her the idea that if one knew how to make buru, she would never run out of money. This got ESE into the buru business. She said *"eka kagisanan pera patse mamuru ka"* ["you won't run out of money in buru-making"].

C. Conclusion

This chapter characterized the underlying human activity and engagement within the Pinak shaping buru practice. It showed how commercial buru practice became a normative livelihood alternative with the community's new preoccupation of sending their children to college. In other words, in their efforts to make/be professionals in the village, they were able to grow the commercial buru industry.

Life was hard long enough, in the fields and tables, so they are inscribed in peoples' memories. The hard lives in the pinak that needed redemption became fertile ground for the commercial transformation of the ecosystem of buru-making. This commercial shift was set into motion by aspirations also molded by the poor histories, wounded souls as well as houses in need of strengthening.

Over-all, this chapter demonstrates how the entry of new aspirations into a landscape of fish and rice, skillful and hardworking people reconfigured the activities in the social landscape–a reiteration of the intersection of life cycles in the landscape and their interanimation. Having described the rice, fish and human actors in this ecology, the next chapter proceeds with the life of the buru in the swamp.

CHAPTER 6

THE PLACE-BASED RECIPE FOR BURU DELICIOUSNESS

Landscapes are ecosystems of sensing and memories. Being dwelled on, they are sites of movement. As sites of perception, they are also sites of memory, and being sites of memory, they are also sites of sensing (Casey 2000; Seremetakis 1996). The human sensing of the environment, with its material affordances and agencies, educate humans (Ingold 2012, Malafouris and Renfrew 2010). Repeated across time, across lifespans, the cultural memory of the landscape is developed (Ingold 2012). Memories become sensing organs responsible for filtering, classifying and orienting experiences (Seremetakis 1996, Bourdieu 1984). Memories can make or not make people see, taste, and feel when confronted with the material (Seremetakis 1996). These sensory-memory entanglements are what Feld (1996) describes as senses placed with the sensing of place. This is a continuing process. Sensory orders evolve following changes in social orders and material landscapes; similarly, social and material changes shape the senses (Howes 2005; Seremetakis 1996; Edwards et al., 2006).

In this chapter and the next, I explore *buru* taste formation within this dialectic of taste as memory of the external landscape (i.e., place, material) and taste as a sense dictating *buru* production. It is a following of the life of taste within the landscape. It is inspired by the acknowledgment of sensory transitions in anthropology and the reconfigurations of sensory orders documented in food scholarship. To date, a few have studied the lives of food as consequences of developments in food science/technology,

and food regulation. For instance, in his history of how fresh milk became an ideal staple of North America, Atkins (2010) illustrated how milk quality was transformed by microbiological knowledge in the dairy industry and the subsequent quality standards developed by science and supported by government policy. Ekelund and Jonsson (2011) and Rima (2013) delve into changing tomato and pork preferences as a result of a shift in rationalities from early to late capitalism in Europe and Japan, respectively.

With the previous chapters examining the different constituents of the San Agustin fermentation landscape, this chapter looks into these constituents' collective agency on taste. Framed within an ecology of memory, I argue the shift to a white rice and live fish foodscape, food and the sensory memory of poverty and marginality, and the politics of taste in the places created a new standard for buru deliciousness. Specifically, deliciousness became equated with clean buru, fermented fish with no smell and white color. Such an interpretation is primarily based on participatory observations, food elicitations and semi-structured interviews with in depth participants and life history interviews with two expert buru-makers.

A. The New Delicious

"Dapat malinis!" [It should be clean!]

This is a common response when I asked what they considered delicious buru. Even without asking this, in fact, these responses were the default reaction each time I started conversations about buru.

Some locals like their buru with more fish, with more rice, and/or with soft bones. Taste and texture wise, some like it sour, salty, pasty, or watery. These are negotiable qualities. What is not negotiable is its cleanliness. Buru should be clean to be considered

manyaman [delicious]. Clean buru is buru without smell [*alang bau*] or not smelly [*"ali mabuluk"*). Buru is classified as dirty or stinky if its smell stays in their hands. I was given these instructions to test if buru is bad: *"Pag potang mangan ka… Manyabun ka ne…Tsaka mu bawan ing gamat mu. Karin mu akayi kung talagang tune na mabuburu retang migburo."* ["When you eat. Wash your hands with soap…Then smell your hands. Then you will see if (your buru) was made by the true buru-makers."]. For a society that regularly eats with their hands, the buru smell was something that they could detect in their own hands or in others'. Important, but less prominent in the definition of delicious, is that buru should be white. This trait is usually required of commercial buru rather than household buru.

Unclean buru does not register well with locals. For instance, when we talked about a notorious buru-maker who sold foul-smelling buru, a government worker could not help but loudly express her disapproval. Commercial buru-maker JAB shared with me how neighbors reprimanded him when the buru he made was stinky. JUH told me how one time after eating smelly buru, her friends teasingly asked her *"nanu telanan mu"* ["what did you touch"]. Bad smelling buru is likened to cat feces, *peksing* [the female reproductive organ] and farts, thus the naughty or judgmental undertones of such inquiry.

B. The Compulsion for a Cleaner Kapampangan Buru

Buru needing to be clean is salient in community discourse. I was introduced to its seriousness early in my research when I was told this by one town official during my courtesy call: *"I research mu pakananu ya magimprove para local and international*

market, pakananu improve ing bawu ning buru" [Research on how to improve (buru) for the local and international market, how to improve its smell].

How to make buru clean was information that locals easily volunteer, in addition to the clean buru requirement, as I start conversations on buru. They say for buru to be manyaman or clean, it must be made from fish that are *"mabie"* [alive]. Dead or weak fish will not do. Furthermore, the fish should be thoroughly cleaned. Much of buru's cleanliness also depends on its maker. They say "you should be clean when you make buru" and "you can't make buru if you are not clean." One should not make buru if the fish they salt stinks [*"dapat e ka bubuluk asinan"*]. In addition to the untidiness of the maker, they attribute stinky or bad buru to those with *mabuluk gamat* [stinky hands]. Their stinky hands are attributed to the touching of their excrement when they were young. ESE explains this in detail below:

> "It's a saying among older people when one is still a baby…When one gets a little older and returns to his/her feces and mash it with his/her hands. When one is no longer an infant but is old enough to walk…Even if he/she washed his/her hands long time ago. But old people explain, it's because you touched your feces that is why your buru are stinky…Yes that's true. Me, probably I didn't do that with my feces so my buru are not smelly."

Immersed in these narratives in the field, I pondered on these questions: Is the specification for clean or non-stinky buru a rejection of extremely stinky buru? Or is this a refusal of the normative smell of fermented fish, or in other words, a sensory transition? These were questions I immersed myself in. I asked the first question as buru smell can vary depending on the ingredients and processes it is subjected to. I think it is more of the second. I argue the clean definition of deliciousness is specific to San Agustin, a result of the new, reconfigured fermentation landscape–thus, a sensory transition. I say this as the

very strong articulation of clean buru standards deviate from the broader understanding of buru as smelly. There are observed differences in the material nature and quality of the buru not just with buru from other towns but also with buru from San Agustin. I expound on these in the following paragraphs.

Buru is buru because it is a product deliberately made rotten. An excerpt from Kapampangan poet Tony Mercado Peña (Kapampangan Ku Pagmaragul Ku International, Inc.) articulates how buru's deliciousness draws from a complexity of taste, including its strong smell:.

> *"...Why is Burung Kapampangan sought after*
> *It combines hints of sour smells and tastes*
> *Why is it delicious and giving off clarity*
> *To an enlightened tongue it brims with savoriness*
> *Its fragrance comes from its stench…"*

Even two of my in depth participants recognized this inherent buru trait. One of them, ELN shared: *"Ali ya buru if ali ya mabuluk, balamu e ya apalya nung e mapait"* ["Buru is not buru if it is not odorous, just like bittermelon is not bittermelon if it's not bitter"]. A middle-aged and college-educated informant COM said: "Buru, you can't say it doesn't have smell because it is fermented. That is what has become known as buru. That's why they called it buru because it was fermented for a couple days, it is intentionally made rotten so it will become buru, so it really has smell"

Other than deviations from the broader Kapampangan buru discourse, there are also differences that have been noted in San Agustin buru's taste. Helpful here was Kapampangan celebrity chef Claude Tayag's description of Candaba buru. He said it is milder than the Kapampangan town Mabalacat's buru. He likens Candaba buru to cheddar and the Mabalacat buru to the stronger-flavored blue-cheese stilton (Tayag,

personal communication, July 7, 2017). It is useful to note that San Agustin is the leading producer of Candaba buru. I also found the buru in San Agustin different. It was not what I was familiar with. I made my family in San Fernando taste it and they said it was also not the normal buru they knew. We all knew buru to be smellier.

While locals were very vocal about the clean buru standard, probing this issue further with them give a more nuanced head and sensory knowledge of buru. For one, what is delicious buru now is not necessarily the delicious buru before. Also, this concept of deliciousness is further complicated by varying actual perceptions of what is actually clean or not.

I was able to document a few perceptions of buru taste differences in the past and present. This is demonstrated by what COM, a middle-aged informant, shared with me:

> "When I was a child, buru was really stinky and fishy. That's the buru I knew. But buru now. It seems they use the expensive rice, the white ones, that's what they use now…Before they use the rice that one can hardly eat…Now they use fish even if they are not rotting. Before they just used the rotting fish."

The buru now she was referring to is the clean buru she prefers buying as she was told, the one she was buying before was dirty. Asked how she liked the buru of a specific buru-makers, one notorious for its stink: She said: "It's delicious, yes delicious [with a laugh]…I Apu [name of buru-maker]…they said then her buru was dirty. But buru is really dirty if you think of it because you make the rice and fish spoil. You make them rot…But what I hear Apu…[her buru] is stinky and dirty. That's what they say." In essence, COM was explaining how she was okay with the stinky buru until she was told that buru was dirty. VAB, an informant in her 50s shared: "*Yaku nyang eku pa byasang mamuro, kakanan ku, pero nyang mi byasa na ku ing buru pala talagang kailangan*

malinis ka" [Before when I wasn't good at making buru, I liked stinky buru, but when I learned how to make it (I preferred the clean one)]. VAB was already making buru before she learned to make the clean one and yet she does not consider herself *biasa* (skilled) in the past.

While I only heard few of these perceptions of buru taste changes, there is more reason to think that there is indeed a transition in buru standards. This strong preference for the clean goes against common local narratives of the past foodscape. Coming from food insecure pasts, they either say everything is their favorite, or they do not have favorites because they did not have a choice. A change in smell preference aligns with the local discourse of intergenerational splits in preferences. I often hear the younger ones are pickier than the old ones. *"Mesalan na la reng tau"* [people have become picky], as they say. For instance, the *matua* (elders) liked using rotten fish in making their *bobotu*[30], and younger ones dislike it. Many food scholars have observed similar shifts from being accepting to being more selective with food among those who have increased their incomes and moved from food-poor to food-rich environments (e.g., Menell 1985 as cited by Howes and Lalonde 1991). A number of them draw explanations for such phenomena from Bourdieu (2017) who put forward the concept of taste of necessity and taste of luxury. The former, as the name implies, is a product of necessity. It is the most filling and economical as it intends to give nourishment and strength. The taste of luxury on the other hand is "the taste of individuals who are the product of material conditions of existence defined by distance from necessity; by freedoms or facilities stemming from

[30] A dish of fish cooked in coconut milk, vinegar, *alagaw* leaves (*Premna odorata*) and spices.

possession of capital…" (Bourdieu 2017, 55). This taste of luxury is meant for physical (body) and social (form).

My conduct of the food elicitation activity demonstrated that this strong discourse for the clean is not necessarily reflective of actual perceptions of buru smell. It can be recalled that I brought three buru samples of varying odor for informants to smell. One of these samples was smellier. It was a smell that was considered stinky by locals I consulted prior to the activity. It must be noted that all 19 participants in the food elicitation agreed that buru should be clean, meaning buru should have no smell and should be white. More than half of the informants identified the smelly buru as stinky and disliked it, while the rest found it acceptable. That said, what was stinky was less of a consensus in the sensory versus the cognitive realm. This reiterates the points made earlier that the discursive is different from the sensory (Stoller 1997) and that theoretical knowledge is different from practical knowledge (O'Brien Cherry 2014; Godoy et al. 2005 as cited by O'Brien 2014). Complicating this is the truth that taste is highly context-based. Haden (2017, 338) explains these through the concept of taste relations which he defines as the "…sum of those factors affecting the experience of taste within the mediating world (or context) in which it operates". These include, but are not limited to, external factors, such as the tasting environment; the knowledge given about the food; social factors such as class, religion; and individual factors such as personality or taste sensations of the taster (Peynaud 207; Lahne et al. 2014).

C. Sanitized Taste: The Product of a Landscape of Material and Memories

I have looked into the landscape in explaining this new taste. I argue that the clean standard for buru deliciousness was a product not only of material resources of the landscape but also of its memory resources. I demonstrate this taste-landscape relationship describing the implications of the new ingredients from the reconfigured pinak in shaping clean taste. Furthemore, I show place-based distaste for the sensory indicators of unclean buru: stink and darkness.

1. The New Ingredients from the Reconfigured Pinak

Chapter three described how the landscape shifted from predominantly a wild fish to farmed fish supply. The rice supply transformed from a combination of government-subsidized rice and localized rice system into a delocalized, commercialized system. This translated to live fish and whiter rice. Outside buru-making, these two forms of rice and fish are already the preferred quality. In buru-making, the use of live fish produces less smelly and whiter buru and rotten fish, the opposite. It should be noted that the longer the fish has been dead, the more advanced it is in its loss of freshness and ultimately spoilage (Nguyen personal communication, April 3, 2022). This makes buru more smelly and darker. On the other hand, white rice, because of its lighter color, renders whiter buru—a clean one.

2. The Other Ingredients: Place, Food and Sensory Memories

This section focuses on: a) the memories and senses created through the engagement of people with the fermentation landscape; and b) the memories and senses that potentially have agency in shaping peoples' buru preferences. My examination of

memories in the landscape was informed by the concept of cultural synaesthesia. As discussed earlier, synaesthesia is a "union of the senses" (Sutton 2001, 217) which happens when one sensory modality is transposed to another. This is best described by Feld (1996) who, citing Cytowic (1989), remarked, "Synaesthesia points to the complexity of sensory ratios, the rich connections inherent in multiple sensation sources, the tingling resonances and bodily reverberations that emerge from simultaneous perceptions." Sutton (2001) gives good examples of this. In *Remembrance of Repasts*, he (2001) describes how Kalymnians and other Greeks say "listen to that smell" to instruct someone to pay attention to the odor of cooking food.

Looking at the fermentation landscape for memories, I observed memories associated with the food, the people/place and the senses. I focus on the first two in this section. I documented a broad range of memories evoked from the food and place. I highlight here memories of poverty and marginality associated with the fishy smells and dark colors.

Talking about rice in general was evocative of good memories revolving around food security. ELN mentioned how when she sees rice in their rice container, she feels good. She knows they will not have hungry days. In the same vein, VIN said, "Whatever rice it is, it is a blessing from God." Among many, it is not uncommon to hear *"malagu la ngan reng abias"* [all rice is good], despite different qualities of rice being recognized. Even the most criticized rice for its hardness, C10, was highly valued. A few informants expressed how indebted they are to it because it carried them through life. Dark rice however registered negative memories. Many participants associated dark rice with poverty and unfortunate events. NFA rice, the government-subsidized rice they

commonly bought before commercial rice became popular, was considered the rice of the poor by the participants. When locals were asked about rice, it was automatic for them to talk about lining up for dark NFA rice outside retail stores and rice trucks along with their memories of meager meals of sweet potato, corn or condiments during very financially tight times. There was one informant who specifically described NFA as a reminder of poverty when she said, “What I remember with the lining up at NFA was our hard life.”

Another dark rice-related scenario evoked by rice conversations was shared by JUH; she said this was her unforgettable rice memory. JUH’s dad was a farmer. During one harvest season, it rained while her father was reaping the rice. The rice got wet in the process. Because it was rainy those days, he tried salvaging it by allowing it to dry. The rice produced a dark and feces-smelling rice. Because they could not sell it, JUH and her family had no choice but to eat the rice—an experience she recalled crying. While this was not a story shared by many, it is possibly an experience shared by others who also had their rice harvest damaged by the floods. It can be recalled how the pinak gets flooded without any announcement and how the damage of harvests is not an uncommon outcome.

Memories of the abundant fish in the past were always brought up. Enumerating different fish to different locals, I learned more about what they thought about the fish. There fish that were manyaman [delicious] and prized like the *dalag* [mudfish] and native *hito* [catfish]. There were fish that were fishier than others, *kanduli* [Manila sea catfish] being the most fishy of all. There were fish that were better for specific dishes. For example, *karpa* [carp] is good for *escabeche* [a sweet and sour fish dish]. Then there was

also fish that is harmful. They talk about the *hitong balikbayan* (catfish) causing fevers and paralysis.

Buru was also loaded with memories. The ferment was commonly thought of as a life saver as it provided *ulam* [dish paired with cooked rice] for them when they did not have any food. The smell of buru was a mnemonic for people. For instance, a number of informants were reminded of Apung Juana (not her real name) and her buru as they smelled the stinky buru I presented to them in the buru elicitation activity. One informant shared how she was reminded of another informant who tried but failed in making clean buru. Interestingly, as I was conducting buru elicitations, the children of two informants jokingly and without restraint expressed what smelly buru evoked. JUH's schooler openly said the buru her mom smelled was *"kabau ne ing puki na"*. She meant, "[the buru] smells like her vagina" (referring to her younger sibling's female organ). While we were working on the buru elicitation, ELB's kids were saying in the background *"burung maantut"* (stinky buru). For these kids, these approximated *"lasang atut"* or fart taste. ELB explained their introduction into this sensoryscape happened on her second attempt making buru, where she accidentally made the smellier one. One of her kids reacted "Mama why does it smell like fart. Even if you cover it the smell comes out. It's stinky!" Among others, buru was offensive. This is something I concluded seeing locals reacting negatively to smelly buru upon smelling it. The offense was also evident with informants talking about their experiences. For instance, BAB wasn't able to help but say this when we talked about the smelly buru in the elicitations activity: *"Ay susmariosep isipan mu*

siping mi yang bale…As in mabuluk ya talaga!" ["Ay sus mariosep[31], imagine she is our neighbor…It's really very stinky!"]. In saying this, she was implying how unfortunate they were because they had to live with that smell around them.

Locals' memories of the place were associated with farming and fishing. Many recalled the bounty of the swamp. Others fondly reminisced about their playtime in the fields as well as the many times they spent their time there helping their parents with agricultural work. Others also remember the pinak for disasters of different kinds. Most of these were sad stories of crops ready for harvest in a few days, damaged by sudden flooding. Some other memories were about people–lost loved ones. JUH, for instance, shared how her father was murdered in the their rice field over irrigation issues.

But there were also memories of the place from outsiders that attached identities to San Agustin and its locals. The village is associated with fish, fishing and buru-making. But such fish associations identified them as lower class Candaba citizens. As described earlier, fishing and buru-making were belittled occupations. A common denominator of these activities are fish, and even more common is the fishy smell or what is called *lansa*. Lansa is not a desirable quality. Unfortunately, the fishy odor increases as the trimethylamine (TMA) inherent in fish is broken down after its death. Lansa sticks to those who process fish. TET explains "buru-making is fishy, it takes a long time for the body, especially the hands, to be rid of the fishy smell." Because of their need for a livelihood, San Agustin locals are said to have the patience to endure the undesirable fishy process of buru-making. MAK of nearby village Paralaya observed "Fish is stinky,

[31] Sus mariosep is a common expression among Filipinos. It is the contraction of the Biblical names Mary and Joseph. It is uttered when annoyed, upset or angry.

dirty, right? It is stinky, fish? If you are not used to the fishy smell, you would stop it. You will not [make buru]. But if you are going to use it for your business, you will do it. Just like San Agustin. Those in San Agustin are really into it. They buy fish in bulk…because in San Agustin they really have a lot of fish."

The fishiness of fishing and buru-making, occupations associated with San Agustin, repeat the theme of a stinky reputation of the village. It may be recalled from the previous chapter how, in the past, the village was littered with feces because of the absence of toilets. This earned for San Agustin its notoriety for being *mabuluk* [stinky].

3. Colonial Sensibilities: The Resistant Senses

The synesthetic experiences discussed in the previous section focused on food and the place. This section focuses on memories that local senses carry. Here, I talk about current sensibilities that were deposited in the senses way deeper in Filipino history. It is an analysis drawing from ethnographies of the sensoryscape of San Agustin vis-à-vis the literature about the Philippines' sanitized path to civility.

A study of the sensibilities in the village repeats themes of poverty and marginality associated with darkness and smell. Whiteness is not just a buru-making value but one that is prevalent in San Agustin. It was the ideal skin color for people. This is exemplified by this sharing from one male informant: "My female ancestors all had good skin [meaning white]…They have Castor blood. They seem to be of Spanish ancestry. They have very good skin. Even their kids have good skin…I wished someday I will be able to marry someone as pretty. With that good skin…" As a female septagenarian informant ROV explained, "[whiteness] is the other half of beauty…Even if one is ugly…One person is pretty only because of her white skin. If a person is dark,

he/she is *matsura* [ugly]…it's in the skin." I heard this before among many other Filipino circles.

This white-dark skin issue is very familiar to me: I was always teased because I was dark. One of my uncles called me "duhat", a dark purple fruit (*Syzygium cumini*). Once, when I was a baby, and my light skinned-mom was carrying me, my mom heard a passerby saying, "her mom is so pretty, no?" implying a contrast with her dark baby. My mom then would always have to console me saying *"maputi la mu"* [they are just white] when people would compare me to my light-skinned cousins.

Locals' perceptions of whiteness, however, intersect with cleanliness. For instance, middle aged-informant GIE shared that, when she was young, it was common for locals to outdo each other in cleaning their wooden houses after the floods. She shared "Back then, we were competing to see who had the best/prettiest house, the whitest, the cleanest]…After the floodwaters immersed the houses, the house is white." This was similarly reported by Dalisay (2015) in her study of chemical use among Filipino youth. She explained the young generation used whitening products as they gave them a feeling of cleanliness.

Stink or *buluk* is also a source of disgust for San Agustin locals. This also does not have to be limited to buru. In the San Agustin context, I learned that pig dung (from pig farms and household hog raisers), fart, and feces, in addition to smelly buru, offends local noses. I heard of locals complaining to village officials (called *barangay*) about the smell from their neighbor pig raisers. One backyard pig raiser, DIB, told me he stopped raising backyard pigs because he was worried his neighbors were being pestered by the smell and might even wish him evil. CES shared how they had to cover their noses in the

village when the place was still littered with feces. In trying to make sense of the meaning of mabuluk, I asked ROV, a septuagenarian, what was wrong with mabuluk. She answered me prefaced with "Who wants mabuluk?" Spoken with a tone that sounded like it was all but natural to dislike stinkiness. She expounded, "It's not good to be stinky…even with your body, if you are stinky it's not good. You should be clean…!" This statement equates stink with uncleanness or in other words the absence of smell with cleanliness. This makes both whiteness and the absence of smell synonymous with cleanliness. The question is, how was cleanliness attached to these sensory characteristics? I argue colonialism had a part to play in imparting legacies of clean aesthetics in San Agustin.

Cleanliness is part of the civilizing process (Vigarello 1988). He (1988: 2) explains: "Cleanliness…reflects the civilizing process, in its gradual molding of bodily sensations, its heightening of their refinement, and its release of their subtlety. It is a history of the refining of behavior, and of the growth of private space and of self-discipline." This civilizing process may be seen employed in colonial systems. Rotter (2019) and Low (2009) describe how in a colonizer-colonized relationship, the colonizer assumes the position of the civilized and thus attempts to civilize the colonized. Race was assumed to have physical and physiological ramifications and thus was used as an indicator for civilized or uncivilized status (Anderson 2006). Concerned with protecting their own health from the weaker, disease-carrying race they colonized, it became the mission of the colonizers to civilize their colonies through the cleaning of the colonies' environment and bodies (Toner 2019).

The Philippines was shown to have undergone a civilizing cum sanitizing process under the American colonial period (Rotter 2019; Anderson 2006). Anderson 2006 (60) wrote: "Americans who came to the Philippines thought that "the air, water, soil, the whole earth and its sundry encumbrances (living and dead) were actually "reeking in germs." He explains Americans were informed by germ theories and equipped with microbiological techniques, they showed how Filipinos were carriers of disease-causing agents. In other words, Filipinos were "dirty," "infected," "armed," and "microbial insurrectos" despite Filipinos frequently bathing and washing (Anderson 2006, 58). Anderson (2006) described how Americans took issue with Filipinos not washing their hands, defecating anywhere and using their hands for eating. Thus, he explains, it was inevitable for Americans to improve public health as they believed Filipinos were the sources of disease. This included the institutionalization of hygiene standards (including the design and promotion of flushing water closets for the wealthy and toilet pots for the poor) and the teaching of hygiene in public schools.

As a result, Filipinos were attuned to their uncivil, dirty bodies through their colonizers. The work that the Americans did to improve bodily practices of Filipinos further communicated ideas of inferiority.

In other countries, it has been shown how white skin color hegemony was transmitted into food preferences. For example, Knight (2009) writes about the shift from brown to white sugar predilection in Indonesia in the mid-20th century. He explains this was a nation building project that coincided with technological advancements in sugar refinement. Adopting white sugar was a sensory statement that articulated modern

identities—that is civilized and clean. This may have been a sensibility at play in the shift of brown rice to white milled rice, brown to refined sugar and from the stinky to deodorized buru in the Philippines.

D. Clean Delicious: Hegemonic Aesthetic in Buru-making

There is politics in taste. This section argues how the clean buru taste is embedded in place through social mediation. Much has been said in the scholarly literature about taste politics. But in saying politics here, I talk about two ideas. First, I refer to the observed definition of tastes from individuals or groups of power. For instance, Mintz (1985) explains the development of the preference for sweetness via Europe's and USA's control of sugar production and trade. Lewis (1998) demonstrates the idea of gustatory subversion or the presumed superiority of foreign food over local food. Cook (2018), in her work on olive oil, showed how politics were involved in the definition of good or bad olive oil. She specifically identified a collective of entities creating this political aesthetic, including the environment, standards, tasters, producers, and the oil itself having influenced the regulation of olive oil quality.

The other stream of food politics I am referring to is the agency of aesthetics in lived experiences. Cook (2018), in her work on olive oil, pointed out how quality (specifically quality standards) redefines the relationship between humans and material. A specific example she mentioned was how food standards legitimized the olive oil practice of different manufacturers, categorizing them into the better and the not so good ones. The theme of taste defining identities/class boundaries is common in food literature. For example, Stoller (1997) demonstrated the power of aesthetics in his telling of the

Songhay way of cooking to communicate their approval or disgust of partakers of their meals. Manalansan (2006) told of how the strong smell of dried fish made known the ethnic and thus marginal roots of a fully integrated, successful Filipina in the US. This relationship between taste and identity was also apparent in the narratives around clean buru-making in San Agustin.

As a sensory standard, the clean taste of buru was not immune to the global politics of aesthetics. Furthermore, the resulting clean standard has the power to classify not only the good from the bad buru but also the good and the bad buru-makers. The succeeding section tackles the western/scientific sensory roots of clean buru as indicator for safe buru; the latter focuses on buru as a classifier of skilled buru-makers.

1. Organoleptic Characteristics: The Local Buru Safety Regulation Standards

Food safety is a concern among buru consumers. Cleanliness is a way to ensure safety. I argue buru needing to be deodorized and white is a local interpretation of food safety with western, modern sensory roots.

It may be recalled how cleanliness was described in the previous chapter as a civilizing process. Cleanliness was not only used to effectively civilize the colonized but also as a tool of sanitation and development aimed to "modernize" societies. Sanitation is described as the "logic of progress" (Henry 2005), "modern path towards civilization" (Low 2009,122) and rationality of modernity (Rojek and Urry 1997). Stink and dirt are the antithesis of cleanliness, and thus out of place in modernity. Baumann (1993, 25) explains:

> "…[s]mells were to be disciplined. That means, [they were] not allowed to appear on their own initiative, in places of their choice, in their native, raw form.

> *Naturalness* in smells, like everything else, was another name for barbarity, since artificiality – the designer reality – had become the trademark of civilization."

The value for cleanliness, particularly in hygiene, rose specifically in response to developments in microbiological and epidemiological developments. For instance, in pre -18th century France, people washed their face for propriety and doused themselves with perfumes. Baths, particularly public baths, were more for social functioning. But this changed as water was seen invigorating and filth was the cause of disease (Vigarello 1988). Instrumental here was the popularization of the germ theory in the 1860s and 1870s, which was in turn developed by a number of events including the invention of the microscope and experiments by scientists like Louis Pasteur and Robert Koch (Tomes 1998). This theory proposes that diseases are caused by microorganisms found in the environment; this better understanding of where deadly illness comes from pushed for the cleanliness of the body and the home (Tomes 1998).

Scientific circles and the enlightened elites imposed the hygiene and the sanitation of urban settlements on the poor, because it is among the poor that dirt, stench and diseases concentrated (Low 2009; Corbin 1982). In France for instance, they imposed a "new [science-informed] olfactory sensitivity" (Corbin 1982), enforced "sanitary discipline" to make people take baths and clean their houses and institutions, created and distributed health manuals, and built public baths and wash houses (Vigarello 1988; Corbin 1982). Later, sanitation projects in architecture and urban spaces were developed to stabilize and economically grow nations. For example, in Singapore and Korea, smell is managed by modern governance in urban environments through deodorization and waste control. This started with controlling odors and ended with the creation of artificial scents from modernity to postmodernity (Low 2009).

This clean sensibility of modernity also made its way to food practice. Tomes, in her book Gospel of Germs (1998), attributes the application of germ theory concepts in American households to Ellen Richards and Marion Talbot. She (1998) describes how these leaders taught evidence-based domestic science/home economics to American women through formal education and informal modes (e.g., magazine, journals). The book mentions how bacteriology was central to their and succeeding home economics instructors' teaching. She says, because of developments in the field, lessons have advanced to keeping food safe through covering it to protect it from contaminants, ensuring environmental sanitation, and observing specific time and temperatures. In connection with the latter, equipment and technologies such as refrigerators, pasteurization, and canning, among others, have become very important (Tomes 1998). Western food sanitation concepts made their way to the Philippines via American education, which prioritized the teaching of nutrition and domestic science to Filipinos as part of their nation-building project (Orquiza 2020).

In San Agustin, my first few food safety lessons were about the need for live and clean fish. Weak fish were not desired. Weak fish are considered unhealthy. My informant ELN and ADD explained how they could cause sickness and bad eyesight, respectively. They were less valuable, even considered as refuse by some. This dispensability of weak or rotten fish may be generational. Middle-aged and older informants, ADD and ELN, expressed how they had conflicts with their children in the use of weak fish at home. I share below a conversation ADD had with her child about the live but weak fish they were not able to sell in the market:

Son: Ma, what will you do with this tilapia, let's not ice them.
Mother: Buy P20 worth of ice son, so we don't waste them, I will make them into daing tomorrow....
Son: Ma, let's just give them to your poor siblings.
Mother: What do you mean we give them away?
Son: Let's give them to Nanang…They are pitiful, so they don't have to buy.

ELN and ADD belong to a generation who have seen their elders eating rotten fish. ELN would reason to her children how it was fine to cook rotten fish as she saw this done by the older generations without any health consequences. While ELN and ADD agree that weak fish are unhealthy, they do not like the idea of throwing fish away because that would be a waste [*sayang*].

If weak and dead fish are rejected, fish advancing in rottenness are even more disgusting to locals. I understood this point when I asked some of my senior informants to cook *bobotu* for me. I was requesting it to be made just as how their elders made it—fish was soaked in water for hours or days to mimic putrefied fish (i.e., stinky and bloated fish). RET, who agreed to cook it for me, did not end up making it because he did not want to use rotten fish. ELN, regardless of my request, made bobotu for me with live fish. MAR, as a compromise, made bobotu for me with a piece of weak fish and a piece of live fish.

Where science, product labeling, government regulations and certifications for buru are absent, non-smelliness and whiteness of buru have become monitorable standards for safety in the village. As earlier described, smell and whiteness are indicative of the freshness of the fish used and the degree to which it was cleaned. Apparently, for others, the whiteness also allowed the easier inspection of the fish. ANT

shared "…We want it pure. It will have its color because of the fish, we want to see that it's really fish. Because the color can cover the way it was fermented."

Considering the educational system was a large contributor to the large-scale introduction of western food safety concepts, and how school-based education was a recent development in San Agustin, consciousness of western food safety concepts may also be surmised as being more novel in the village. In other words, clean buru as deodorized and white are recent standards. In the semi-structured interviews, I asked my informants, why do locals dislike stinky buru today, when in the past it was OK? Three of the 22 respondents mentioned *selan* or finickiness as an explanation. This was also expressed through the phrases, *"maarte ngeni"* or *"sosyal na ngeni"* ["They are finicky now" or "they are sophisticated now"]. Middle-aged informant VAB said people just became finicky recently [*"Ngeni nala meselan ing tau"*]. JAB explained "It's just now smelly buru is stinky…People then were not finicky because it was still times of hardship…But life is not hard anymore, unlike before. Before, if you don't eat, you die". Selan in the village is thought to be generational. COM shared "…There are a lot of people who are finicky now,…Before, the people here, are old fashioned. They like this [smelly buru] more. But the new generation are finicky. Millennial." It was very common for San Agustin locals to pertain to the younger generation, particularly teenagers and younger persons as millennials. Elder ELN explains that it is not that they just want to be picky; they are just being protective of their health. COM explained to me "Because [stinky buru] is said to be dirty, of course people have become picky now, because a lot of diseases have surfaced."

Choosiness with food with improvements in economic status was earlier described by (Huss-Ashmore and Johnson 1997). This was also implied in Bourdieu's differentiation of taste across classes (see discussion of taste of necessity vs. taste of luxury in Chapter six). From what was presented, there is reason to think sanitary sensibilities could have not taken shape without the availability of disposable income.

2. Buru as Panolfacton

Yamin-Pasternak et al. (2005) pointed out how smell identified individuals with backward or progressive identities in sub-Artic groups. Based on her observations, she coined the word "panolfacton" based on Foucault's "panoptic schema" that relates the social regulation or control through the visual. She applied this to smell. In the same vein, the panolfacton "characterize[s] the internalization of hegemonic aesthetic norms that press for the adoption of new disciplinary practices of culinary deodorization." Buru is also an example of panolfacton as it policed those with stinky buru practice; they were identified as dirty. Moreover, clean buru identified the skilled buru-makers.

Buru as panolfacton is most seen through the buru of Apung Juana (not her real name). Apung Juana's buru is very notorious in San Agustin for its stinky smell. Some even called it the worst buru. As earlier mentioned, buru cleanliness depended on the form of fish used (i.e., live vs. dead or even rotten), the smell of the hands of the maker (i.e., if they were stinky [*mabuluk gamat*]) and the manner in which the fish was cleaned. Thus, the stinky buru suggested either of these or all of them. Local theories I heard as to why her buru was stinky usually revolved around the rotten fish she used and her being dirty. One informant talked about her this way:

> "…But [Apung Juana], her buru is not good, when that old lady makes buru she always uses the rotten fish which she bought very cheap, they're the ones she ferments so her buru is not delicious…This you can see anyway from how the person dresses up. You know one is dirty…Here [in Candaba] they don't buy her buru…they know her buru."

On the other side of the spectrum, those who made non-smelly and deodorized buru drew affirmation from their clean buru. There is a moment I will not forget: once, when I was at DOF's house, she made buru for me to try. She made a round, presenting her buru to me and three other women who happened to be in the living room with me. She told them, *"o bawan me oh, ala yang bawu"* ["smell this one, see it doesn't have smell"]. Like other buru-maker informants who made buru for the study, I could see how she was looking at me intently to see what I thought. She and others had these very slightly tensed expressions on their faces which turned to smiles when I agreed that their buru did not have a smell. In another conversation, one of the informants RET was all smiles when he was telling me about how a Kapampangan actress (Angelu de Leon) liked the buru he brought to a friend's house in Olongapo. I also saw the joy of VIN, a senior citizen informant, as she talked about how priests and even buru authority Kong Resty admired and requested her to make buru. In other words, successful, non-stinky buru preparation was met with approval from their peers.

Clean buru-making was rewarding because it was considered a skill [*kabiasnan*]. It is an embodied practice through material engagement. This is explained better in RER's words *"turu na ka ning obra"* [the job will teach you]. It was common for buru-makers to have learned making buru by watching and listening to instructions, but it was the practice itself that taught them. But key in achieving clean buru is "*sipag at tiyaga"* [industriousness and perseverance]. Sipag at tiyaga were also commonly mentioned by

other buru-maker informants as the factor for perfecting their craft and being successful in business. For instance, when I asked what was the secret to delicious buru, leading buru-maker Resty Balagtas explains, "…Probably industriousness, that depends on you if you choose to be industrious or not….The most important thing there is industriousness whatever you do. There should be perseverance and industriousness in the business." Veteran buru-maker AUA says, *"Magtiyaga ka mu agawa mu ngan itang buri mung gawan…Pakibabatan mu"* [Just be persistent and you can do everything, just be patient"].

Sipag at tiyaga are important considering the trial and error that goes into learning how to make clean buru. Clean buru-making does not seem to be very easy. It can be recalled that not everyone can make buru. There are those who have tried but failed. But sipag at tiyaga are all the more important in commercial buru-making. Buru-making as a business is physically exhausting. Processing the fish becomes hard labor at the large scale. Usually this meant squatting on the kitchen floor for long hours, risking cuts from cleaning the fish and getting a fever from the balikbayan hito. In my conversations with commercial buru-makers, I regularly heard them say their craft is taxing to the body. ADD shared one time "I don't have much buru in stock, they are about 20 [pails]. I'm thinking of making another batch, but I'm lazy. I was making some earlier. I made them two days ago, my body ached…Yes it's [too physical]. I could hardly stand up in the morning". Another time she said

> "I was tired before and tired now because I'm getting older…Right now my body is aching. Everyday is painful. I can feel it in my hip, feet, and back…There's no retirement with fish, it's tiring, it's continuous. That's why I don't smile so often.

> Before I leave home, I would cook rice for [my kids], wash the dishes, make their beds, won't you be tired?

Here ADD was talking about how she has body issues because of buru-making, but she is also expressing how this was even more tiring considering all the other chores she has as a mom. Buru-maker ROC had similar issues. What she said also brings into the picture the difficulty that the floods add to the situation:

> "[Buru-making] was my source of income. My mom sells fish. All the dead ones she gives to me. I make them into buru. It was so hard, Oh my God. I would scale them, split them vertically. My hands got swollen…they also got punctured [by the bones and fins] but I'm used to it. I'm used to processing basinfuls of fish. Then I would still have to cook rice, a full pot…of course I gave birth…what should I do with my child…I had to [also] carry him/her to hush him/her…It's so hard right?...Whenever I thought about it, I asked myself, when will this hardship end? My feet were soaked in floodwaters, I was selling rice"

Hard work, accomplished in San Agustin through sipag at tiyaga, is a common ethic. Popular for instance, is the protestant ethic that considers hard work as a moral duty (Weber 2001); this was also argued to have encouraged capitalism. Hard work is also an ethical standard in non-Christian contexts. For instance, hard work was described as a moral discipline among the Jolo in Africa. Davidson (2015), in her work Sacred Rice, revealed how among the Jolos, citizenship is defined by hard work. They have used primarily rice cultivation as their way to show hard work. Despite the low productivity, they maintained the hard labor of rice planting to counter the concept of laziness. This was their way of being distinct in an egalitarian society. Previous research has also found that Filipinos associate cleanliness, industriousness, and perseverance with morality. For instance, in his research in a Philippine farming community, Borchgrevink (2014, 185) found cleanliness to be associated with "virtues of hard work, diligence and community

cooperation." On the other hand, he described hard work as a "dominant morality". For example, if a farmer succeeds, it means he did hard work, that he is moral and god-fearing. Also, it means the hard work, because of it being God-honoring, will have its returns. Considering "giving up the self" or altruistic practices is a form of Filipino self-actualization (Bulatao 1992: 275). Cleaning which is hard work, and hard work as giving up a part of the self also seem as self-actualizing traits.

E. Conclusion

In this chapter, I described how clean buru has become what delicious buru meant in San Agustin. The cleanliness of buru was measured through its smell and whiteness. I examined San Agustin's landscape of material and memory to answer how the deliciousness of buru came to be equated with cleanliness (or no smell and whiteness) and why this makes up a predominant discourse in San Agustin. I argue deliciousness is a material affordance of the white rice and live farm fish available in the village. The standard for deliciousness was also created from place, food and sensory memories. It was taste creation evading what evoked poverty and marginality. But the selection of what tastes good was also politically-mediated. It was shaped by modern/scientific sensibilities. It is also upheld as it functions to maintain social boundaries in San Agustin society.

Theory wise, this chapter reiterates landscapes having memories as demonstrated by remembrances of bounty, disasters, people, poverty and marginality through places, material/food and senses. Also, it echoes senses co-evolving with social orders. But I add that it also responds to environmental reconfigurations–a process I showed through the creation of taste from the new, reconfigured landscape.

So far in exploring the taste and external landscape dialectic, I have covered how buru taste is shaped by the fermentation landscape. In the succeeding chapter, I show the other direction of this relationship, how the clean buru standard facilitated buru materiality change.

CHAPTER 7

"HAUTING" AND HAUNTING IN THE FERMENTATION LANDSCAPE

How does taste figure in the continuity of a tradition? This chapter continues with the discussion of the dialectic relationship between taste and the rest of the landscape. The previous chapter revolved around how *buru* taste was shaped by the landscape and memories embedded in it. This chapter talks about how taste, specifically the delicious or clean buru standards have directed the continuity of the ferment in San Agustin. I argue that buru practice took the direction of what I refer to as "hauting." I further propose that hauting leads to the continuing dominance of the clean buru in San Agustin society and even possibly beyond.

"*Haute*" means fashionable or high class (Webster n.d.). Applied to cuisine, to haute means to make cuisine high rather than low art. Haute cuisine is better understood compared with its antithesis—regional cuisine. Revel (1992) describes regional cuisine as "being linked to the soil, of being able to exploit the products of various regions and different seasons, in close accord with nature, of being based on age-old skills, transmitted unconsciously by way of imitation and habit, of applying methods of cooking patiently tested and associated with certain cooking utensils and recipients prescribed by a long tradition" (149). While regional cuisine is unconsciously transmitted, haute cuisine, or what he also calls erudite cuisine, is "deliberately created" (149), through "invention, renewal, experimentation" (148). Regional cuisine may be used as its base (Mintz 1996).

Trubek (2000) describes how making cuisine haute was a strategy employed by French chefs to elevate their profession. According to her, after the French Revolution, French chefs who were displaced from their royal appointments had to rebuild their careers in the public sphere. French chefs were undervalued because the nature of their kitchen work was not professional enough. To build their profession they engaged in multiple activities like creating culinary guilds, starting cooking schools, and food writing. They also made the cuisine haute. Trubek argues this not only elevated French cuisine to an international and superior cuisine but it also elevated chefs' status to professionals with knowledge capital. Informed by Bourdieu, she explains knowledge capital is a non-economic form of capital. According to Bourdieu (1986), non-economic forms of capital, such as social and cultural capital, circulate in societies where economic capital is not very high. He explains that these forms ultimately contribute to economic capital and consequently upward mobility.

I argue the buru-making process took the haute direction as it produced a haute buru and producers/consumers with increased capital (both economic and non-economic). The clean buru taste used for commodification, differentiation, and heritage-making guided these processes. This chapter is organized into three parts. First, it describes how commodification, differentiation, and heritage-making have contributed to a "haute buru". Second, it discusses the unmet economic/cultural capital aspirations in the village and how clean buru-making rose to a more respectable position contributing to the achievement of these aspirations. This chapter concludes with what prognosis there is for the buru landscape, considering all the landscape changes. It specifically proposes how

clean buru will predominate and how stinky buru will be further marginalized in the long term.

A. Haute Buru: The Reinvention of a Tradition

There are different ways of transforming food to haute food. These include ingredients and processes like "[r]are products, equipment and the sheer outlay of time and money for training, the hours required for constant invention and incessant promotion" (Ferguson 2005, 97). I argue that buru has become haute as its clean version resonates with the characteristics described. In this section, I show the processes that have made buru haute. This is a biography of buru that I reconstructed, drawing mainly from participatory observations, video recordings and semi-structured interviews with commercial buru-makers. This represents an in-depth study of five active commercial buru-makers in San Agustin. It should be noted that all of these participants produced homemade buru regularly in their households and sold it locally or nationally.

B. The Efficient Buru: The Ferment of Commodification

A good place to start discussing the processes that re-made buru are the procedural changes buru experienced since its commercialization. As discussed in Chapter five, buru began as a household endeavor and became a commercial industry. The increased popularity of San Agustin buru in turn increased demand. Further, I highlight changes introduced by efficiency. Efficiency, along with precision and objectivity, is a legacy of the technologically dependent industrial revolution (Zhang 2013). Efficiency appears to be a common business sensibility in the *pinak*. This was seen among farmers choosing rice and other crop monocultures and the *curimao*

[combine harvester] to facilitate harvests and land preparation, minimizing their labor. In commercial buru-making, efficiency was necessary to avoid wasted effort or avoid missed selling opportunities. I heard from two buru-makers how their worst experience in the business was when they ran out of buru to sell. Using the basic recipe, one that ferments in about seven days to a month, they might not have any ready when a customer comes. On the other hand, they might have over-fermented buru by the time a customer buys one order. I argue that the difficulty of making this ferment available on time issues has led commercial buru-makers to make buru using a two-step fermentation method. As described earlier, this involved the heavy salting of fish and a little rice and allowing it to ferment for 30 days to a year. This is finished by removing the rice and/or adding more rice and letting it ferment for a day or two.

With this kind of buru, a large supply of buru may be prepared in advance in anticipation of unexpected buyers without the risks of wastage, and thus added costs (Figure 7.1). This brings to mind Heidegger (1977) who argued that to meet the demands of efficiency, both humans and resources are “challenged forth”; that is, much more than usual is demanded from them to make products fast and allow them to make extra stock for future use or what he calls “standing reserve”.

Figure 7.1. Pails of buru (balaksina) ready for customers.
(Photo by author)

Efficiency is not what would normally be thought of as haute. Thinking about efficiently made commodified goods brings to mind more run-of-the-mill products. But this is not the case for buru because the efficient two-step method entails more ingredients and more skill. For instance, it requires more salt. In contrast to the austere way of doing things in the past, commercial buru-makers in the study talked about how they should not scrimp on ingredients. It was common to hear buru-makers and non-buru-makers alike saying *"basta emo pagtipiran asin"* [for as long as you don't scrimp on salt] to ensure the product is successful. For this reason, some buru-makers criticize others. VIN for instance says how other buru-makers make bad buru because they are trying to save money. She said *"Magtipid la reng aliwa uling magastus"* ["Others are trying not to spend so much because it is expensive"]

The two-step method is also deemed valuable because it can be fermented or kept for a long time. As they say *"kontoru lalambat ya, nyanyaman ya"* [as it ferments longer, it becomes more delicious]. This time element further qualifies the clean buru as being haute. Buru that cannot last for a month or a year is looked down on; they are thought of as *"pemiraplan"* or rushed.

The resulting product is usually whiter and less smelly as the rice with the fish exudate is thrown away or weakened with the addition of more rice. This is true even if rotten fish is used. The development of this process may actually have also contributed to the setting of clean buru standards, in addition to live fish and white rice use.

C. Differentiation by Pinak-style Sanitation

As argued in Chapter five, the commercial buru-making industry has grown. Beyond the six buru-makers in the wet market, some others sell from their homes. This has meant more competition.

Callon et al (2002), theorized that in competitive markets, businesses tend to redefine their products. It is a continuous cycle of making similar yet different products, different enough to attract sales; this is referred to as the economy of quality (Callon et al 2002). Buru-making demonstrates this phenomenon. Its quality differentiation resonates with the concepts of "hyperesthecization" and "mimetic excess."

1. More Inodorate, Whiter and Brighter: When More is Better

Hyperesthecization is a concept Howes (2005) associated with late capitalism. This is the process where "hypersensory" environments were deliberated created to attract customers in a heavily competitive market. In San Agustin, heightening the

sensory stimuli of buru in terms of whiteness and inodorateness appears appealing to consumers. The conversation below with two middle-aged women demonstrates the advantage of these intensified traits:

> SIV: No, they want to have the malagung abias [good/prettier rice], before you can…cook whatever rice. Now they choose rice used for buru, if it's not very white then they won't [patronize it]… There are many competitors here now.
> BED: We already had commercial [rice] for a long time, but, because people didn't have money to buy it, NFA got popular. But the commercial rice became abundant…[around 2000] People made their buru prettier, it's like a competition. They had different techniques for buru…Now they choose ingredients to make it fragrant."

Another example of hyperesthecization is the heightened pink color of buru with curing salts. It has been a long-established practice for commercial buru-makers to add saltpeter and prague powder[32] to firm-up the fish and make it *malare* (pinkish). It seems to me, these additions appear as a useful covering up of the rotten fishes' decaying body. This practice remains common despite how most of the fish used are no longer rotten. Given this, the fish in the buru ends up appearing bright pink and being tougher.

Another way to think about these hypersensory tendencies is through mimetic excess. Mimetic excess is said to be in force when "bodies mimic, yet the result is not without parody" (Taussig 2020, 8). A society accentuates an aspect of cultural production in the process of trying to get away from something that is oppressing them. It is known by the community that clean buru is ideal and this is usually accomplished by using live fish and thoroughly cleaning the fish. In the process of exaggerating cleanliness, they similarly intensified the inodorateness, whiteness, and brightness. Again, this is

[32] Saltpeter was banned in the Philippines for its carcinogenicity; prague powder was used as an alternative.

accomplished by the two-step method where the removal of the rice exudate eliminates the fishy smell, leaving the buru with more lactic acid than fish notes. In a similar manner, the addition of curing salts was mimetic. These were added to make the fish bright pink in color[33] or to look more alive. (Figure 7.2)

Figure 7.2. Buru prepared with curing salt has more pinkish fish. (Photo by author)

This differentiation by heightening sensory stimuli (whether by hyperesthicization or mimesis) contributes to making haute buru. Haute cuisine is usually something that "disdains convention and prizes individual activity," something that is "more dramatically different," and something that is "incongr[uous]" (Ferguson 2005:94). In the

[33] While there are buru-makers using saltpeter and prague powder, there are those who are against the practice

case of buru, the whiter and less odorous products are similar enough to what is known as buru, but different enough to be special.

2. Heritage-making in a Kapampangan Landscape

Buru-making may have been practiced for a long time in San Agustin. However, their embrace of the product as their heritage seems to have come in the late 20th or early 21st century. It is quite unthinkable for buru to be embraced as their heritage considering it had a bad reputation prior to the boom of commercial buru. It can recalled how San Agustin locals were looked down on in the past because they were buru-makers. Older accounts of Candaba did not mention or promote buru as much as they have done in more recent accounts. For instance, Henson (1953) talked about agricultural produce in Candaba like rice and fish but not buru. It is important to note that it was in the 1960s when Apung Malta started her buru business, but it seems it was only in the 1980s when buru from Candaba became popular. This was the decade when Candaba Mayor Gonzalo Martin held office. He was the earliest mayor I heard that promoted it. In the same decade, buru appeared in a Pampanga Day Souvenir Program (Aldo Ning Kapampangan Souvenir Magazine 1981). By the 1980s, San Agustin residents had also started to complete college, so degree students contributed to a buru buying public. By the 2000s, more buru-makers had risen to the ranks as clean buru-makers.

What are the implications of buru being a heritage product? Heritage products have been documented to have undergone the process of heritigisation or heritage making (Brulotte and Giovine 2014). In the heritigisation process, objects, places, and practices are transformed into cultural heritage through the attachment of values to them (Sjöholm 2016). This may take the form of construction based on imagined communities, terroir,

and invention of tradition (Brulotte and Giovine 2014). In Brulotte and Giovine's Edible Identities (2014), contributors observed how the heritigisation of food reconstructed food in such a way that it was not necessarily true to the way that people lived or have lived in the place. In some cases, selecting heritage foods showed signs of hauting. For instance, Grasseni (2014) documented how in the selection of which cheese to promote as their own, Alpine Italians chose another cheese over the local and traditional *tallegio* cheese. As she explains it, Tallegio cheese would not make it as heritage food because it is made in a simple manner. In Mexico, authorities chose chef-inspired recipes instead of peasant recipes to represent Oaxacan food to the world. With the inscription of traditional cuisines in UNESCO's intangible cultural heritage list (ICH), food undergoes hauting through their adoptions in restaurants (Sammels 2014). The ICH list is a listing of priority intangible cultural heritage [34]for conservation (UNESCO 1992-2023b). In this sense, with buru's becoming a heritage product, it is likely to have been reconstructed to meet specific cultural objectives. This begs the question, what indeed are the cultural objectives of heritage-making in San Agustin.

The term heritage is both symbolic and assertive of identity (Smith 2006). This can mean different kinds of identity. Smith (2006, 4) clarifies: "[a]t one level heritage is about the promotion of a consensus version of history by state-sanctioned cultural institutions and elites to regulate cultural and social tensions in the present. On the other hand, heritage may also be a resource that is used to challenge and redefine received values and identities by a range of sub-altern groups." Reading the fermentation

[34] Intangible heritage includes oral traditions, performing arts, social practices, rituals, festive events, among others (UNESCO 1992-2023a).

landscape of San Agustin within the intersection of heritage and identity, I find that the performance of the Kapampangan identity surfaces.

Transforming buru to haute food by creating it through a longer, more complicated, and expensive process is also reflective of Kapampangan tendencies. While the recreation of buru taste preferences that were present during this research appears as a modern project, these taste preferences also remain grounded in ethnic sensoria. This section details what these senses are by drawing from Kapampangan-centered literature and interviews from culture bearers.

Kapampangans are known for the stereotypes: *mayabang*, *galante* [a type of generosity that shows no stinginess] and *magastos* [spendthrift] (Mendoza et al. 2019). In the Filipino vernacular, mayabang means a proud or even boastful person. The word mayabang does not carry as much negative connotation to Kapampangans as the word does to outsiders of the culture (Pangilinan, personal communication, December 6, 2006). In a discussion with members of *Amanuan Sisuan*, a Kapampangan culture advocacy group based in Angeles City, they explained *yabang* [the rootword of mayabang] as confidence expressed in terms of *porma* or the way one carries himself through his/her appearance and clothes. It also manifests in their being *mangye* [talkativeness] or being outspoken to the extent of being *mapagsisti* [bashers]. Also, being mayabang is the Kapampangan way of doing things well and doing it with pride. This goes well with the other traits galante and magastos. This proud way of doing things is exemplified in Pampanga's crafting of Christmas Lanterns. Anthropologist Dominique Juntado (2006) shares how lantern craftsmen say they create these pieces *"para pagmulalan da la,"* that is, to impress and awe people. Kapampangan's flair for creating spectacles is expressed

in food and hospitality. They made a mark in Philippine culinary arts because of their *magarbu* [grandiose], *masangkap* [not scrimping on ingredients] and *maprosesu* [elaborate] ways. Historical accounts of Pampanga capture the opulent culinary ways and hospitality of the Kapampangans through the mention of parties for foreign dignitaries given by the elite families like Capitan Joaquin Arnedo Cruz' and Philippine Assemblyman Monino Mercado's in Sulipan and Mexico, respectively (Larkin 1993). Of these events, more documented were the events hosted by the Arnedos of Sulipan (an old Pampanga town) which were specifically immortalized through Chef Gene Gonzalez' book "Cocina Sulipena Culinary Gems from Old Pampanga." In the book, one of the Arnedo descendants, Macario Gonzalez, describes the hotel-like accommodations for the Arnedo partygoers. Guests were provided with perfumes and top of the line period furnishings, as well as being personally attended to by valets. Meals were multi-course and featured wines from France and Spain, along with ice from the United States–rarities in the country during that time.

Some locals attribute this confidence to high culture, culture bearers particularly trace such sophistication to their Royal Bornean heritage, from their Spanish colonial past and to their strong local agricultural history (Andy Alviz, personal communication, July 14, 2017). Kapampangans live up to, perform and distinguish this mayabang-galante-magastus history/identity. A case in point here is the "*Mayabang* Tour" organized by a culture bearer of the province. I have heard some informants and other locals referring back to their Kapampangan identity when talking about their cooking and hospitality. They would often describe their cooking as being more complicated. Hospitality-wise, they would often distinguish themselves from the Tagalog, especially their townmates in

the Tagalog Region. For instance, ANT shared: "here, the Tagalog practices [of those in the Tagalog region] are not like those here. Because they have already been influenced by the Tagalogs there [in nearby province Bulacan]. Here people are mayabang, or not exactly mayabang but Kapampangan. Kapampangans are better at receiving visitors. Because sometimes I find myself expecting the same standards from them…Just like between the American and the Filipino, Filipinos are better at accepting guests, right?...It's the same. There are degrees of differences. It seems like you are more at ease when you are with a Kapampangan."

Clean buru standards allow for the expression of the traits mayabang-magastos-galante-the spectacle-making identity. This is as clean buru is more complicated, expensive, and consequently, haute.

D. Buru-making and Buru-makers: The Alternative Profession and Professionals

Traditions are invented (Hobsbawm and Ranger 1983). Concurrent with the invention of traditions is memory and identity transformation (Antze and Lambek 1996; Mills and Walker 2008). Antze and Lambek (1996, xxix) elaborate: "if there is an "invention of tradition" there may be equally and "invention of biography." Informed by this, I argue that clean buru standards and buru-makers' re-invention of the buru tradition created an alternative profession that helped locals achieve capital (including cultural and specifically knowledge capital). I demonstrate this by first presenting the general need for capital in the landscape. I then discuss how clean buru-making has entailed much skill and has legitimized buru-making expertise, among its other achievements.

1. Capital in the Fermentation Landscape

"Asensado na la… Pangaragul da na reng bale San Agustin." [They have improved economically, their houses have gotten bigger].

This was not uncommon to hear when I tried to open conversations about San Agustin. The hard work of San Agustin locals is not unnoticed. Insiders and outsiders boast about how the village has improved a lot financially. Observers say, their houses have become bigger because they were able to go to school. San Agustin's past reputation as uneducated, dirty, and stinky is hardly heard. As one informant explained, "that stinky [reputation] was erased, now when they say San Agustin, [they say] it is now good houses." Such a statement hints at the visuality of society in the expression and appreciation of cultural capital. Cultural capital is a form of capital like economic and social capital. It can be in the form of objects like writings, monuments, machines (Bourdieu 1986). As earlier mentioned, the completion of a college degree is very important in San Agustin. It is a huge form of cultural capital recognized in the village. It gains currency in conversations. It was pointed out earlier how locals would always have a way to inject it into non-related conversations. But this cultural capital is also imprinted on the landscape through home displays and the display of homes as well. In the homes, school certificates, medals and trophies from all grade and year levels are prominently displayed. Their successes in sending their kids to school are also communicated in the neighborhood through tarpaulin congratulatory posters with the graduation photo of their children, along with their names, their school, and their degree.

It is, however, building projects that provides huge advances in cultural capital. This would usually be their big, concrete houses–their grand trophies for not just the

students' hard work in finishing school and making a living, but also the parents' hard work for successfully sending their children to college (Figure 7.3). Building projects beyond the home were also productive sources of cultural capital. For instance, San Agustin became popular when the villagers were able to build their own village chapel without any help from the local government. San Agustin resident DIB, having donated to this church-building project, elevated his name in San Agustin. He shared "But you have not asked ma'am, … my child donated PHP50,000 [US$1000] to the church. Since then, my last name appeared. Each time somebody met me they say 'ah, that person gave P50,000…' How little they saw me before [but now I] got a bit higher [in San Agustin society]."

While it is true that the San Agustin landscape now has more professionals and concrete houses than in the past, the popular perception of economic advancement in the village is not inclusive. The household survey conducted for this study reveals only 13% of the survey population (N=906) had a college degree (Table 7.1). The rest finished either elementary or high school. Almost a quarter (21%) of the surveyed population was jobless. Less than 50% of households (124 households or 48%, N=255) was primarily dependent on wages and about 60% of the households were dependent on government financial assistance. Many locals heavily depend on loans to get by.

Table 7.1. Educational Attainment in San Agustin Based on Household Survey Data (N=906)

Educational Attainment	Number	%
Elementary School	384	42.38
High School	363	40.07
College	114	12.58

Other than financial insecurity, emotional insecurity was also present. Not finishing school was a lingering frustration. Even with other successes, not finishing school or not being a professional made them feel like second-class citizens. This is something I especially felt talking with my landlord and landlady. Many times they praised me saying *"ang galing mo naman"* ["you're so amazing"] as they could not get over my having a Bachelor's and a Master's degree, now working on a doctoral degree. In one more serious conversation, my landlord expressed, *"Atin kang ali ku akwa"* ["You have something I can never have"]. He explained "whatever persistence he was going to do, it was impossible to possess this intelligence because he doesn't have anywhere to get it from." This perceived importance of a profession (or to be a professional) was also emphasized to me by a culture bearer originally from San Agustin. He told me how he, being a college graduate, was highly respected by others because he had a professional title that money can not buy. This is what he told me as we were talking about his relatives who succeeded in business but continued to be insecure because of the lack of education. He said: "If you get to talk to [to my cousin], [they say] regardless how much my money is…I can't achieve the intelligence of *Koya*[35], I cannot defeat him. It am still

[35] A Kapampangan term used to address an older brother or older male.

envious because whatever I do, I do not have a title. I have money but I don't have a title…That's the significance of getting a college education. It's the title, that cannot be bought…"

With all this said, finishing school remains the dream for most locals. Or at least, their dream for their children. Because of the preceding cases of house-building among those who made it in life, the aspirations have gone higher. Village elder ANT explains: "Around fifty years ago, if a person was able to finish college, he/she has made it…One of the surest ways is to complete school so people will say one has made it. But now, the parameters have changed. How will they know one is educated, one made it? That's not enough… They say. 'car-acter and pera-sonality'. *Pera* [meaning money] and car… One has a car, a nice house, one has money. Those are the parameters now to say one made it. Today, if people see that one's house is not nice and he/she does not have a car. They won't call that person *asensado* [economically-improved]".

2. Cleaning Up Buru-Making into an Alternative Profession

Despite the perceived large scale economic improvements in San Agustin, a general lack of financial freedom and education continues. Aspirations for economic and cultural capital–or the delicious life–remain. I argue that clean buru-making became an alternative means for performing identities contributory to economic and cultural capital. In the French case, haute cuisine, along with the establishment of culinary schools, publication of cookbooks/food writing articles, and development of guilds, co-produced the professionalized culinary arts (Trubek 2000). In San Agustin, the clean buru-making skill or the buru hauting came along with local versions of legitimizing -- which gave the craft a better reputation. The elevation of buru-making into a clean taste and practice has

given commercial buru-makers knowledge capital and thus a higher place in society. This section demonstrates this through the concept of legitimization. Legitimization *"*is a generalized perception or assumption that the actions of an entity are desirable, proper, or appropriate within some socially constructed system of norms, values, beliefs, and definitions*"* (Suchman 1995, 543). Legitimization has been used to promote food experts (Hugol-Gential et al. 2019) or food as plant foods (de Boer and Aiking 2020), and national cuisine (Wilk 1999). Legitimization takes many forms. Deboer and Aiking (2020) summarize the ways that legitimization may occur, stating that they can bea) authority-, b) morality-, c) rationality-, and d) story-based. They elaborate that authority-based legitimization may come from individual or institutional authorities of tradition/custom, laws and regulations, and influencers. On the other hand, morality-based legitimization deals with the reinforcement by moral values or moralized practices. Rationality-based legitimization may be based on goals, explanations and predictions. Story logic is legitimization by myths or stories. In the case of buru-making in San Agustin, legitimization is drawn from the materiality of the clean buru; the visibility of buru-makers' trade and the non-economic fruits of their buru-making craft's; and their media coverage.

ELN, one of my elder informants, once said, *"mabiasa kang mamuru nung taga San Agustin ka"* [You would learn how to make buru if you are from San Agustin"]. She expresses how being from the place makes buru-making second nature. However, this does not seem to be the case for clean buru. Not everyone succeeds in producing clean buru, particularly the non-stinky one. Take the examples of several women participants who wanted to make buru for their family but failed. BEK shares "Oh my God that was

long time ago, in the 80s, I never tried making buru again. I only tried once. But because the fish I salt rots. When the fish you salt rots, you should not make buru. They tried eating them but the buru bites the tongue, I just threw the buru away." VIV tried a number of times but quit. She explains *"mabuluk ku gamat"* [my hands are stinky]. ELB was looking for a business to help her husband earn for the family. She tried making buru two times, but made stinky buru on the second try and got much ridicule from her kids because of the smell. She gave up on it. I also tried making buru when I was in the field. Out of three attempts at making buru during my research, I was not able to make clean buru. We all made smelly buru instead. Recognizing the challenge of making clean buru and the need for skill (along with the necessary industriousness and perseverance) to successfully make it, made clean buru itself a legitimizing entity for buru-makers.

I suggest the visibility of buru-makers and their profit from buru-making is one of the factors that proved their worth as buru-makers. Commercial buru-makers are more visible to the public eye compared to their household buru-maker counterparts through the visibility of their customers, the visible signs of economic success like homes, and media coverage that comes with being recognized as a skilled buru-maker. The visibility of their customers or sales speaks to their success at producing good buru. The son of Resty Balagtas explains his dad's buru this way: "His buru really got popular…Probably because it was made clean. It is delicious. He has a lot of *suki* [repeat customers]." Other Buru-makers told me about their high-status customers, ranging from customers with cars to those who sold to governmental staff of Philippine presidents such as Presidents Marcos and Macapagal. In a community attuned to signs of progress like concrete homes and vehicles, the buru-makers' economic success, and by extension, skill at buru-making,

was also visible. For example, buru-maker JAB told me that he wanted to work in law enforcement but continued with buru-making indicating, *"madaling kang ating pakit"* ["It's easy for you to show something"]. He was referring to how it is more possible to save up, invest in something and have something to actually show. He gave their concrete house as an example. When I asked ADD about how buru changed her life, she had to invite me to her house. Her concrete house was her evidence. Like what commercial buru pioneer Apung Malta showed Candaba society, commercial buru-makers in San Agustin were able to show the watching public how the profession can not only send children to college but also transform their small wooden houses into big concrete abodes.

Also legitimizing commercial buru-makers' expertise is their media exposure. Today and in the past, popular buru-makers have been featured in newspapers or TV Commercial buru-makers shared with enthusiasm that they had appeared on popular shows like "I-Juander" and "Kapuso Mo Jessica Soho." Among the buru-makers, Resty Balagtas had the most TV appearances. One informant COM explains his popularity was "because he was interviewed by Jessica Soho." She also said "He did not get attention before. He was not that popular before, he was just known in Candaba. Then he got popular, he was featured on Jessica Soho right?...Then many more buru-makers mushroomed." He was featured at the Candaba market and then referred the media toward other commercial buru-makers in the area. Within Candaba, or even more broadly the Philippine context, to say *"medyaryu ya"* (he/she was featured on the newspaper) or *"me TV ya"* (he/she was featured on TV) or recently *"me-Jessica soho ya"* (he was featured in Jessica Soho's show) is very important and signals attention, success, and skill.

3. Commercial Buru-makers: The Local Buru Experts and Tastemakers

In this chapter, I argue how clean buru is akin to haute cuisine in the sense that it co-produced knowledge capital among its practitioners. In the case of commercial buru-makers, the clean buru-making process produced local experts and tastemakers. These in turn transformed buru-making from a belittled occupation to a respected one.

This insight came earlier during my fieldwork and was an object of my curiosity. When I asked about the expert buru-makers in town at the onset of my research, the common response I got was "*mengamate na la"* ["they're all dead"]. With further probing, town locals commonly pointed me to the pioneer commercial buru-makers like Apung Malta and Apung Simang. After asking them for expert buru-makers in present time, I commonly heard the remark *"dakal no reng mebiasa"* [many have already learned]. They also usually pointed to Dalaga, a buru vendor in the palengke as the expert (Later on I found out that this is popular buru-maker Resty Balagtas' wife). I would ask for names of buru-makers who only made buru for home consumption, but people could not name many people.

I went around San Agustin accompanied by a *barangay tanod* [village guard] for a quick survey to learn who was making buru for household consumption. I approached about 20 households. When I asked if they were making buru, many said "no" even if they were actually making buru for their households. It was only upon probing that I learned that some of them were actually making buru for their family. Their understanding of the question "Are you making buru?" was "Are you selling buru?" Upon telling them how interested I was to know more about their practice, they pointed me to the palengke. They said *"detang keng palengke biasa la"* [those in the palengke

are biasa]. *"Biasa"* literally means learned, intelligent or skilled. This is applied to describe both head (i.e., academic) knowledge (e.g., science, math) and body knowledge (e.g., cooking, piano).

In both situations, I picked up the prominence of commercial buru-making and the invisibility of household buru-making—that the expertise of buru-making was the domain of the commercial makers. Why were they considered experts or biasa in buru-making? It was puzzling how they said there were more skilled buru-makers now when buru-making was always a craft in the village. My immersion in place revealed how biasa or skill was associated with clean buru.

Their expertise led commercial buru-makers to their being tastemakers. "Tastemakers are those individuals who have attained enough cultural capital to empower them to determine if new artefacts, novel ideas, or creative acts are recognised as valid and made available for future iteration" (Khan et al. 2015). The tastemaking influence may be most seen in the example of Kong Resty. Kong Resty humbly explained how in his earlier years as a buru-maker, he was just imitating the buru-makers who preceded him. However, now, he says *"aku na ing pakyapusan da"* [I'm the one they are imitating now]. He says he was the one who made pricking of the fish eyes a fashion in buru-making. Others followed his lead when he started removing fish eyes to remove blood from those organs.

With clean buru considered a *kabiasnan* [skill] and buru-making experts, buru became a more dignified occupation or what I would call an "alternate profession." As discussed in the previous section, it used to be that buru-makers were at the lower rungs of society. From being referred to as *"mamumura la mu"* or *"they are just buru-makers,"*

they are now always described *"mebiyasa na la"* or *"ating lang sariling kabiasnan"* ["they have their own knowledge"]. Being called experts in turn honors the skill that others find hard to duplicate, along with the industriousness and perseverance that goes with it. Such knowledge capital not only provides opportunities for economic improvement but also poses as doable alternatives for the highly valued and aspired for college degree or the "professional status." Being a counter to mainstream professions and knowledge, it may well be what Scott (1985) calls a "weapon of the weak."

E. Hauntings from the Ghosts of the Fermentation Landscape

The previous chapters have shown and characterized how the fermentation landscape of San Agustin has changed. Despite and within these changes, I have argued how buru persisted and changed. The role of taste has been consistently important in its cultural transmission; however, taste itself was a shifting sense and memory.

In this last section of the dissertation, I ask, what is buru "becoming" into? The theoretical foundation of this research is the concept that landscapes and everything in it change. They are a "work in progress" and "unfinished" (Ingold 2007 and 2011).

The momentary synthesis for buru-making I constructed from my 2019 to 2021 fieldwork was one where clean buru dominated a range of buru including the more stinky ones. I write the future trajectory of San Agustin buru guided by the ethnographic data and inspired by the concept of "memory work," "hauntings," and "ghosts." I have earlier described memory as a process that "continually rewrites the meaning of the past, constructed within the context of the present" (Wertsch 2002 as cited by Smith 2006, 58). Societies employ memory work to rewrite traumatic histories (Mills and Walker 2008). This includes the hiding, intentional destruction, and abandonment of places and objects.

More recently, memory work has been theorized to have a more imaginative component, that cultures imagine and construct their past and select memories that would fit the history they envisioned (Kilroy-Marac 2019).

Memory work is a remembering and forgetting process (Mills and Walker 2008). These two are inevitable facilitators of each other (Forty and Kuchler 1999). Antze and Lambek (1996, xxix) explain: "One is to argue that forgetting is inevitable – memory is simply, like the scarred face of the rock, what remains. The other is to say that the past is a treacherous burden, which could crush us if we did not continuously divest ourselves of its weight. Forgetting here is as much an active process as remembering; both require effort and energy. Forgetting and remembering are an "intellectual labor" that creates knowledge (Samuel 1994, x). As memory has motives, remembering and forgetting are not aimless activities.

Examining buru within an ecology of memory, its continuity and material and sensory change may be seen embedded within an on-going process of remembering and forgetting. Through this lens, I put forward clean buru as a memory work used to build economic and non-economic capital to re-write the personal and collective identities of San Agustin locals. It similarly is a remembering and forgetting process. Between the two co-existing buru practices, clean buru is more commemorative of the pinak, the non-clean burus being in the process of forgetting. I explain this using the concept of a memorial and ghost.

1. Clean Buru: The Memorial to the Old Pinak

I liken clean buru, most of the buru available today, to a memorial. A memorial is "something that keeps remembrance alive; such as a monument; something (such as a

speech of ceremony) that commemorates; keepsake, memento" (Merriam Webster). .In memory studies, however, it is recognized that memorials are commemorations of what is no longer there. For instance, Pierre Nora (1989) laments that because there are no more "real environments of memory" [milieux de memoire], societies commemorate instead "lieux de memoire" [sites of memory]. By saying real environments of memory, he (1989, 13) refers to "memory… which has taken refuge in gestures and habits, in skills passed down by unspoken traditions, in the body's inherent self- knowledge, in unstudied reflexes and ingrained memories, and memory trans- formed by its passage through history." In contrast, he (1989, 13) described sites of memory as "archival…[i]t relies entirely on the materiality of the trace, the immediacy of the recording, the visibility of the image… The less memory is experienced from the inside the more it exists only through its exterior scaffolding and outward sign".

Clean buru resonates with a memorial. Locals treasure buru because it nourished their families and the families before them. It was their food in times of lack and their food during feasts. Buru was the passport to a college degree and a better life. In essence, it is part of their personhood and identity as Candabeños. Clean buru remains as a celebration the fruit of the pinak despite the changed swamp—one characterized by the depletion of wild fish, the domination of farmed fish from nearby villages, the delocalization of harvested rice, and the market's flooding with commercial rice. To continue the buru craft, commercial buru-makers embraced this new material landscape, navigated through its memoryscape, and put in much hard work. This place-based reinvention made it haute, a version perceived better, not to mention more expensive. The

resulting clean buru enabled them to compete with the market, sell, financially improve their lives, and perform desired identities.

Ironically, while a memorial is supposedly a mnemonic for something, it is said to be the "first stage of forgetting" (Koselleck 1979 as cited by Rigney 2005). Connerton (2009, 29) explains: "[t]he relationship between memorials and forgetting is reciprocal: the threat of forgetting begets memorials and the construction of memorials begets forgetting. If giving monumental shape to what we remember is to discard the obligation to remember, that is because memorials permit only some things to be remembered and, the exclusion, cause others to be forgotten." If there is anything clean buru pushes into oblivion, it is likely the stinky buru.

Different parts of the landscape prompted this clean buru. In Chapter 3, it was discussed that some household buru-makers stopped making buru because it was already available in the market and they had jobs/income to purchase it. Some also stopped because they say there are no more wild fish from the *pinak*. These particularly meant the patronage of clean buru that was usually sold by the commercial buru-makers. It has been pointed out in Chapter four that the new ingredient landscape and the landscape of memories shaped the standard for the clean taste of buru, and consequently, buru. In chapter seven, I showed how clean buru helps in the performance of skilled identities and ultimately, the achievement of economic/cultural capital among commercial buru-makers. Considering how these circumstances are likely to continue at the rate materials and memory are circulating in the swamp, clean buru is likely to increase in dominance and may ultimately replace stinky buru.

2. Stinky Buru: Ghost of the Fermentation Landscape

Tsing et al. (2017) argue that landscape changes are not without material traces. They (2017, G2) say "[e]very landscape is haunted by past ways of life" as previous landscapes leave their ghosts behind. With this definition, buru, that is stinky buru, may be described as a ghost. It is the remnant of the pinak of the past. It is a material memory of redolent wild fish history, locally harvested/milled rice, NFA rice, and traditional economy. According to Tsing et al. (2017, G8) "…"there are also ghosts we cannot see and those we chose to forget. They don't sit still. They leave traces; they disturb our plans. They crack through pavements. They tell us about stretches of ancient time and contemporary layerings of time, collapsed together in landscapes." Stinky buru resonates much with these ghost traits. Stinky buru is evocative. It is not very welcome. Using the words of Douglas (1966, 35) for dirt, stinky buru is a "matter-out of place." It is matter from another landscape in another landscape. Why do I say it is out of place?

The landscape that used to support less strict standards of deliciousness is no longer in place. With the swamp being less inundated, there are fewer wild fish. Such an infrequency of floods paved the way for land-based transportation and thus more access and opportunities for fish trade. As a result, more wild fish are taken out of the swamp. Thus, gone are the days of wild fish abundance (whether fresh and rotten) which initiated buru-making in the home and supplied commercial buru-making. Other than the wild fish being scarce, what also changed was the social landscape. Hardship and aspirations for the good life reconfigured society to equip their locals with more college education. Sending kids to school, in turn, helped commercial buru-making prosper. Schooling, not to mention the village's increased openness to the outside and virtual world, reconfigured

human senses from being more appreciative of a plethora of food to being more finicky. All that to say is, all the disconnections and reconnections in the changing fermentation landscape of San Agustin favored commercial buru-making, and consequently its invention –clean buru.

Considering how the landscape of material and memory facilitates the reproduction of clean buru and the out of placeness of stinky buru in the new landscape, stinky buru may be the buru that is in the process of being forgotten. On the other hand, clean buru stays, as it negotiates, through a new standard of deliciousness, conflicting material and sensory landscapes of the past and present. It maintains the beloved product of the place without the pain, and with all the economic and socio-cultural perks. It continues to promise and give San Agustin villagers the delicious life.

F. Conclusion

This chapter examined the agency of taste in the production and consumption of buru. In the process, it revealed that buru-making in the landscape is a haute buru-making process. This is as commodification, differentiation, and herigisation, guided by the clean buru standard, created a haute buru and elevated buru-maker's social position.

The chapter also gave its prognosis on buru's future. It projects the continuing dominance of clean buru as the current landscape of material and memory favors the reproduction of this clean buru. This makes stinky buru a "matter out of place" (Douglas 1966) in a marginal, vulnerable, forgettable position.

CHAPTER 8

CONCLUSION

This dissertation studied the cultural transmission of fermented fish in the village of San Agustin in Candaba, Philippines within the context of its changing landscape. This was carried out to grow anthropological theories primarily in the discourses of landscape, material, memory, and senses. Furthermore, this dissertation was done to contribute an anthropological perspective in the continuity and change of fermented foods in the promotion of sustainable diets.

This research was an approximately two-year ethnographic study carried out through ethnographic participatory observation, semi-structured interviews, life history interviews, archival work, food source visits, and food elicitation activities. It sought to answer the specific questions: a) How has the fermented rice landscape changed? b) How did the fermentation landscape change taste for *buru*?; and c) How did taste shape fermented fish practice? In this chapter, I present the highlights of the results and present their implications and the future research they suggest.

A. Concluding Summary

Buru was born out of the Candaba swamp landscape. The swamp's water cycle provided bountiful floodwaters and fertile soil which provided an abundance of fish and cantaloupes/watermelons. It institutionalized fishing and farming as the major ways of making a living.

Buru-making was the creative, industrious, and austere people's response to the excessive fish catch. However, this landscape changed. Since the early 2000s, the swamp flooded less frequently and for shorter durations. As the floods retreated, so did the quantity and quality of wild fish wane. By this time, the modern rice that was introduced in the *pinak's* fields in the 1970s had become the dominant crop in San Agustin and had further entered the delocalized rice market. More locals became preoccupied with buru-making as a livelihood. San Agustin locals engaged in the buru business to send their kids to school—a stepping stone perceived to allow an improvement to their lives. While some household makers and smaller commercial buru-makers refrained from making buru because of the lack of wild fish, bigger commercial buru-makers produced a steady supply of buru from the locally available farmed fish. These cultured fish were introduced to town as part of a larger national campaign to increase food production for food security. Some locals who got employed in non-agricultural jobs and income, stopped making buru and relied on commercial buru instead.

Despite the landscape changes, buru consumption and production continues in San Agustin. How did buru persist in the changing landscape? The examination of the fermentation landscape points out the following actors in buru-making in the past: wild fish, NFA or harvested rice and household buru-makers. In contrast, the contemporary buru-making landscape include: farmed fish, commercial rice and commercial buru-makers. Clearly, both combinations can produce fermented fish. Local knowledge has it that any kind of fish and rice can make fermentation proceed. However, they can produce different buru quality. With preparation methods equal, the use of rotten fish that were abundant in the past, along with darker NFA and harvested rice is likely to produce a

darker and smellier buru. Fermentation is faster for fish in more advanced stages of putrefaction. In contrast, the use of the farmed fish which are normally used live, along with whiter commercial rice, yield a whiter and deodorized buru. These quality differences however have implications in their acceptability. It should be noted that buru deliciousness, according to the current discourse, means clean buru. This means buru primarily should not have a smell, and secondarily should be white. On the other hand, stinky buru and dark buru are disliked as they are thought of as dirty.

This deliciousness has its landscape underpinnings. Such an aesthetic standard may be attributed to the material affordances of the landscape– white rice and live fish produce less smelly and whiter buru. Looking deeper into food/material, body and place memories, fish smell and darker shades are evocative of poverty and marginality – reminiscent of the recent poor and much earlier colonial past. Applying the concept of clean deliciousness thus functions to steer locals away from these difficult positions. Simultaneously, the same standard is used to inform them of the safety of their food.

This delicious standard buru practice appears to have ramifications in current buru materiality as cleaner burus particularly those made using the two-step method dominate the fermented fish scene. Examining current buru practice with the late capitalist modernity lens suggests clean buru standard guided the buru commodification, differentiation and heritigisation process towards the lengthening and complicating of its procedure, and heightening and exaggeration of sensory stimuli. Altogether, these produced a clean buru or what I also call a “haute buru”. Such clean buru was useful in making commercial buru-makers compete in the market and for buru-makers’ and

consumers' evasion of their poor and marginal past memories, performance of their desired progressive identities and the building up of their cultural capital.

In summary, buru persisted in the evolving San Agustin landscape but this continuity was accompanied by changes in the ferment's quality–one shaped by the place, ingredients, people and their taste. However, I argue the driving force for its persistence in changing landscapes is its deliciousness. Research on fermented foods has shown how certain fermented foods were seen as backward and marginalized because of their strong smells. Consequently, societies navigate this issue through various forms of negotiations. Buru, notorious for its smell, is a matter out of place, inferior, an object of disgust–as such, is in a precarious situation at risk for cultural ousting. The clean kind of deliciousness is the negotiation process that allows the ferment to stay in place. Clean buru allows the society to reproduce their beloved food without the painful memories of poverty and marginality. While producing delicious buru, they are also building their social identities and cultural capital. As such, clean buru continues to make life more delicious for locals of San Agustin.

B. Theoretical Implications of Studying Cultural Transmission in an Ecology of Memory

This study explores the persistence of buru in changing landscapes in order to explore anthropological theories on landscape and senses/memories, particularly the role that landscape plays in maintaining local culinary and food knowledge in modernizing landscapes.

Overall, this ethnographic work demonstrates the continuity of buru as a reflection of the landscape made and unmade. Specifically, it substantiates earlier

theorizations about the landscapes, material, memories and the senses. The stories of swamp, rice, fish, taste and buru demonstrate that these have lives, reiterating the constantly changing nature of the landscape (e.g., Ingold 2011). These were seen with the changing swamp cycles, the agricultural trajectories and peoples' careers in San Agustin. These landscape stories crystallize into the taste for deliciousness and buru practice, and as such echoes the encompassing, enfolding and interanimating relationships within the landscape (e.g., Ingold 2011; Basso 1996; Nazarea 2005). More broadly, the reconfigurations in the macro environments being similarly felt in other layers or scales of the landscape reiterate the ecological tenet of interconnection. That said, I suggest the continued use of ecological and biographical lenses in food studies.

The evocations of bounty, poverty, marginality from the swamp, bodies, and food also reiterate theories describing memory being embedded, produced and agentive in these sites (e.g., Casey 2000; Sutton 2001; Feld 1996; Antze and Lambek 1986). This is most exemplified by the clean taste for buru which was a lingering sense from years of buru-making but also one constructed in place with the materials and memories/sense of the time. Commercial buru-makers appropriated whatever resources there were, informed by memories deposited in the buru ingredients. Parallel with memory work and sensory production in other cultures, they evaded negative memories and adopted more progressive sensibilities. The role of taste in keeping the buru in place brings to mind a cultural memory akin to ecological memory which maintains culture in the presence of disturbances (Nazarea 2006). Overall, the examination of the cultural transmission of buru within the intersection of these theories on landscape, memory/senses and buru was a productive exercise. It revealed memories and senses not only as parts of landscapes but

also active ones. In view of this, I recommend the inclusion of the memory and senses in ecological studies, specifically for sustainability studies.

C. Practical Implications

1. The Future of San Agustin and Candaba buru

Materials are unfinished, Ingold (2007) claims. He explains, within a world of materials, materials each have their flows and processes. Materials "are continually generated and dissolved within the fluxes of materials across the interface between substances and the medium that surrounds them. Thus, things are active not because they are imbued with agency but because of the ways in which they are caught up in these currents of the lifeworld" (1). The unfinished nature of materials has been demonstrated in food scholarship. For instance, food quality standards have been shown to be constantly changing (Besky 2020), they are collaboratively shaped by their producers and consumers (Callon et al. 2002). I suggest that it will be so for buru. In this dissertation, I showed how the clean buru was birthed and became the predominant buru in San Agustin. In the following paragraphs, I discuss the directions buru is likely to take considering the continuity of specific landscape situations.

This study has shown how buru-making has increasingly become a commercial activity in the past years. Commercial buru-making remains as it brings a means, a hope for and a performance space for an improved life. It is also supported by a bigger delocalized rice system and a high yielding fish pond industry. But I also suggest that there will be more dependence on this buru considering the roles of commercial buru-making in the lives of San Agustin locals as well as circumstances discouraging the

household production of buru such as the lack of wild fish, increased buru availability in the market, higher employment among villagers, and the difficulty of preparing clean buru. In other words, household buru-makers may stop or make buru more infrequently. This is something observed in Pampanga kakanin production too by Fray Francis Musngi, one of the culture bearers of the province. He says food culture is preserved through commercial establishments. This brings to my mind the popular establishment Susie's, which has expanded widely, even outside the town, and which has catered almost every Kapampangan event I have attended.

The increased dependence on commercial buru would privilege the clean buru, facilitating its everywhereness in San Agustin. Its increasing presence foretells the embodiment of the taste and the marginalization of the smellier and darker buru. It has been mentioned how material reconfigurations have bearings on sensory perception (Seremetakis 1996). Such deposition of taste memory is demonstrated by psychological studies on food that show increased liking for food with increased exposure to it (e.g., Elmas and Kabaran 2023; Shicker et al. 2023).

2. Promoting Fermented Food as Sustainable

My dissertation shows how ecology can reconfigure food quality and that reconfigurations of food materiality bring another set of meanings and agencies (Saito 2007; Hojlund 2022). Aesthetics, specifically, taste has been shown to have environmental impacts. What could this be for buru? I observed varying tolerances for buru smell. The tolerance or taste for smelly or dirty buru allows the use of salvaged rotten fish as well blood and innards (that are normally thrown away) in the production of buru. On the other hand, the taste for the clean buru dictates the use of new ingredients

and the increased wastage. These point out one fermented food can have different variants with different sustainability effects.

In this study, taste has been shown as ecologically constructed, and that part of this ecosystem includes memories and the senses. In view of this, the taste for the sustainable may not be necessarily taught in the traditional manner but something that would have to be attuned to within an ecosystem. In the case of San Agustin, the clean taste for buru was developed by buru-makers embedded in a depleted fishscape with conflicting memories of poverty/marginality and sensibilities of progress. Informed by this, I suggest nutrition education and other nutrition interventions intending to promote fermented foods need to map these ecologies of material and memories/senses. This human ecological approach may expose broader issues that need to be addressed as poverty, marginality and environmental disturbances.

D. Avenues for Future Research

1. This dissertation followed the lives of multiple landscape constituents including taste. This research originally set off to investigate the perceptions of buru smell and how they correspond to the material and biochemical properties of the food utilizing objective data from Gas Chromatography Mass Spectrometry and other similar laboratory tests. This was however not possible during my research due to the global COVID-19 pandemic. I resorted to subjective current and retrospective sensory perceptions of buru, but these were not as productive in providing nuances in buru olfaction in the past and present. Thus, for future studies of buru sensory transitions, I recommend complementing actual perceptions along with objective and longitudinal measures as much as possible.

2. The taste for clean buru in San Agustin was constructed in avoidance of memories relating to poverty and marginality embedded in their place, food, and bodies. It would be interesting to know how fermented food-specific sensoria are shaped in developed cultures with distant poor and marginal histories. How do they enjoy their fermented food? Smelly or not? If they also prefer deodorized versions, how have their senses of smell been defined by the landscape?
3. This dissertation revealed the predominance of clean buru in San Agustin. Results show how this clean buru has been described bland by some study participants and how some also cooked the buru adding different kinds of flavoring ingredients beyond the traditional oil, garlic, salt and tomatoes. The bland buru is a sensory manifestation of the loss of umami resulting from the slower or less breakdown of fish in clean buru making. Considering the importance of umami in constructing palatable meals, it is interesting to see how meals have been reconfigured to compensate for the umami loss from the deodorization of one of its most popular condiments.
4. Other studies of the trajectories of the sensoriality and materiality of other fermented food vis-à-vis landscape are crucial considering the popularity of fermented food as functional foods and how slight alterations in their production have many biochemical, microbial, nutritional implications.

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APPENDIX A

LIFE HISTORY INTERVIEW SCHEDULE

Persistence of Pampango Rice-Based Fermentation Traditions
Life History Interview Guide

Session 1:
The life history interviews allow us researchers to get a glimpse of history not only of a person, but also of a place, an object, practices and others. In my case, I am interested to know about the change and continuity of rice and fermented rice traditions in the area. While we do not have to limit our conversations on rice and fermented traditions, thinking about these will also help in focusing what you want to share to those related to food, homelife and agriculture

Please feel free to tell me whatever you think is relevant. If you need me to remind you of what you need to share, please let me know. If something makes you uncomfortable, you may stop, we may reschedule or you may discontinue with the study if needed.

1. We can start by talking about your family. Can your share about your origins and background?

Probes:

- Place/culture of origin
- Family size, longevity and spread
- Livelihood and social status
- Religion
- Education
- Family traditions passed on
- Stories and Memories from forebears about them and about the place

2. If you were a book, what would be your major chapters in your life and the highlights.

Probes:
Why did you consider these the major chapters?
Which chapter is the most important and why?
How old were you and where did these happen?
What significant personal and historic events happened during these times?

Possible follow-up questions for the succeeding sessions. The progression of the sessions would depend on the pace of the initial conversations.

Session 2: Childhood stories

1. Can you tell me about your activities during your childhood?

Probes:
- What was your schedule like?
- How was your school experience? (e.g., clubs, favorite subjects)
- Where did you hang out?
- How did you spend your holidays?
- What were your household chores?

2. What was food and kitchen life like at this life stage?

Probes:
- What was your relationship with food at this stage?
- What food did you have most of the time (e.g., food rewards, meals, favorites, dislikes)
- Who prepared your family's food?
- What was your part in preparing the family food?
- Did you learn to cook? How (i.e., make fermented rice)?
- How was rice/fish/fermented rice prepared?
- What was your kitchen like?

3. What was your relationship with rice/fish/fermented rice at this stage?

Probes:
- What rice/fish did you have that time at home? How was it like? Where are they from? Who produced them?
- What rice products did you eat? Where are they from? Who produced them?

4. What were you good and bad memories of this time?

Probes:
- What did you look forward to?
- What were you afraid of?
- Who were the most important people during this time?
- What traditions do you remember from this life stage?

Session 3: Adulthood stories

5. Can you tell me about your preoccupation during your adult years?

Probes:

- What jobs did you take?
- How did you learn your craft?
- How did you spend your free time? With whom?
- How did you spend your holidays

6. What was food and kitchen life like at this life stage?

Probes:

- What was your relationship with food at this stage?
- What food did you have most of the time (e.g., meals, favorites, dislikes, prohibitions)
- Who prepared your family's food?
- What was your part in preparing the family food?
- Did you learn to cook? How (i.e., make fermented rice)?
- How was rice/fish/fermented rice prepared?
- What was your kitchen like?
- How different is the food and your experiences from the previous stage

7. What was your relationship with rice at this stage?

Probes:

- What rice/fish did you have that time at home? How was it like? Where are they from? Who produced them?
- What rice products did you eat? Where are they from? Who produced them?
- How different is the rice and your experiences from the previous stage

8. What were you good and bad memories of this time?

Probes:

- What did you look forward to?
- What were you afraid of?
- Who were the most important people during this time?
- What traditions do you remember from this life stage?

Session 4: Reflections

9. Looking back at your life, can you tell me about your reflections of the past and thoughts about the future

Probes:

- How different is the food and your experiences from the previous stage
- How different is the rice and your experiences from the previous stage
- How has rice changed? How about those of others?
- How has your diet changed? How about those of others?

- How has your taste changed? How about those of others?
- How has your environment changed?
- Your Greatest accomplishments
- Your most treasured possession
- Your greatest influences
- If you could go back and re-live any part of your life, what would it be?
- What would you want to leave as legacy in this world?

APPENDIX B

HOUSEHOLD SURVEY INSTRUMENT

Questionnaire no.

1. Household head: _____

Persistence of Pampango Rice-Based Fermentation Traditions in the Context of the Changing Rice Landscape in the Philippines
Household Survey

HOUSEHOLD PROFILE

2. Ilang tao ang kasalukuyang nakatira dito sa bahay? _____ 3. Ilang pamilya ang nakatira dito? _____

Pakilarawan ang bawat miyembro ng inyong **pamilya** (mga 18 gulang at pataas lamang)

Pangalan ng Nakakatandang Miembro ng Pamilya (4)	**Birth year** (5)	**Edad** (6)	**Sex** (7)	**Orihen** (8)	**Kung dayo,** **Pinagmulan** (9) (siyudad at probinsya kung saan pinaka nagtagal)	**Taon sa Candaba** (10)	**Natapos** (11) 1: College 2: Vocational 3: Highschool 4: Elementary 5: Prep/ Kinder/Nursery	**Trabaho** (12)
			1: M 2: F	1: native 2: dayo				
			1: M 2: F	1: native 2: dayo				
			1: M 2: F	1: native 2: dayo				
			1: M 2: F	1: native 2: dayo				
			1: M 2: F	1: native 2: dayo				
			1: M 2: F	1: native 2: dayo				

13. Anu ang major source of income (pangunahing pinagkikitaan) ng inyong pamilya? (Pumili ng **isa**)

1: Sweldo (regular)
2: Ibang kita na hindi regular
3: Bigay
4: Ani
5: Business
6: Remittance galing abroad
7: 4Ps
8: Iba pa: _____

14. Anu ang secondary source of income (ikalawang pangunahing pinagkikitaan) ng inyong pamilya? (Pumili ng **isa**).

1: Sweldo (regular)
2: Kita na hindi regular
3: Bigay
4: Ani
5: Business
6: Remittance galing abroad
7: 4Ps
8: Iba pa: _____

15. Anu ang iba pang source of income (pinagkikitaan) ng inyong pamilya? (Pumili ng **isa**).

1: Sweldo (regular)
2: Kita na hindi regular
3: Bigay
4: Ani
5: Business
6: Remittance galing abroad
7: 4Ps
8: Iba pa: _____

16. Mayroon ba kayong kapamilya na nasa abroad? (asawa, anak, kapatid, magulang, apo) _____ Oo _____ Hindi

Pakilarawan ang bawat miyembro na nasa abroad:

Pangalan (17)	**Edad** (18)	**Sex** (19)	**Bansang Tinitirhan (Pinakahuli)** (20)	**Taon sa Abroad (Pinakahuli)** (21)	**Trabaho** (22)

HOUSEHOLD BURO PRODUCTION

23. Gumagawa ba kayo dito sa bahay ng buro?

_____Oo, regular na itinitinda _____ Oo, minsan nagtitinda _____Oo, para sa bahay lamang _____ Hindi

*Pumunta sa **#27** kung **hindi gumagawa** ng buro sa inyong bahay*

24. Ano ang burong ginagawa dito? _____ isda _____ hipon _____ baboy

25. Kadalasan, gaano karami ang buro na ginagawa?

_____ walang 1 kilong isda _____ 1 -3 kilong isda _____4-9 kilong isda ____ 10 kilong isda o higit pa

26. Sino sa inyong pamilya dito o sa abroad ang gumagawa ng buro. Ano ang kanilang mga pangalan?

1. 5.
2. 6.
3. 7.
4. 8.

27. Kumakain ba kayo ng buro dito sa bahay? _____ Oo _____ Hindi

28. Nagpapadala kayo ng buro sa kamag-anak abroad? _____ Oo, regular na nagpapadala _____ Oo, minsan nagpapadala _____Hindi

Para sa susunod na parte, pumili ng tatlong miyembro ng pamilya na tatanungin.

Bilugan ang mga sagot ng bawat napiling miyembro

Miyembro na Edad: 60 years old at higit pa _____

45- 59 years old _____

18-44 years old _____

29. Pangalan: _____

MGA ALALA NG KAPALIGIRAN AT PAGKAIN NOONG KABATAAN

30. Anong uri ng isdang nakakain ang meron noon? (**bilugan lahat** ng posibleng sagot)

1: Biya
2: Carpa
3: Common
4: Dalag
5: Fighting fish
6: Gurami
7: Hipon (Alamang, Ulang)
8: Hito, African
9: Hito, balikbayan
10: Hito, native
11: Kanduli
12: Licauc/Pakut
13: Liwalo
14: Pararak
15: Rojo
16: Silver/Big head
17: Susu, papa
18: Susu, pilipit
19: Thai fish
20: Tilapia
21: Iba pa: _____

31. Anong uri ng bigas ang meron noon (sa palengke, bukid)? (**bilugan lahat** ng posibleng sagot)

1: Benzer
2: Wag-wag
3: Be-3
4: Burma
5: Milagrosa
6: IR36
7: IR42
8: C10
9: R10
10: 222
11: 402
12: 216
13: Buko Pandan
14: Mahalina
15: Manyaman Nasi
16: Commercial Rice
17: Local Rice
18: NFA
19: Me presyong: ____/kg
20: Iba pa: _____

32. Ang mga sumusunod na gawain ay me relasyon sa bigas/isda, alin sa mga ito ang inyong ginawa noon?

(Basahin ang lahat nga mga choices; **bilugan lahat** ng posibleng sagot)

1: nagtatanim ng palay	**3: nagbebenta/bumibili ng palay/bigas**	**8: nagtitinda ng isa**
2: nagaani ng palay (pumapalot)	**4: bumibili ng bigas para sa bahay**	**9: nagluluto ng isda**
3: pumupulot ng palay	**6: nagsasaing ng bigas**	**10: iba pa: _____**
	7: nangingisda	

33. Anong palay ang kadalasang tinatanim ng inyong pamilya noon? (Piliin ang **top two**)

1: Benzer	5: Milagrosa	10: 222	15: Manyaman Nasi
2: Wag-wag	6: IR36	11: 402	16: Commercial Rice
3: Be-3	7: IR42	12: 216	17: Local Rice
4: Burma	8: C10	13: Buko Pandan	18: NFA
5: Milagrosa	9: R10	14: Mahalina	19: Me presyong: _____/kg
			20: Iba pa: _____

34. Bakit _____ (Isulat ang ngalan ng palay) ang itinatanim niyo noon? (Piliin ang **top two)**.

1: maraming umani	3: maganda ang butil	5: nakasanayan na/ito lagi ang tinatanim	7: iba pa: _____
2: mabilis umani	4: masarap ang kanin	6: ito ang uso noon	

35. Bakit _____ (Isulat ang ngalan ng palay) ang itinatanim niyo noon? (Piliin ang **top two)**.

1: maraming umani	3: maganda ang butil	5: nakasanayan na/ito lagi ang tinatanim	7: iba pa: _____
2: mabilis umani	4: masarap ang kanin	6: ito ang uso noon	

36. Anong kanin ang kadalasan kinakain ng inyong pamilya noon? (Piliin ang **top two**)

1: Benzer	5: Milagrosa	10: 222	15: Manyaman Nasi
2: Wag-wag	6: IR36	11: 402	16: Commercial Rice
3: Be-3	7: IR42	12: 216	17: Local Rice
4: Burma	8: C10	13: Buko Pandan	18: NFA
5: Milagrosa	9: R10	14: Mahalina	19: Me presyong: _____/kg
			20: Iba pa: _____

37. Bakit _____ (isulat ang ngalan ng bigas) ang inyong kinakain noon? (Piliin ang **top two**)

1: mura	4: nakuha namin sa	6: nakasanayan na/ito lagi ang binibili
2: masarap	pagtulong sa pagsaka	7: ito ang uso
3: ito ang aming ani	5: bigay sa amin	8: Iba pa: _____

38. Bakit _____ (isulat ang ngalan ng bigas) ang inyong kinakain noon? (Piliin ang **top two**)

1: mura	4: nakuha namin sa	6: nakasanayan na/ ito lagi ang binibili
2: masarap	pagtulong sa pagsaka	7: ito ang uso
3: ito ang aming ani	5: bigay sa amin	8: Iba pa: _____

BURO CONSUMPTION DURING CHILDHOOD

39. Kailan karaniwang hinahain ang buro noon? (**basahin ang lahat** nga mga choices; **bilugan lahat** ng posibleng sagot)

1: ordinaryong kain	**4: sa fiestahan**	**7: baon sa eskwela**	**10: iba pa:**
2: sa birthdayan	**5: Pasko/bagong taon**	**8: baon sa trabaho**	_____
3: sa kasalan/binyagan	**6: sa outing**	**9: pag walang ulam**	

Kumakain ba kayo ng buro noon? (40) (Kung **hindi**, punta sa **#45**)	Mga Tanong para sa kumakain ng buro noon			
	Para saan ang gamit ng buro noon? (41) (**basahin ang lahat** ng mga choices; **bilugan lahat** ng posibleng sagot)	**Gaano ito kadalas kainin noon?** (42)	**Paano kinakain ang buro noon?** (43) (**basahin ang lahat** ng mga choices; **bilugan lahat** ng posibleng sagot)	**Anong mga sangkap sa pagluto ng buro noon?** (44) (**bilugan lahat** ng possibleng sagot)
1: oo 2: hindi	**1: Ulam** **2: Sawsawan** **3: Pinapapak** **4: Palaman** **5: Pulutan** **6: Sahog for cooking** **7: Iba pa:** _____	1: Isang kainan sa isang araw 2: higit sa isang kainan sa isang araw 3: 4-6 araw/linggo 4: 1-3 araw/linggo **5: mas madalas pag tagbaha** 6: kapag may okasyon 7: iba pa: _____	**1: hilaw** **2: pinapatong sa sinaing** **3: ginigisa** **4: Iba pa:** _____	1: Bawang 2: Sibuyas 3: kamatis 4: tomato sauce 5: luya 6: vetsin 7: Magic sarap 8: Iba pa: _____

BURO PREPARATION DURING CHILDHOOD

45. Gumagawa ba kayo ng buro noon? _____ Oo _____ Hindi

*Kung **hindi**, punta sa # **56***

Mga tanong para sa mga **gumagawa ng buro** lamang			
Anong uri ng buro ang ginagawa ninyo noon? (46) (**bilugan lahat** ng posibleng sagot)		**Anong klase ng buro ang ginagawa ninyo noon?** (47) (**bilugan lahat** ng posibleng sagot)	**Itinitinda niyo ang gawa niyong buro noon?** (48)
1: Biya 2: Carpa 3: Common 4: Dalag 5: Fighting fish 6: Gurami 7: Hipon (Alamang, Ulang) 8: Hito, African 9: Hito, balikbayan 10: Hito, native 11: Kanduli 12: Licauc/Pakut	13: Liwalo 14: Pararak 15: Rojo 16: Silver/Big head 17: Susu, papa 18: Susu, pilipit 19: Thai fish 20: Tilapia 21: Kombinasyon ng: _____ _____ 21: Iba pa: _____	1: tecupan 2: salat-salat/halo-halo 3: iba pa: _____	1: regular na tinitinda 2: pambahay at minsan tinitinda 3: pambahay

Mga tanong para sa mga **gumagawa ng buro** lamang				
Gaano karaming buro ang ginagawa niyo noon? (49)	**Gaano kadalas ang paggawa ng buro noon?** (50)	**Anong sangkap na gamit sa pagburo noon? (maliban sa isda/hipon/karne, bigas at asin)** (51) (**bilugan lahat** ng posibleng sagot)	**Anong bigas na gamit sa buro noon?** (52) (**bilugan lahat** ng posibleng sagot)	
1: walang 1 kilong isda 2: 1 - 3 na kilong isda 3: 4 - 9 na kilong isda 4: 10 kilo o higit pa 5: Iba pa: _____	1: araw-araw 2: 4-6 araw/linggo 3: 1-3 araw/linggo 4: mas madalas pag tagbaha 5: kapag may okasyon 6: Iba pa: _____	1: Selestre/Salitre 2: Vetsin 3: Magic sarap 4: Vinegar 5: Sinigang mix 6: Beef/Chicken/Shrimp Cubes 7: Iba pa: _____	1: Benzer 2: Wag-wag 3: Be-3 4: Burma 5: Milagrosa 5: Milagrosa 6: IR36 7: IR42 8: C10 9: R10 10: 222 11: 402	12: 216 13: Buko Pandan 14: Mahalina 15: Manyaman Nasi 16: Commercial Rice 17: Local Rice 18: NFA 19: Me presyong: _____/kg 20: Kahit ano 21: Iba pa: _____

9

53. Bakit kayo gumagawa ng buro noon? (**bilugan lahat** ng posibleng sagot)

1: walang binebentang buro dati
2: marami ang isda
3: masisira/sayang ang isda
4: sayang ang kanin
5: para me pagkain
6: para sa okasyon
7: para kumita
8: para ipamigay
9: di maganda ang benta
10: para ituloy ang tradition
11: pag-alala ng mga mahal sa buhay na magbuburo
12: iba pa: _____

54. Gumagawa pa ba kayo ng buro ngayon? _____ Oo _____ Hindi

*Kung **oo**, punta sa **#56**.*

55. Bakit di na kayo gumagawa ng buro ngayon? (**bilugan lahat** ng possibleng sagot)

1: Mayroon nang nagtitinda
2: Wala ng isdang mula sa pinak
3: Di na maasikaso
4: Me pambili na
5: Matrabaho
6: Di na kaya ng katawan gawin
7: Pinatigil ng anak/kamaganak
8: Bawal sa sakit na: _____
9: Pangmahirap lang ito
10: Iba pa: _____

INTERES NA SUMALI SA RESEARCH

Kayo ba ay interesadong sumali sa iba pang activity ng research ukol sa buro? (56)	**Pano naming kayo pwedeng abisuhan?**		
	Cellphone No. (57)	**Cellphone Network** (58)	**Pangalan sa Facebook** (59)
1: oo 2: hindi			

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APPENDIX C

SEMI-STRUCTURED INTERVIEW SCHEDULE 1

QUESTIONS ON RICE, LIFE, BURU
Balu yu na siyempre na ing panigaralan ku tunkol keng buru. Deng kutang ku ngeni tungkol keng buru pati na rin ing pamibiyebiye yu keti Candaba, lalu na ing tunkol keng pamagpale at pamanasan.
1. Malyari yeng pakilala ninu I (name of participant) ● Pilan na kayung banwa ● Taga keti ko talaga? ● Nanung kabuhayan yu? ● Anggang nanu kayung grade/year?
2. Nanu ing kabuhayan yu yang kabataan yu? Komusta ing bye pamagpale/pamanasan/_____? ● Nanung makasakit keng bie kanita? *For farmers* ● Nokarin ing kekayung lauta? ● Nanu ngan ing tatanam yu? *For fishermen* ● Nokarin kayu manasan? ● Nanung klaseng pamanasan?
3. Makananu ing pamangan yu keng bale yang kanita? ● Kakanan yu ba ing kekayung pupul? ● Magkulang ba o sawa-sawa? ● Asabi yu bang meranup kayo? ● Nanung gagawan yu para ating pamangan?
4. Pakananu menaliwa ing bie yang menaliwa ing pamagpale? ● Nanu ing epekto da reng variety? ● Nanu ing epekto da reng makinarya? ● Mas asabi yu ba na mesakit o mebilis ing bie? ● Menaliwa din bai ng kekayung abias at aliwang pamangan?
5. Sasali or pakiskis kayu bang abias kanita? *For those buying* ● Ninu ing sasali at nokarin?

- Nanung pasali da kekayu?
- Pakananu mikaaliwa reng tindahan abias kanita kareng ngeni?
- Nang palage yu king kalidad ning abias kanita?

For those milling

- Kaninu kayu pakiskis kanita?
- Nang palage yu king kalidad ning abias kanita?

6. Nokarin na kayu ngeni kukwang abias?Bakit?

    - Nanung sasaliwan yung abias? Why
    - Nanung palage yu keng kalidad ning abias ngeni?

7. Nanung pinakamemorable yung pale/abias?

- Nanung atatandanan yu kareni: Burma, BE-3, Milagrosa, IR36, IR42, C10, NFA, others

Pisabyan ta naman ngeni ing buru

8. Buri yu na in buru yang anak ko pa?

- Bakit kayu mamangan buru?
- Makananu kayu mo kadalas mangan buru kanita?
- Mamangan kayu rin burung babi okaya retang burung tagan-tagan?

9. Nokarin yu kukunan ing buru yu kanita?

- Atin gagawa kekayu? Ninu?
- Pakananu karakal?

For those who didn't grow up making buru skip to Question 13

Questions for those who grew up with buru-making at home

10. Pakananu ing bie dinagul keng pamagburu?

    - Kayabe kayung magburu kanita?
    - Buri yu ing gagawang buru?
    - Ot gagawa kayu nung atin naman pamisali?
    - Ali na kayu gawang buru nung_____

11. Kapilan itang ikayu dili mu mekagawa kayung buru?

- Bakit kayu ginawa?
- Nanung gewa yu para akwa ye sangkap?
- Dakal kayu augse keng proceso?

12. Nanung menaliwa keng pamangawa o pamamamangan yung buru ngening metua na kayu?

- Do you make/eat/cook it as often?
- How do younger members of your household like buru?
- Does your household make it? Are kids involved in making it?

13. Nanung eyu akalingwan na buru? Bakit?

- Nanung pinakamasanting/pinakamatsura yung alala tunkol keng buru?

Uling isulat ku pu ini keng libru o kaya online. Ok mu pu kekayu na pakit da kayo o sabyan ke ing lagyu yo? Dakal pung Salamat.

APPENDIX D

SEMI-STRUCTURED INTERVIEW SCHEDULE 2

Buru Clarifications

1. Ask based on their videos (e.g rice; # days)
2. Where do you get your ingredients? What fish was used? Why did you use __fish?
3. What is the role of rice, salt, fish?
4. What do you think of the following in buru-making:
    a. Use of 1 step/2 step fermentation
    b. Use of tomato sauce
    c. Use of magic sarap /cubes/vetsin
5. Tell me how many days will the following take?
    a. Hard rice like C10 for one step fermentation
    b. Soft rice like 216, for one stop fermentation
    c. How about other rice like NFA rice, etc?
    d. Hard rice like C10 as lelut in two step fermentation
    e. Soft rice like 216 as lelut in two step fermentation
    f. How about other rice like NFA rice, etc?
6. Have you tried other ways to make it?

For commercial buru-makers

- How different is your buru for selling from buru for household use?
- How much is one timba?
    - How much is your profit per timba?
    - How do you make it to increase profit?
- Challenge in selling buru (how promoted it?)

7. Why is buru important to you?

Food, Memories and Aspirations

1. What food was uso during your childhood? What was typical B,L,S?
    - What do you prepare when it is flooded?
    - Do you eat boboto? Which one?
2. What were your good and bad memories?
3. What were your good and bad food memories?
4. How did the reputation San Agustin affect you? What did you do about it?
5. What did you dream of as a child?
6. What did your parents always teach you when you were younger?

APPENDIX E

FOOD ELICITATION GUIDE

Present and make them smell different kinds of buru

1. Which among these are mabantut?
2. Which do you prefer?
3. Which among these you won't eat?Why?
4. Which among these you won't buy? Why?
5. What do these samples remind you of?
6. Which among these samples are most similar to buru you have grown up with?

Present photos of different kinds of buru

1. I'll show you different buru I have seen. Tell me if you like the following?
    a. "Whole" rice buru
    b. Liquidy buru
    c. Dark buru (how if NFA rice then)
    d. More fish buru
2. Which among these were similar to the buru you have grown up with?
3. How different is the way you make you buru from the one you learned if from? Child?
4. What is a good buru like?

APPENDIX F

HYMN OF CANDABA IN KAPAMPANGAN

Imno ning Candaba

Candawe dane aslagan
Labuad ning leguaan at sipagan
Kapampangan at Katagalugan
Payapa lang manuknangan
Masaplala kekang kabiayan
Lauta ring milun at pakwan
Danuman lingkas karing asan
Daba ning Burung maniaman
Malugud tamung memalen king Candaba
Malugud tamung kabalen king Pampanga
Kapinakan man kabilian
Matas naman ing dangalan
Sale kang pipamugaran
Ning balayan mung sari nuan
Makapasno kang pagsantungan
Ding ayup malaut ibatan
Malugud tamung memalen king Candaba
Malugud tamung kabalen king Pampanga
Kapinakan man kabilian
Matas naman ing dangalan
O tune suguing Candabeño
Marangal kang Pampangueño
Lugud mu king balen maglapo
Pakaluiran naka ning Dios!
Malugud tamung memalen king Candaba
Malugud tamung kabalen king Pampanga
Kapinakan man kabilian
Matas naman ing dangalan
Luid ka, tibuan ming Candaba
Pakapakamalan daka!