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# Life in Between: Prehispanic Settlement Patterns of the Carabamba Valley, Northern Peru

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# Abstract

This dissertation is an archaeological study of the Carabamba Valley (ca. 150 - 3,500 m.a.s.l.) in Northern Peru, which aims to reconstruct settlement patterns through the *longue durée* (ca. 1800 B.C. - A.D. 1532). This study also documents the relations occupants of this frontier zone maintained with neighboring polities on the Peruvian North Coast (Virú Valley) and in the Northern Highlands. The valley features the resource-rich ecological niche called *chaupiyunga*, fed by rainwater that flows towards the Pacific Ocean and by a number of springs, where crops like coca, fruits, and vegetables can be easily grown. The Carabamba Valley also acted as a natural corridor enabling and even fostering interactions and trade between the lowlands and highlands. Yet, despite the importance of such area during Prehispanic times, over the past century, archaeological research in Northern Peru has mainly focused on core areas, with little attention paid to peripheries such as the *chaupiyungas*. This doctoral project documents the Carabamba Valley *chaupiyunga*, therein shedding new light on wider geopolitical processes that have shaped the development of early complex societies in this part of South America.

I used existing maps and satellite imagery to plan a pedestrian survey of the valley, carried out in 2019. During fieldwork, 48 archaeological sites were surveyed and mapped with a lightweight Unmanned Aerial Vehicle (UAV). I also carried out a surface collection of ceramic artifacts and recorded all aboveground architecture, which led to the creation of a four-phase chronology of the valley. Data on architecture and orthomosaics produced with the UAV helped reconstruct the population size at different moments in time. Spatial analyses were carried out with a Geographic Information System (GIS) software (ArcMap), allowing us to document social, political, and economic developments that marked the history of the region prior to the Conquest. I found that the Carabamba Valley was a dynamic frontier where peoples with different material cultures, sociopolitical organizations, and worldviews interacted. The valley was influenced by both coastal and highland groups, but results show that locals kept a high degree of autonomy through time, likely acting as cultural brokers who facilitated intergroup interactions.

## Keywords

Peru, Andes, Andean archaeology, Northern Peru, Peruvian North Coast, Peruvian Northern Highlands, *Chaupiyunga*, Survey, Settlement patterns, Remote sensing, Unmanned Aerial Vehicle (UAV), Geographic Information Systems (GIS), Chronology, Ceramics, Architecture, Rock art, Frontiers, *Longue Durée*, Initial Period, Early Horizon, Early Intermediate Period, Middle Horizon, Late Intermediate Period, Late Horizon.

# Summary for Lay Audience

Archaeological research conducted in Peru has generally focused on monumental sites located at the center of states or empires that developed in this part of South America before the Spanish Conquest (A.D. 1532). This has led Andeanists to neglect areas located farther from large urban centers, despite the key role they played in connecting human groups from different regions and the fact that they usually controlled highly desirable resources (water, crops, minerals, etc.) that were essential to them and their neighbors. One such understudied area is the Carabamba Valley (150 - 3,500 m.a.s.l.) in Northern Peru, which connects the coastal Virú Valley to the highlands. This dissertation reports on a doctoral research project in which I conducted a survey of the valley, identifying and mapping archaeological sites, collecting artifacts from the surface, and documenting aboveground architecture. This work confirmed that the valley had been occupied over a long period of time (ca. 1800 B.C. – A.D. 1532) and that it was the theater of continuous interactions between local communities and groups that occupied the neighboring coast and highlands.

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# Chapter 1

## 1 Introduction to the Study

“Trade and exchange across cultural lines have played a crucial role in human history, being perhaps the most important external stimuli to change” (Curtin 1984:1)

Most archaeologists recognize the importance of peripheries in fueling social, political, and economic changes. However, they have traditionally focused the bulk of their time, efforts, and funding to documenting core areas (*sensu* Wallerstein 1974, 2000) and associated monumental centers, therein overshadowing contact zones located at the edges of territories under the control of core polities. This is unfortunate, considering that peripheries, and contact zones in particular, represent ideal places where the effects of a constant flow of people, goods, and information can be analyzed. Interest in contact zones began towards the end of the 19th century with Frederik Jackson Turner’s ([1893] 1993) publication “The Significance of the Frontier in American History”. Since then, scholars have tackled key issues on these areas. The impact of contacts on interacting human groups, the agency and the role played by local people have been analyzed (Dietler 1998, 2005; Hirth 1978; Stein 2002; Szremski 2017), processes like ethnogenesis and hybridity have been explored (Naum 2012; van Gijseghem 2006), the expansion of sociopolitical formations through colonization (Algaze 1993; Stein 2005), the policies of states and empires in their peripheries (Alconini 2005; Boswell 2016; D'Altroy 1992; Lattimore 1951; Luttwak [1976] 2016), and the exploitation of marginal yet rich ecological niches (Dillehay 1979; Murra 1975) have been studied. The archaeology of core areas is usually mute on the abovementioned central issues and it is thus essential to shift our gaze from core monumental centers to peripheral contact zones to answer questions that play a fundamental role in achieving a full understanding of social, political, and economic developments in the *longue durée* (Braudel [1949] 1996).

Northern Peru seems to represent a textbook example of this pattern. Archaeologists working in this part of the Central Andes have spent most of their time and efforts in the core areas of state and imperial formations that controlled the Peruvian North Coast (e.g., the lower Lambayeque, Jequetepeque, Moche, and Virú valleys) and Peruvian North Highlands (e.g., Cajamarca, Huamachuco, and Callejón de Huaylas), tainting their reconstruction of key sociopolitical developments in the region. Indeed, while highlighting the importance of interactions among groups occupying different ecological zones, many scholars have overlooked peripheral areas where such interactions were actually taking place.

In the western slope of the Central Andes, one such area is the *chaupiyunga*, a resource-rich ecological niche that extends approximately from 500 to 2,300 m.a.s.l. (meters above sea level) and sits between the Pacific shoreline and the highlands. After a few pioneering archaeological projects conducted in the 1970s (Dillehay 1976, 1979; Topic and Topic 1982), interest in Andean *chaupiyungas* has grown during the last two decades (Billman et al. 2019; Boswell 2016, 2019; Briceño Rosario and Billman 2014; Ringberg 2012; Szremski 2015, 2017; Tsai 2012, 2019). These projects have shown the importance of these regions as contact zones where interactions took place among local, coastal, and highland peoples in manifold ways (see Chapter 2).

One particularly rich area is the Carabamba Valley (ca. 150 - 3,500 m.a.sl.) (Figure 1.1). Research conducted in the coastal Virú Valley since the beginning of the 20th century has shown that the Carabamba Valley likely played a pivotal role in connecting coastal groups with people living in the Peruvian Northern Highlands. Ceramics and textiles coming from the highlands were collected at important coastal sites like Huaca Gallinazo, Huaca Santa Clara, and Castillo de Tomaval (Bennett 1950; Millaire and Surette 2011; Strong and Evans 1952; Surette 2015). Excavations conducted at the site of Huaca Santa Clara also yielded wool bags likely produced and used by *chaupiyunga* people and isotopic analyses carried out on human remains suggested that people living in intermediate zones were buried at this site (Hyland, Millaire, and Szpak 2021; Szpak et al. 2015).

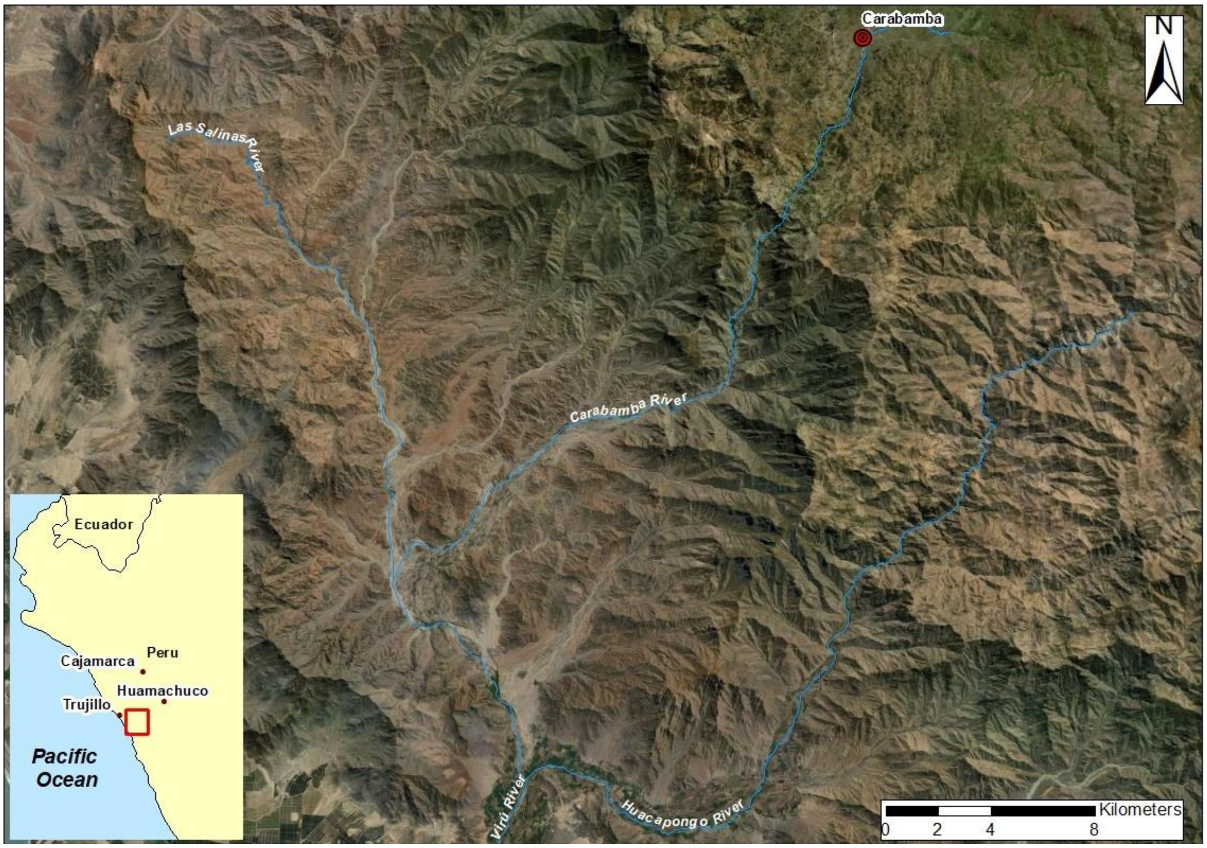


**Figure 1.1: The area of Northern Peru analyzed in this dissertation. The copyright of all satellite images used in this study is owned by ESRI.**

While evidence collected in the Virú Valley hinted at the importance of the Carabamba Valley in the movement of people, goods, and ideas, the abovementioned key issues have never been tackled. Very little research has been conducted in this area so far (but see Briceño Rosario 2011; Briceño Rosario and Fuchs 2009; Castillo Benítez and Barrau 2016; Topic and Topic 1982; van Hoek 2017) and the scope of such investigations was very specific (e.g., the identification of defensive settlements and the analysis of petroglyphs at particular sites). There are therefore important gaps in our understanding of the regional developments, hindering a fuller understanding of the social, political, and economic processes that were unique to this important area. This natural corridor holds high potential for shedding light on the understudied Andean *chaupiyungas* and, more broadly, on how contact zones were occupied in the past.

This introductory chapter sets the stage for a dissertation that aims to document the long-term history of the Carabamba Valley (ca. 1800 B.C. - A.D. 1532) through a pedestrian survey. In turn, this will help shed light on key historical developments that have marked this part of Northern Peru during Prehispanic times. Before describing the archaeological fieldwork conducted in the region over the past three years, the following section presents key concepts useful to the study of contact zones.

## 1.1 Key Concepts for the Study of Contact Zones

### 1.1.1 Boundaries, Borders, Frontiers, and Borderlands

Over the past decades, contact zones have been studied using a number of concepts, including those of borderlands, boundaries, borders, and frontiers. These terms are used interchangeably in various disciplines (anthropology, political science, geography, history), even if they carry different meanings. While a clear-cut definition of these concepts may conceal the nuances of specific contact zones, it is no doubt true that the use of a shared lexicon clarifies potential confusion and is beneficial to the comparison of human encounters over time and space. The sections below will define these concepts mainly drawing from Bradley Parker's (2006) work on contact zones.

*Borderlands*

Parker (2006:80) defined borderlands as "regions around or between political or cultural entities where geographic, political, demographic, cultural, and economic circumstances or processes may interact to create borders or frontiers", with static borders at one end of the spectrum and fluid frontiers at the other (Figure 1.2).


**Figure 1.2: Borderlands, borders, and frontiers (after Parker 2006:81).**

*Boundaries*

Boundaries have been defined as “unspecific divides or separators that indicate limits of various kinds” (Parker 2006:79). Parker (2006) argued that borderlands are made up of boundary sets (geographic, political, demographic, cultural, and economic boundaries) that overlap and interact with each other, defining the occupation and nature (static or porous) of contact zones over time. For example, the hypothetical military conquest (political) of the Carabamba Valley by a neighboring core group may have led to migrations (demographic) and subsequent shifts in the material culture, the language (cultural), and the subsistence strategies (economic) of the valley.

*Borders*

Borders are often associated with clearly delineated lines that divide the administrative jurisdictions of political entities, linguistic, and ethnic groups, which are sometimes associated with natural features. The process of placing demarcation lines is closely related to the concept of territoriality, a social attitude that implies the control of a spatially bounded area by a human group. The desire to harness resources plays a key role in bounding space and such restricting and defense-oriented behavior is particularly marked in socially stratified societies (Bonzani 1992; Parker 2006). Examples of restrictive borders documented in the archaeological record are the walls built by Roman emperors Hadrian and Antoninus Pius in Northern Britannia during the 2nd century A.D., and the palisades that characterized the Eastern European Roman *limes* (Breeze 2011), or the walls that separated Chinese states and the Chinese empire from nomad groups (Lattimore 1937). However, a border is not always an impenetrable line.

The social nature of human beings questions this conservative attitude and creates a debate between “pull factors”, such as the need for security or the repulsion of the other, and “push factors”, like the chance to access new social, political, and economic networks that lie beyond the boundary (Feuer 2016; Mc Williams 2011; Ringberg 2012). The latter move may be undertaken by specific shares of society, which are more receptive to innovations and aim to reinforce their status within their group (elites) or to gain a more prominent role in society (would-be elites) (Feuer 2018).

*Frontiers*

The term frontier was used in culture contact studies since the publication of Turner's essay on the American frontier, which was interpreted as the "meeting point between savagery and civilization" (Turner 1993:60), the forefront of a taming movement conducted by settlers who disentangled themselves from European roots and became Americans through a civilizing feat (Naum 2010). This Eurocentric view neglected or considered the inhabitants of the frontier as an obstacle (Forbes 1968), reiterating the dichotomy between civilized Western people and barbarian "others". The division between "us" and "them" is deeply rooted in European history and it has pervaded the Western worldview since the time of Classical Greece (5$^{th}$ - 4$^{th}$ centuries B.C.) (Dietler 2005).

However, a more nuanced conception of frontiers has recently rejected the Turnerian view, which envisioned them as areas occupied by passive people that have to be domesticated by a culture-bearer group (Lightfoot, Martinez, and Schiff 1998). According to this model, frontiers are understood as porous zones located between cultural cores, where inter-ethnic relations take place, political and economic interests of many actors overlap, and identities are negotiated, questioned, reinforced, or created through processes of ethnogenesis (Lightfoot and Martinez 1995). Social, political, and economic processes are usually intertwined and influence each other. These processes should therefore be analyzed together to have a clear picture of the area under analysis (Parker 2006). Encounters between human groups are also likely to trigger social phenomena such as acculturation of indigenous people, assimilation of indigenous traits by new settlers, and hybridization or creolization, two concepts that consider culture change as a multidirectional process (Cusick 2000). The nature of relations that take place within frontiers is not fixed but varies over time. Furthermore, being the place where people first come into contact, frontiers are the locus of innovations (Lightfoot and Martinez 1995).

The concept of frontier has recently been the focus of edited volumes on the understanding of contact zones in various archaeological contexts (Parker and Rodseth 2005; Tica, Martin, and Larsen 2019). In the Andes, Hendrik van Gijseghem (2006) has assigned a key role to frontier processes in the emergence of the Nasca culture in Southern Peru around 100 B.C., while in Northern Peru the eastern frontier of the Chimú empire has been investigated (Boswell 2016; Mullins 2019).

*Boundaries, Borders, Frontiers, Borderlands, and Their Significance for the Carabamba Valley*

The concepts described above can help interpret archaeological data collected during the survey, allowing us to understand the nature and the intensity of interactions among local, coastal, and highland peoples, clarifying the long-term impact of interactive processes on various aspects of human societies, such as settlement patterns, material culture, social and political organizations, technological advancements, and ritual life. In our case, the six fortresses or *castillos* built at the Virú Valley neck by the Virú state may have constituted a restrictive border separating the coast from the *chaupiyunga* and the highlands between about 200 B.C. and A.D. 600 (Downey 2015; Millaire 2008). However, it was stated above that the Carabamba Valley is located between two distinct ecological zones, and evidence from the coastal Virú Valley also suggests that this area played a pivotal role in connecting rather than separating peoples with different material cultures, sociopolitical organizations, beliefs, and languages. The most recent formulation of frontiers, which underlines the porousness of contact zones, therefore seems to be a powerful concept to document the Carabamba Valley over the *longue durée*.

### 1.1.2 John Murra and the Vertical Archipelago Model

Since its first publication in the early 1970s (Murra 1975), the concept of Vertical Archipelago or ecological complementarity has been widely used by anthropologists to study how Andean peoples occupied and exploited regions characterized by many ecological niches located at different elevations above sea level, and to understand how human groups interacted with each other. Each ecological zone has its climate, soil, amount of arable land, vegetation and yields different kinds of crops. As one climbs the Andean range, these ecological floors become tighter, and the environment suddenly changes. This environmental configuration is shared by the whole Central Andean region, but it is no doubt true that each river valley has its peculiarities (Dollfus 1981; Pulgar Vidal 1987). According to John Murra (2017), people living in the highlands and on the coast strive to get direct control over the highest number of ecological pockets and to harvest the crops that were growing only in these areas.

A key concept in Murra's (2017) theory is *direct control*. Supported by ethnographic studies, Murra presented five cases of ecological complementarity. For instance, in the case of Lupaqa people of the Titicaca Basin, he argued that they had their main settlement in the pasture lands and tubers producing *puna* (ca. 4,000 m.a.s.l.) and they also owned houses and fields at lower altitudes on both slopes of the Andean mountain range to harvest coastal resources (guano, seafood) and intermediate zones crops (coca leaves, maize, fruits, wood). These settlements were permanent and people living there did not lose their rights and properties in the homeland. Staple goods and some luxuries, such as maize (used to produce maize beer) or coca leaves, were produced and redistributed within the community (composed of homeland and "islands"), and, when not available through direct control, luxury goods were obtained via administered trade (Murra 2017; Polanyi 1957).[1] Murra (2017) also posited that the direct control of multiple ecological niches and the self-sufficiency achieved by Prehispanic Andean societies made this area of the world a unique place where states and empires developed without commercial interactions and marketplaces (Hirth and Pillsbury 2013; Murra 1995).

*Critiques to the Model*

This pattern of land exploitation has been depicted by Murra (1975) as a timeless pan-Andean structure. However, the antiquity of the Vertical Archipelago Model has been questioned. Using archaeological data, Van Buren (1996) argued that in the Lupaqa case analyzed by Murra (1975) highland people did not occupy the western slope of the Andes prior to Inka times. Moreover, she posited that the presence of highland artifacts during Inka and colonial times represented a local response to policies enacted by the imperial formations rather than an environmental adaptation or a way to gain direct control over exotic goods. Building on Murra's formulation, Stephen Brush (1976) noted that the archipelago is not the

[1] Karl Polanyi (1957) defined administered trade as a government-controlled form of exchange that has its foundation on treaties stipulated between sovereign bodies.

only way to get resources from different ecological zones. People living in steep and short valleys (e.g., 50 km long), where other crop zones are located one or two days walk apart, can be described as transhumant communities with temporary shelters in other ecological niches. By contrast, extended valleys (e.g., 300 km long) with smooth transitions between environmental zones are occupied by many communities that meet in marketplaces to exchange goods, introducing a concept not considered by Murra.

The interpretation of foreign goods and architecture in Prehispanic contexts has been widely used as proof of the long-lasting nature of the Vertical Archipelago Model. However, the uncritical use of the model can hide the nuanced occupation of intermediate zones and intergroup relations that occurred in the Andean region (Dillehay 2013; van Buren 1996). Confirming what was argued by Brush (1976), archaeological research has shown that other strategies were enacted by Andean people to get access to resources, such as cooperation and shared use of arable lands and mines (Dillehay 1979; Ramírez 1985; Santoro et al. 2010; Shimada 1985), barter (Dillehay 2013; Stanish and Coben 2013), trade diasporas (Goldstein 2015), small and long-distant exchanges (Hirth and Pillsbury 2013; Mayer 2002; Topic and Topic 1983), and long-distance trade carried out by specialists (Salomon 1986).

### *The Vertical Archipelago Model and Its Significance for the Carabamba Valley*

Moving beyond the autarchic Vertical Archipelago Model and taking into account other means of resource procurement allows us to understand the nuanced ways in which Andean people interacted and acquired resources in frontiers rich in coveted goods. Thus, the Carabamba Valley may have been occupied by coastal or highland people aiming to control resources that could not be extracted in their homelands. Nevertheless, recent re-examinations of the Vertical Archipelago Model suggest that the area under investigation may have also been a key meeting place and home to marketplaces where local, coastal, and highland people interacted.

### 1.1.3 Core-Periphery Relations

*The World-System Model*

The World-Systems Theory was formulated in the 1970s by the American sociologist Immanuel Wallerstein (1974, 2000). This theory sought to explain the rise, evolution, and operation of the modern global world economy, positing that the process that has led to today's globalization started with the appearance of the first Neolithic settlements (ca. 12,000 years ago). According to Wallerstein (1974, 2000), all modern states are part of this system, each one fulfilling a role within it, and they interact according to their hierarchical position, which can change through time (Chase-Dunn and Hall 1997; Schneider 1991). The system features three tiers: core, semi-periphery, and periphery. The core regions – such as North America and Western Europe – show a high level of political, technological, and economic development and compete to dominate the modern world system. Peripheral regions are exploited by core areas, which control them through weak administrators, and produce bulk and high-value goods to be exported to the core. Between core and periphery lies the semi-periphery, a less developed area that is both exploited and exploiter and acts as a buffer zone, stabilizing the whole system (Schneider 1991; Stein 1998; Wallerstein 1974, 2000). Beyond the limits of a world economy, there are "external arenas" (i.e., other world-systems) that interact with a given system through luxury goods exchange. However, Wallerstein (1974, 2000) defined such interaction as non-systemic, and he believed that luxury goods do not influence social change. While he focused on the capitalist world economy, he argued that it was preceded by mini-systems and world economies. The former was defined as small-scale and culturally homogeneous units where the division of labor takes place within the same group, such as the first agricultural societies. World economies are tribute-extracting and redistributive political entities like the Roman or the Inka empires (Khutkyy and Chase-Dunn 2018).

*Core Societies and Their Expansion*

Core sociopolitical formations like states and empires tend to expand into peripheries located beyond their heartland. The reasons behind expansions are numerous and range from the need to exploit resources not available in the heartland to the need to dominate potential rivals (Algaze 1993; Boswell 2016; D'Altroy 2015b; Spencer 2010). Peripheries featuring valuable resources (e.g., access to water, agricultural land, or coveted crops) can become causes of disagreement between polities or "contested peripheries". Eric Cline (2000) suggested that contested peripheries are areas of intense military conflict that can cause shifts in political affiliation of a region and these changes may be reflected in the periphery's material culture. States and empires can exert a hegemonic (or indirect) control over peripheries, or they can directly rule neighboring areas through a territorial strategy. In the latter, states/empires occupied peripheries and invested notable amounts of resources in the construction of infrastructures like roads, defensive structures, and administrative centers. In the former, core societies loosely controlled client polities and relied on them for enacting state/imperial policy and extracting key resources (D'Altroy 1992).

Another way of exerting hegemonic power and overcoming transportation constraints that affected pre-modern societies was the creation of outposts or colonies (Algaze 1993; Stein 2001, 2005).[2] Such settlements are established in an empty territory or the land of another group of people, and they are spatially and culturally different from indigenous settlements. At least at the beginning of their life history, colonies and outposts keep strong political, cultural, economic, and religious ties with the homeland. The establishment of settlements far from the homeland responds to various needs. These settlements can be trade or military outposts, shelter for persecuted people, a solution for overpopulation in the homeland, a way to resettle convicted or recently conquered people, a means of extracting resources deemed as valuable but that are not available in the homeland or to spread state ideology (D'Altroy 2005; Schreiber 2005). Such strategies were carried out in different times and places (Algaze 1993), including the Peruvian North Coast (Millaire et al. 2016).

[2] While the term outpost characterizes a small-scale foreign presence, the words colonies and colonization may indicate a more extensive alien intrusion (Algaze 2013).

*Core-Periphery Power Imbalance*

Since its formulation, many archaeologists have drawn upon Wallerstein's (1974, 2000) model, applying the theory and the core-periphery opposition to a wide array of pre-capitalist contexts in acritical or extreme ways (Hall and Chase-Dunn 1993; Hall, Kardulias, and Chase-Dunn 2011; Stein 1998). However, scholars have highlighted issues associated with a non-reflexive application of the model to past societies. One of the main shortcomings of the World-System model is the assumption that there are always social, political, and economic asymmetries and strong power imbalances between highly developed cores and passive peripheries (Algaze 1993). However, peripheries can retain a degree of agency when engaging with foreigners, selectively adopting some exotic goods while rejecting others, and the same could have happened with foreign technologies (Dietler 1998). Moreover, peripheries may have had the strength to deal as equal with more complex sociopolitical entities using key resources as leverage (Szremski 2017), exerting tactical power (Wolf 1999)[3] over their neighbors, reducing, or eliminating apparent power imbalances (Stein 2001, 2005). Inhabitants of peripheral areas were thus active players in a dialectical relation that entailed adoptions and refusals of goods and ideas. Core-periphery encounters have effects on both societies involved in the exchange, and in these meeting places, "culture change would be at its most intense" (Kardulias 2007:56). In addition, distance and the already mentioned transportation constraints may have mitigated power imbalances, reducing the chances of military domination (Stein 1998).

*The Importance of Luxury Goods*

According to the World-System Model, long-distance trade is usually limited to preciosities or what Wallerstein (1974, 2000) called "rich-trades", whose importance he dismissed. Nevertheless, some scholars underlined the importance of luxury goods exchange within pre-capitalist settings (Chase-Dunn and Hall 1997; Schneider 1991). Demand for luxuries came from elite members, who envisioned new opportunities to display their prestige, charisma,

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[3] Szremski (2017:85) defined tactical power "the ability … to shape the behaviors of another actor through controlling the social or physical setting where interactions between them occur"

and power through these alien goods (Schortman and Urban 1998). Foreign objects can also be repurposed and adapted to a new sociopolitical context and cosmology (Dietler 1998). It should be noted that status display was not the only driving force of rich trades. Members of the higher levels of the hierarchy bestowed these goods upon mid and lower-level classes to create a patronage network. The debtor enjoyed gifts and protection coming from his patron. However, the client had to repay the debt to his patron; the obligation was fulfilled by offering labor or other goods and such reciprocal obligations reproduced and reinforced social ties.[4] Luxury goods were thus vital to social reproduction, impacting all parties involved in the exchange network and stimulating changes within them (Schneider 1991). A steady flow of exotic goods can be ensured by the establishment of trade-specialized settlements called "gateway communities", which are founded and flourish along trade routes, communication corridors, or at strategic places (e.g., river valley necks). People in charge of such communities can take advantage of the geographic setting and the craving of luxury goods of the neighboring elites, exerting power over adjacent groups (Burghardt 1971; Hirth 1978). Frontiers could therefore have played a key role in controlling flows of luxury goods and keeping a peaceful relation with the elites living in intermediate zones would have been crucial to core groups.

*Frontier People, Identity, and Brokerage*

Culture contacts involving frontier and core groups can produce hybridity and fuel social, economic and political changes. However, interaction can also bolster differences, reinforce, or create new identities (Barth 1968; Flynn 1997). As already mentioned, the nature of these interactions is in flux through time and across space. Moreover, we should take into account the fact that human groups have never been monolithic. The archaeological record allows us to identify different social groups (e.g., elites, commoners, etc.) and even identities (e.g., social, gender, religion, age) in any given society, each of which may have had its own attitude towards foreigners. In this context, elites and would-be elites could be more inclined

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[4] Reciprocal obligations between people of equal and different status, between humans and other living beings, and between humans and supernatural forces pervaded non-monetary Prehispanic societies and still pervade Andean life (Allen 2002; Rostworowski 1976; Sammells 2018).

to accept new objects and ideologies to reinforce their role or to climb social ladders, while commoners could stick to their traditions. Furthermore, inhabiting a frontier would make people feel that they were neither a member of one group nor part of the other. This situation could have been disorienting, but it might also have been an opportunity to exploit. People could thus "play" with their identity, placing themselves in a grey area and dealing with different groups as peers, acting as middlemen or brokers between core societies. Brokers put into contact actors that are otherwise not connected, obtaining short or long-term (e.g., episodic or permanent access to social, economic, and political networks) advantages from brokerage (Feuer 2016; Grossberg 1996; Mills 2018; Naum 2010; Obstfeld, Borgatti, and Davis 2014).

*Core-Periphery Relations and their Significance for the Carabamba Valley*

The Carabamba Valley was surrounded by core societies inhabiting the Pacific coast and the Andean mountain range. While the model proposed by Wallerstein suggests that it may have been under the dominance of core groups, more recent and nuanced archaeological applications of this theoretical formulation remind that locals may have retained a good measure of autonomy. Moreover, the area under investigation may have been home to outposts or colonies of surrounding societies, founded to control and extract key resources. Luxury goods may have circulated throughout the valley, fueling societal changes both within and outside the valley and some inhabitants of the Carabamba Valley may have acted as brokers, facilitating contacts between coastal and highland peoples, and profiting from this role.

## 1.2 Pedestrian Survey of the Carabamba Valley

Previous research conducted in areas adjacent to the Carabamba Valley suggests that this contact zone played a fundamental role in connecting two of the main ecological zones of the Central Andean region, the coast, and the highlands. Despite the existence of fortresses at the southern end of the valley, this area epitomizes the definition of frontier proposed by Parker (2006), a permeable and dynamic zone where peoples with different material cultures, sociopolitical organizations, and worldviews met, and a natural corridor through which goods and ideas flew. The valley and its highly desirable resources like coca leaves may have attracted communities, states, and empires occupying the surrounding areas throughout history. The Carabamba Valley may have been dominated and acculturated by these core groups, but the control of key resources may also have afforded local people tactical power (Szremski 2017; Wolf 1999). Local elites may have been cultural brokers that facilitated intergroup interaction (Mills 2018; Obstfeld, Borgatti, and Davis 2014).

Given the importance of this frontier zone and that previous studies focused on specific sites or particular aspects of the valley, a project that aimed at reconstructing the settlement patterns of this area and identifying potential interaction among distinct human groups was much needed. To achieve these goals, a pedestrian survey of the Carabamba Valley was conducted in 2019.

### 1.2.1 Preparing for Fieldwork

A first survey of the Carabamba Valley was carried out by the Prehistoric Fortification Systems of Northern Peru Project, directed by Theresa and John Topic between 1977 and 1980 (Topic and Topic 1977, 1979a, 1979b; Topic and Topic 1982), which focused on part of the Carabamba Valley and the Carabamba Plateau. The Carabamba Plateau was later studied by graduate students at Trent University in the late 1970s (DeHetre 1979; Haley 1979). Those studies included a series of archaeological maps, which were georeferenced on ESRI ArcGIS, offering a preliminary portrait of settlement patterns in the area. On ArcGIS, a dot was assigned to each archaeological site marked on such maps.

Satellite images freely available on Google Earth Pro and Bing Maps were also analyzed to identify potential archaeological features. Starting from the easily recognizable Castillo de Tomaval, located at the Virú Valley neck (ca. 150 m.a.s.l.), I inspected the right and left banks of the Carabamba River, ending approximately at the village of La Viña (ca. 2,300 m.a.s.l.). Taking into consideration the observations made by Brian Billman (1996; 2014, 2018) in the neighboring middle and the upper Moche valleys, I focused on hilltops and hillslopes, given that such areas have a higher archaeological potential than flatlands located near the riverbed (which could have been affected by flooding events). The vegetation covering the valley above 1,000 m.a.s.l. made it difficult to identify archaeological features in this area. Through this inspection, I was able to identify areas with possible archaeological features (e.g., habitational terraces, rectangular features representing possible ceremonial or administrative buildings, defensive walls, and roads) that were pinned on Google Earth Pro.

The settlements identified by earlier archaeological surveys and possible archaeological sites marked on satellite images were used to create a preliminary survey map. As a final step, the coordinates of all the sites and potential sites were loaded in a portable GPS unit and were used as starting points of the survey. The survey area was also divided into 30 transects (29 rectangular and one triangular) created using ArcGIS. The transects were opened in an IPad version of Google Earth Pro while in the field and the transects were progressively checked off after being surveyed (Figure 1.3).

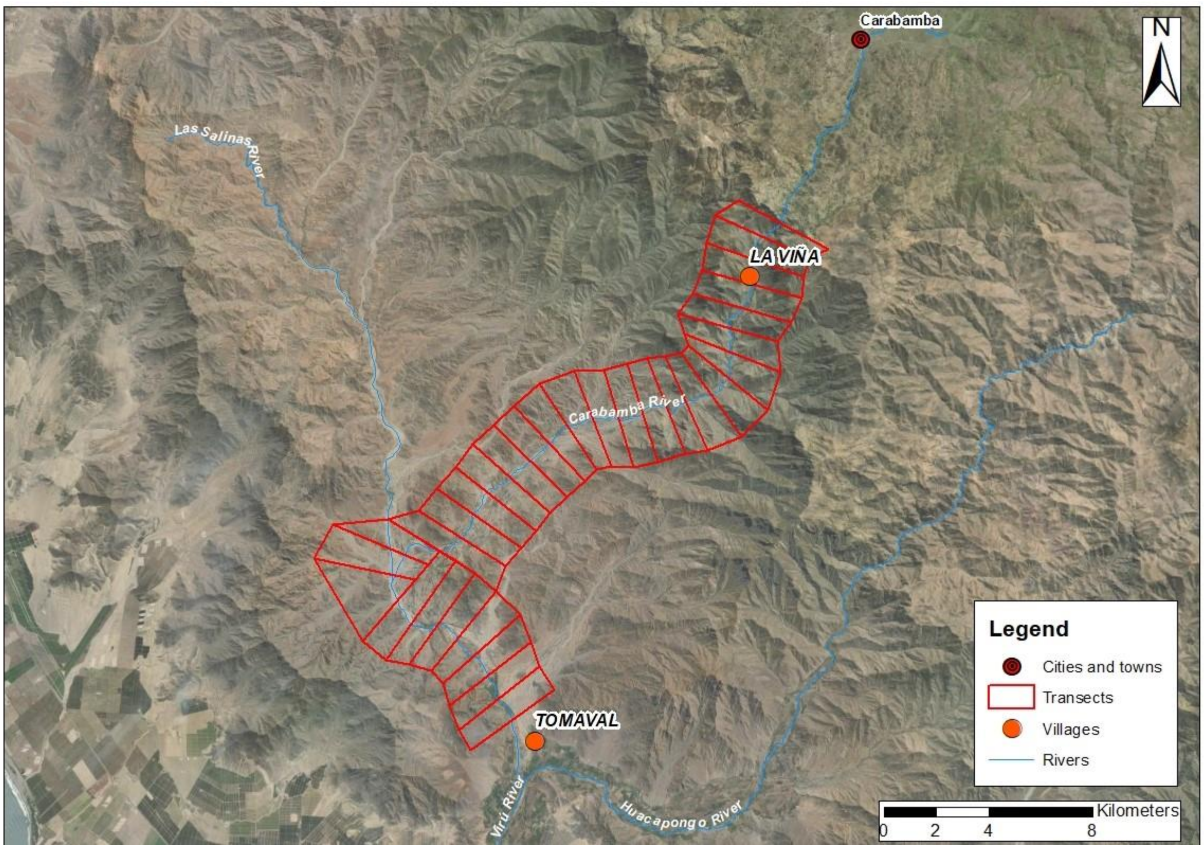


**Figure 1.3: Survey transects between the villages of Tomaval and La Viña.**

## 1.2.2 The Survey

In August 2018, I conducted a two-day pilot project along with my supervisor Dr. Jean-François Millaire, Peruvian colleagues Estuardo La Torre Calvera and Jeisen Navarro Vega, Edward Eastaugh, and fellow graduate student Kayla Golay Lausanne. Two archaeological sites (PVC-13, located next to the *caserío* of La Huaca, and PVC-27, located 3.3 km southeast of Carabamba on the hill called Cerro Sulcha) were visited. This pilot study was carried out to better plan the upcoming 2019 survey and to become familiar with the landscape and material culture of the Carabamba Valley. This first trip to the valley showed me the rugged nature of this stretch of land, the profound differences between ecological niches located in distinct parts of the valley, and it confirmed that archaeological sites are mostly located on hilltops and hillslopes. I was also able to appreciate differences and similarities in architectural features and ceramic artifacts between archaeological sites located in different parts of the valley, getting some hints on the peoples that interacted in this area. These two trips also highlighted dissimilarities (e.g., the use of stones instead of adobe bricks) and resemblances (e.g., some ceramic types) with coastal sites where I had previously worked in 2017 and 2018.

The archaeological survey was carried out in 2019 over two blocks of three months (March-May, September-November). This research took a site-based approach. Archaeological sites were defined as areas of variable sizes featuring archaeological structures (e.g., residential terraces, water canals, ceremonial platforms, defensive walls, paths, rock art manifestations, etc.) and/or concentrations of artifacts.

To achieve the goals mentioned in the previous section, I:

1) Identified archaeological sites located between the village of Tomaval and the southwestern edge of the Carabamba Plateau (ca. 90 $km^2$), which is marked by a 400 m change in altitude (ca. from 2,600 to 3,000 m.a.s.l.) and a waterfall located along the Carabamba River, near La Viña (Figure 1.4);

2) Visited sites in the Carabamba Plateau that were identified in the 1970s (DeHetre 1979; Haley 1979);

3) Mapped and defined the extent of the archaeological sites and their architectural features using both a portable GPS unit and a lightweight drone;

4) Collected diagnostic ceramic artifacts (rims, feet, decorated sherds, and significant body sherds) on the surface of each site;

5) Took notes about the architectural features of identified sites and other artifacts (e.g., human or animal bones, shells, wooden objects, and lithics).

**Figure 1.4: The waterfall along the Carabamba River.**

The crew, composed of the author, Jeisen Navarro Vega and Estuardo La Torre Calvera, and Kayla Golay Lausanne, traveled daily from Virú Pueblo to the Carabamba Valley by car.[5] The sites called V-192 and V-194 by Willey (1953) were visited and merged into one site (PVC-30). Nine sites had already been identified by Theresa and John Topic (1982), but accurate descriptions were not available. In addition, five sites surveyed by Haley (1979) in the Carabamba Plateau were visited to compare their material culture with the findings made between Tomaval and La Viña. Thus, 48 sites were visited and mapped as part of this

[5] A driver from the village of Sarraque (6.5 km northeast of Virú Pueblo) was hired.

project.[6] The sites were recorded on both notebooks and forms provided by the Peruvian Ministry of Culture. The latter includes information such as coordinates, altitude, size of the site, building materials, artifacts, chronology, degree of preservation of the site, and a short description.

As highlighted above, sites and settlements identified during earlier projects were used as starting points. From there, a binocular was used to identify archaeological remains in the vicinity. We also talked to locals throughout the survey, helping us identify several archaeological sites. To orient ourselves in the valley, we used GPS receivers and 1:100,000 maps produced by the *Instituto Geográfico Nacional del Perú* (sheet 17-F – Salaverry). An average of six hours per day was spent in the field from Monday to Friday, and a few more hours each day were spent downloading data from electronic devices, reviewing, and organizing the data and field notes. Weekends were spent cleaning and taking pictures of ceramic artifacts collected during the week (Figure 1.5).

**Figure 1.5: The crew surveying site PVC-4.**

[6] Appendix C includes a description of each archaeological site.

### 1.2.3 Data Collection

Once an archaeological site was identified, the crew aimed to reach the highest point of the ancient settlement. From there, the site was mapped with a lightweight drone (DJI Mavic Pro Platinum) featuring a 12.35 megapixel and a 26 mm lens camera (Figure 1.6). Unmanned Aerial Vehicles (UAVs) have proven cost-effective in recording anthropogenic features and large areas can be quickly and accurately mapped (Berquist et al. 2018; Campana 2017; Gonzalez-Macqueen 2018; Herrmann et al. 2018; Reu et al. 2013). Due to the rugged nature of the area and the scarcity of power sources to charge UAV batteries, it was almost impossible to follow some of the suggestions provided by previous publications (Federman et al. 2017; Nex and Remondino 2014), such as the execution of several flights or the acquisition of ground control points. Batteries generally lasted about 25 minutes, but at high altitudes, especially above 2,000 m.a.s.l., they systematically provided shorter flight time.

The drone was flown both manually[7] and in automated mode. The DJI GS Pro app for IPad allows the creation of flight paths that cover the entire surface of the site with a 70% front overlap and a 60% side overlap between images. This feature is critical when stitching the pictures together (Casana et al. 2017:Figure 2). A photogrammetry software (Agisoft Metashape) is used to create an orthomosaic – a georeferenced and rectified picture merging several individual images. To merge photos, the software looks for tie points (i.e., features shared by different photos): high overlap ensures a high number of tie points and the production of a high-quality orthomosaic. In the automated flight mode offered by DJI GS Pro, the drone was taking off automatically and taking pictures at equal intervals (two seconds) with the camera looking downwards (90°). The quality of the pictures taken varied from one site to the next and between different sectors of a given site, because 1) the drone was flown at a constant elevation, 2) the topography of the sites was irregular and 3) the structures were therefore located at variable distances from the camera. From December 2019 to July 2020, back at Western University, I processed the UAV pictures with the

[7] In manual flight mode, the user has complete control over the tool. A controller connected to a portable device (in our case an IPad) is used to take off, to move the drone forward, backwards, and sideways, to rotate and land the UAV. Moreover, the user can adjust the inclination of the camera and take pictures when desired.

photogrammetry software Agisoft Metashape Professional Edition (version 1.6). The workflow created by the United States Geological Survey (2017) was used to create orthomosaics for approximately 90% of the sites (42 out of 48).

**Figure 1.6: Drone survey in the Carabamba Valley.**

Next, the crew walked throughout the site, taking pictures with digital cameras of the most relevant architectural features, organic remains (e.g., seashells, land snails, human and animal bones, wooden objects), lithics (e.g., agricultural tools, loom weights, grinding and pounding stones) and ceramic artifacts lying on the ground. A handheld GPS was used to log the coordinates of different sectors of the sites (e.g., funerary areas, residential terraces, water canals, ceremonial areas).

While walking throughout the site, we also collected diagnostic ceramic artifacts from the surface. The potsherds were placed in different bags, according to the sector in which they were collected. Four sites out of 48 did not produce ceramic sherds. It should be noted that ceramics were collected only in the area between 450 and 3,000 m.a.s.l., while between 150 and 450 m.a.s.l. and 3,000 and 3,500 m.a.s.l. pottery was photographed in the field.[8] The number of sherds collected or observed on any given site ranges from zero to 135, with an average of 30.6 sherds per site. 964 sherds were collected, cleaned, numbered[9], analyzed, and subsequently stored in the Peruvian Ministry of Culture facility at Huaca El Dragón, Trujillo. Another 533 sherds were only analyzed and photographed in the field. The ceramic analysis is thus based on a collection of 1,497 sherds (see Chapter 3).

## 1.3 Summary

Recent research has shown that the Carabamba Valley in Northern Peru was a key contact zone that connected (and still connects) different ecological zones and their inhabitants. The anthropological literature provides us with several concepts that can shed light on the occupation of contact zones and the nature of intergroup interaction. This overview suggests that the Carabamba Valley could be defined as a porous frontier zone that facilitated contacts among different groups of people. This area also included highly desirable resources (e.g., water and coca) that were likely coveted by neighboring groups that may have tried to settle this area or conquer this peripheral zone to gain access to goods not available in their homelands. However, core-periphery relations do not always imply the existence of power imbalances, and the control of key resources may have given locals the power to deal on equal terms with core sociopolitical formations. Despite its importance, very few archaeological investigations have been conducted in the Carabamba Valley so far. This project aims to reconstruct the settlement patterns and interactive processes that took place in this important area through the *longue durèe*, contributing to the understanding of social, political, and economic developments of this part of Northern Peru during Prehispanic times,

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[8] The permit obtained from the Peruvian Ministry of Culture allowed me to collect potsherds only in the middle and upper valleys.

[9] Each sherd was labeled with the project code (PVC – Proyecto Valle de Carabamba), site number (e.g., 13) and a progressive number (e.g., 355). For example:

PVC-13

355

and, more broadly, to the comprehension of contact zones. These goals will be achieved through the analysis of archaeological data (ceramics, other artifacts, and ecofacts, data on architectural features, and orthomosaics of sites) collected during a pedestrian survey conducted in 2019.

## 1.4 Structure of the Dissertation

This dissertation is composed of six chapters. This introductory chapter (Chapter 1) is followed by a survey of the geography of the Western Andean area (Chapter 2). This chapter also includes a presentation of the environment of the Carabamba Valley, a survey of the cultural history of the Peruvian North Coast and the Peruvian North Highlands, and an overview of previous research conducted in the area under investigation. Chapter 3 presents data on the ceramic artifacts collected during the survey and the creation of a chronological framework for the Carabamba Valley. Chapter 4 focuses on archaeological sites and their functions, the population of the valley, and the topography of the research area at different moments through time. Chapter 5 is a settlement pattern analysis of the Carabamba Valley, focusing on the slow-paced rhythms and long-lasting trends that characterized its social and long-term histories, respectively (*sensu* Braudel [1949] 1996). Chapter 6 concludes the dissertation with reflections on key patterns identified in this study and with suggestions for future research. The dissertation also includes four appendices that allow readers to navigate through the data analyzed in this study (tables showing ceramic data, tables with demographic and landscape data, a description of the archaeological sites, and a file including spatial data).

# Chapter 2

# 2 The Geographic Setting, Historical Context, and Previous Research

This chapter is an overview of 1) the environmental characteristics of the research area, 2) the main social, political, and economic developments that have marked Northern Peru between 1800 B.C. and A.D. 1532, and 3) the results of archaeological projects conducted in Andean intermediate zones and the few investigations previously carried out in the Carabamba Valley.

## 2.1 The Geographic Setting

The Carabamba Valley (ca. 150 - 3,500 m.a.s.l.) lies between the Peruvian North Coast and the Peruvian Northern Highlands and is the product of the Carabamba River. The river is 48 km long and its basin covers a total area of 696 $km^2$ (ONERN 1973), originating one km northwest of the modern town of Carabamba (ca. 3,500 m.a.s.l.) from the union of the Quebrada[10] Yahuaranay, Quebrada Lindero, and an unnamed *quebrada*. The first stream begins between Cerro (mountain) Huallarquin (3,750 m.a.s.l.), Cerro Shugo (3,800 m.a.s.l.) and Cerro Quinga (4,131 m.a.s.l.), which is also the starting point of Quebrada Lindero. The third stream starts in the vicinity of another mountain located in the Carabamba Plateau, Cerro Munday (3,900 m.a.s.l.). While flowing southwest towards the coast, the Carabamba River is fed by several intermittent streams. The right bank tributaries are five streams without a name, Quebrada Algodonal, and the Las Salinas River. After meeting the Las Salinas River, the river is also called Carabambita and at least six quebradas join it. The left bank tributaries are the quebradas Padahuambo, Siquis, Higuerón, Bola, Chorro Blanco, Las Lajas, Pates, while Quebrada Mayasgo and Quebrada Seca join the river in the Carabambita section (Briceño Rosario and Fuchs 2009). Close to the village of Tomaval (ca. 150 m.a.s.l.), the Carabamba River meets the Huacapongo River, forming the Virú River. The environment

[10] The term *quebrada* can be translated as ravine.

of the steep (average slope 7%[11]) and narrow Carabamba Valley is not homogenous, and the following sections provide a detailed description of the different ecological zones found in the valley. Ethnographic data on modern land use is also presented.

### 2.1.1 The Andean Ecological Zones and the Carabamba Valley

The Central Andes can be subdivided into three ecological macro-areas; the arid and hot coast on the western slope of the mountain range, the rainy and colder highlands, and the humid *selva* or *montaña* (the Amazon basin) located in the eastern slope of the Andes (ONERN 1973; Rostworowski 2004). However, this subdivision does not illustrate the full range of ecological niches featured in this area of the planet. A more nuanced depiction of the Andean environment was made by Javier Pulgar Vidal (1941, 1987). The Chilean scholar argued that the Central Andes features eight different ecological zones. He defined these zones based on altitude, vegetation, fauna, and indigenous use of such areas, labeling them with Quechua terms. The western slope features the *chala* (0 - 500 m.a.s.l.), *yunga marítima* or *chaupiyunga* (500 - 2,300 m.a.s.l.)[12], *quechua* (2,300 - 3,500 m.a.s.l.), *suni* or *jalca* (3,500 - 4,000 m.a.s.l.), *puna* (4,000 - 4,800 m.a.s.l.) and *janca* (4,800 - to the highest peaks) zones, while the eastern slope of the Andes features the *yunga* fluvial (1,000-2,300), *rupa-rupa* or *selva alta* (400 - 1,000 m.a.s.l.) and *selva baja* (400 - 0 m.a.s.l.) zones (Sandweiss and Richardson, III 2008). The area under investigation is located in the western slopes of the Andes and includes the *chala*, *yunga marítima*, and *quechua* regions (Figure 2.1).

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[11] Information gathered from ONERN (1973).

[12] María Rostworowski (1973) placed the lower limit of the *chaupiyunga* at 200 m.a.s.l.

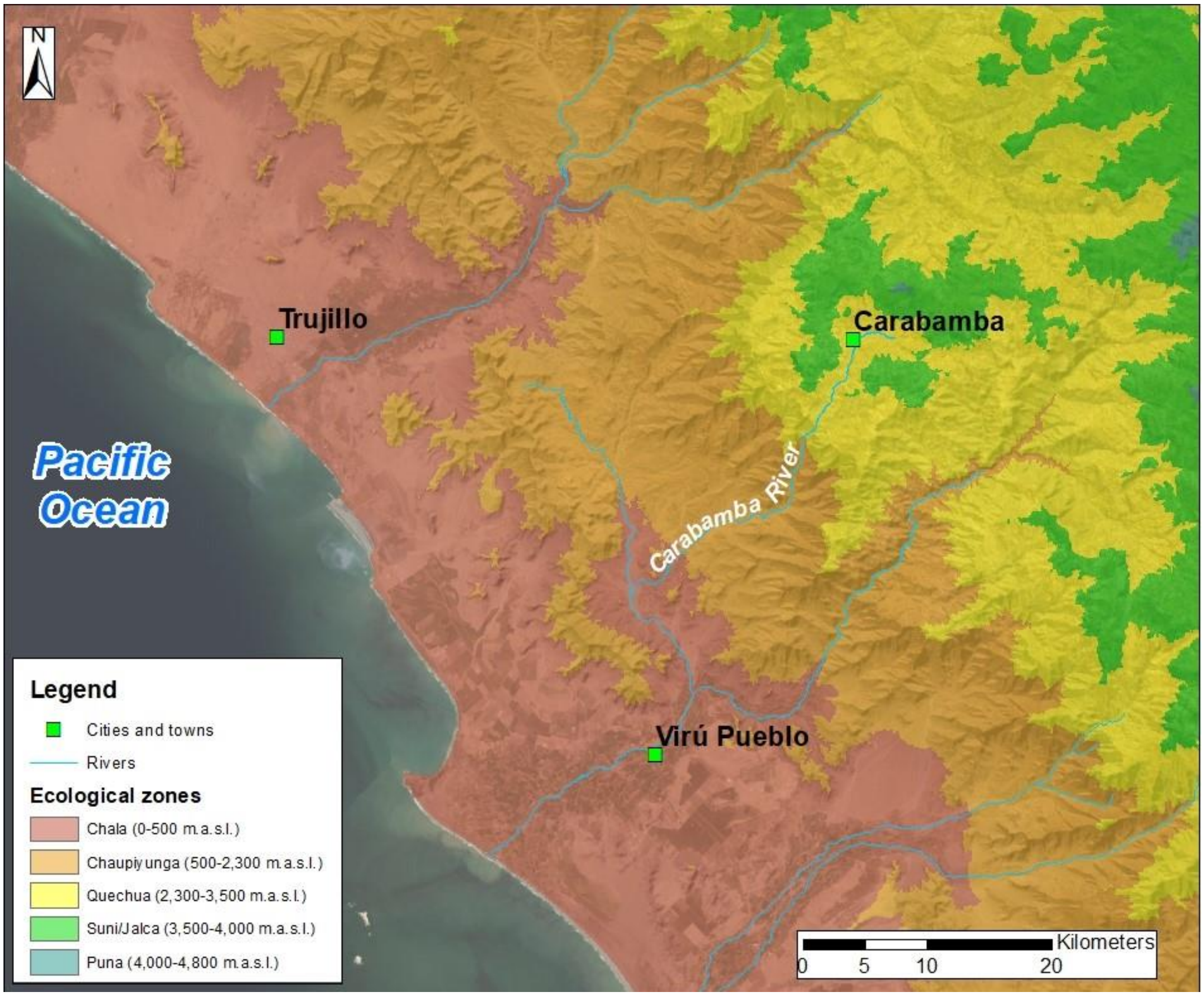


**Figure 2.1: The ecological zones of the area under investigation.**

The *chala* is characterized by a dry, desert-like climate. The arid climate is caused by both the Humboldt Current and the rain shadow created by the Andean mountain range. Rainfall is very scarce in this zone. Rivers run perpendicularly through the *chala* and in the summer (December-March) they carry a larger amount of water due to rainfalls in the highlands. During the winter (June-September), this area presents a thick fog coverage, called *garúa*, that allows the growth of xerophytic (e.g., cacti) and epiphytic (e.g., *Tillandsia sp.*) plants. Very few trees grow in this zone, and *algarrobo* or *huarango* (*Prosopis pallida*) and *molle* (*Schinus molle*) are the most common. Moreover, *caña brava* (*Arundo donax*) grows on the riverbanks and next to springs. Due to water scarcity, this area can be farmed only through irrigation. Maize (*Zea mays*), squash (*Lagenaria siceraria*, *Cucurbita moschata*, and *Cucurbita maxima*), cotton (*Gossypium barbadense*), beans (*Phaseolus vulgaris*), ají peppers

(*Capsicum baccatum*), fruits, and non-indigenous plants like asparagus (*Asparagus officinalis*) and sugar cane (*Saccharum officinarum*) are produced in this zone (ONERN 1973; Sandweiss and Richardson, III 2008).

The *chaupiyunga* is a hot region characterized by the constant presence of the sun (Pulgar Vidal 1941). Even here precipitations are scarce, but the closer proximity to river sources and the rainy highlands ensures steadier access to water resources. However, here again, irrigation is essential. As underlined by Marcus and Silva (1988), the Quechua word *chaupi* means “middle”, while *yunga* translates into “warm land”. George Lau (2004a) highlighted that this ecological zone was: 1) a place of interaction among coastal and highland groups (Proulx 1982; Topic 2013; Topic and Topic 1983, 1985), 2) essential in providing water to the coastal irrigation networks and canal intakes may be placed here (Billman 1996; Szremski 2017)[13], and 3) it has the ideal climate where crops desired by both coastal and highland people can be cultivated. Like in the *chala* zone, xerophytic and epiphytic plants, and a few tree species mark the flora of this area. Moreover, ephemeral grasses grow in the rainy summer. The plants farmed here are similar to the ones grown in the *chala*. Nevertheless, this area is also ideal to grow coca (*Erythroxylum var. truxillense*)[14], a plant whose leaves were and still are highly valued by Andean people (Allen 2002; Valdez, Taboada, and Valdez 2015).

Coca bushes grow in areas where the temperature ranges from 18 to 25°C and they are cultivated in flat areas. The presence of irrigation canals is important, but coca bushes are extremely resistant to droughts. They can be protected from excessive solar radiation placing them below taller plants (Rostworowski 1973). Coca leaves are harvested in December, March/April, and July. Subsequently, the leaves are sun-dried and they are ready to be

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[13] It should be noted that the irrigation canals that feed the coastal Virú Valley start in the *chala* zone, where the Carabamba and Huacapongo River meet (Downey 2015).

[14] Four varieties of coca are currently cultivated in the Andes. The variety cultivated in the western slope of the Andes is *Erythroxylum novogranatense var. truxillense*, which features smaller and lighter green leaves than coca grown in the eastern slope (*Erythroxylum coca var. coca*) (Marcus and Silva 1988; Plowman 1984).

consumed (Plowman 1984). Chewing[15] coca leaves reduces hunger and suppresses fatigue and pain (Marcus and Silva 1988), it gives strength and it is a remedy against gastrointestinal problems and altitude sickness, among other things (Plowman 1984). Moreover, coca leaves are still widely used during public and private events, such as religious festivals, inaugurations of buildings and public officials, weddings, funerals, and as a currency to pay for labor or in the barter of goods (Valdez, Taboada, and Valdez 2015).

Archaeological research has shown that people knew the properties of coca leaves since at least 6000 B.C. (Dillehay et al. 2010). People chewing coca were depicted by Nasca (Proulx 2006), Moche (Bawden 1996), and Lima (Sghinolfi 2016; Velásquez-López 2015) cultures among others, and coca leaves were used in mortuary rituals (Reinhard and Ceruti 2010) and they were offered at *huacas*[16] (Valdez, Taboada, and Valdez 2015). According to colonial sources, the Inka strictly controlled access and use of coca, and only nobles and the army were allowed to chew the leaves. However, research questioned this view, highlighting the long-lasting importance of such a plant among all Andean people (Parkerson 1983). The use of coca leaves was noted and described by chroniclers like Pedro Cieza de León ([1553] 2005) and the Spanish empire exploited plantations to supply miners with leaves (Plowman 1984). Colonial documents also provide us with important information on the organization of labor in coca plantations located on the eastern slope of the Bolivian Andes. During Inka times, small groups of highland people (50 men and their families) were permanently residing in the *chaupiyunga*. These individuals, called *camayos*, were responsible for drying and packing coca leaves and their role was inherited by a descendant. *Camayos* owned a plot of land (*chacra*) where they cultivated coca and the leaves were traded for highland products. Coca was harvested three times per year and about 200 temporary workers (*mitayos*) from the highlands were descending to the *chaupiyunga* along with 160 women and 8/10 children

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[15] As highlighted by Timothy Plowman (1984), coca leaves are not actually chewed. Leaves are moistened with saliva and the juices with stimulating properties are ingested. Such properties are enhanced by mixing coca leaves with ashes and/or lime.

[16] The term *huaca* encompasses wide array of powerful objects and places (mountains, rivers, rocks, temples, statues, mummies, burials etc...) that were deemed as living beings (*camascas*) by Andean people and they were part of the community. *Huacas* were not abstract notions but had a material nature. They were worshiped, consulted, had agency and strongly influenced everyday life (Bray 2015; Jennings and Swenson 2018).

when it was time to pick up the leaves. While women and children took care of preparing meals for the workers, the *mitayos* harvested coca leaves. The leaves were subsequently packed by the *camayos* using fibers that they previously harvested. Lastly, the leaves were transported to the highlands by the *mitayos*. The workers loaded the packages on their backs or, more rarely, using llamas (Julien 1998). Thus, coca production may have been managed in this way also on the western slopes, even before Inka times. Controlling this area was therefore deemed important by both coastal states and empires, and highland polities during Prehispanic and Colonial times (Billman 1996; Gagnon et al. 2013; Rostworowski 1988; Szremski 2017; Topic and Topic 1985).

The *quechua* region features a cooler climate than the areas described above and Javier Pulgar Vidal (1941:154) defined it as “el mejor clima del Perú”. The average temperature ranges between 11 and 16°C, with a maximum of 29°C and a minimum of -4°C. Many rivers originate here or in the higher *suni* region. Also, precipitations in the summer are more abundant and this allows people to carry out both rain-fed and irrigation agriculture. The vegetation of this zone is mostly composed of bushes and grasses. The *quechua* zone is the uppermost limit of maize and many different tubers like potatoes (*Solanum tuberosum*), olluco (*Ullucus tuberosus*), yuca (*Manihot esculenta*), and oca (*Oxalis tuberosus*) are grown here. The inhabitants of this region take advantage of the abovementioned cool temperatures to produce both dried potatoes (*chuño*) and dried camelid meat (*charki*) (Sandweiss and Richardson, III 2008).

Based on the topography, environmental characteristics, and artifacts recovered from the surface, I decided to divide the Carabamba Valley into four parts. The lower valley (ca. 150 - 450 m.a.s.l.), the middle valley (ca. 450 - 1,000 m.a.s.l.), the upper valley (ca. 1,000 - 3,000 m.a.s.l.) and the plateau (ca. 3,000 - 3,800 m.a.s.l.). The lower valley shows the characteristics of the previously mentioned *chala* region. However, the dryness of this area is mitigated by the presence of a spring (*puquio*) called Puquio Grande, which is surrounded by trees and canes. This source of water was probably at the root of the foundation of the namesake village. The middle valley is the lower portion of the *chaupiyunga* zone. Like the lower valley, it is surrounded by narrow gorges that occasionally bring water to the river. The slightly higher presence of water is mainly due to the existence of at least four *puquios*

(Instituto Nacional de Recursos Naturales 2003) and this is reflected in the larger portions of land farmed by local people. The upper valley encompasses part of both the *chaupiyunga* and the *quechua* regions. At about 1,000 m.a.s.l., the vegetation increases, and the valley becomes narrower and steeper, reaching 3,000 m.a.s.l. in approximately 10 km. The border between the upper valley and the plateau is marked by a sudden drop and a waterfall. On the plateau, which is located in the *quechua* region, the river is still flanked by peaks, but the steepness of this area is markedly lower (Figure 2.2 and 2.3).

**Figure 2.2: The lower (top left) and the middle valleys (top right); the upper valley (bottom left) and the Carabamba Plateau (bottom right).**

### 2.1.2 The Subsistence Strategies in the Carabamba Valley

Today, the area under investigation (ca. 150 - 3,000 m.a.s.l.) is sparsely populated and people live in six small groups of houses called *caseríos*. The *caseríos* of Puquio Grande (250 m.a.s.l.), La Huaca (330 m.a.s.l.), La Calera (390 m.a.s.l.), Mayasgo (480 m.a.s.l.), El Huayo (725 m.a.s.l.), Juyacul (1,000 m.a.s.l.), and El Olivar (1,400 m.a.s.l.) belong to the District of Virú (Province of Virú, Department of La Libertad), while La Viña (2,300 m.a.s.l.) is part of the District of Carabamba (Province of Julcán, Department of La Libertad).[17] When I visited the sites located in the plateau, I walked through the villages of Padahuambo (3,200 m.a.s.l.) and Satapampa (ca. 3,300 m.a.s.l.), located 4.75 km and 6 km southeast of Carabamba, which are part of the homonym district (Figure 2.3).

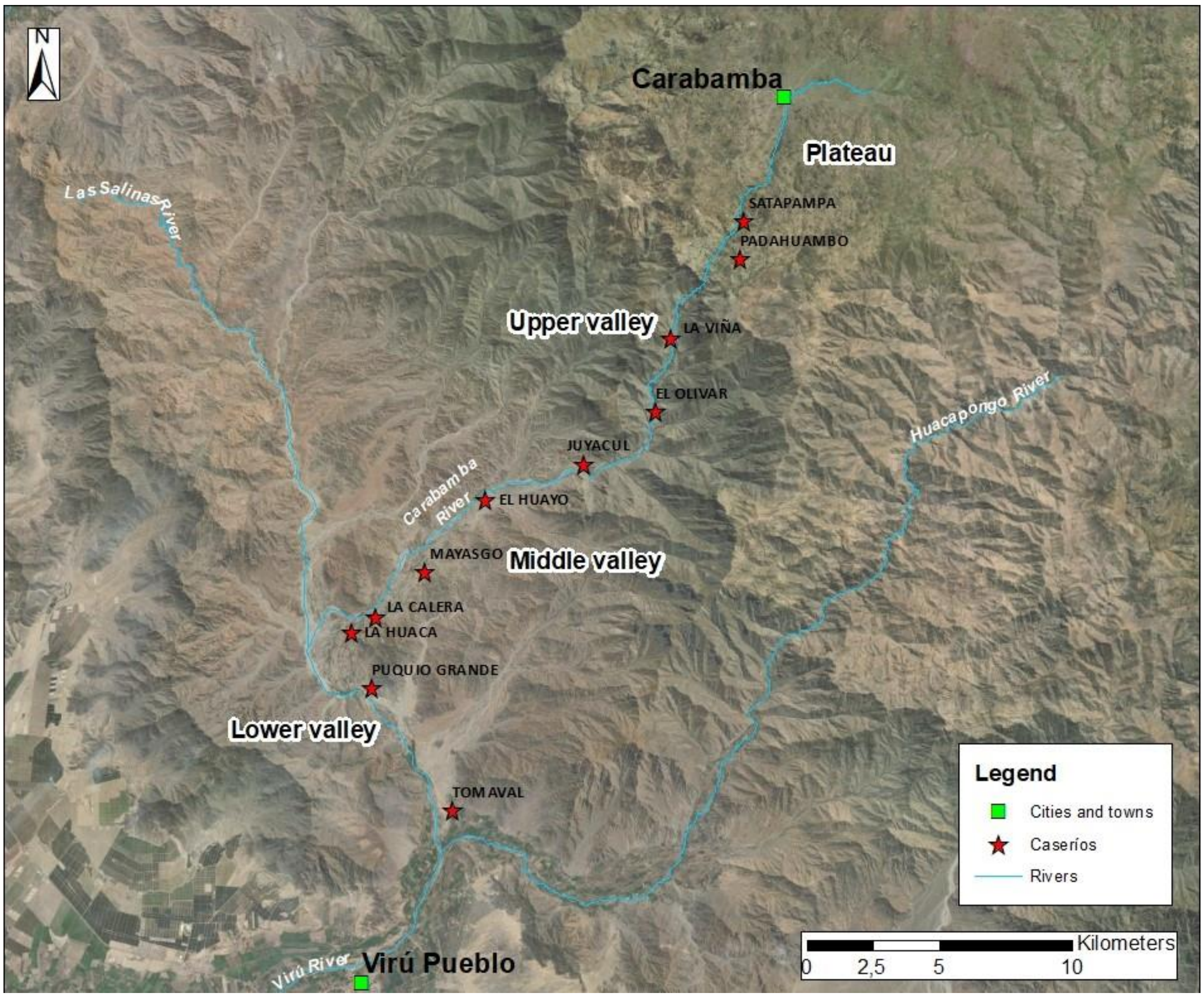


**Figure 2.3: The *caseríos* and the four parts mentioned in the text.**

[17] Today's Peruvian administrative subdivision is composed of Departments, Provinces and Districts.

In my subdivision of the valley, Puquio Grande falls into the lower valley, La Huaca, Mayasgo, and Juyacul are in the middle valley, El Olivar and La Viña in the upper valley, and Padahuambo and Satapampa are located in the plateau. The surveyed area includes three ecological zones defined by ONERN (1973): Desierto Pre-Montano (ca. 0 - 900 m.a.s.l.), Matorral Desértico Pre-Montano (ca. 900 - 1,800 m.a.s.l.) and Estepa Espinoza Montano Bajo (ca. 1,800 - 2,800 m.a.s.l.), while the plateau is included in the Pradera Húmeda Montano (ca. 2,800 - 3,700 m.a.s.l.). Reflecting the characteristics of the *chala*, the first zone is arid, with an average temperature of 20.3°C and annual precipitations that range from 7 to 40/50 mm. The Matorral Desertico Pre-Montano is also characterized by an arid climate, but annual precipitations range from 50 to 200 mm and the average temperature is 17°C. This zone is steep, the natural vegetation is scarce (mostly cacti and ephemeral grasses), and irrigation is essential to cultivate the small amount of arable land available (the main products are maize, yuca, vegetables, fruit, and coca). The Estepa Espinoza Montano Bajo is more humid, with precipitations ranging from 200 to 500 mm per year and an average temperature of 14°C. The natural vegetation is composed of cacti, grasses, and trees. Due to higher precipitations, this zone can be farmed either with or without irrigation systems. Potatoes, maize, fruits, and non-native cereals like barley and wheat are the main crops. Lastly, the Pradera Húmeda Montano characterizes most of the Carabamba Plateau. The average temperature is 10°C, and the annual precipitations range from 500 to 1,000 mm. The vegetation is composed of cacti and grasses and high quantities of maize, tubers, and non-native cereals are grown in this zone (Figure 2.4).

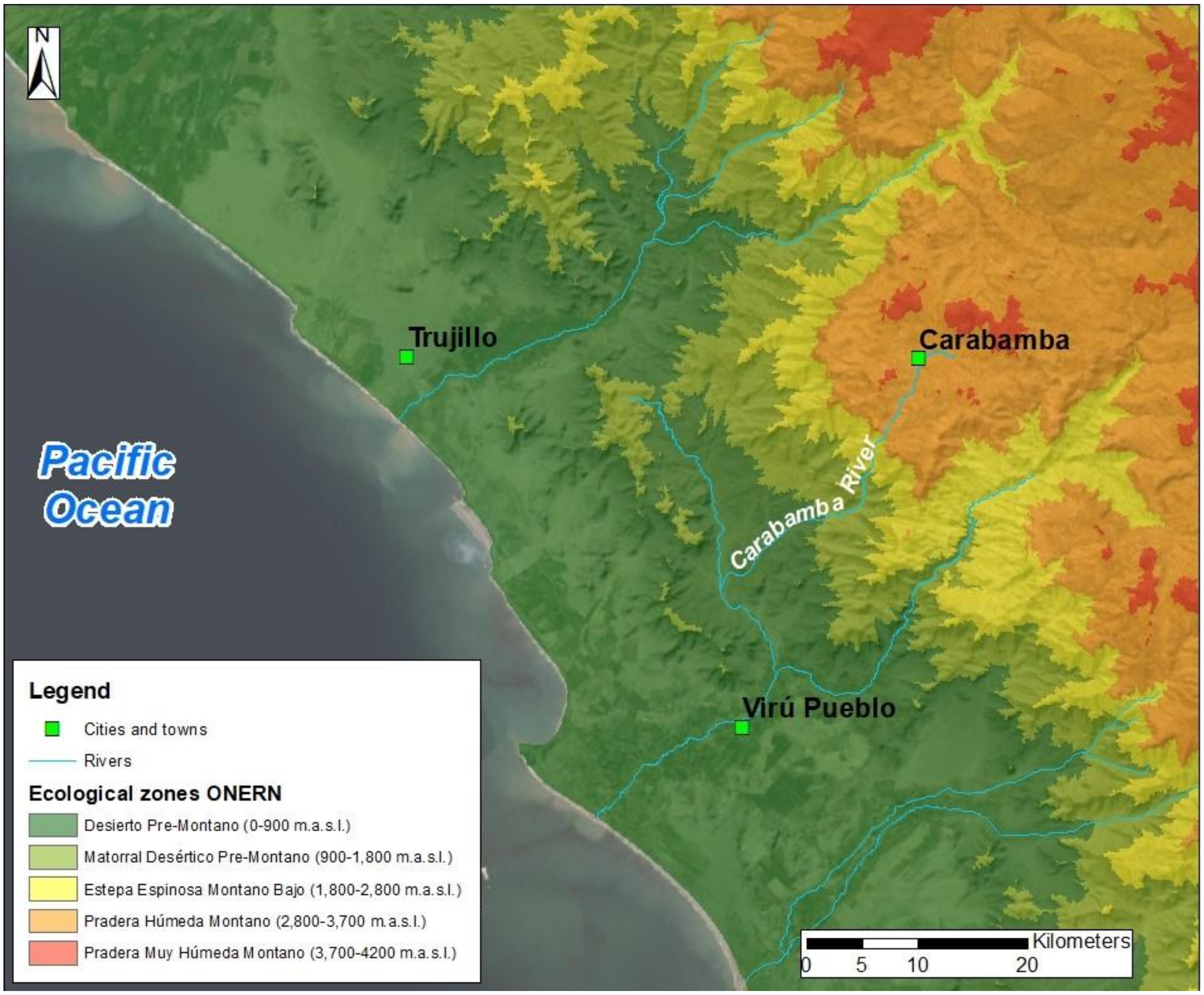


**Figure 2.4: The ecological zones defined by ONERN (1973).**

The valley is crossed by an unpaved road (LI-119) that goes from Virú Pueblo to Carabamba. The road runs along the river until Mayasgo, where it crosses the river, and it follows the Quebrada Algodonal until reaching the plateau and flanking the river again. However, the detour was built in the early 2000s, moving the road away from the natural path that follows the Carabamba River. Locals who do not own cars or motorcycles still walk along the path that passes through the abovementioned *caseríos*, as was likely the case during Prehispanic times. A possible paved path was identified on the left bank of the river that leads to the site called PVC-22. Jesús Briceño and Peter Fuchs (2009) also reported that it takes eight hours to walk from the *caserío* of La Huaca to Carabamba.

Walking throughout the valley and talking with modern dwellers, I noted that people grow a variety of crops. Maize, beans, ají peppers, squash, and fruits like avocado (*Persea americana*), guava (*Psidium guajava*), pacae (*Inga feuillei*), passion fruit (*Passiflora edulis*), and pineapple (*Ananas comosus*, which is a non-indigenous plant) are grown throughout the entire valley. Tubers (potatoes, oca, olluco, and yuca) and wheat (*Triticum sp.*) are mostly grown in the upper valley and the plateau. The upper valley also shows some plants of chirimoya (*Annona cherimola*), prickly pear (*Opuntia sp.*), and non-indigenous plants like sugar cane and orange (*Citrus sinensis*). Due to the absence of a paved road in the upper valley, the goods produced here are transported to the middle valley and the plateau using donkeys. The Carabamba Plateau is well known in Northern Peru for the quality of the potato ("*papa de Carabamba*") produced here.

Nowadays, due to water scarcity, the lower and the middle valleys feature only one planting season. However, land in the upper valley can be farmed twice a year; fields showing beans in May featured almost full-grown maize plants in November. The agricultural fields are currently fed through rudimentary water pipes, but water canals excavated on the hillslopes are still used and some of them were built during Prehispanic times and maintained for centuries. The outer side of the canal is generally outlined by stones, which could be removed at regular intervals to let water flow to the underlying fields. During the survey, I did not see coca plants, but local people claimed that it was grown near the *caserío* of El Olivar until a few decades ago. Nevertheless, farmers are still using coca leaves when tending agricultural fields (and when showing us archaeological sites)[18].

The name El Olivar suggests that olive trees (*Olea europaea*), another non-local plant, were grown in this share of the valley. This is confirmed by colonial documents, which also tell us that cotton, maize, and ají peppers were produced between the 16th and the 17th centuries. Such documents reveal that there were vineyards in the *chaupiyungas* and the name of the

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[18] Plastic bags with coca leaves were also left by *huaqueros* (looters) at Prehispanic cemeteries identified in the valley.

*caserío* of La Viña may suggest that vines were grown also in the upper Carabamba Valley during colonial times (Castañeda Murga and Millaire 2015).

As noted during the survey and confirmed by an environmental study conducted in the 1970s the area is particularly arid, and the river is completely dry some years (ONERN 1973). As highlighted above, springs were therefore extremely important to locals, and Juan Castañeda and Millaire (2015) reported that the farming of both the Carabamba and the Huacapongo valleys caused several water shortages in the coastal Virú Valley. This led to legal fights during the 17$^{th}$ century (Castañeda Murga and Millaire 2015) and disputes over access to water resources could have been a bone of contention between people occupying different shares of the valley even in Prehispanic times. Towards the beginning of the 20$^{th}$ century, a dam was built 2 km south of Carabamba and this may have further reduced the already low amount of water flowing to the valley (Leiva González et al. 2019b).

Torrential rains caused by the El Niño Southern Oscillation (ENSO) phenomenon represent a serious threat to people living on the western slope of the Andes. During these events, which have been affecting Northern Perú and Southern Ecuador since ca. 15,000 B.C. at different degrees of intensity (Rein et al. 2005), the trade winds that push warm water towards Asia and Oceania weaken, oceanic upwelling diminishes, and the temperature of the Pacific Ocean increased by about 6°C (Rodbell et al. 1999). The warmer sea temperature causes the migration or the death of several marine species, heavily affecting fishing communities living along the coast. The warm winds come from the west and the Andean mountain range cannot protect the western slope. Such winds produce moisture that leads to intense rainfall. The level of coastal rivers rises, inundating agricultural fields and damaging irrigation networks and houses. In areas like the Carabamba Valley, water running through the steep quebradas produces flash flooding, destroying irrigation canals, roads, houses of mud bricks, thus endangering the already unstable equilibrium of these zones. Moreover, flooding is usually followed by the spread of diseases and pest invasions (Caramanica et al. 2020). El Niño events occur every two and a half to eight years (Rodbell et al. 1999). Over the last few decades, intense events impacted Northern Peru in 1982-1983, 1997-1998, and 2017 (Ramírez and Briones 2017). El Niño events have been identified at several Prehispanic archaeological sites as thick silt layers and scholars have posited that such events could have been major catalysts of sociopolitical change (Mauricio 2018; Mogrovejo and Makowski 1999; Nesbitt 2012; Sandweiss et al. 2001; Shimada and Segura Llanos 2010).

In 2019, some inhabitants of Mayasgo in the Carabamba Valley were still living in tents supplied by the Peruvian Red Cross two years earlier. Also, rain damaged the unpaved road running across the valley (INGEMMET 2017). Recent research conducted in the upper Huacapongo Valley shows that the 1982-1983 and 1997-1998 events destroyed the road leading to the coast and people had to walk to the Carabamba Plateau to buy supplies. El Niño did not affect daily life in the plateau but instead produced a higher agricultural output (Leiva González et al. 2019b). On the other hand, the 1982-1983 El Niño caused an increase in the population of the Carabamba Valley and the number of families residing around the *caserío* of La Huaca went from 30 to 93. However, after a four-year-long period of drought, several families had to leave this area in 2005 (Briceño Rosario and Fuchs 2009). In 2017, a census was conducted by the *Instituto Nacional de Estadistica e Informatica* (2018) and the population of the *caseríos* located in the *chaupiyunga* was recorded. The total population of the lower, middle, and upper valley was 352 people. However, it should be noted that the population was recorded after a strong El Niño event, which may have affected the results. Besides, the document produced by the Peruvian government does not mention El Olivar at all. However, this group of houses was likely considered to be part of Juyacul.

Agriculture is not the only source of livelihood for people living in the Carabamba Valley. During the summer, inhabitants of the middle and upper valley collect land snails (*Scutalus sp.*), which are commonly called *caracoles de cerro*. This gastropod species lives between 50 and 2,700 m.a.s.l. Snails can be found on rocks, cactuses, and trees, and they reproduce during the rainy summer. Therefore, it is easier to catch them at this stage of their life. Due to high humidity, the abovementioned El Niño events lead to an extraordinary increase in the population of these land snails, and they constitute an important source of food during periods of environmental crisis. *Scutalus sp.* have been consumed over the last 11,000 years in Northern Peru and have been depicted on both Moche and Chimú pottery. In particular, Moche pottery shows that people were collecting them by hand or with wooden sticks (Bourget 1990). After being collected, *caracoles de cerro* are purged with maize flour or squash endocarp and then the edible parts are extracted with a needle. Lastly, the snails are parboiled or cooked and eaten along with tubers, *ají amarillo,* and maize beer (*chicha de jora*) (Castañeda Murga 1996). When consumed before being purged, caracoles may have psychotropic effects (Elera Arévalo 1993).

Today, land snails are locally consumed or collected and brought to Virú's market, where they are exchanged for coastal products. Dwellers of the valley collect and sell caracoles on the weekend. This practice is not new, and it was noted by Allan R. Holmberg (1950) in the 1940s and it could have happened also before the Spanish conquest. Moreover, the survey showed that the surface of most sites features large quantities of *caracoles de cerro*, sometimes associated with shellfish (*Donax obesulus* and *Mesodesma sp.*), confirming the local consumption of the gastropods and contacts with coastal groups.

Briceño and Fuchs (2009) reported that people living between the lower and the middle Carabamba Valley hunt for lizards called *cañanes* (*Dicrodon sp.*) along the Las Salinas River. This area still features *algarrobo* trees[19] whose fruits are the only means of subsistence for these reptiles. *Cañanes* hibernate in holes located close to *algarrobo* trees during the austral winter (June-September) and they re-emerge during the summer to stock up for the following winter. As shown by Holmberg (1957) in his ethnological study of the Virú Valley, the consumption of lizards is another long-lasting tradition of Northern Peru and, like land snails, they are depicted on Moche pottery. In Virú, *cañanes* are captured using traps laid out around *algarrobos.* Subsequently, they are scorched, scaled, and stewed.

The survey of the upper valley showed the presence of sheep, goats, cows, and horses grazing towards the end of the rainy summer when the surface presents an abundance of ephemeral grasses. Most of these animals are owned by people living in the Carabamba Plateau, who leave their livestock free to roam. There are no apparent tensions between the owners and the dwellers of the upper valley, and these two groups share the resources of the area. A similar pattern might have existed during the Prehispanic past when domesticated camelids (*Lama glama* and *Vicuña pacos*) were herded in the region. Alpacas were

[19] These trees are disappearing due to deforestation. This means that also the population of *cañanes* is dramatically decreasing.

domesticated from their wild ancestors (*Vicugna vicugna*) in the *puna* region (4,000 - 4,800 m.a.s.l.) of the Peruvian Central Highlands around 4,000 B.C., while the domestication of llamas from guanacos (*Lama guanicoe*) took place in different areas of the Andes between 3000 and 1800 B.C. (Bonavia 1996; Wheeler 2012).

Camelids were utilized as a source of meat and wool, and, especially llamas, were also used as pack animals, playing a pivotal role in the circulation of people, goods, and ideas (Bonavia 1996; Shimada and Shimada 1985; Szpak et al. 2015; Szpak et al. 2016; Topic, McGreevy, and Topic 1987). John Topic (1977) noted that Chimú craftsmen at Chan Chan were using pre-spun wool. In the Colonial era, the Carabamba Plateau was an important cloth production center, hosting a textile factory owned by Augustinian friars (Espinoza Soriano 1971). This may also have been a production center during Prehispanic times, and eventually traded against coastal products (Topic and Topic 1979a).

Talking with people living in La Viña, I also learned that some families own land in different parts of the valley. Land in the middle valley is used to grow maize. Other than offering *caracoles*, land in the upper valley produces maize, beans, sugar canes, wheat, and beehives are placed there to produce honey, while plots of land owned in the plateau yield *papa de Carabamba*. The exploitation of different ecological zones located next to one another recalls Stephen Brush's (1976) compressed type of Andean zonation and the case of resource sharing noted in the Chillón Valley (Dillehay 1979) rather than Murra's (1975) Vertical Archipelago Model. The compressed Andean zonation is featured in steep and short river valleys, where people can quickly (in less than one day) travel between ecological niches. Conversely, in the archipelago model people have to travel several days through areas occupied by other groups to reach the ecological zone with the desired resources; to avoid frequent travels, satellite settlements (the islands that compose the archipelago) located away from the homeland could be founded (Brush 1976). When an area and its resources are shared, different groups cooperate, and both get advantages from this interaction; in our case, highlanders were likely granted access to pasture lands in exchange for products like potatoes, camelid meat, and wool, and access to water resources. Another important resource in this area is metal.

During colonial times, Carabamba was also renowned for its silver mines (Briceño Rosario and Billman 2018; Espinoza Soriano 1971). In the 1970s, ONERN (1973) reported the presence of four mines in the Carabamba Plateau. The Machacala mine, located 5 km northeast of Carabamba, yielded silver, copper, and gold, while the small mines called Fraternidad 3 (southwest of Carabamba), Princesa, and Rosicler (both southeast of Carabamba) yielded silver. When he visited the Carabamba Plateau, Shawn Haley (1979) highlighted the importance of silver, arguing that copper had a secondary role. Topic and Topic (1979a) have been looking for traces of prehistoric mining and smelting activities, but their search has not been successful. While conducting the survey, I did not see active mines, but 1 km east of Juyacul there is an abandoned mine. Raw and semi-processed metals could have been trading goods during Prehispanic times, and highland people could have exchanged them for coastal (e.g., marine resources, fancy pottery, featherworks, elaborated metalworks) or *chaupiyunga* (i.e., coca leaves) goods.

To sum up, the Carabamba Valley is a short valley with a rugged topography located between the coast and the highlands. Its lower half (lower and middle valley) is particularly dry, while moving towards the origins of the river (upper valley and plateau) the valley becomes moister due to an increase in water resources (springs, rainfall water, and water flowing in the river). A variety of resources can be produced and extracted from the valley and this has fueled interaction among local, coastal and highland groups. To understand who lived at the edges of the Carabamba Valley, the following section will present a review of the Prehispanic occupation of the Peruvian North Coast and Northern Highlands, where most of the research was conducted since the late 18th century (Middendorf 1895; Squier 1877; Wiener 1880).

## 2.2 The Historical Background

Since the beginning of the 20th century, archaeologists conducting research in the Central Andes have worked towards defining a general chronological framework for the region (Ramón Joffré 2005). Today, two chronological systems are commonly used by scholars: One developed by Peruvian archaeologist Luis Guillermo Lumbreras (1974) and the other by American scholars John Howland Rowe, Dorothy Menzel, and Edward P. Lanning (Lanning 1967; Menzel 1977; Rowe 1962; Rowe and Menzel 1967). In this project, I use the latter chronological system with the adjustments proposed by Jeffrey Quilter (1991, 2014). This chronological system, which was the outcome of research conducted in the Ica Valley in Southern Peru, is characterized by four 'Periods' and three 'Horizons'. Periods are marked by the development of regional cultures defined by distinctive stylistic expressions. Conversely, Horizons are times that show widespread cultural and stylistic homogeneity (Quilter 2014). In the next paragraphs, I will present the cultural history of the Peruvian North Coast and Northern Highlands following the chronology proposed by Lanning (1967) (Table 2.1).

| YEAR | Andean Chronology (Lanning 1967) | Moche Valley (Donnan and Mackey 1978; Billman 2002) | Virú Valley (Willey 1953) | Huamachuco (J. Topic 2009) | Ancash Highlands (Burger 1992:Rick et al. 2009;Lau 2004b;Lau 2011;Lau 2016) | Cajamarca (Seki 1998; Watanabe 2009) |
|---|---|---|---|---|---|---|
| 1600 A.D. | Late Horizon A.D. 1476-1532 | Chimú-Inka A.D. 1470-1532 | Estero A.D. 1470-1532 | Santa Barbara Phase A.D. 1470-1532 | Inka A.D. 1450-1532 | |
| 1500 A.D. | | | La Plata | | | Cajamarca Final |
| 1400 A.D. | Late Intermediate | Middle and Late | A.D. 1300-1470 | Tuscan | Aquillpo | A.D. 1200-1532 |
| 1300 A.D. | Period | Chimu | Tomaval | Phase | A.D. 950-1450 | |
| 1200 A.D. | A.D. 1000-1476 | A.D. 1000-1470 | A.D. 1000-1300 | A.D. 1000-1470 | | Cajamarca Tardío |
| 1100 A.D. | | | | | | A.D. 900-1200 |
| 1000 A.D. | Middle | Early Chimu A.D. 900-1000 | Huancaco | Late Huamachuco Phase | Wilkawaín II A.D. 850-950 | |
| 900 A.D. | Horizon | Late Moche A.D. 800-900 | A.D. 800-1000 | A.D. 800?-1000 | Wilkawaín I | |
| 800 A.D. | A.D. 600-1000 | | | Amaru Phase | A.D. 700-850 | Cajamarca Medio |
| 700 A.D. | | Middle Moche | | A.D. 600-800? | Late Recuay A.D. 600-700 | A.D. 450-900 |
| 600 A.D. | | A.D. 400-800 | Gallinazo (Virú) | Early Huamachuco | | |
| 500 A.D. | | | A.D. 1-800 | Phase | Recuay | Cajamarca Temprano |
| 400 A.D. | Early | Early Moche | | A.D. 300-600 | A.D. 250-600 | A.D. 200-450 |
| 300 A.D. | Intermediate | A.D. 200-400 | | | | |
| 200 A.D. | Period | Gallinazo | | | | Cajamarca Inicial 50 B.C.-A.D. 200 |
| 100 A.D. | 200 B.C.-A.D. 600 | A.D. 1-200 | | Purpucala | Huarás | Layzón |
| 100 B.C. | | Late Salinar | | Phase | 200 B.C.-A.D. 250 | 250 B.C.-A.D. 50 |
| 200 B.C. | | 200-1 B.C. | Puerto Moorin | 200 B.C.-A.D. 300 | | |
| 300 B.C. | | Early Salinar | 400 -1 B.C. | | ? | Early Layzón |
| 400 B.C. | | 400-200 B.C. | | | | 550-250 B.C. |
| 500 B.C. | | | | Sausagocha | | |
| 600 B.C. | Early Horizon | Late Guañape | Middle and Late | Phase | | |
| 700 B.C. | 900-200 B.C. | 800-400 B.C. | Guañape | 900-200 B.C. | Chavín | Huacaloma Tardío |
| 800 B.C. | | | 900-400 B.C. | | 1200-400 B.C. | 1000-550 B.C. |
| 900 B.C. | | | | | | |
| 1000 B.C. | | Middle Guañape | Early Guañape | | | |
| 1100 B.C. | | 1300-800 B.C. | 1200-900 B.C. | | | Huacaloma Temprano |
| 1200 B.C. | | | | Colpa Phase | | 1500-1000 B.C. |
| 1300 B.C. | | | | ?-900 B.C. | | |
| 1400 B.C. | Initial Period | | | | | |
| 1500 B.C. | 1800-900 B.C. | Early Guañape | Cerro Prieto | | | |
| 1600 B.C. | | 1800-1300 B.C. | ?-1200 B.C. | | | |
| 1700 B.C. | | | | | Huaricoto | |
| 1800 B.C. | | | | | Toril | |

**Table 2.1: Chronological table of the Central Andean region.**

### 2.2.1 Initial Period (ca. 1800 - 900 B.C.) and Early Horizon (ca. 900 - 200 B.C.)

*The North Coast*

The beginning of the Initial Period is marked by the construction and expansion of earlier ceremonial sites characterized by the presence of flat-topped mounds and sunken circular/rectangular plazas that give a U-shaped layout to the sites. Such centers can be seen as a continuation of a tradition started in the previous Late Preceramic Period (ca. 3000 -

2000 B.C.) (Haas and Creamer 2006; Quilter 1991). However, key innovations like the production of ceramic artifacts and the use of heddle loom in the production of textiles were introduced, and a greater variety of foods were consumed due to an increase in the complexity of irrigation networks (Pozorski and Pozorski 2018; Quilter 2014).

The Peruvian North Coast was no exception and large ceremonial centers emerged in the Casma Valley at the beginning of the Initial Period, when the sites that compose the Sechín Alto Complex and Pampa de Las Llamas-Moxeke were built (Fuchs et al. 2006; Fuchs et al. 2009; Pozorski and Pozorski 1987, 1998; Pozorski and Pozorski 2005, 2018). Around 1500 B.C., large centers also proliferated further north, and the Caballo Muerto Complex in the Moche Valley (Billman 1996; Nesbitt 2012; Pozorski 1976, 1980, 1995) and Huaca El Gallo and La Gallina in the Huacapongo Valley (Zoubek 1997, 1998b; Zoubek and Iberico Portocarrero 2004) were built.

Recent research conducted in the Moche and Jequetepeque valleys by Jason Nesbitt (2012; Nesbitt, Gutiérrez and Vásquez 2008) and Masato Sakai and Juan Martinez (2014) showed that these large ceremonial buildings were not the result of an individual building episode, but they were built throughout time. No elite burials nor administrative buildings were found. They argued that these complexes had a ceremonial nature and were constructed by competing groups with limited power rooted in religious authority. Feasting was a way to mobilize workforce, create new social ties and a sense of community.

Shared architectural and iconographic traits centered around zoomorphic, anthropomorphic (reptiles, birds, felines, and spiders), and hybrid motifs suggest the presence of shared beliefs at the end of the Initial Period/beginning of Early Horizon (Nesbitt 2012). The material culture of this phase can be associated with the Cupisnique style identified by Rafael Larco Hoyle (1941). The hallmarks of this ceramic style are black, red and black, and polychrome stirrup spout bottles (Burtenshaw-Zumstein 2014; Elera Arévalo 2009; Larco Hoyle 1941). Nesbitt (2012) noted subtle differences in material culture that allowed him to identify a northern (Lambayeque, Jequetepeque, and Chicama valleys) and a southern (from Moche to Nepeña) Cupisnique ‘social field’ composed of several interacting polities sharing the same cult. He also argued that the northern Cupisnique interacted with the Cajamarca area in the

Northern Highlands (Onuki 2001), while the southern social field had contacts with Chavín de Huantar (Burger 1992).

The Chavín cult, a pan-regional religious phenomenon that originated from earlier and coeval coastal and highland traditions (Burger 1989, 1992, 2008; Burger and Salazar 2008), reached the Peruvian North Coast during the phase called Janabarriu (ca. 800 - 500/400 B.C.) (Rick et al. 2009), which marked the emergence of social stratification in the Chavín heartland (Department of Ancash, southern portion of the Northern Highlands). On the North Coast, there was a dramatic reduction in the size of the monumental centers, and Nesbitt (2012) argued that the spread of the Chavín cult caused the abandonment of the communal ideology that characterized the Initial Period, and emerging elites focused their efforts on accessing valuable goods circulating throughout the Chavín network.

*The Northern Highlands*

The Cajamarca area in the Northern Highlands interacted with the Lambayeque and Jequetepeque Valleys. Interaction has been noted in the middle and lower Jequetepeque valleys, where Huacaloma Temprano (1500 - 1000 B.C.) ceramics were recovered (hemispherical bowls and neckless pots decorated with incisions, appliques, and red paint). These clay objects show similarities with pottery made during the Early Guañape phase (Ford 1949; Strong and Evans 1952; Willey 1953) in the coastal Virú Valley. During Huacaloma Tardío (1000 - 550 B.C.) monumental buildings with zoomorphic, anthropomorphic, and geometric friezes were built. These motifs were replicated on pottery (polished redwares decorated with incisions or painted in red, orange, yellow, and white, and blackwares). At sites like Kuntur Wasi (Onuki 1995) and Pacopampa (Seki et al. 2008), elite burials were found, indicating the emergence of social stratification (Nagaoka et al. 2020). The Early Layzón (550 - 250 B.C.) phase was marked by the abandonment of the Huacaloma ceremonial sites (Seki 1998; Seki and Yoneda 2005).

In the Huamachuco area, the Initial Period and the Early Horizon are marked by the Colpa (n.d. - 900 B.C.) and the Sausagocha (900 - 200 B.C.) phases. Few data are available about these phases, which may have been marked by an increase in the importance of farming and herding. No Chavín influence has been noted (Topic 2009b) and no data about the Initial

Period and Early Horizon occupation of La Libertad Highlands (i.e., Otuzco and Carabamba areas) is available (Carmichael 1980).

## 2.2.2 Early Intermediate Period (ca. 200 B.C. - A.D. 600)

### 2.2.2.1 The Beginning of the Early Intermediate Period

*The North Coast*

The end of the Chavín influence over the region, by ca. 400 B.C., marked the beginning of the Early Intermediate Period, characterized by the emergence of the Salinar culture on the Peruvian North Coast. The most striking feature of this period was an increase in warfare among people living within the same valley or in different river basins (Millaire 2020; Topic and Topic 1997). These tensions were reflected in the settlement pattern of many northern valleys, which show various site clusters and the construction of impressive fortresses (Downey 2015; Ikehara and Chicoine 2011).

Gordon Willey's (1953) pioneering work in the Virú Valley revealed the existence of two site clusters during this period (Puerto Moorin phase). The first cluster was centered around the Huacapongo River, one of the two tributaries of the Virú River, and most sites were located on steep slopes that flank the valley. The second group of sites was composed of settlements distributed over the lower part of the Virú basin and it displayed sites built in defensive locations. As highlighted by Jordan Downey (2015), these two clusters were likely independent polities, neither showing signs of having controlled other parts of the valley. Members of the two polities could have started building an irrigation network that continued to be expanded over the following centuries. However, people could have used alternative techniques to farm large agricultural lands, such as the exploitation of groundwater (Parsons 1968; West 1979).

Similar developments took place in the Moche Valley during the Salinar phase (400 - 1 B.C.). Billman (1996, 1999, 2002) and Millaire (2020) pointed out that the inhabitants of this valley expanded an already existing irrigation network and the population increased sharply. The existence of conflicts within the Moche Valley is suggested by the presence of eight site clusters separated by wide buffer zones and the occupation of hilltops, like Cerro Arena

(Brennan 1978, 1980, 1982; Mujica Barreda 1975, 1984). The site was interpreted as the oldest city on the Peruvian North Coast, but its role has been recently re-evaluated (Gonzalez-Macqueen 2018; Millaire 2020), and its short occupation suggests it was an urban experiment that did not fully develop. As was the case with the Huacapongo polity in the Virú Valley, the Moche clusters displayed an incipient political centralization, featuring a three-tiered hierarchy.

Research conducted by Christopher Attarian (2003), David Wilson (1988b, 1995), and Donald Proulx (1968, 1973, 1985) in the Chicama, Santa (Vinzos period), Casma (Patazca period), and Nepeña (Ikehara and Chicoine 2011) valleys yielded similar data. All these valleys show an increase in population and a rise in the number of fortified sites.

The material culture of this phase is characterized by the spread of fine-grained, brick-red pottery. Along with painted geometric motifs, burnishing was the most common decorative technique (Brennan 1978; Proulx 1985). As Curtiss T. Brennan (1978) noted, Salinar potters did not completely master the firing process, and this produced black cores in most of the ceramic artifacts. However, some tombs yielded anthropomorphic and zoomorphic bottles (Donnan and Mackey 1978; Ford 1949). Considerable amounts of Salinar potsherds were also found in the upper part of the Jequetepeque, Moche, and Santa valleys (Briceño Rosario and Billman 2014; Seki 1997; Wilson 1988b).

River valleys clearly had different degrees of political centralization, which ranged from the loosely centralized Huacapongo polity in Virú to the four-tiered, pan-valley system reported by Wilson (1995) in the Casma Valley. The proliferation of defensive sites in the Santa, Nepeña, and Casma valleys has been interpreted as an indicator of inter-valley warfare; groups residing in Nepeña and Casma could have raided people living in the Santa Valley, especially in years of water scarcity (Wilson 1995). Another explanation of this endemic warfare has been offered by Topic and Topic (1997). They argued that North Coast fortresses may have been connected to ritual battles (*tinku*) rather than expansionist wars.

Red-on-white ceramics collected at Cerro Arena (Brennan 1978; Mujica Barreda 1975) resemble the Layzón pottery style recovered in the Cajamarca region (Seki 1998). Elias Mujica Barreda (1984) argued that potters living at Cerro Arena may have reproduced exotic artifacts coming from the highlands. Coast-highlands relations are confirmed by the finding of highland ceramics in the Chicama and Virú valleys (Topic and Topic 1987). Moreover, Proulx (1985) highlighted that redwares decorated with burnished geometric patterns have been collected in the Callejón de Huaylas and the Cajamarca region, suggesting a highland influence over the North Coast. Such a hypothesis was recently restated by Vincent Chamussy and Nicolas Goepfert (2019), who argued that the Salinar phenomenon may be the outcome of a highland invasion. However, the results of this project do not support this theory (see Chapter 5.3).

*The Northern Highlands*

In the Cajamarca area, this period is marked by the Layzón (250 - 50 B.C.) phase, when new ceremonial sites were built. Sites were located on hilltops, suggesting the existence of tensions between communities (Seki 1998; Seki and Yoneda 2005). The Purpucala phase (200 B.C. - A.D. 300) in Huamachuco began with an isolation of the area, but at the end of this period contacts with Cajamarca and Recuay cultures intensified. The most common ceramic artifacts were neckless ollas, open bowls decorated with geometric motifs, and colanders[20]. Also, this period was marked by population growth (Thatcher 1972a, 1972b; Topic 2009b; Topic and Topic 1986). Little is known about the Otuzco and the Carabamba areas during this period. Aerial and pedestrian surveys allowed to identify five (three conclusive and two unclear) archaeological sites dated to this phase that may have been simple and isolated farming communities. The presence of a wall (Muro de Sango) and watch stations suggests a tense climate. These structures are located along the *quechua-jalca* border and it has been hypothesized that farmers were pressured by camelid herders living in the *jalca* zone (Carmichael 1980; Haley 1979; Topic and Topic 1979a, 1979b). Recent research has revealed that sites in the Carabamba Plateau (e.g., Cerro Sulcha and Cerro Shamana) dated to the Late Intermediate Period were in fact also occupied during the Early

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[20] Colanders are shallow bowls with angular or rounded holes. They do not appear on the coast, while they have been found in different parts of the Northern Highlands, such as Huamachuco McCown (1945); Thatcher (1972b), the upper Chicama Valley Krzanowski (1977), Cajamarca Toohey (2011), and Ancash Bennett (1944); Lau (2001), and in the upper Moche Valley Ringberg (2012). Their function is still not clear, but they could have been used to dry and/or roast food Toohey (2011).

Intermediate Period. These sites feature White, Red, Orange ceramics recovered by Wendell Bennett (1939, 1950) in the Virú Valley and considered intrusive by this American scholar. The Plateau may therefore have been more intensively occupied than previously thought (Leiva González et al. 2018; Leiva González et al. 2019b; Leiva González et al. 2019a).

Further towards the south, in the Callejón de Huaylas, the immediate post-Chavín is known as the Huarás phase (200 B.C. - A.D. 250). During this period, highland people produced White-on-Red pottery comparable to that found on the coast (Lau 2004b).

#### 2.2.2.2 The Middle Part of the Early Intermediate Period

*The North Coast*

The middle part of the Early Intermediate Period saw the emergence of the earliest state in the region, the Virú state (Downey 2015; Millaire 2010b). The settlement pattern of the valley changed dramatically in the period that Downey (2015) called Middle Virú (200 B.C. - A.D. 600). Settlements spread over the whole valley, the number of sites rose sharply, and the population increased significantly due to the expansion of the valley irrigation network. A three-tiered hierarchy developed in this period in the Virú Valley (Downey 2015). The Gallinazo Group was the capital city of the newly born valley-wide Virú state. This urban center featured about 30 mounds and extended over an area of 40 ha, hosting between 10,000 and 14,400 people (Bennett 1939, 1950; Fogel 1993; Millaire and Eastaugh 2011, 2014). The second level of this hierarchy was composed of midsized centers like Huaca Santa Clara (Dillon 2015; Hyland 2020; Johns 2017; Millaire 2010a), while villages and hamlets comprised the lowest tier (Downey 2015; Millaire 2010b).[21] Six fortified administrative centers (*castillos*) were built at the valley neck. Such settlements constituted a defensive system that would have secured irrigation intakes and they suggest the existence of strong yet tense relations with *chaupiyunga* and highland groups (Millaire 2008).

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[21] Millaire (2010b) created a four-tiered settlement system, which was streamlined by Downey (2015), who merged villages and hamlets into the lowest tier.

In the first centuries A.D., the Virú state expanded northward to the Moche and Chicama valleys. The most striking evidence of Virú expansion comes from coastal sites like Huaca Prieta, Chicama Valley, Pampa La Cruz, and Huaca Las Estrellas, Moche Valley. At these sites, people used and likely produced both the utilitarian Castillo pottery and the distinctive Virú Negative fine wares. These settlements may have functioned as outposts that facilitated the exploitation of resources and the movement of goods along the coast (Millaire et al. 2016).

Unlike in the Virú Valley, in the Moche Valley (Gallinazo phase, A.D. 1 - 200), population declined sharply, and people may have migrated to the core of the Virú state. Depopulation and migrations may be explained by a highland presence in the upper part of the middle valley. Highland people formed three clusters in the middle valley, and they built many settlements in defensive settings (Billman 1996; Billman et al. 2019; Ringberg 2012).

*The Northern Highlands*

In the highlands, the middle Early Intermediate Period saw the emergence of the Cajamarca culture (A.D. 50 - 1532), which differed from the previous Layzón phase in that potters started to produce kaolin pottery. Local white kaolin clay was used to produce bowls and spoons. These pots were usually painted in black, red, and purple, and featured geometric, anthropomorphic, and zoomorphic decorations. Kaolin pottery was likely used for ritual purposes and, since the Early Cajamarca phase (ca. A.D. 200 - 450), it started to appear in the Huamachuco area and some coastal valleys (Matsumoto 1993; Watanabe 2009).

#### 2.2.2.3 The Late Early Intermediate Period

*The North Coast*

During the second half of the Early Intermediate Period, the Moche (ca. A.D. 200 - 900) started to develop and spread on the North Coast. The Moche has long been considered a single, centralized political entity with a capital city located at Huacas de Moche, in the namesake valley (Bourget and Jones 2008; Castillo 2008; Castillo and Donnan 1994; Castillo and Uceda Castillo 2008; Larco Hoyle 2001; Mujica Barreda and Uceda Castillo 2003). Billman (1996, 2002) argued that the Cerro Oreja polity reconquered the middle Moche

Valley, moved its capital to Huacas de Moche, further expanded the irrigation network, and integrated other North Coast valleys, establishing a *Pax Mochica*.

Based on the analysis of the distinctive Moche stirrup-spout bottles, Larco Hoyle (1945, 1948) created a five-phase seriation. Moche pottery is characterized by red terracotta clay, and pots were produced using coiling, molding, hammering, or a combination of these techniques (Espinosa et al. in press; Espinosa 2020). The elaborate decorations were rendered through hand-modeling, painting (mostly in red, white, and shade of these two colors), incising, and stamping, and many pots were heavily polished to give them luster. Usually, Moche pottery was fired in an oxidizing atmosphere. The most iconic forms were stirrup-spout bottles (which include portrait vessels) and *floreros* (flaring bowls with a flat, ring, or trapezoidal/rattle base) (Bernier 2010; Donnan 1965, 1973; Donnan and Mackey 1978; Quilter and Koons 2012).

Over the past 20 years, the idea of a centralized Moche state has been questioned by many scholars. The Moche phenomenon[22] has been divided into two macro-areas, Northern (Piura, Lambayeque, and Jequetepeque) and Southern Moche (Chicama, Moche, Virú, Chao, Santa, Nepeña, Huarmey and Culebras) (Castillo and Uceda Castillo 2008; Giersz 2011). Recent research has also revised Moche chronology; based on radiocarbon analysis, Michele Koons and Bridget Alex (2014) argued that this culture occupied the North Coast between A.D. 200 and 900. In the Southern Moche valleys, Hoyle’s sequence has been subsequently reshaped into three main phases: Early Moche (I-II), Middle Moche (III-IV), and Late Moche (V) (Billman 1996). A similar three-stage chronology has also been created for the northern valleys (Castillo and Donnan 1994; Castillo and Uceda Castillo 2008).

Differences between North Coast valleys can be observed in ceramic assemblages, burial practices, and building techniques (Quilter and Castillo 2010; Quilter and Koons 2012). However, North Coast valleys shared a religious system that “reshuffled social, political, and economic relations among independent political entities” (Quilter and Koons 2012:138).

[22] The term “phenomenon” is used instead of “state” in this dissertation given that besides its political nature, Moche was likely a religious system that spread along the Peruvian North Coast (Quilter and Koons 2012).

An interesting situation has been observed in the Virú Valley; contrary to what was argued by Willey (1953) (Huancaco Period), recent scholarship has revealed that this valley did not undergo a Moche conquest. The Virú state abandoned its outposts in the neighboring valleys but kept control of the core region until ca. A.D. 700, constituting an island within a Moche sea (Millaire 2010a). Nevertheless, various degrees of Moche influence and contacts with neighboring valleys were established between A.D. 500 and 750 and evidence has been found at sites like Huaca de la Cruz, Huaca Santa Clara, and Huancaco (Bourget 2003, 2010; Millaire 2010a; Willey 1953). Thus, Moche may have exerted indirect rule over Virú, exacting tributes from local elites (Millaire 2010a).

The area that runs from Chao to Huarmey valleys was influenced by the Moche phenomenon (Chicoine 2011; Donnan 1973; Giersz 2011; Proulx 1982; Wilson 1988b, 1995). The settlement patterns in the Nepeña Valley exhibit a high interaction between the Moche and Recuay people. Donald Proulx (1982) argued the two groups came into contact between the middle and upper valleys. This area represented a frontier where people traded fine pottery, among other things. However, the presence of Moche strongholds and the depiction of battles between Moche and Recuay people on Moche pottery suggests tense relations (Lau 2004a; Proulx 1982).

*The Northern Highlands*

In the highlands, the Recuay culture fully developed during the middle and late Early Intermediate Period. Recuay formed a “commonwealth (that) was characterized by a predominant pattern of small scale communities” (Lau 2011:56). Most Recuay sites were located in strategic places that allowed them to trade with other Recuay communities and with coastal and other highland peoples, farm agricultural lands, graze camelid herds, and defend themselves from other groups (Lau 2011). Members of these highland communities produced thin-walled pots made of white kaolin clay. Recuay pottery was usually burnished, and geometric motifs were painted in black, brown, red, orange, or negative-painted (Lau 2004b, 2011).

The Middle Cajamarca phase (A.D. 450/550 - 900) can be divided into two sub-phases: A (ca. A.D. 550 - 700) and B (A.D. 700 - 900). In sub-phase A, potters produced pottery painted in the iconic cursive style, whose name refers to the quick and thin strokes of paint that rendered geometric and abstract zoomorphic and anthropomorphic figures. Well-planned sites were built and the site of Coyor likely played a key role in this period (Watanabe 2009).

In Huamachuco, the Early Huamachuco phase (A.D. 300 - 600) was characterized by an increase in the number of sites and population growth. Marcahuamachuco emerged as the largest site in the area. In this phase, Huamachuco people used a wide range of clay pastes (orange, brown, grey, buff) and the most common decorations were red bands at the lip and the neck join. Archaeological excavations have yielded kaolin bowls likely imported from Cajamarca and local imitations that replicate Cajamarca motifs, but there is no evidence of contact with Moche people (Thatcher 1972a, 1972b; Topic 2009b; Topic and Topic 1986; Topic and Topic 1992).

### 2.2.3 Middle Horizon (ca. A.D. 600 - 1000)

*The North Coast*

The beginning of the Middle Horizon on the North Coast was marked by profound changes that have been attributed to external threats, climatic changes, and internal turbulences (Billman 1996; Castillo and Uceda Castillo 2008; Koons and Alex 2014; Quilter 2020). Sites like Galindo in the Moche Valley and Pampa Grande in the Lambayeque Valley started playing a prominent role within the Moche world (Lockard 2005, 2009; Shimada 1994)**.** Moche V style developed in the Chicama Valley and later spread to the Moche, Chicama, Jequetepeque, and Lambayeque valleys, while the Moche phenomenon seems to have dissolved in the southernmost valleys (Quilter and Koons 2012).

The production of a new ceramic style and the construction of public buildings that favored more restricted spaces suggest an ideological change during this period (Koons 2015). Sites like the Huacas de Moche and Cerro Mayal in the Chicama Valley kept producing and using Moche IV ceramics, suggesting a fragmentation of the Moche world (Koons and Alex 2014; Russell, Leonard, and Briceño Rosario 1994). This change in ideology may have been fueled by the increasing influence of the powerful Wari state, which spread its sway over the whole Central Andean region during the Middle Horizon (Koons 2015). Since Moche was not a homogeneous phenomenon, Wari influx was different in each valley.

Strong evidence of contacts between Moche and Wari come from San José de Moro, Jequetepeque Valley, where pottery was imported from North Highlands, Central Highlands, Central Coast, and ceramic artifacts that combined local and foreign forms, techniques, and motifs were produced. Wari people could have acted as middlemen and the expansion of the Wari state facilitated the circulation of elite goods (Castillo 2000; Castillo, Fernandini Parodi and Muro Y. 2012). Wari influence on the Virú Valley was weak and marked by polychrome Tiahuanacoid pottery. This phase (Tomaval Period) was also characterized by the emergence of blackwares with molded or stamped decorations and this ceramic tradition will characterize the valley until the Spanish conquest (Bennett 1950; Collier 1955; Ford 1949; Willey 1953).

*The Northern Highlands*

As argued by Watanabe (2009, 2012), Cajamarca Medio B (A.D. 700 - 900) was marked by the abandonment of large ceremonial centers and the construction of a Wari administrative center at El Palacio. After establishing control over the Cajamarca area, the Wari people may have reached the coast through the Jequetepeque Valley. Cajamarca people kept producing kaolin pottery, which spread until Wari heartland. Wari influence has been also identified in Huamachuco and Recuay areas. During the Amaru (A.D. 600 - 800) and Late Huamachuco (A.D. 800 - 1000) phases, there were no major changes in the settlement patterns of the Huamachuco area and Marcahuamachuco kept growing. However, Wari influence has been detected at Viracochapampa. The site, which was never completed, shows a mix of local and Wari architectural traditions. Wari influence was also found at the water shrine of Cerro Amaru, where excavations yielded offerings that included pottery coming from different parts of the Central Andean region (Topic 2009b; Topic and Topic 2000; Topic and Topic 2010).

While no Wari ceramics have been found in the Otuzco and Carabamba areas (Haley 1979), Topic and Topic (1979a) identified nine sites that were occupied during this period. Haley (1979) and Carmichael (1980) saw the Middle Horizon as a continuation of the Early Intermediate Period sparse population pattern. Janet MacKenzie (1980) argued that in the Otuzco/Upper Moche area there were several small chiefdoms. In the area occupied by the Recuay culture, the Middle Horizon was marked by the gradual disappearance of kaolin pottery. People living in the Recuay area highly interacted with both coastal and highland groups. Late Moche, Middle Cajamarca, and Wari ceramics were found in funerary contexts, and Wari-related pottery started to be locally produced (Lau 2011).

### 2.2.4 Late Intermediate Period (ca. A.D. 1000 - 1476)

*The North Coast*

In the Lambayeque and Jequetepeque valleys, the Moche phenomenon did not end abruptly. A Transitional Period (A.D. 850 - 950), marked by an even greater presence of foreign artifacts, technologies, and iconographies, led to a smooth shift between Moche and the Lambayeque/Sicán culture (ca. A.D. 950 - 1375) (Castillo, Fernandini Parodi, and Muro Y. 2012). Lambayeque people produced massive quantities of molded blackwares and interacted with the neighboring Cajamarca culture. The ceramic style called Cajamarca Costeño may be an indicator of these contacts and it may reveal the presence of highland people on the coast (Montenegro and Shimada 1998; Shimada and Craig 2013; Tsai 2019; Watanabe 2009).

In the meantime, the future Chimú empire (ca. A.D. 900 - 1470) started to develop in the Moche Valley.[23] According to ethnohistorical sources, a man called Tacaynamo arrived from afar and settled in this valley, becoming the first Chimú ruler. Chimú people further expanded the existing irrigation network and established settlements that ensured access to a wide range of agricultural products (Moore and Mackey 2008; Moseley and Cordy-Collins 1990; Rowe 1948). As in the case of the Lambayeque, Chimú people are renowned for molded blackwares. Chimú pottery was decorated with many geometric, anthropomorphic, and zoomorphic motifs (Wauters 2016).

After consolidating its heartland by A.D. 1200, the empire expanded north and south, carrying out a variety of control strategies. Two expansionist waves (ca. A.D. 1320 and

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[23] While there is wide consensus that the Chimú culture developed between A.D. 900 and 1470, radiocarbon dates obtained both at Chan Chan and at rural administrative sites (Keatinge and Conrad 1983; Meneses Bartra 2020; Pozorski 1987) suggest that these settlements were not occupied before A.D. 1200. Although more radiocarbon dates are needed to reconstruct the absolute chronology of the Late Intermediate Period on the North Coast, the data collected so far may push back the consolidation and expansion of the Chimú to the 13$^{th}$ century A.D. (Castillo Luján 2021a).

1375) led to the conquest of the Lambayeque culture (Moore and Mackey 2008; Topic 1990b). By A.D. 1350, the empire extended its control up to the Casma Valley, where Manchan was built (Wilson 1988b, 1995). Before the Chimú conquest, the southern valleys were occupied by the Casma polity, which developed after the demise of the Southern Moche state and extended its influence between the Chao and the Pativilca valleys (Vogel 2003, 2011; Vogel et al. 2015; Vogel et al. 2016b; Vogel et al. 2016a; Vogel 2018; Vogel, Buhrow, and Cornish 2016). The Chimú also interacted with the Tumbes region to get access to Spondylus shells and Chimú artifacts were found in the Huarmey and Fortaleza valleys (Moore and Mackey 2008). Chimú people also come into contact with highland polities located in the Carabamba Plateau (Carmichael 1980; Coupland 1979; DeHetre 1979; Haley 1979; MacKenzie 1980) and tried to control middle and upper river valleys to get rid of *chaupiyungas* middlemen (Boswell 2016; Keatinge and Day 1973; Melly Cava 1998; Mullins 2012, 2016, 2019; Topic 1990b; Topic and Topic 1982; Topic and Topic 1985; Watanabe 2011).

The heart of the Chimú empire was the capital Chan Chan, the largest settlement on the North Coast. The city occupied 20 $km^2$ and had an urban core that covered 6 $km^2$, hosting 30,000/40,000 people (Moore and Mackey 2008; Topic and Moseley 1983). The plan of the city evolved through time (Moore 1996) and four major architectural classes have been identified at Chan Chan; 1) 10 royal compounds called *ciudadelas*, 2) elite compounds, 3) residential areas occupied by commoners known as 'small, irregular, agglutinated rooms' or SIAR, 4) and four ceremonial mounds (Moore 1992, 1996; Moore and Mackey 2008; Moseley 1975; Topic 1982, 1990a, 2009a).

The heartland of the empire also featured rural administrative sites like El Milagro de San José, Quebrada del Oso, and Quebrada Katuay (Keatinge 1974). These settlements were all built a few hundred meters from irrigation canals that were bringing water to the Moche Valley from both the Moche (Moro Canal) and the Chicama (La Cumbre Canal) rivers (Ortloff, Feldman, and Moseley 1985; Ortloff, Moseley, and Feldman 1983) and close to agricultural fields. Due to their location, the presence of possible administrative structures like *audiencias*[24] , and the absence of structures indicating a large population, Keatinge (1974) argued that they were headquarters for the construction and maintenance of the canals, and the management of agricultural fields whose products were collected and redistributed throughout the empire.

Communities were usually divided into two ranked groups called *parcialidades* or 'part of a whole'. Members of these subdivisions were living in a specific territory and were bound by social, economic, and religious ties. Each *parcialidad* was further subdivided into halves. The lord of the higher-ranked *parcialidad* and leader of the whole polity was referred to as *cacique principal* by the Spaniards, while the leader of the lower-ranked *parcialidad* was called *segunda persona*. The heads of the lower subdivisions were generally called *principales*. Such organizations helped to mobilize the workforce to carry out large projects like the construction of water canals or defensive walls, and for productive and military reasons (Netherly 1977, 1984, 1990:Fig.I). Scholars have proposed two main models for understanding the administration of the Chimú empire: the bureaucratic and the *señorial* model. The first model assigns a prominent role to Chan Chan and the provincial centers in organizing human energy and in collecting and redistributing goods, while in the second moieties and their lords were pivotal in fulfilling the empire's goals (Moore 1985). Topic (2003) argued that the models could have coexisted, with the first operating in the heartland and the second utilized in the conquered territories.

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In the highlands, the Late Cajamarca phase (A.D. 850 - 1200) featured a decrease in the number of settlements, while during the following Final Cajamarca phase (A.D. 1200 - 1532) the number of settlements almost doubled (Julien 1993). In the Huamachuco area, the Tuscan phase (A.D. 1000 - 1470) was characterized by the emergence of three autonomous site clusters (Topic 2009b). In this phase, Huamachuco potters produced two distinctive ceramic styles called Huamachuco Impressed and Huamachuco-on-White (Topic and Topic 1986).

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[24] While Day (1982) described audiencias as structures that played a key role in controlling the access to storerooms, Topic (2003) interpreted them as record-keeping structures controlled by Chimú bureaucrats.

As mentioned above, the Chimú empire was interacting with polities from the highlands (Topic and Topic 1985). Surveys conducted by Gary Coupland (1979) and MacKenzie (1980) in the Otuzco area revealed several fortified sites. According to Coupland (1979), Carpaico (3,300 m.a.s.l.) was the main settlement of a small polity and a ‘toll center’. Chimú pottery was interpreted as tribute paid by coastal traders to access the highlands and their resources. MacKenzie (1980) saw Carpaico as the main center of a redistributive chiefdom or a gateway community. Chimú traders may have been seen as an opportunity to increase the wealth and power of the polity, but the defensive nature of Carpaico and other sites suggests that the empire may have been also considered a threat. Carpaico yielded pottery coming from Cajamarca, indicating contacts with other highland political entities. Nevertheless, local ceramics constituted 95% of the assemblage at Carpaico. Local ceramics are brown and include large jars with flaring rims, bowls, ollas, and colanders. Decorated pots usually feature a sloppy red band at the lip and, more rarely, are painted in red, white, orange, and black.

The Carabamba Plateau has been subjected to surveys conducted by John and Theresa Topic and their students Debora Anne DeHetre (1979) and Shawn Dean Haley (1979). What emerged from these investigations was a “population explosion” (Topic and Topic 1979a:14) during the Late Intermediate Period and four site clusters or polities (Cuidista, Shamana, Sulcha, and a cluster centered around site C-48) were separated by buffer zones. Haley (1979), who surveyed the Sulcha polity, highlighted that this was the outcome of a process that started in the Early Intermediate Period. At the beginning of the Late Intermediate Period, Los Paredones was the main center of this polity and controlled a road leading to the coast through the Huacapongo Valley. Later, a road connecting the plateau to the coast through the Carabamba River was established and Cerro Sulcha grew in importance. Many sites yielded Chimú potsherds, showing the importance of the abovementioned roads in connecting the coast to the highlands. Approximately 10 km north of Carabamba, around the modern town of Mache (ca. 3,300 m.a.s.l.), Carmichael (1980) identified another sociopolitical unity that he called Blanca Polity (referred to as Mache/Julcán in Topic and Topic 1979a). Four out of 17 sites yielded Chimú pottery, indicating contacts with the coastal empire.

After the end of Wari influence, the Recuay area apparently lost access to exotic goods and potters abandoned Wari's techniques and motifs to produce coarser redwares known as Aquillpo wares. Sites were located on hilltops and people mainly relied on camelid herding (Lau 2004b, 2006).

### 2.2.5 Late Horizon (ca. A.D. 1476 - 1532)

The Inka emerged as a state in the Cuzco Basin (Peruvian Central Highlands) during the Late Intermediate Period and expanded within their heartland through military conquests and peaceful incorporations (Bauer and Covey 2002). After consolidating the control of the heartland, around A.D. 1400 the Inka started a sweeping expansion that led to the conquest of most of today's Peru, Bolivia, Ecuador, and parts of Argentina and Chile (Covey 2008). Right after the civil war involving the half-brothers Huascar and Atahualpa, Francisco Pizarro arrived in Cajamarca (November 15, A.D. 1532). The Spaniards captured and later executed Atahualpa on July 26, A.D. 1533 (D'Altroy 2015b).

The Quechua (the language that the empire tried to impose on all its subjects) term Tawantinsuyu ('the land of the four quarters') was used by the Inka to define the empire. The empire was thus divided into four main administrative areas, and Northern Peru was part of Chinchaysuyu, the northwestern part of the empire. Each quarter had a prefect and was subdivided into provinces run by a governor.

Each province had two or three ranked moieties governed by *kurakas* (D'Altroy 2015b; Rowe 1946; Urton 2015). Following the decimal administration system (Julien 1988), *kurakas* ruled over 10,000 households, while lower-ranked *kurakas* led smaller groups of people (see D'Altroy 2015b:Fig.11.1). Both provincial and local governors were responsible for the proper functioning of the unit that they were leading, ensuring the maintenance of state facilities and the mobilization of the workforce for civic and military duties. *Kurakas* were also *ayllu* leaders. *Ayllus* were key socioeconomic units within highland contexts that originated between the Early Intermediate Period and the Middle Horizon (Isbell 1997). *Ayllus* were kin groups of variable size whose members were not necessarily bound to a specific settlement. *Ayllus* featured shared ownership of resources like pastures, land, and raw materials, and people were cooperating when carrying out public interest projects.

Symmetrical reciprocal obligations were important in regulating relations among families.[25] *Ayllus* were ranked groups and asymmetrical relations between them existed. The leaders had the authority to assign the use of the resources to different households based on their rank and needs. In exchange for the leadership granted by members of the group, ‘elite’ families distributed prestigious goods (e.g., coca leaves, textiles, alcoholic drinks) during feasts that reinforced social bonds and inequality (D'Altroy 2015a).

Around A.D. 1470, the Inka army was extending the northern limits of the empire and attacked the Cajamarca polity. The latter, ruled by Cusmanco, formed an alliance with the Chimú empire, ruled by Minchançaman, but the two allies were defeated by the Inka (Cabello Balboa [1586] 1951). The Inka army reaffirmed its control over Cajamarca and descended to the North Coast through Huamachuco and defeated the Chimú empire. Minchançaman was exiled in Cusco, his descendants were kept as puppet rulers (D'Altroy 2015b; Julien 1993; Moore and Mackey 2008; Rowe 1948) and Chimú craftsmen were sent to Cusco (Rostworowski 1990).

*The North Coast*

After the conquest, the Inka kept lower-level administrators in their position (Boswell 2016; Tate 2006). Thus, the Inka did not profoundly transform the North Coast of Peru during their short reign. However, some important Chimú administrative centers like Farfán, Túcume, and Manchan were remodeled (Mackey 2003, 2006; Mackey and Nelson 2020; Moore and Mackey 2008; Sapp 2002; Toyne 2002), and new administrative centers like Chiquitoy Viejo in the Chicama Valley (Conrad 1977) and craft centers (Donnan 1997a; Hayashida 1999; Hayashida and Guzmán 2015) were built.

*The Northern Highlands*

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[25] Holmberg (1950) mentioned that reciprocal obligations were still in place in Virú in the 1940s. When farmers needed to get some work done in their fields, they asked for help to their neighbors and, when the tasks were completed, a festival (*minga*) was held at the expenses of the owner of the fields. In this way, people that offered labor were entitled to ask for help in the future.

In the highlands, the Inka established two administrative centers, Cajamarca and Huamachuco (Julien 1993; Topic 2009b; Topic and Topic 1993). The Santa Barbara Phase marked the Inka occupation in Huamachuco. The Inka administrative center is probably lying underneath the modern town of Huamachuco (Topic and Topic 1993). The hills that surround the modern town presented storage facilities (Chiswell 1986; Topic and Chiswell 1993), and hamlets, and possible staging posts (*tambos*) located around the town yielded Inka or Inka-influenced ceramics (Topic 2009b; Topic and Topic 1993).

The Huamachuco area was also home to Catequil, a local *huaca* (located at Cerro Icchal) whose popularity grew during the Late Horizon and whose cult was spread north by Huayna Capac. The hill and the shrine were burnt by Atahualpa, who was disappointed by Catequil's[26] prophecies, and eventually destroyed by the Augustinian friars (Topic 1992, 2015; Topic, Topic, and Melly Cava 2002). The Inka assigned the administration of the middle and upper river valleys down to 300 m.a.s.l. to Huamachuco (Netherly 1977) and subdivided the inhabitants of the province into seven *guarangas* (administrative units of 1,000 households).[27] Four *guarangas* were composed of indigenous people[28], two *guarangas* were made up of *mitmaqkunas*[29] coming from the coast and the highlands, and the last one was located in the *chaupiyunga* zone and encompassed the Carabamba Valley (Topic 1998:Fig. 1).

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[26] According to the information gathered by Augustinian friars, Catequil was the mythical founder of Huamachuco and its people. According to the myth, Catequil, grandson of the creator Ataguju, expelled the Guachemines, the people that were already inhabiting Huamachuco. The Guachemines resettled in the hot *chaupiyungas* (where the toponym '*guachemin'* is still associated with quebradas and mountains). The Guachemines could have also represented coastal people, since the terms *guaxme* (fisherman) and *uachimis* (fishermen) reported by Domingo de Santo Tomás and Guamán Poma de Ayala recall the name of these people (Topic 1992, 1998).

[27] As argued by Marina Zuloaga Rada (2012), such subdivision was based on a preexisting sociopolitical framework that may have existed since the Middle Horizon in the Peruvian North Highlands. Moreover, Martti Pärssinen (1992) posited that such units were formal subdivisions that rarely included exactly 1,000 households.

[28] The indigenous *guarangas* of Llampa and Guacapongo included the Otuzco area and Carabamba Plateau, respectively (Topic 1998).

[29] Groups of people that were temporarily moved to other parts of the Tawantinsuyu to carry out specific tasks required by the empire (D'Altroy 2015a).

While the Inka had a negligible impact on the Carabamba Plateau (Haley 1979), the Otuzco area saw the abandonment of Carpaico and the emergence of Rogoday-Tres Puntas (which yielded Inka-influenced potsherds). According to Coupland (1979) and MacKenzie (1980), the trade route that connected the coast and highlands during the Late Intermediate Period was interrupted. The Inka presence has also been identified further south, in the Department of Ancash (Lau 2016, 2019).

On both the coast and the highlands, material culture did not change dramatically. However, Inka influence can be detected in the scant presence of painted Inka pottery and the production of Chimu-Inka ceramics. The latter show formal and decorative characteristics of both imperial ceramic types (Castillo Luján 2018; Collier 1955; Donnan 1997a; Ford 1949; Topic 2009b; Topic and Topic 1986).

## 2.3 Previous Research

### 2.3.1 Previous Research in the Peruvian *Chaupiyungas*

As shown in the previous sections, archaeological research in Northern Peru (and in the rest of the Central Andean region) has mostly focused on sociopolitical formations that developed along the coast and on the highlands. While coast-highland relations have been considered a key aspect of Andean life (Topic and Topic 1979a, 1983), the *chaupiyungas* have rarely been the focus of archaeological projects. The *chaupiyungas* are resource-rich areas where interactions based on dominance (Marcus and Silva 1988; Rostworowski 1988), alliance (Boswell 2016), resources sharing (Dillehay 1976, 1979; Tsai 2012), interdependence (Szremski 2015, 2017), and state interplay (Williams 2001; Williams, Isla, and Nash 2001; Williams and Nash 2002) likely took place. This section will present a series of studies conducted over the last 50 years that represent an exception to this pattern.

#### 2.3.1.1 The Ica Valley

Recent research conducted by the One River Project led to the discovery of several sites located in the Ica Valley *chaupiyunga* (Lane et al. 2017). Only three sites out of 56 were occupied before the Late Intermediate Period. Test pits conducted at two of these sites, Challaca and Cerro San Bernardo (both located at about 2,000 m.a.s.l.), yielded coastal ceramics (Paracas/Ocucaje and Nasca styles) indicating the presence of coastal people during the Early Horizon and the Early Intermediate Period. These sites have been interpreted as coastal colonies that may have allowed Paracas and Nasca people to gain direct access to *chaupiyunga* products and as outposts from where they could have easily interacted with people living in the *quechua* and *puna* ecological zones (Lane et al. 2017).

#### 2.3.1.2 The Moquegua Valley

Since the 1980s, the Moquegua Valley in Southern Peru has been subjected to archaeological studies that aimed to understand the relations between the two paramount state formations of the Middle Horizon, Wari and Tiwanaku. The two highland states emerged in different areas of the Central Andes (the Ayacucho region in the Central Highlands and Titicaca Basin, respectively), but they shared religious beliefs. Despite these similarities, the architectural styles of Wari and Tiwanaku followed different canons and, along with ceramics, wooden objects, and textiles, have been useful in interpreting the occupation of the Moquegua Valley, where the two sociopolitical formations overlapped (Williams 2001).

Tiwanaku colonists started occupying the flat area between 900 and 2,000 m.a.s.l. to obtain products that could not be produced in the Titicaca Basin (especially maize and coca) during the 7$^{th}$ century A.D. and maintained strong ties with their homeland, avoiding intermarriage with local people. Two distinguishable Tiwanaku groups, called Omo and Chen-Chen, occupied the valley. Omo (traders or pastoralists) and Chen-Chen (agriculturalists) people produced distinctive ceramics and occupied different settlements or coexisted as separate enclaves within the same site (Goldstein 2015; Goldstein and Owen 2001; Hastorf et al. 2006).

The Wari created a new settlement system in the upper part of the valley (2,000 - 3,000 m.a.s.l.) centered around the site of Cerro Baúl, which was protected by defensive walls and hosted elite, ceremonial, and administrative buildings. Between A.D. 650 and 750, the Wari intrusion in the upper valley, combined with a decrease in rainfall, could have reduced water available to Tiwanaku farmers, creating tensions between the two states.

Between A.D. 800 and 1000, the interaction increased, Chen-Chen settlements appeared in the upper valley and Tiwanaku ceramics were used in the ceremonial sector of Cerro Baúl.

Nevertheless, the interaction did not lead to the emergence of hybrid groups, and separation persisted. Around A.D. 1000, Tiwanaku settlements were abandoned after violent events. The collapse of Tiwanaku could have also caused the abandonment of Cerro Baúl since Wari did not need to limit Tiwanaku's expansion anymore (Williams 2001, 2002; Williams, Isla, and Nash 2001; Williams and Nash 2002).

#### 2.3.1.3 The Chillón Valley

In the 1970s and the 1980s, archaeological research was carried out in the Chillón and Lurín intermediate zones (Dillehay 1976, 1977, 1979, 2013; Feltham 1983). Tom Dillehay (1976, 1979) showed that the *chaupiyunga* zone of the Chillón Valley in Central Peru had been the theater of intergroup interactions since the Early Horizon. Excavations conducted at the site of Huancayo Alto showed that local people interacted with both coastal and highland groups. This is confirmed by the presence of coastal and highland ceramics, and camelid bones. the site could have been run by a theocratic authority that had religious affinities with coastal ceremonial sites. Subsequently, the Early Intermediate Period was marked by a stronger presence of highlanders. According to Dillehay, highlanders were low-status people who occupied a specific part of the site characterized by stone structures, which contrasted with adobe multiroom buildings showing coastal influence. People from the highlands could have descended seasonally to obtain local resources (e.g., fruits and coca leaves), offering their labour and abiding by the authority of the locals. The religious authority was slowly replaced by a civic authority, represented by an administrative building.

In the Middle Horizon, the number of people from the highlands increased and another administrative building that yielded highland ceramics was constructed. Therefore, a dual administration was established. Moreover, the site featured separate storage areas that were used by different groups that cooperated and peacefully coexisted. In the Late Intermediate Period, the two groups integrated and coalesced (Dillehay 1976, 1979).

Before the Inka conquest, higher up in the valley, the Quivi people were paying a tribute to the coastal group called Collique. This highly valued area was desired by other neighboring groups and the highland Canta people drove away the Collique through military threats. When the Inka took control of the area, they granted the land to a *mitmaqkuna* group, the highland Chaclla (who were previously working seasonally in this area). After the arrival of the Spaniards, the Canta regained control of the area. In 1558, the Chaclla claimed the land as theirs and the court in Madrid assigned them the land (Dillehay 1976; Marcus and Silva 1988; Rostworowski 1988). Archaeological research and Colonial documents show the multifaceted nature of the relations among groups of people that entailed exchange, co-residence, dominance, military threats, and resettlements and goes beyond the mere presence of highland 'colonies' (Dillehay 2013; Murra 1975; Santoro et al. 2010).

#### 2.3.1.4 The Lurín Valley

Between the late 1960s and late 1970s, Patricia Feltham (1983) conducted an archaeological survey and excavations in the Lurín Valley, Central Peru. Between the Early Intermediate Period and the Middle Horizon, the presence of coastal Nievería pottery (see Velásquez-López 2015) was noted and linguistic evidence may confirm coastal penetration in the *chaupiyunga*. Between the Middle Horizon and the Late Intermediate Period, a strong highland influence marked by the presence of dark brown ceramics appeared at 1,000 m.a.s.l. and it was likely connected with the conquest of the area by the Yauyos, a highland group that aimed to control coca fields. Conversely, the lower part of the *chaupiyunga* showed a high coastal influence characterized by orange pottery; according to Feltham, coastal people based in Pachacamac could have extracted tributes from the lower *chaupiyunga*.

#### 2.3.1.5 The Huanangue Valley

In the last decade, Kasia Szremski (2015, 2017) conducted archaeological research on the Late Intermediate Period occupation of the Huanangue Valley, Central Peru, that highlighted interaction among the coastal Chancay culture (centered in the Chanchay and Huaura valleys) and local *chaupiyunga* groups. Szremski has conducted excavations at two sites called Campo Libre and Salitre, which are located only 2 km apart. The former was the largest site occupied by local people for a long time (1730 B.C. - A.D. 1440) and was likely controlling an irrigation intake, while the latter was a short-lived (A.D. 1420 - 1560) Chancay site. Excavations at Salitre showed that Chancay people used coastal ceramics, produced a variety of foods (e.g., beans, avocado, maize, squash, lúcuma), and part of these were likely sent to the homeland and exchanged with marine resources. Campo Libre yielded very few non-local ceramics and a sharp increase in the consumption of marine resources has been noted when Chancay people settled at Salitre. A possible feasting midden rich in food remains (shellfish, guinea pigs, camelids, fruits, and vegetables) and ceramics was identified at Salitre. Although militarily weaker and with lower social complexity, *chaupiyunga* people were controlling access to water, and Chancay settlers had to keep an amicable relation with them to produce goods that were sent to the coast. Coastal and *chaupiyunga* groups became entangled with each other, with the former securing access to water, and the latter obtaining marine resources.

#### 2.3.1.6 The Moche Valley

The Moche Valley *chaupiyunga* has been investigated since 1980 when Topic and Topic (1982) conducted the last season of the Prehistoric Fortification Systems of Northern Peru project. The name of the project indicates that the scholars were mostly focusing on defensive sites. However, the study of coast-sierra relations was another key goal of the project. In the area ranging from 200 to 1,200 m.a.s.l. 46 sites were identified and surveyed.

The earliest fortified sites showed a Salinar occupation. Between the end of the Salinar and the full development of the Moche (A.D. 1 - 400) coastal and, above all, highland potsherds were noted in this share of the valley. These ceramics (called Phase 2) were characterized by orange, greyish (Northern Style), buff, white (kaolin), and brown or buff pastes (Southern Style). Common forms are flaring jars and small bowls. When decorated, these ceramics feature a red band at the lip or show painted white-red-orange geometric motifs. These potsherds resemble the ones produced in the Otuzco area and Carabamba Plateau, showing that this part of the Moche Valley could have featured a substantial highland presence or could have been inhabited by middlemen that mediated between coastal and highland groups. While the beginning of the Moche era (Moche I and II) is not well represented in the middle valley, the Moche presence increased between Moche III and V. Moche V ceramics were found at the valley neck, especially at Galindo, but they were scarcer higher up in the valley. During the Late Intermediate Period, the Chimú intensively occupied the middle Moche Valley building hilltop forts and they interacted with highland peoples. This interaction was marked by the presence of highland ceramics (Phase 4 – mainly brown flaring and incurving neck jars, sometimes with a sloppy red band at the lip); an example is Loma del Shingo (excavated by Alfredo Melly [1998]), a defensive site that yielded an admixture of Chimú and highland pottery. This part of the Moche Valley did not feature Inka pottery.

Between 1990 and 1991, Billman (1996) conducted another survey of the middle Moche Valley. In recent years (Briceño Rosario and Billman 2014), he also conducted research in the upper part of the Moche Valley, showing that Salinar people occupied the Collambay area up until 1,280 m.a.s.l. (see also Boswell 2016). Like Topic and Topic (1982), Billman (1996, 2002) noted that between A.D. 1 and 400 there was a strong highland presence in the middle valley and interpreted it as a two-wave migration/invasion event that drove out coastal people. Coastal groups mainly settled around the site called Cerro Oreja, located between the lower and the middle valley, and at Pampa la Cruz, on the Pacific shoreline.

To document the highland occupation of the middle valley, excavations were carried out at the site called Cerro León since 2000 (Briceño Rosario and Billman 2018). The site yielded both coastal and highland ceramics. However, more than half of the ceramics came from the highlands. Thus, it has been suggested that people living at Cerro León used a highland set of culinary tools and this may indicate their identity. No evidence of pottery production was found, and the vessels were likely imported from the homeland (i.e., the Otuzco area or the Carabamba Plateau). The recovery of unfinished stone (e.g., spindle whorls, beads) and metal (e.g., copper hooks, gold, and silver ornaments) objects showed that such goods were made at the site, but raw materials were likely imported from quarries and mines located in the highlands. The highlanders could have occupied this area to get direct access to a resource-rich zone that had higher agricultural potential than the *quechua* and *jalca*. The site was abandoned around ca. A.D. 250 and the scholars did not find signs of violence. The absence of violence also points towards pacific relations among coast and sierra people, and scholars have recently discarded the ‘invasion hypothesis’ postulated in the 1990s. Billman and his colleagues also suggested that highlanders might have been assimilated into the emergent Southern Moche state (Billman et al. 2019; Briceño Rosario and Billman 2018; Fariss 2008; Ringberg 2012).

The Late Intermediate and Late Horizon occupation of the middle and upper Moche Valley has been recently studied by Patrick Mullins (2012, 2016, 2019, 2021), Alicia Boswell (2016, 2019), and Matt Ballance (2019). Mullins (2012, 2019) and Ballance (2019) focused on two defensive sites called Fortaleza de Quirihuac and Cerro Cumbray. Fortaleza de Quirihuac is a small site (2 ha), but a high amount of energy was spent to build defensive walls with parapets and store sling stones. The presence of storage jars suggests that the site could have periodically hosted a garrison and even feasting events could have been held within the fortified perimeter. Ceramics indicate that the site was probably occupied from A.D. 1100 when this area was already controlled by the coastal empire (Topic 1990b). While the site was built in an area that already featured an administrative site (Quebrada Katuay; see [Keatinge 1974; Keatinge and Day 1973]) and a possible defensive wall that restricted the access to the middle and the lower valley, the fortress could have been part of a series of outposts, playing an important role in alerting Chan Chan in case of attack from the highlands (Mullins 2012, 2016, 2019). At Cerro Cumbray, the empire relied more on the hilltop location than on impressive defensive structures. This late Chimú site has been interpreted as a small lookout that monitored the upper valley, an area that was not under the strict control of the coastal empire (Ballance 2019). Mullins (2021) has also recently conducted a long-term study of the upper Moche Valley, showing that this was a locus of intergroup interaction influenced by coastal and highland groups during Prehispanic times.

Higher up in the valley, the Collambay area was surveyed and the sites Cerro Ramon (1,831 m.a.s.l.) and Cerro Huancha (1,000 m.a.s.l.) were subjected to excavations (Boswell 2016, 2019). The investigations showed that this area was occupied by Salinar people at the beginning of the Early Intermediate Period. Research has shown that highlanders extensively occupied Collambay in the Late Intermediate Period and Late Horizon. During most of the Late Intermediate Period (ca. A.D. 900 - 1229/1271), people residing in the Collambay area used local ceramics (that show similarities with Phase 4 ceramics defined by John and Theresa Topic [1982]) along with some Chimú domestic wares. Among nonlocal materials, there were also marine resources, but in limited amounts. Boswell argued that in this phase highland settlers were trading with the Chimú empire. Next, during the terminal part of the Late Intermediate Period (A.D. 1229/1271 - 1470), the contacts with the coastal empire intensified. Some structures at Cerro Huancha were remodeled or expanded, the production of pottery and textiles increased, and more marine resources were consumed. According to Boswell, this indicates an alliance between Chimú and Collambay people. The latter would have controlled the flow of people and goods between the coast and the highlands with the support of the Chimú. Lastly, the Inka empire assigned this area to the Huamachuco province. The only site that was certainly occupied in this phase was Cerro Huancha, which yielded local, Inka and Chimú-Inka pottery. The amount of storage space increased during this phase, perhaps to store goods that were used to pay tributes. Moreover, people interacted with *chullpas*, funerary structures that hosted important ancestors. These funerary structures are widespread in the sierra and this would confirm the highland origins of these people.

The Collambay area and the town of Simbal are also mentioned in Gabriel Prieto's (2009, 2018) ethnographic study of the coastal town of Huanchaco. Colonial documents from 1595 tell us that coastal fishermen were going to Simbal to exchange fish for *chaupiyunga* and highland products. John Gillin (1945) noted that exchanges were still taking place regularly at the beginning of the 20$^{th}$ century. Moreover, coastal people told him that such contacts led to intermarriages between men from the highlands and coastal women. Prieto (2018) noted that nowadays exchanges are concentrated during the two days that precede the Catholic celebration called *Fiesta del Señor de la Piedad* (end of January) when local, coastal, and highland people exchange goods in the main plaza of Simbal. Highlanders offered wool, cereals, tubers, and dried potatoes in exchange for fish, salt, shells used to make lime, fruits, seaweed (*Gigartina chamissoi*, locally called *mococho* and that is used as food. See also [Masuda 1981]), coca and ají peppers. Prieto (2009, 2018) argued that such interactions were likely taking place also during Prehispanic times.

#### 2.3.1.7 The Jequetepeque Valley

The Jequetepeque *chaupiyunga* has been the subject of archaeological excavations for the past 10 years (Cutright and Cervantes 2011, 2013; Cutright and Osores 2016; Tsai 2012, 2019). Howard Tsai (2012, 2019) conducted research at the site called Las Varas (300 m.a.s.l.). The excavations showed that the site was occupied between ca. A.D. 950 - 1200/1300 and yielded a mix of coastal, highland, and local traits. Coastal ceramics (Lambayeque/Sicán) and marine resources were found throughout the site, especially at a ritual platform that faced the coast. Moreover, tombs featuring seated individuals buried with coastal pottery were found. Thus, Tsai (2012) argued that coastal people were trading with inhabitants of Las Varas, but they could have also lived alongside locals. The absence of fortifications reinforces the hypothesis of peaceful relations between Las Varas and coastal people. The structures excavated at Las Varas show standing stones or door jambs at the entrance, a technique that is common in the highlands. In addition, cists or *chullpas* of different shapes were found, and, as we saw above, this burial tradition was connected with the highlands. The whole site is littered with the so-called Coastal Cajamarca pottery. Due to their similarities with the highland Cajamarca ceramics (i.e., abstract painted decorations, cream color resembling kaolin clay), scholars thought that Coastal Cajamarca ceramics were imitations of sierra pottery. However, recent research has shown that Coastal Cajamarca is the dominant style in the *chaupiyunga*, where it is found in residential, ceremonial, and burial contexts and where it shows a higher variety of forms and decorative motifs than on the coast. Therefore, Tsai (2019) argued that the *chaupiyunga* is the place of origin of Coastal Cajamarca.

Since 2011, Robyn Cutright and her colleagues (Cutright and Cervantes 2011, 2013; Cutright and Osores 2016) have been conducting research at Ventanillas (280 m.a.s.l.), a site located ca. 5 km southwest of Las Varas that was occupied during the Late Intermediate Period. Ventanillas features platforms made of adobe, residential structures on flat areas, residential terraces, and ceremonial areas. The excavations have shown that people used large quantities of coastal ceramics (especially Lambayeque/Sicán and Chimú) and this, paired with the presence of adobe bricks, indicates ties with coastal people. Coastal pottery was mixed with highland and Coastal Cajamarca wares. The excavations also showed that people living at Ventanillas were consuming both land snails (*Scutalus sp.*) and marine resources. Furthermore, archaeologists recovered two types of spindle whorls, *piruros,* and *torteros*. *Piruros* are conical and lightweight spinning tools made of clay, stone, wood, or metal and are used to spin cotton, which grows on the Peruvian coast. *Torteros* are heavy disk-shaped tools made of clay that are used to produce yarn from animal fibers like camelid wool. *Piruros* are more common at coastal sites, while *torteros* are usually found in highland contexts. With these pieces of evidence, Cutright and her colleagues argued that the site was inhabited by a multiethnic community that might have had religious and political ties with the Lambayeque/Sicán polity.

The studies summarized above give us some hints on who could have been the actors involved in the competition for the highly valued *chaupiyunga* zone of the Carabamba

Valley, how they could have interacted throughout time, and what could have been the outcomes of such constant contacts.

### 2.3.2 Previous Research in the Carabamba Valley

Little research has been carried out in the Carabamba Valley, but the Carabamba Plateau has been the subject of intensive and small scale archaeological surveys (Coupland 1979; DeHetre 1979; Haley 1979; Leiva González et al. 2018; Leiva González et al. 2019b; Leiva González et al. 2019a; Topic and Topic 1979a, 1979b). In the 1940s, the members of the interdisciplinary Virú Valley Project (Collier 1955; Ford 1949; Strong and Evans 1952; Willey 1953) did not include the Carabamba Valley in their survey and William Duncan Strong and Clifford Evans (1952:7) stated that "whereas the upper Huacapongo Valley has considerable farming land and brushland or monte in a narrow belt along the stream, the Upper Viru[30] arroyo, or rocky channel, supports no vegetation at all. Similarly, whereas both modern farms and ancient sites occur in the Huacapongo Valley, the Upper Viru is apparently barren of both".

The Carabamba *chaupiyunga* was therefore left unexplored until 1980 when Topic and Topic (1982) conducted the last field season of the Prehistoric Fortification Systems of Northern Peru Project. The project led to the identification of 13 archaeological sites between the *caseríos* of Tomaval and Juyacul. The sites yielded both coastal and highland potsherds ranging from the beginning of the Early Intermediate to the Late Horizon. The coastal ceramics were associated with the Salinar, Gallinazo[31], Moche, Middle Horizon, Chimú, and

[30] In their publication Strong and Evans (1952) call the Carabamba River Upper Virú.

[31] "Gallinazo" is a problematic term since it has been used to refer both to the negative fancy wares used by Virú polity's elites and to the Castillo Modeled and Castillo Incised domestic wares used for several hundred years on the Peruvian North Coast (Strong and Evans 1952). "Gallinazo" has also been used to define a group of people that may have occupied the Peruvian North Coast between the Salinar phenomenon and the Moche (Billman 1996). These issues have been recently tackled by Millaire (2009), who clarified that Gallinazo does not indicate a short-lived cultural phenomenon, but it was a shared North Coast cultural substrate within which different sociopolitical formations developed. Millaire also argues that "Gallinazo" should be used for the long-lasting Castillo-style ceramics while "Virú" should indicate the negative pottery or the coastal state formation. In this dissertation, "Gallinazo" will not be used to avoid confusion. I will use the term "Castillo" to define the abovementioned domestic pottery, "Virú" to indicate the Early Intermediate Period coastal polity and "Virú Negative" to indicate fancy wares used by Virú polity's elites.

Inka archaeological cultures. Highland ceramics were subdivided into four phases. Phase 2-Southern Style (ca. 200 B.C. - A.D. 500) and Phase 4 (Late Intermediate Period) ceramics have been recovered in the Carabamba Valley. Phase 2-Southern Style occurred more frequently in the *chaupiyunga* and potters may have copied highland ceramics using a local clay mixture. Phase 2-Southern style ceramics presented a black core, were decorated with red bands at the lip, and featured grooved rims. Everted rim jars were very common. Small fine bowls were also common, and they featured either a brown or a white kaolin paste. Bowls and jars can be decorated with red painted lines or with painted white-red-orange geometric motifs. Phase 3 (Middle Horizon) may have been characterized by a decrease in interaction between the highlands and the *chaupiyunga*. Phase 4 ceramics were characterized by brown paste and everted rim and incurving neck jars were common shapes. The presence of a red band at the lip persisted, but the decoration was usually sloppily executed. Some jars also presented lugs at the lip. Theresa and John Topic argued that intense trade between coast and highlands took place during the Early Intermediate Period and the Late Intermediate Period, and *chaupiyunga* people may have acted as middlemen (Topic and Topic 1983, 1985).

In 2006, Briceño and Fuchs (2009) surveyed La Huaca (labeled PVC-13 in this dissertation), a site that overlooks the namesake *caserío.* It is located between the lower and the middle valleys and the survey conducted in 2006 yielded ceramics ranging from the beginning of the Early Intermediate Period to the Late Horizon. Briceño and Fuchs highlighted the strong Moche presence at the site, especially on the lower peaks, which show several burials with fine Moche pottery. The site could have been occupied by a community that included spinners/weavers, metalworkers, and stone workers, since spindle whorls made of clay and copper, and stone beads were recovered. The presence of *caracoles de cerro*, camelid, deer bones and shellfish give us insights into the diet of the people living at La Huaca, while highland ceramics painted in white-red-orange indicate contacts with the highlands. The high quantity of Chimú potsherds recovered shows that the site played an important role even during later periods and the presence of only one Chimú-Inka sherd confirms the weak Inka influence already noted by Theresa and John Topic (1982). In 2011, Briceño (2011) also identified a rock shelter along Quebrada Algodonal, which featured land snails and stone tools, likely occupied by Paiján people, hunter-gatherers who occupied the Peruvian North Coast since about 10000 B.C. (Dillehay 2008).

Between 2016 and 2018, Daniel Castillo Benítez and María Barrau (2016), and Maarten van Hoek (2017, 2018) studied petroglyphs located around the *caserío* of Mayasgo. Castillo Benítez and Barrau (2016) reported and studied rock art located at the site that is 500 m east of the *caserío* of Mayasgo (called in this dissertation PVC-18), at Pampa Colorada (the site that I call PVC-3), and at Juyacul. The petroglyphs were produced through percussion or, more rarely, drilling holes on granodiorite blocks. The petroglyphs at Mayasgo and Pampa Colorada feature geometric (crosses, lines, circles, spirals), anthropomorphic (heads, complex scenes with several human figures, humans in adoration, feet), and zoomorphic (birds, rodents, foxes, camelids) motifs. The authors of the study posited that the petroglyphs could have been produced during the Early Horizon and the Early Intermediate Period. Maarten van Hoek (2017) also visited Mayasgo. More recently, van Hoek (2018) argued that Mayasgo was located along a road (Coastal Cupisnique Road) marked by rock art. The Coastal Cupisnique Road ran inland between the Moche and Santa valleys, was first established by Cupisnique people, and later used by the other groups that occupied Northern Peru.

The Carabamba Valley has also been recently subjected to ethnohistorical research. Castañeda and Millaire (2015) analyzed colonial documents containing information relevant to the water management of the Virú and the Carabamba valleys. At the beginning of the 17th century, the coastal town of Guañape[32] faced water shortages. This led to a three-year-long (1616-1619) legal dispute (*litigio*) between the *gobernadores* of Guañape and Simbal around water scarcity on the coast. Simbal was a *reducción*[33] founded in 1574 and located in the Moche *chaupiyunga.* People from the Moche, Virú and Chao *chaupiyungas* were resettled

[32] The name Guañape comes from guano. Seabird excrements were used as fertilizer during Prehispanic times and this practice has endured over time (Szpak et al. 2012).

[33] *Reducciones* were towns where native people were forcefully resettled to extract labor from them, to facilitate their evangelization of natives and to transform them into 'civilized' subjects of the Spanish Crown (VanValkenburgh 2016).

there and the town was administered by the province of Huamachuco. The *gobernador* of Guañape claimed that Simbal people, who were farming the *valle de Susanga* (i.e., Huacapongo and Carabamba valleys), were using up all the water and Guañape's harvest was so poor that the inhabitants were neither able to pay tributes nor to feed themselves. In 1616 the *gobernadores* reached an agreement; people farming Susanga would use water for six months, while Guañape people would have access to water for the remaining six months. However, in 1618 the issue was not solved and Guanape's *gobernador* stated that his people were still thirsty and so hungry that some of them had to eat *algarrobo* pods instead of maize.

In 1619 an earthquake hit the country. New springs emerged in the Carabamba Valley after the earthquakes and the valley was farmed more intensively after 1619. This further reduced the amount of water available to coastal peoples, leading to the abandonment of Guañape, which had also been severely damaged by the earthquake. The existence of colonial disputes over water suggests that this resource was also likely a bone of contention during Prehispanic times between coastal, local, and highland peoples.

The Carabamba Valley and its *caseríos* are also mentioned in a *litigio* between Florencia de Mora, *encomendera*[34] of Huamachuco, and Jerónimo Ninaquispe, *gobernador* of Simbal, that took place in the last decade of the 16th century. While fighting over the ownership of the valley, both parties stated that ají peppers, maize, and cotton were produced in this area. The Carabamba Valley is also mentioned by Feyjoo de Sosa (1763), who stated that 72 slaves were residing in Huacapongo and Mayasgo, and such lands produced sugar. He also mentioned Juyacul and El Olivar, telling us that in the second half of the 18th century they were part of the parish of Virú.[35]

The name of the village of Tomaval, located at the Virú Valley neck is either spelled *Tomaval* or *Tomabal*. Here, the ending *-bal* hints at a Culle origin, a dead language that was

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[34] *Encomenderos* were Spaniards who were granted land and native people living within that land. The grantees could extract tributes and labor from native people, but they were also supposed to protect and evangelize them (VanValkenburgh 2012).

[35] Miguel Feyjoo de Sosa (1763) drew a map showing that the boundary between the Huamachuco and Trujillo provinces was located right east of Juyacul.

spoken until the 20th century (Adelaar 1989; Fonseca 1999; Rivet 1949) in the Department of La Libertad highlands, in the northern part of the Department of Ancash (Province and District of Pallasca) and along the Marañon River, and at least in the southern part of the Department of Cajamarca, province and district of Cajabamba (Adelaar 1989; Cabeza Luján 2009; Topic 1998).

The word Culle was first used to define this language in 1638 (Adelaar 1989). Subsequently, Baltazar Jaime Martínez Compañón, bishop of Trujillo in the last quarter of the 18th century, traveled throughout his diocese and wrote a list of Spanish words, translating them into the eight languages spoken in his bishopric (Adelaar 1989; Cabeza Luján 2009; Torero 1986, 1989). One of these languages was the “lengua culli de la provincia de Guamachuco” (Martínez Compañón 1978-85 [1789] Volume 2:iv, cited in [Topic 1998:115]). Another short list of words was found in 1915 in Pallasca (Rivet 1949), while other words were reported by the Augustinian friars (Torero 1989).

Studies conducted on toponyms show that the name of several places comes from the combination of Culle words or particles like coñ/goñ (water), chuco (land), -bal/val (pampa/flatland), -day (high peak), cau (rain), chuchú (flower), llucá (wind), mú (fire), muñ (moon), pichuñ (bird), urù (tree), ogoll (son), quida (sea). Culle words are also mixed with Quechua and Spanish words, indicating interaction among languages and people who spoke those languages (Adelaar 1989; Krzanowski and Szemiński 1978; Torero 1989). The origin of this language is still unclear, but it has been argued that it might have been spoken since the Early Intermediate Period (Lau 2010). As previously mentioned, during colonial times Culle was considered the language of Huamachuco and we also know that both the Carabamba Plateau and the *chaupiyungas* were controlled by the highland center in Inka times. Therefore, it is not surprising to see possible Culle words throughout the Carabamba Plateau. The map of the lower, middle and upper Carabamba valleys produced by the *Instituto Geográfico Nacional del Perú* (sheet 17-F – Salaverry) shows only one possible Culle toponym, Cushcunday. The latter should be a plot of land between Juyacul and El Olivar, but the inhabitants of the valley never mentioned such a name to us. The Carabamba *chaupiyunga* likely represented a transition zone between coastal Quingnam speakers (Torero

1986) and highland Culle speakers (Adelaar and Muysken 2004:Map 3; Torero 1986:529, 1989:222).

# Chapter 3

# 3 Towards a Chronology of the Carabamba Valley

In this chapter, I discuss the pottery collections recovered during fieldwork. Pottery is the outcome of a process that implies the collection, preparation, formation, and firing of the clay. In arid environments like the *chala* or *chaupiyunga*, potsherds are usually the most common category of artifacts recovered by archaeologists. This material was used to create architectural ornaments, figurines, music instruments, but ceramic artifacts were mainly utilized to process, transport, and store foods and beverages. Clay objects were also used as grave goods, and the type, quality, and provenance of pots can convey a great deal of information on social organization, social stratification, and contacts among human groups. The choices made by potters in terms of paste (clay and temper), morphology (shape and size), and surface treatments (slip, paint, modeled appliques, incisions, etc.) during the production process were connected to future uses of ceramic artifacts. Additionally, potsherds play a pivotal role in site dating and this is particularly true when clay artifacts under investigation have been chronologically ordered in previous studies. Thus, due to its omnipresence in most archaeological contexts, pottery is an invaluable source of information on culinary traditions, production and trade networks, economic and ritual practices (Arnold 1999; Druc 2015; Orton and Hughes 2013; Shepard 1985; Sinopoli 1991; Skibo 2013). The following sections present: 1) the development of a ceramic typology for the Carabamba Valley, 2) spatial and statistical analyses on the potsherds collected during fieldwork, and 3) a chronology for the Carabamba Valley, based on both the analysis of pottery and social, political and economic happenings that took place in the Central Andes throughout Prehispanic times.

## 3.1 A Ceramic Typology for the Carabamba Valley

In November 2019, all ceramic sherds collected in the field were packed and moved to a temporary laboratory located in Trujillo. A number was assigned to each potsherd and a typology was created based on earlier studies carried out in the Moche, Virú, and Santa valleys (Boswell 2016; Brennan 1978; Briceño Rosario and Billman 2014; Collier 1955; Donnan and Mackey 1978; Downey 2015; Espinosa 2020; Ford 1949; Kanigan 1994;

Keatinge 1973; Nesbitt 2012; Prieto 2015; Ringberg 2012; Strong and Evans 1952; Topic and Moseley 1983; Topic and Topic 1982; Wilson 1988b). An Excel spreadsheet was used to log information on each sherd, including information on the thickness of the sherd, the vessel diameter, paste type (coarse, medium, fine), paste color, the presence or absence of decorations, and additional observations such as striking similarity with fragments recovered by other scholars. 176 sherds were drawn and digitized using Corel Draw by Jeisen Navarro Vega.

Analyzing the collected potsherds, and following the abovementioned sources, I created a ceramic typology mainly based on:

- Surface treatment and decorations;
- Firing;
- Macroscopic observations on the paste (i.e., color, and size, and type of inclusions);
- Vessel shape.[36]

Eight different ceramic types were defined. Table 3.1 shows the types that I defined and the types on which they are based. The characteristics of the eight types are briefly summarized in Table 3.2, while a more detailed description will be provided in the following paragraphs.[37]

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[36] The ceramic artifacts collected in the Carabamba Valley were likely both locally produced and imported. While no signs of ceramic production have been recovered during the survey, Briceño and Fuchs (2009) found one possible mold fragment at PVC-13/La Huaca. Moreover, the presence of possible modern brick kilns suggests the existence of local clay sources that could have been used to produce pottery during Prehispanic times. A technological study of potsherds has not been carried out at this time.

[37] Tabs 1, 2, 3 and 4 in Appendix A show quantities and percentages of undecorated and decorated ceramics found at each site. Table 3.1 and Table 3.2 are at the end of section 3.1.

*Guañape Ceramics*

The term Guañape was first used by members of the Virú Valley Project to define the second period of their chronological framework. During that period, the earliest ceramic tradition of the Virú Valley emerged (Collier 1955; Ford 1949; Strong and Evans 1952; Willey 1953). Similarly, the Guañape type defined herein marked the first use of pottery in the Carabamba Valley. The Guañape type includes a series of ceramic sub-types defined by scholars that conducted research in the Virú and Moche valleys, namely Guañape Zoned Punctate and Ancón Zoned Punctate (Collier 1955; Ford 1949; Strong and Evans 1952; Zoubek 1997), Gramalote wares (Prieto 2015), and incised wares akin to Laredo Phase wares (Nesbitt 2012). Guañape ceramics represent a very small part of the collection (0.3% - four sherds) and they were found in the middle and upper valleys. The paste color of Guañape pottery ranges from reddish-brown to dark brown, while the texture is fine (showing sub-millimetric inclusions). This suggests that the vessels could have been fired in both oxidizing (rich in oxygen) and reducing (oxygen-poor) atmospheres. The thickness of the sherds ranges from 0.3 to 1.3 cm, while the diameter of the pots is comprised between 7 and 12 cm.[38]

The sherds are decorated with applique ribs, punctate motifs, incised motifs, or a combination of both. In the latter case, the punctation is located in triangular/irregularly shaped areas defined by incisions. The exterior surface is smoothed or polished, while the interior surface is at most scraped (Figure 3.1). Two fragments are decorated body sherds and two neckless *ollas* (cooking pots) rim sherds have been identified. Following the chronology of the abovementioned sources, it can be argued that Guañape ceramics were used over a long period (ca. 1800-400 B.C.).

[38] Thickness and diameter were measured on the potsherds collected while conducting fieldwork. Such observations were not made on the potsherds that were only observed and photographed in the field.

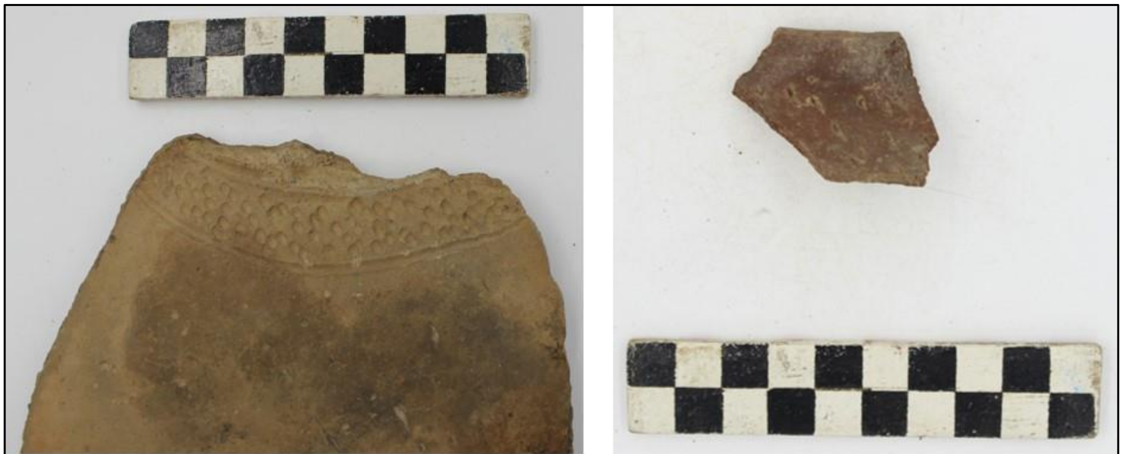


**Figure 3.1: Guañape ceramics from the Carabamba Valley.**

*Salinar Ceramics*

The Salinar type has been named after the coastal phenomenon described in Chapter 2 and this type includes Huacapongo Polished and Puerto Moorin White-on-Red wares (Collier 1955; Ford 1949; Strong and Evans 1952) defined by the Virú Valley Project.[39] Salinar ceramics represent 13.6% (203 sherds) of the whole collection. Salinar sherds were spatially clustered in the lower and the middle parts of the valley. Similar patterns have been identified in the neighboring Moche Valley (Briceño Rosario and Billman 2014). The paste color of Salinar ceramics ranges from brick orange to brown, indicating that the pots were fired in an oxidizing atmosphere. However, the firing process was not well-controlled. The pots were usually only partially oxidized, and most sherds assigned to this type featured a black/grey core – usually called 'sandwich'. The presence of fire clouds also suggests that poor control over the firing process. *Tinajas* (large containers used to store dry foods or liquids) usually show a coarse paste (four sherds – 4.8% of the 83 collected Salinar sherds) with many sub-

[39] Huacapongo Polished and Puerto Moorin White-on-Red wares have been used as a reference by other scholars working in the Virú and Moche valleys, and in the lower Carabamba Valley (Billman 1996; Brennan 1978; Briceño Rosario and Billman 2014; Briceño Rosario and Fuchs 2009; Donnan and Mackey 1978). Like I did, these authors merged the two above mentioned wares into one type called Salinar. As argued by Downey (2014:67) "Ford created numerous categories of domestic wares and treated these independently from one another, whereas they appear to essentially be variations around a central stylistic theme".

centimetric sandy inclusions. Jars (*cántaros* – used to store/serve liquids), cooking pots, grater bowls (*ralladores*), and bowls (*cuencos*) feature medium (a mix of sub-centimetric and sub-millimetric black and white temper grains – 66 sherds – 79.5% of the 83 collected Salinar sherds) and fine (13 sherds – 15.7% of the 83 collected Salinar sherds) pastes. The exterior surface is either smoothed or, more often, burnished. The burnishing marks are visible, and they are vertical, oblique, or, more rarely, horizontal. Such burnishing marks may have been considered a form of decoration. The interior surfaces are scraped or seldom smoothed. The most common forms are jars with direct or upcurved rims. In the latter case, rims are usually thickened (Strong and Evans 1952). The thickness of the sherds ranges from 0.2 to 2.1 cm, while the diameter of the pots is comprised between 7 and 21 cm (Figure 3.2).

Decorated sherds (26 sherds –12.8% of the 203 sherds) usually show vertical or oblique incisions at the rim. Only one sherd (PVC-6 175) shows evidence of white paint. As shown by research conducted on the Peruvian North Coast (Billman 1996; Bourget and Chapdelaine 1996; Downey 2015; Downey and Millaire 2019; Millaire 2020; Willey 1953), these ceramics could have been produced between the end of the Early Horizon and the beginning of the Early Intermediate Period (ca. 500 B.C. - A.D. 100).

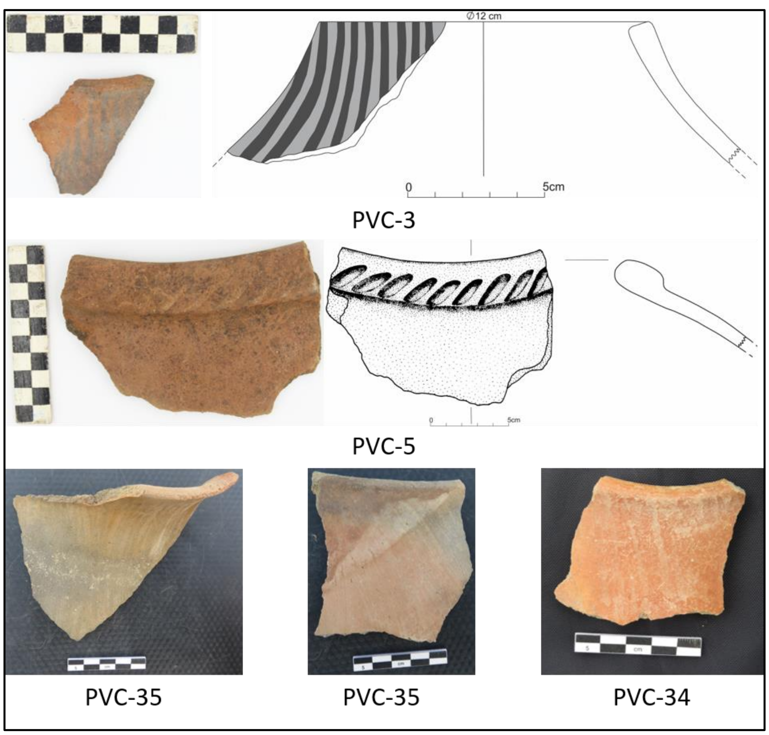


**Figure 3.2: Salinar ceramics from the Carabamba Valley.**

*Castillo Ceramics*

The Castillo ceramic type includes several sub-types identified by the Virú Valley Project, namely Castillo Plain, Castillo Modeled, Castillo Incised, Gloria Polished Plain, and Valle Plain (Bennett 1950; Collier 1955; Downey 2015; Downey and Millaire 2019; Ford 1949; Strong and Evans 1952). As highlighted by research conducted over the last two decades (Downey 2015; Downey and Millaire 2019; Millaire and Morlion 2009), Castillo wares were used throughout the Early Intermediate Period and the Middle Horizon on the Peruvian North Coast. Castillo ceramics constitute 14.7% (220 sherds) of the ceramics collected or observed in the field. As was the case with the Salinar type, Castillo ceramics were predominantly found in the lower and middle valley areas. Most Castillo ceramics are characterized by an orange paste, but some sherds are light brown or brown. The orange color and the near absence of black/grey cores suggest a better control over the firing process. As highlighted by Alicia Espinosa (in press; 2020), Castillo ceramics were produced using coiling, modeling, molding, and hammering forming techniques. Large (Ø 22-50 cm) storage *tinajas* feature a coarse paste (7 sherds - 9% of the 78 collected Castillo sherds), while jars, bottles, cooking pots, bowls, grater bowls, plates, and spinning tools (*piruros* and *torteros*) feature medium or fine (47 sherds – 60.3% and 24 sherds – 30.8% of the 78 collected Castillo sherds respectively) paste. The most common temper is sand. Both exterior and interior surfaces are smoothed and sometimes present horizontal wiping marks. The interior and exterior surfaces of plates have been polished by potters. Common forms are jars with short, everted rims, jars with tall vertical necks, jars with direct thickened rims, and grater bowls. The thickness of the sherds ranges from 0.3 to 3.5 cm, while the diameter of the pots is comprised between 4.5 and 50 cm.

Castillo Incised sherds are decorated with vertical or horizontal incisions below the lip or on an appliqued coil running below the lip, triangular motifs, and dots. Castillo Modeled potsherds show snake-like motifs, bats, appliqued braids, bulges, lugs, coils, and circles. Interestingly, no face-neck jars (which are commonly found at coastal sites; see Millaire 2009) have been noted. However, some appliqued lugs might have been ears of human figures (Figure 3.3). Castillo Modeled or Castillo Incised represent 20% of the Castillo sherds (44 sherds). Taking into account recent research carried out on the Peruvian North

Coast (Downey 2015; Downey and Millaire 2019; Millaire and Morlion 2009), I argue that this ceramic type could have been used in the Carabamba Valley between A.D. 1 and 1000.

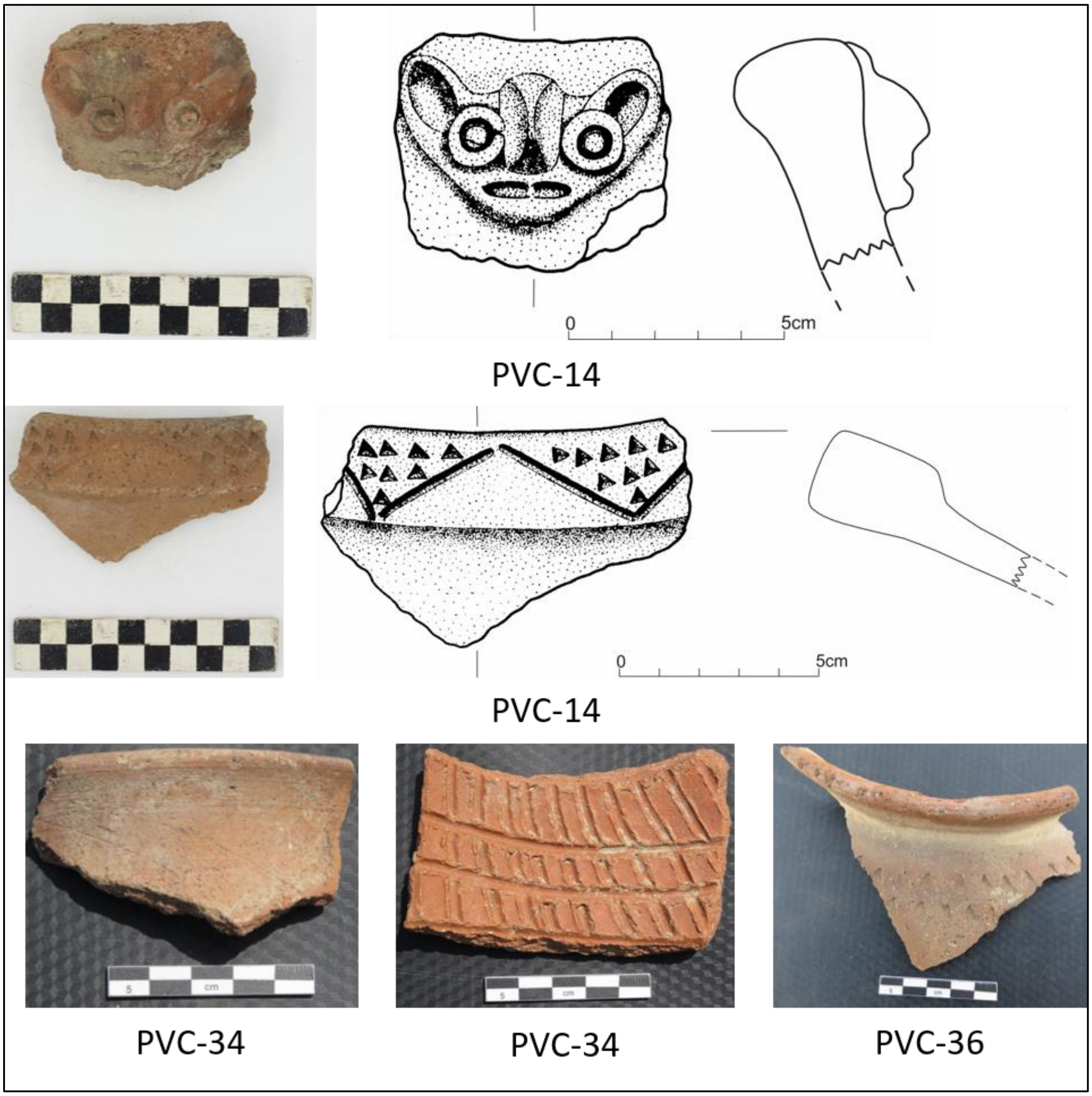


**Figure 3.3: Castillo ceramics from the Carabamba Valley.**

*Early Sierra Ceramics*

This ceramic type has been defined following research carried out in this part of the Northern Highlands and in the intermediate zones that separate them from the coast (Leiva González et al. 2018; Leiva González et al. 2019b; Leiva González et al. 2019a; Ringberg 2012; Thatcher

1972a; Topic and Topic 1982). This type includes Cerro León, Otuzco, and Quinga Series defined by Elise Ringberg (2012) at Cerro León, and Phase 2 and 3 ceramics defined by Theresa and John Topic (1982). Moreover, the non-local type identified in the coastal Virú Valley called Castillo White Red Orange (Bennett 1950; Strong and Evans 1952)[40] has been included. Early Sierra potsherds are 18.6% (278 sherds) of the whole assemblage. Early Sierra potsherds represent a large part of the ceramic sherds collected in the plateau and the upper valley. A substantial number of Early Sierra sherds can be found also in the middle valley, while their presence becomes scarcer moving towards the coast. The color of the paste is highly variable. The sherds can be orange, buff/beige, or brown. Very few sherds are made of kaolin clay (three sherds – 1.1% of the whole type) and their color is pearl white. Most potsherds have been fired in an oxidizing atmosphere; however, some sherds show a black core. According to Ringberg (2012), the black core could have been intentional; potters were firing vessels in a reducing atmosphere first and in an oxidizing atmosphere at the end of the firing process. As highlighted by Theresa and John Topic (1982), people living in the Carabamba Valley *chaupiyunga* may have locally produced imitations of pots manufactured in the Carabamba Plateau, and the former presented a lighter-colored paste than the latter. The thickness of the sherds ranges from 0.2 to 1.6 cm, while the diameter of the pots is comprised between 4 and 48 cm.

Early Sierra ceramics include *tinajas*, *ollas*, *cántaros*, *cuencos*, *platos*, and spindle whorls. In addition, site PVC-20 yielded a colander sherd with angular holes (Topic and Topic 1982). Early Sierra storage vessels feature coarse pastes (one sherd – 0.5% of the 197 collected Early Sierra ceramics). Other containers such as jars with everted rims and flaring necks, jars with bulged or grooved rims, and small bowls feature finer pastes (75 sherds –38.1% of the 197 collected Early Sierra potsherds). Temper is composed of white subangular grains. The exterior surface is usually smoothed, while the interior surface can be either smoothed or scraped.

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[40] Despite the use of the word Castillo, Strong and Evans (1952) clarify that this is an intrusive type in the coastal Virú Valley.

Of all Early Sierra sherds, 101 are decorated (36.3%). The most common decoration is a red band either at the interior or at the exterior of the lip. Similar decorations have been observed in the middle Moche Valley (Ringberg 2012) and the Huamachuco area (Thatcher 1972b). In addition, three sherds (1.1% of the collected and observed Early Sierra sherds) were decorated with white, red, and orange bands. This type of painted decoration could be associated with the Castillo White, Red, Orange (W/R/O) wares defined by Bennett (1950) and Strong and Evans (1952). Early Sierra sherds can also show a red slip (Figure 3.4). Following the chronology proposed by Theresa and John Topic (1982), the ceramics assigned to this type could have been produced between 200 B.C. and A.D. 900.

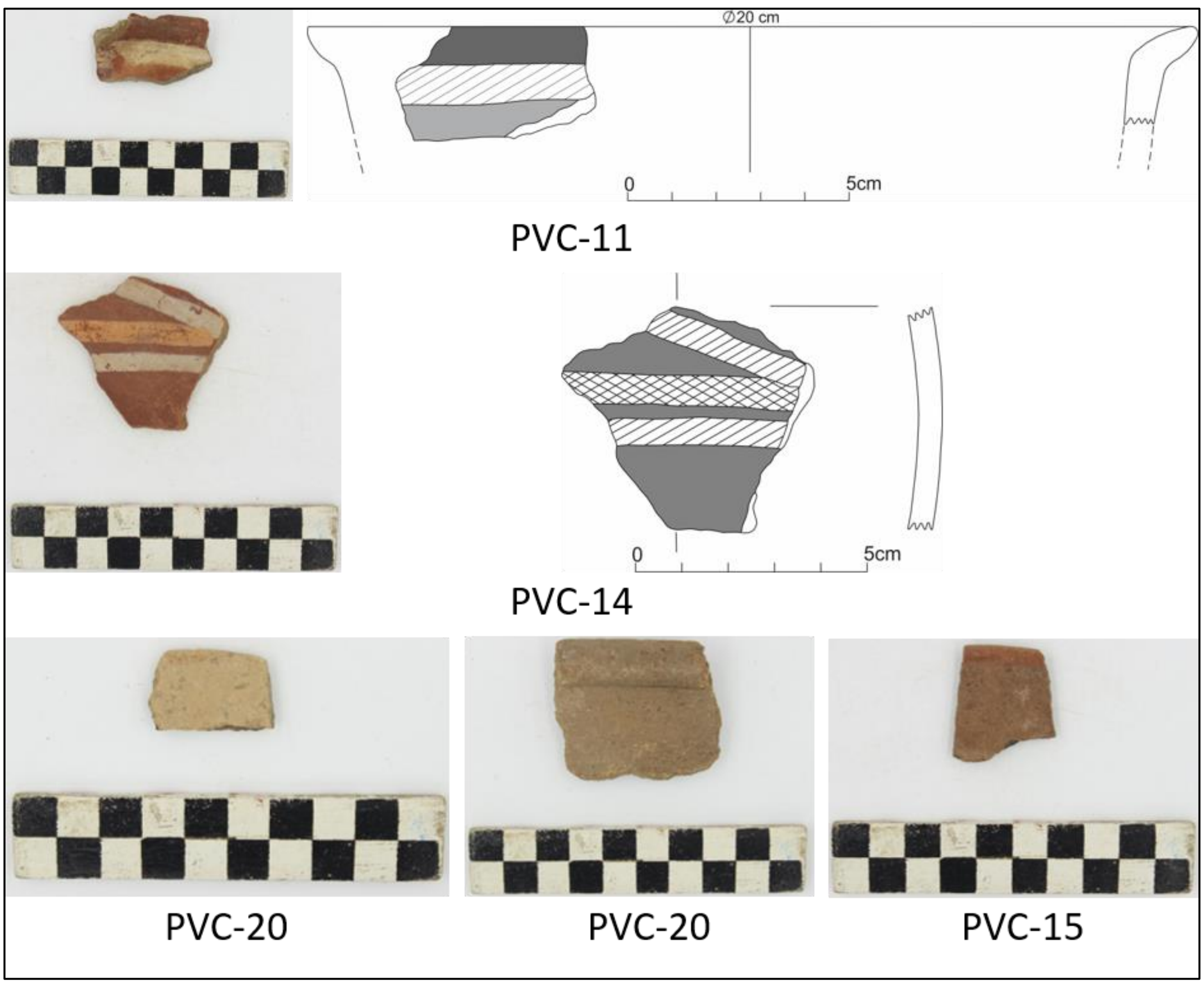


**Figure 3.4: Early Sierra ceramics from the Carabamba Valley.**

*Moche Ceramics*

The Moche phenomenon and the fine wares produced by Moche people have been extensively studied over the last century (Bourget and Jones 2008), and the Moche ceramics from the coastal Virú Valley are no exception (Bourget 2003, 2010; Collier 1955; Ford 1949; Strong 1947; Willey 1953). Moche ceramics represent 5.6% (84 sherds) of the whole ceramic assemblage and almost half of them (37 sherds) were collected at PVC-13, located between the lower and the middle valleys. A strong Moche presence had previously been noted by Briceño and Fuchs (2009) in this area. Few Moche ceramics were identified, if any, on sites located in the middle and the upper parts of the valley. Moche ceramics paste usually ranges from orange to brick red; however, while some sherds feature a brown or grey paste. The pots were usually fired in an oxidizing atmosphere. Very few of them display a grey core and this suggests a good control over the firing process. Most of the potsherds (63 – 94% of the 67 collected Moche sherds) feature a fine paste with a small, almost indiscernible, sand temper. The exterior surface is smoothed, while the interior surface is either smoothed (open forms) or scraped (forms with a restricted orifice).[41] Diagnostic sherds indicate the presence of serving dishes, including jars with tall vertical necks, stirrup spout bottles, plates, bowls, and *floreros*

Moche sherds recovered in the Carabamba Valley are decorated with paint (red, white, purple, black, white on red, red on white) used to create geometric (bands, lines, dots, stepped motifs) and zoomorphic (i.e., a prawn) motifs. In addition, some potsherds show molded and appliqued anthropomorphic and phytomorphic (i.e., peanuts) decorations (Figure 3.5). Following the chronology proposed by Briceño and Fuchs (2009), I argue that these ceramics were produced during the Late Moche period, between A.D. 600 and 900 (Koons and Alex 2014).

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[41] Open or unrestricted forms are characterized by an orifice equal to/larger than the maximum diameter of the vessel. Closed or restricted forms show an orifice smaller than the maximum diameter of the vessel (Shepard 1985) As highlighted by Elise Ringberg (2012), the former (e.g., bowls, plates and *ralladores*) are used to serve, prepare and consume foods, while the latter (e.g., *olla*s, jars and bottles) are used to store, transport and cook dry foods and liquids. However, colanders may be an exception to this framework.

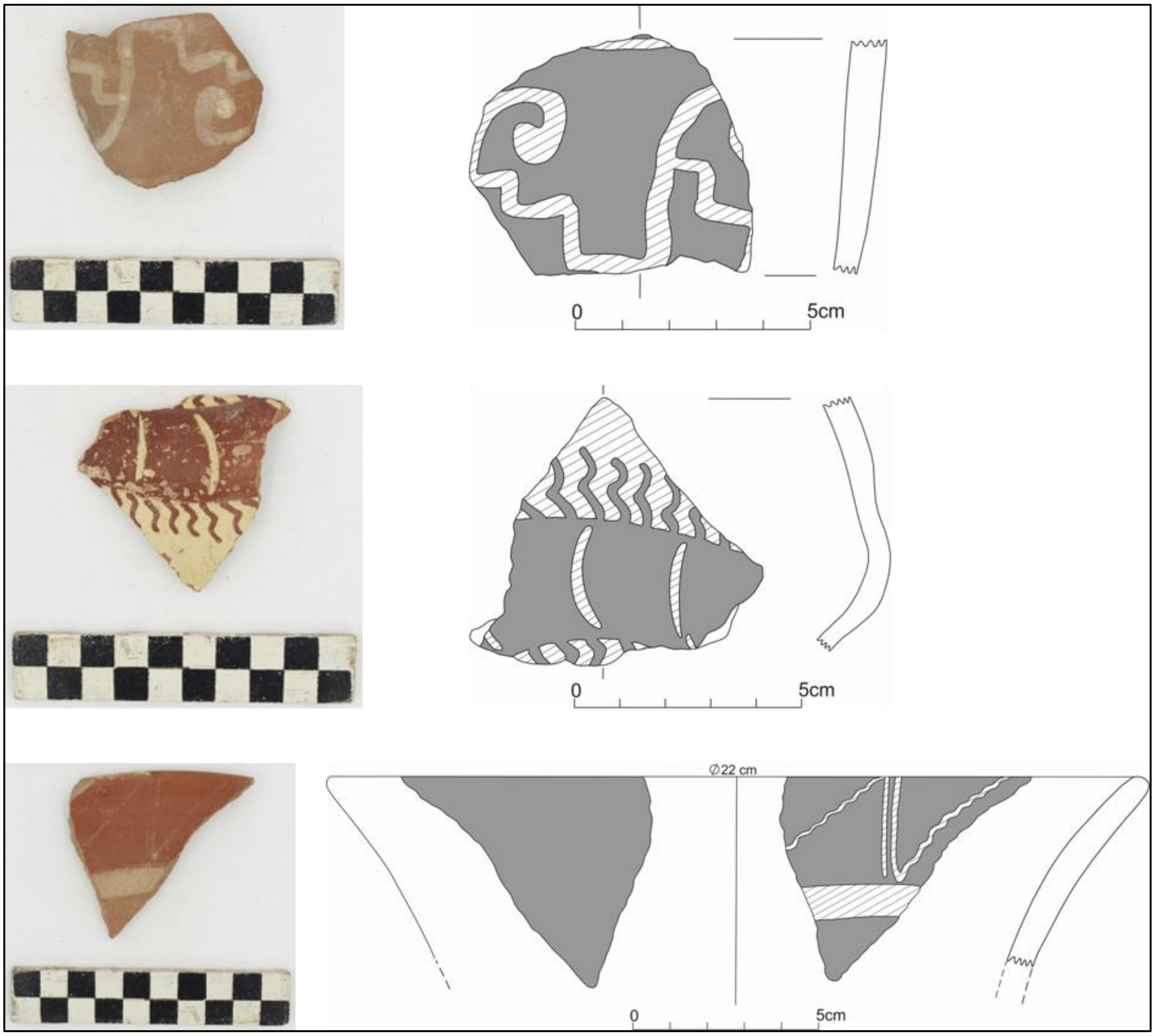


**Figure 3.5: Moche ceramics from the Carabamba Valley. All the sherds in this picture were collected at PVC-13.**

*Transitional Ceramics*

The Transitional ceramic type is associated with the collapse of Moche ideology, the expansion of the Wari state throughout the Central Andes, and the emergence of several sociopolitical entities and ceramic styles on the Peruvian North Coast (Castillo Luján 2019). This type has been defined by looking at Tiahuanacoid ceramics identified by the members of the Virú Valley Project (Collier 1955; Ford 1949; Strong and Evans 1952; Willey 1953). Transitional ceramics represent a very small portion of the collection (two sherds – 0.1%) and it can therefore be argued that the Wari influence in this area was weak. Both sherds have an orange paste with sandy inclusions. Sherd PVC-3 47 shows sub-millimetric inclusions, while sherd PVC-10 226 shows larger inclusions. Their exterior surface is smoothed, while the interior could be either smoothed or scraped. The exterior of sherd PVC-10 226 is decorated with a molded chevron motif, while its interior shows a brown slip. The exterior of sherd PVC-3 47 is painted in white, black, and red, while its interior is scraped, indicating that it could have been part of a closed form. The thickness of the sherds ranges from 0.5 to 0.6 cm, while the diameter of the pots could not be reconstructed (Figure 3.6).

Following the chronology proposed by Downey (2015; 2019), these pots could have been produced between A.D. 750 and 1100.

**Figure 3.6: Transitional sherd (PVC-3 47) from the Carabamba Valley. The sherd was collected at PVC-3.**

*Chimú Ceramics*

This ceramic type has been defined analyzing pottery produced during the Chimú domination of the Peruvian North Coast and the brief Inca rule (Moore and Mackey 2008), in particular in the neighboring Virú (Collier 1955; Ford 1949; Strong and Evans 1952; Willey 1953), Moche (Boswell 2016; Castillo Luján 2018; Donnan 1997a; Donnan and Mackey 1978; Kanigan 1994; Keatinge 1973; Topic and Moseley 1983), Santa (Wilson 1988b) valleys. Chimú ceramics represent the most common type identified during the survey (521 sherds – 34.8% of the collected and observed sherds). They were recovered in the lower and the middle valleys, but less common in the upper valley and on the Carabamba Plateau. The paste color can be orange, reddish-brown, brown, grey, or black. Potsherds showing shades of orange, red, and brown were fired in an oxidizing atmosphere (black cores are uncommon), while the grey and black wares were fired in a reducing atmosphere. Large *tinajas*, *ralladores*, and, more rarely, jars show a coarse paste (10.4% - 39 out of the 376 collected Chimú sherds). Most jars, cooking pots and serving vessels (i.e., bowls and plates) feature a medium (247 sherds – 65.7% of the 376 collected Chimú sherds) or a fine paste with small sandy inclusions (90 sherds – 23.9% of the 376 collected Chimú sherds). Both the exterior and the interior surfaces could be either smoothed (horizontal wiping marks can usually be detected) or polished. Common shapes are large tinajas with incurved or everted rims, jars with tall vertical/slightly everted necks, jars with cambered rims, jars with short, everted rims, grater bowls, and round-bottomed plates. The thickness of the sherds ranges from 0.3 to 2.4 cm, while the diameter of the pots is comprised between 2 and 51 cm.

Chimú potsherds do not feature painted motifs. 207 sherds (39.7% of all 521 Chimú sherds) are decorated. Potsherds are commonly decorated with molded motifs, such as the widespread *piel de ganso* (raised dots), waves, seashells, fish, birds, fruits, corn cobs, human faces, and geometric motifs. Chimú sherds were also decorated with incised reticulated motifs, incised dots with vertical or oblique arrangements, appliqued braids, nubs, nubs with vertical incisions, and paddle stamping (Figure 3.7). Following the chronology proposed by Moore and Mackey (2008) and assuming that pottery production in this area was not heavily affected by the Inka conquest, I argue that these pots were produced between A.D. 900 and 1532.

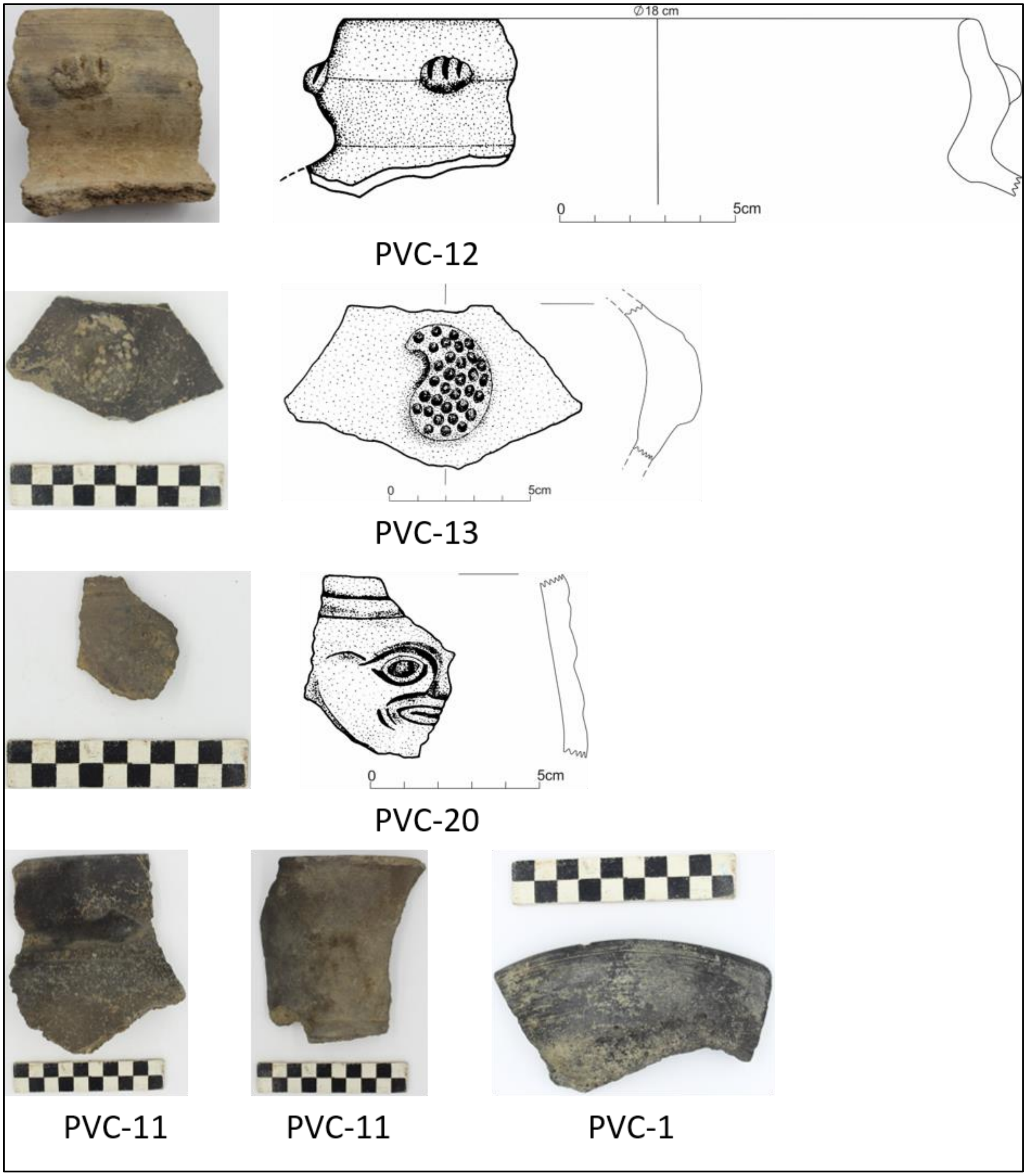


**Figure 3.7: Chimú ceramics from the Carabamba Valley.**

*Late Sierra Ceramics*

The Late Sierra type is based on the little research carried out on the Late Intermediate Period occupation of the neighboring *chaupiyungas*, namely the Phase 4 ceramics defined by Topic and Topic (1982) and Collambay style pottery recovered by Alicia Boswell (2016) at Cerro Huancha and Cerro Ramon, in the upper Moche Valley. The 185 Late Sierra sherds identified on the sites' surface represent 12.4% of the ceramic collection. This type is widespread in the Carabamba Plateau and the upper valley, while its presence decreases as one travels towards the coast. The paste color is brown to dark brown. Most sherds (131 sherds – 88.5% of the 148 collected Late Sierra sherds) show a medium paste, while 17 sherds (11.5% of the 148 collected Late Sierra sherds) feature a fine paste. Common inclusions are white and dark crushed rocks and golden mica. The exterior and the interior surfaces are usually smoothed, and, in some cases, potsherds show rough horizontal smoothing marks. However, colanders feature very rough exteriors and smoothed interiors. Common shapes include jars with flaring and incurving necks, jars with everted rims, bowls with lugs at the lip, and colanders with rounded holes located throughout the entire body of the vessel. Jars may also have lugs at the lip. The thickness of the sherds ranges from 0.3 to 2 cm, while the diameter of the pots is comprised between 6 and 48 cm.

When decorated (21 sherds – 11.4% of the 185 Late Sierra potsherds), Late Sierra sherds show a sloppily painted red band at the lip (either at the interior or the exterior) and, more rarely, black bands. Following the chronology proposed by Theresa and John Topic (1982) and what was postulated above about Early Sierra ceramics, Late Sierra ceramics were likely produced between A.D. 800 and 1532.

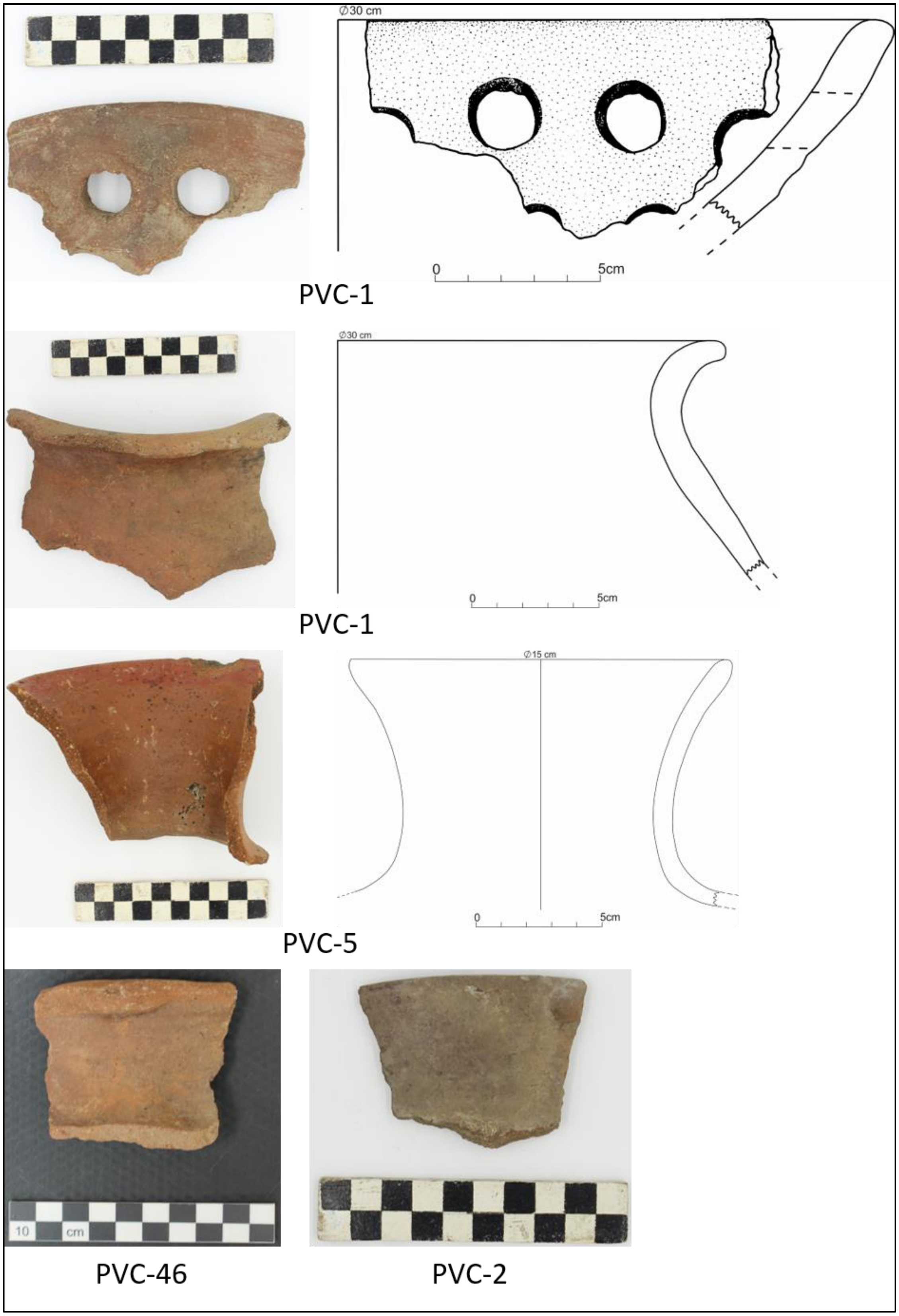


**Figure 3.8: Late Sierra ceramics from the Carabamba Valley.**

| CARABAMBA VALLEY TYPE | REFERENCE TYPES |
|---|---|
| Guañape | • Guañape Plain, Guañape Zone Punctated, Ancón Zone Punctated (Collier 1955; Ford 1949; Strong and Evans 1952)<br>• Gramalote wares (Prieto 2015)<br>• Laredo Phase ceramics (Nesbitt 2012) |
| Salinar | • Huacapongo Polished Plain, Puerto Moorin White-on-Red (Collier 1955; Ford 1949; Strong and Evans 1952)<br>• Salinar (Brennan 1978; Briceño Rosario and Billman 2014; Briceño Rosario and Fuchs 2009; Donnan and Mackey 1978) |
| Castillo | • Castillo Plain, Castillo Modeled, Castillo Incised, Gloria Polished Plain, Valle Plain (Bennett 1950; Collier 1955; Espinosa 2020; Ford 1949; Strong and Evans 1952)<br>• Castillo Series (Ringberg 2012) |
| Early Sierra | • Castillo White-Red-Orange (Bennett 1950; Strong and Evans 1952)<br>• Phase 2 and 3 ceramics (Topic and Topic 1982) |

| | |
|---|---|
| | • Cerro León, Otuzco and Quinga Series (Ringberg 2012) |
| Moche | • Huancaco ceramics (Ford 1949; Strong and Evans 1952)<br>• Moche ceramics (Donnan and Mackey 1978) |
| Transitional | • Tiahuanacoid ceramics (Collier 1955; Ford 1949) |
| Chimú | • Virú Plain, Tomaval Plain, Queneto Polished Plain, Rubia Plain, La Plata Molded, San Juan Molded, San Nicolas Molded (Collier 1955; Ford 1949; Strong and Evans 1952)<br>• Moche Valley ceramics (Keatinge 1973)<br>• Chan Chan ceramics (Kanigan 1994; Topic and Moseley 1983)<br>• Early Tambo Real – Santa Valley (Wilson 1988b)<br>• Chimú-Inka ceramics (Castillo Luján 2018; Donnan 1997a; Donnan and Mackey 1978) |
| Late Sierra | • Phase 4 (Topic and Topic 1982)<br>• Collambay style (Boswell 2016) |

**Table 3.1: Carabamba Valley ceramic types and types identified by other scholars.**

| TYPE | PASTE | COMMON SHAPES | SURFACES | DECORATIONS | CHRONOLOGY |
|---|---|---|---|---|---|
| Late Sierra | Brown/Dark brown | Jars with flaring and incurving necks, everted rims, bowls with lugs at the lip, and colanders | Ext: smoothed/polished. Int: smoothed/polished | Sloppily painted bands (red/black) | A.D. 800 - 1532 |
| Chimú | Orange to black. Oxidizing/reducing atmosphere | Jars with tall vertical necks, cambered rims, short, everted rims, grater bowls, round-bottomed plates | Ext: smoothed/polished. Int: smoothed/polished | Molded and modeled motifs | A.D. 900 - 1532 |
| Transitional | Orange. Oxidizing atmosphere | / | Ext: smoothed. Int: smoothed/scraped | Painted (white, black, red)/molded motifs | A.D. 750 - 1100 |
| Moche | Brick orange to grey. Oxidizing/reducing atmosphere | Jars with tall vertical necks, stirrup spout bottles, plates, bowls, floreros | Ext: smoothed. Int: smoothed/scraped | Painted (red, white, purple) motifs | A.D. 600 - 900 |
| Castillo | Brick orange/brown. Oxidizing atmosphere | Jars with short, everted rims, tall vertical necks, direct thickened rim, grater bowls | Ext: smoothed. Int: smoothed (smoothing lines) | Incised and modeled motifs | A.D. 1 - 1000 |
| Early Sierra | Orange, buff/beige, brown, pearl white. Oxidizing atmosphere (black core) | Jars with everted rims and flaring necks, bulged or grooved rims, small bowls | Ext: smoothed. Int: scraped/smoothed | Painted red bands (lip), painted white, red, orange motifs | 200 B.C. - A.D. 900 |
| Salinar | Brick orange to brown. Oxidizing atmosphere (black core, fire clouds) | Jars with direct/upcurved rims | Ext: smoothed/polished (clear marks). Int: scraped | Incised lines (rim), white on red paint | 500 B.C. - A.D. 100 |
| Guañape | Reddish-brown. Dark brown. Oxidizing/reducing atmosphere | Neckless ollas | Ext: smoothed or polished. Int: scraped | Incised punctations and incised lines | 1800 - 400 B.C. |

**Table 3.2: Summary of the main characteristics of the ceramic types identified during the survey.**

## 3.2 The Seriation of the Carabamba Valley Ceramics

The use of pottery was not confined to specific groups and specific contexts but was instead used daily in both mundane and ritual contexts (Rice 2015). In mundane contexts, domestic wares were used for cooking, serving, and storing purposes, while in the ritual contexts finely made ceramics were used during religious ceremonies, ritual gatherings, or placed inside burial contexts. Thus, ceramics can yield information about culinary practices, identity, interaction among human groups, political organization, beliefs, raw materials procurement, labor organization, social stratification, and chronology of human settlements (Sinopoli 1991).

Even though the availability and the accuracy of absolute means of dating have improved over the last 70 years (Libby 1955), ceramics are still widely used to date the occupation of archaeological sites, especially when conducting studies at a regional scale that do not involve archaeological excavations. To anchor the eight ceramic types to absolute chronology, studies conducted on the Peruvian North Coast over the last century can be of precious help. The chronology of the Carabamba Plateau is still poorly defined, given the paucity of research conducted in the region. To create a chronological framework that will guide the analyses that will be carried out in the next chapters, in the following paragraphs I will:

1) Highlight the presence of two main ceramic traditions;
2) Carry out a frequency seriation on those ceramic traditions;

To conduct these analyses, the numerical data about each ceramic type was logged onto an Excel spreadsheet, and the percentage of each ceramic type at each archaeological site[42] was calculated. The software also allowed to graphically display such percentages using the REPT function. The latter produces bars whose size reflects the selected numerical value and has more immediate readability than numbers.

[42] 44 sites out of 48 featured ceramics on the surface. The sites located on the Carabamba Plateau were also included in the analysis.

### 3.2.1 Two Main Traditions

In the previous section, I defined eight different ceramic types based on the characteristics listed above. These ceramic types reflect the intermediate nature of this area, showing that people were using artifacts from two separate pottery traditions: a Coastal and a Highland tradition. Therefore, each ceramic type can be assigned to one of these two traditions (Table 3.3).

| COASTAL TRADITION | HIGHLAND TRADITION |
|---|---|
| – Guañape | – Early Sierra |
| – Salinar | – Late Sierra |
| – Castillo | |
| – Moche | |
| – Transitional[43] | |
| – Chimú | |

**Table 3.3: The affiliation of each ceramic type identified in the previous section.**

As highlighted above, the ceramic types assigned to the Coastal Tradition have been defined using studies conducted on the Peruvian North Coast, in particular the Virú Valley. Ceramic sherds collected in the Carabamba Valley are very similar, if not identical, to potsherds collected on the coast. They generally have an orange paste (except for the early Guañape type and the late oxidized Chimú sherds) and sandy inclusions. Moreover, coastal types show

[43] Even though the Wari phenomenon (ca. A.D. 600 - 1000) developed in the Central Peruvian Highlands, Transitional ceramics show an orange sandy paste. These pots could have been produced on the coast or by coastal potters influenced by the Wari phenomenon that may have produced what Donald Collier (1955) calls Tiahuanacoid ceramics.

forms that are not usually found in the highlands, such as *ralladores.*[44] Ceramics pertaining to the Sierra Tradition show a buff, brown, or dark brown paste with sub-angular inclusions and golden mica. Even highland ceramics show characteristic forms, such as the already mentioned colanders. The presence of both coastal and highland forms showing a brown paste is not unusual and this may suggest that pots were produced exploiting local clay sources (Topic and Topic 1982).

As shown by recent research conducted in the Moche Valley (Boswell 2016; Ringberg 2012), coastal and highland ceramics can coexist in archaeological sites located in intermediate zones. This could suggest that people with different identities were living alongside each other or that people living in this intermediate zone were being influenced by loosely centralized polities, state formations, and empires that developed beyond the Carabamba Valley.

In Appendix A (Tab 11) it is possible to visualize the distribution of pottery types over space. The sites have been arranged according to their location along a hypothetical path connecting the *caserío* of Tomaval (PVC-30) and the town of Carabamba (PVC-27). Besides bars showing the percentage of ceramic types, I also specified the linear distance of the sites from both Tomaval and Carabamba, and the number of ceramic sherds that were collected or observed on the surface. The last column of the chart shows if the site is located in the lower, middle, upper valleys, or the Carabamba Plateau. Moreover, the percentage range of each ceramic type is specified at the bottom of the chart.

The chart shows that the few Guañape potsherds collected during the survey have been found in the middle and upper valleys. The chart also clearly shows that the coastal Salinar, Castillo, and Moche types are clustered in the lower and middle valleys, and their presence diminishes as one moves towards the Carabamba Plateau. The distribution of Salinar ceramics is particularly interesting because it confirms the coastal nature of this phenomenon (cf. Chamussy and Goepfert 2019). Conversely, high quantities of both Early Sierra and Late

[44] *Ralladores* are grater bowls charazterized by incisions in the interior surface (see Figure 3.3, bottom row, central photo).

Sierra ceramics were found in the plateau, and the upper and middle valleys, while their popularity decreases as one moves towards Tomaval. Due to the very small size of the sample, little can be said about Transitional potsherds. Chimú ceramics present an interesting pattern. Contrary to what one might have expected, the sites with the highest percentages of Chimú sherds are not located in the lower valley, close to Tomaval, but in the middle valley.

The observations made above find further confirmation through the calculation of the Brainerd-Robinson coefficient of similarity (Brainerd 1951; Robinson 1951). This statistical method was developed to compare archaeological assemblages and determine their degree of likeness. The percentage of each ceramic type on an archaeological site is contrasted to the percentage of the same types on another site. The differences in the percentages are observed. Subsequently, the sum of these differences is noted and subtracted from 200. The result of this subtraction is the Brainerd-Robinson coefficient. The coefficient value lies between zero and 200. 200 represents the highest similarity between ceramic assemblages, while zero represents the maximum disagreement between assemblages (Brainerd 1951; Robinson 1951). This statistical analysis was run on the software RStudio 1.3 using a script developed by Matthew Peeples (2011). The script processes an Excel file that features rows with the names of the sites, while the first column includes the quantity of each ceramic type. The quantities are separated by commas. The result of the analysis is an Excel worksheet, which features rows and columns representing archaeological sites[45], and coefficients of similarity that allow us to explore resemblances/differences among ceramic assemblages.

The results of this analysis show that sites located in the lower valley have similar ceramic assemblages. As mentioned earlier, the assemblage of these sites is almost completely coastal. The coefficient of similarity decreases as we move towards the upper valley and the Carabamba Plateau. Conversely, sites located in the latter zones show very few coastal-related potsherds and the highland nature of their assemblages makes them cluster together. It is also interesting to note that sites located in the middle valley (thus showing a high

[45] Sites that did not yield ceramics were not included in the analysis.

percentage of Chimú ceramics) are highly similar to each other, confirming the strong Chimú influence over the core of the Carabamba Valley (Appendix A - Tab 4).

### 3.2.2 The Frequency Seriation of the Ceramic Traditions

Before the introduction of absolute dating methods such as radiocarbon dating (Libby 1955), the relative chronology of settlements and artifacts was usually defined through frequency seriation. This method involves the arrangement of archaeological artifacts in a way that it is possible to discern the passage of time (Lyman, Wolverton, and O'Brien 1998; O'Brien and Lyman 2002). As highlighted by Max Uhle (Rowe 1954:63) "each form of life represents a type which is apparently stable and which, as far as we can observe, is changed only gradually, although the forces behind its change are always active. The appearance of stability is the result of man's limited capacity for observation. Continual change is the eternal law of the world". Artifact types identified by archaeologists and defined according to technological, functional, and/or aesthetic attributes (which may or may not have been meaningful to the people who produced them), appear in the archaeological record, they become widespread, then their frequency decreases and they eventually disappear (Downey 2015) (Figure 3.9). A key indicator of gradual change is the overlap of traits among different types (O'Brien and Lyman 2002).

The frequency seriation of ceramic artifacts was crucial in defining the changes in material culture in the Virú Valley (Ford 1949).[46] James Ford (1949:39) argued that "people making the artifacts and following the customs were probably under the impression that they were doing everything exactly as their fathers and grandfathers did". In a later publication (Ford 1972), he listed a series of conditions that should be met to carry out frequency seriation. He argued that artifacts should be collected from a limited geographic area. He did not specify what he means by "limited geographic area", but his work in the Virú Valley suggests that the investigation of a whole river valley suits this requirement. Next, Ford asserted that an unselected sample composed of 100 sherds from each site is desirable and that each

[46] It must be noted that Ford (1949) did not use only ceramics collected from the surface, but survey data was integrated with data coming from stratigraphic excavations conducted by Strong and Evans (1952) and Collier (1955). For this analysis, I rely only on surface data.

collection should represent short periods. Lastly, he warned that a region should be thoroughly analyzed and that the sample should represent the entire occupational history of the area.

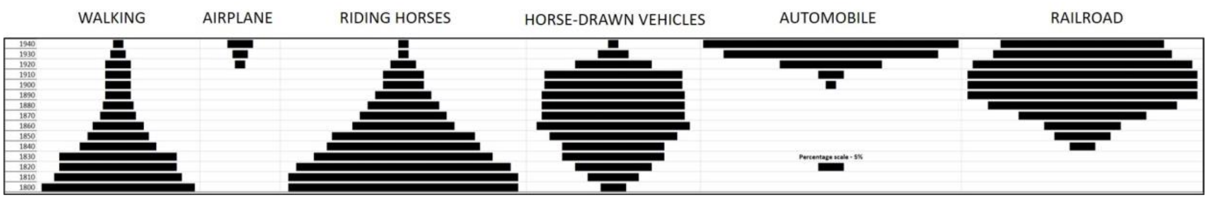


**Figure 3.9: "Battleship graphs" applied to 20th century means of transportation (after Phillips et al. [1951] 2003:Figure 15). Columns feature means of transportation; rows show how people traveled in percentage terms in each decade.**

While I could not follow every recommendation presented above while conducting survey work in the Carabamba Valley[47], I believe that this study meets most requirements outlined by Ford. Also, research conducted over the last two decades on Peruvian North Coast ceramics (Donnan 2009; Downey 2015; Downey and Millaire 2019; Millaire 2009; Sidoroff 2005) tells us that there were no sudden changes in the material culture of the inhabitants of the North Coast. This is especially true in domestic wares[48], which show subtle changes over long periods. Thus, I argue that the strong presence of coastal ceramics in the Carabamba Valley on the one hand and the conservativeness of highland potters observed in the use of similar forms over time on the other, make this ceramic collection suitable for a frequency seriation. Following Downey's (2015) approach, I decided to carry out a frequency seriation

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[47] As previously mentioned, I focused on diagnostic potsherds and the pictures above show that I rarely collected or took notes on 100 sherds at individual sites, mostly for logistical reasons, i.e., the small size of the team and the topography of the area.

[48] In his dissertation, Downey (2015) highlights that domestic/utilitarian wares are used in mundane, everyday activities and have a larger spatial and temporal range than corporate ceramics. Other than having a more restricted spatial and temporal range, the latter are rarer, characterized by fancy decorations and used by elite members affiliated with political entities and/or religious ideologies.

only on domestic wares. For the purpose of this study, I considered Guañape, Salinar[49], Castillo, Chimú, Early, and Late Sierra domestic wares. Moche is the only corporate type identified in the Carabamba Valley.[50] Due to the very small number of Guañape and Transitional[51] sherds (four and two sherds, respectively), I decided not to include these types in the analysis.

While Ford (1972) drew bars indicating the frequency of each ceramic type and manually rearranged them to show the flow of time through "battleship graphs" (see Figure 3.9), in our case the process was streamlined by carrying it out with Excel following these steps:

1) As mentioned in the previous section, the REPT function in Excel allowed me to create bars indicating the percentage of each ceramic type at each site;

2) Three seriations (two Coastal and one Highland) were produced, rearranging the rows (that represent archaeological sites) and the associated frequency bars in Excel to obtain 'battleship-shaped' curves indicating an expansion and a contraction in the popularity of the types (see Appendix A – Tabs 12, 13, and 14).

As mentioned by Ford (1972), in this process there is a high degree of subjectivity when assigning a position to archaeological sites. Moreover, it is hard to define which extremity of the battleship graph indicates the emergence or the decline in popularity of a ceramic type. However, the coexistence of small quantities of ceramic types that follow each other in time may help us place sites within the seriation, indicating the decline of a type and the emergence of another type. While battleship graphs help us to show the use of different ceramic types throughout time, it should be borne in mind that sampling error (e.g., low

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[49] For the purpose of this study, I consider Salinar domestic wares since only one sherd (0,5% of the whole Salinar type) was painted and possibly associated with the Puerto Morin White on Red type defined by the Virú Valley Project (Collier 1955; Ford 1949; Strong and Evans 1952).

[50] The survey did not yield Virú Negative potsherds. This corporate style was associated with the coastal Virú polity (Millaire 2009).

[51] Due to the small sample and the paucity of research on the Wari presence in this share of the North Coast, it is not possible to conclusively assign the Transitional type to domestic or corporate wares.

number of sherds collected, partial coverage of the site) may lead to incorrect conclusions (Ford 1972). Furthermore, surface assemblages may not exactly match subsurface assemblages. Natural phenomena like erosion and human activities such as looting can negatively affect the readability of the archaeological record from the surface collection (Downey 2017). However, Downey's (2017) research in the Virú Valley shows that the surface is a good proxy for the first meter of the archaeological record, and excavations conducted in the neighboring and environmentally similar middle and upper Moche Valley (Boswell 2016; Ringberg 2012) tell us that cultural depositions are not deeper than 0.6 m. Therefore, I believe that the surface of the sites accurately represents their occupational history.

The previous paragraphs highlighted that three seriations were created: two Coastal seriations and a Highland seriation. The creation of separate seriations for one region (i.e., the Carabamba Valley) is undoubtedly unusual. Nevertheless, the valley is located between two areas, the coast, and the highlands, that were characterized by distinct pottery traditions. I therefore believe that the two traditions should be treated separately.

Most sites located in the lower and middle valley feature Salinar, Castillo, and Chimú sherds. Ford (1949) would have interpreted the presence of such types as a series of abandonments and reoccupations of the settlements. While this scenario is possible due to the long periods encompassed by the ceramic types and the lack of stratigraphic excavations, I agree with Downey (2015) that this shows the absence of abrupt abandonments and reoccupations of archaeological sites, representing a long-lasting occupation of the valley. Only one site (PVC-12) may have been occupied during the first part of the Early Intermediate Period, abandoned, and then reoccupied during the Late Intermediate Period. Chimú ceramics are widespread throughout the valley, which complicates the seriation, making it difficult to include all three coastal types in one battleship graph. I therefore decided to create two seriations focusing on the shifts between types adjacent in time. The first Coastal seriation centers on Salinar and Castillo types, since the Guañape and Transitional samples are very small, and little can be said about them. The second seriation focuses on the shift from Castillo to Chimú wares.

The first Coastal seriation confirms what was observed both by the members of the Virú Valley Project (Collier 1955; Ford 1949; Strong and Evans 1952) and by scholars that have recently re-examined the results of the study conducted in the 1940s (Downey 2015; Downey and Millaire 2019). The Salinar and the Castillo types show a substantial overlap, suggesting that the latter developed out of the former. As shown in the description of the types, both wares were fired in an oxidizing atmosphere and they have formal characteristics, such as jars with thickened rims. The battleship graph suggests that the Salinar type gradually reaches a peak (PVC-43 and PVC-45, with 100% and 66.7% of Salinar potsherds respectively) and, at this point, the Castillo type started gaining popularity in the valley. Site PVC-39 (91.7%) marks the maximum popularity of Castillo ceramics, which slowly gives way to the Chimú type (see Appendix A – Tab 12).

The second seriation highlights the passage from Castillo to Chimú wares, showing the shift from oxidized pottery to the predominance of reduced wares. However, formal characteristics like cambered rims persist over time (Strong and Evans 1952). Sites with high percentages of Chimú pottery have been placed at the top of the graph (e.g., PVC-7 and PVC-4 with 100% and 71.7% of Chimú sherds respectively) because the Inka conquest did not have a strong influence on the material culture of this area during the Late Horizon. The apparent decrease in popularity of Chimú pottery halfway through the seriation (between PVC-21-sector 3 and PVC-2) could be explained by the location of the sites, which are in the upper Carabamba Valley, where the influence of coastal types is weaker (Appendix A – Tab 13).

The Sierra seriation suggests a slow but steady shift from Early Sierra to Late Sierra ceramics. The surface of most archaeological sites in the valley shows both types of ceramics. Early Sierra ceramics reached their peak at PVC-31 and 21- sector 1 (100% of Early Sierra ceramics). Early Sierra ceramics were followed by the emergence and spread of Late Sierra wares, which feature technological (i.e., oxidizing firing, paste color) and formal (i.e., jars with flaring necks) similarities with their predecessors. As was the case in the second Coastal seriation, the sites with the highest percentages of Late Sierra ceramics (i.e., PVC-2 and PVC-22, with 100 and 76,93% of Late Sierra pottery, respectively) were placed at the top of the graph due to the absence of a strong Inka influence over this area during the Late Horizon. It is also possible to observe a series of outliers at the bottom of the Late Sierra column. Due to the long duration of both highland types, we cannot totally rule out the hypothesis that such outliers or even other settlements were occupied, abandoned, and reoccupied at a later stage. It should also be stressed that a lack of stratigraphic data from the Carabamba Plateau did not allow me to create a finer-grained typology of highland ceramics that would have shown subtler changes in the material culture over time (see Appendix A – Tab 14).

### 3.2.3 The Chronology of the Carabamba Valley

As highlighted by ethnographic and archaeological research conducted in the Central Andes and beyond, identity can be defined using a dynamic set of non-material (e.g., social, and political organization, ancestry, and kinship, beliefs), and material (e.g., ceramics, dresses, architectural layouts) elements. The presence of various pottery traditions alone does not necessarily show the coexistence of different ethnic groups (Barth 1968; Dietler 1998; Dietler and Herbich 1994; Dores Cruz 2011; Janusek 2005; Pikirayi 2007; Sillar and Dean 2002; Stanish 2005; Stovel 2013). Nevertheless, the emergence and the disappearance of ceramic types from the archaeological record may have indeed been connected to social, political, and economic processes that affected Northern Peru or even larger portions of the Central Andes.

Hence, both political events and changes in material culture can help us define a four-phase chronology of the Carabamba Valley that will be useful when reconstructing how people occupied the land over time (Table 3.4). In what follows, I will illustrate the four phases, the ceramic types that were used during such time frames, the sociopolitical context within which these artifacts were used, and the importance of pottery in understanding intergroup interactions.[52]

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[52] A detailed breakdown showing the distribution of ceramic types in the lower, middle, and upper valleys, and in the Carabamba Plateau can be found in Appendices A – Tab 1 and D.

Phase 1 (1800 – 400 B.C.)[53] is associated with the use of the Guañape type. The same pottery was also common in the Virú (Collier 1955; Ford 1949; Strong and Evans 1952; Zoubek and Iberico Portocarrero 2004) and Moche (Billman 1996; Nesbitt 2012; Prieto 2015) valleys. This might indicate that people occupying this part of Northern Peru shared a unique ceramic technology (Burger 1992; Elera Arévalo 1998; Jones 2010). The recovery of Guañape ceramics can also suggest that coastal and *chaupiyunga* people were trading.

During Phase 2 (400 B.C. – 0) people inhabiting the lower and middle Carabamba Valley started using Salinar pottery and this may indicate that coastal Salinar people (Larco Hoyle 1944; Millaire 2020) influenced daily activities carried out in the Carabamba Valley. The production of Salinar storage jars and cooking pots, and the presence of Salinar pottery on sites in defensive locations (which is a recurrent pattern on the coast) like PVC-35 and PVC-13 may indicate a Salinar occupation of the lower half of the valley. This would confirm the interest of Salinar people in the intermediate zones that have already been noted in the Moche Valley (Boswell 2016; Briceño Rosario and Billman 2014). Phase 2 was also marked by the emergence of Early Sierra pottery. Small highland polities that will further develop during the following phases may have started producing such ceramics towards the end of this phase (Carmichael 1980; DeHetre 1979; Haley 1979; Leiva González et al. 2019b; Topic and Topic 1987). If the lower valley and part of the middle valley were occupied by Salinar people, the coexistence of the two ceramic types may indicate trade, but the defensive location of some sites may also suggest hostile interactions between coastal and highland people.

Phase 3a (A.D. 1 – 600) was characterized by the significant presence of Castillo ceramics in the lower valley. In this phase, the emergence, expansion, and contraction of the Virú state took place in Virú and the coastal section of the neighboring Moche and Chicama valleys (Millaire et al. 2016). Moreover, the Moche ideology started spreading on the coast (Bawden 1996; Quilter and Castillo 2010). The *castillos* at the Virú Valley neck did not constitute a

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[53] It must be noted that Thomas Zoubek (2016) argued that Guañape ceramics may have been used in the Virú Valley since ca. 2400 B.C.

clear-cut border and coastal influence can be detected in the use of Castillo storage, serving, and cooking pots in the lower valley. Early Sierra ceramics were still produced by members of the abovementioned highland polities during both Phase 3a and 3b (A.D. 600 – 900) and the possible power vacuum left by Salinar people may have favored the spread of this ceramic type in the middle valley. Along with domestic Castillo ceramics, Phase 3b also featured the presence of Moche ceramics, especially between the lower and middle Carabamba Valley. This took place during the final stage of the Moche phenomenon (Koons and Alex 2014). The final part of Phase 3b was also characterized by the production or the importation of Transitional pottery. Due to the small size of the sample, little can be said about the impact of the Wari state on the Carabamba Valley. However, the paucity of Transitional potsherds may also suggest that the highland state did not influence that much this stretch of land.

Lastly, the beginning of Phase 4 (A.D. 900 – 1532) marked the appearance of Chimú pottery, which spread throughout the lower, middle, and upper valleys. The omnipresence of a wide array of domestic Chimú pottery (grater bowls, cooking pots, serving and storage jars, plates) may indicate that the empire expanded into the intermediate zones (Topic and Topic 1985). At the same time, the Late Sierra type spread in the plateau, upper valley, and to a lesser extent in the middle valley. The presence of colanders and large jars suggests that highland foodways had an impact on people occupying the Carabamba Valley, especially on the settlers of the upper valley. These settlers may have had close relations with the polities that controlled the Otuzco and Carabamba areas (Coupland 1979; Haley 1979; MacKenzie 1980; Topic and Topic 1982) and they could have interacted with the coastal empire. Towards the end of this phase (ca. A.D. 1470), the Inka empire conquered Northern Peru (Netherly 1977), but this event did not cause sudden changes in the material culture of the valley.

## 3.3 Summary

Most sites (44 out of 48) identified during the archaeological survey of the Carabamba Valley yielded ceramic artifacts, which were collected and analyzed in a lab or observed and photographed in the field. The study of technological and formal characteristics of potsherds and the comparison of the artifacts with extant classifications allowed me to create eight ceramic types. These ceramic types were used over different times, for various purposes (domestic vs. corporate wares), and by people that were constantly influenced by coastal and highland groups. High proportions of what I labeled Coastal traditions have been found in the lower and middle valleys. In the upper valley, such types wane and the Sierra influence becomes higher as one moves towards the plateau. The distribution of the ceramic types indicates that the middle valley could have been the hotbed of interaction among different peoples, and sites like PVC-3, PVC-4, PVC-5, and PVC-20 show the co-occurrence of both traditions throughout time. The seriations presented above show gradual changes in both coastal and sierra clay objects used in everyday contexts, suggesting that most sites were occupied over hundreds of years. As illustrated above, combining information on the cultural history of Northern Peru with a series of analyses on pottery, I created a four-phase chronology of the Carabamba Valley. The latter will be used in the next chapters as a base to explore how people were distributed over the valley and how this arrangement changed throughout time.

| YEAR | CARABAMBA VALLEY CHRONOLOGY | | CERAMIC TYPE/S | MAJOR DEVELOPMENTS |
|---|---|---|---|---|
| 1600 A.D. | | | LATE SIERRA | INKA CONQUEST - SPANISH CONQUEST |
| 1500 A.D. | | | | |
| 1400 A.D. | | | | LATE SIERRA POLITIES |
| 1300 A.D. | PHASE 4 | | CHIMÚ | |
| 1200 A.D. | A.D. 900 - 1532 | | | CHIMÚ EMPIRE |
| 1100 A.D. | | | | |
| 1000 A.D. | | | TRANSITIONAL | END OF WARI/NORTH COAST POLITIES |
| 900 A.D. | | Subphase 3b | EARLY SIERRA | EARLY SIERRA POLITIES |
| 800 A.D. | | A.D. 650 - 900 | TRANSITIONAL | WARI STATE INFLUENCE |
| 700 A.D. | | | CASTILLO-MOCHE | LATE MOCHE |
| 600 A.D. | PHASE 3 | | | |
| 500 A.D. | A.D. 1 - 900 | | EARLY SIERRA | |
| 400 A.D. | | Subphase 3a | | EARLY SIERRA POLITIES |
| 300 A.D. | | A.D. 1 - 650 | | |
| 200 A.D. | | | CASTILLO | VIRÚ STATE AND MOCHE PHENOMENON |
| 100 A.D. | | | | |
| 100 B.C. | PHASE 2 | | EARLY SIERRA | EARLY SIERRA POLITIES |
| 200 B.C. | | | | |
| 300 B.C. | | | | |
| 400 B.C. | 400 - 1 B.C. | | SALINAR | SALINAR PHENOMENON |
| 500 B.C. | | | | |
| 600 B.C. | | | | |
| 700 B.C. | | | | |
| 800 B.C. | PHASE 1 | | | |
| 900 B.C. | | | | |
| 1000 B.C. | | | | |
| 1100 B.C. | | | GUAÑAPE | INITIAL PERIOD CEREMONIAL CENTERS, |
| 1200 B.C. | | | | CUPISNIQUE CULTURE AND CHAVÍN CULT |
| 1300 B.C. | | | | |
| 1400 B.C. | | | | |
| 1500 B.C. | 1800 - 400 B.C. | | | |
| 1600 B.C. | | | | |
| 1700 B.C. | | | | |
| 1800 B.C. | | | | |

**Table 3.4: Carabamba Valley chronology, ceramic types, and major developments of Northern Peru during Prehispanic times.**

# Chapter 4

# 4 The Prehispanic Population of the Carabamba Valley

As highlighted in Chapter 2, during the archaeological survey of the Carabamba Valley 48 sites were visited. The ceramic evidence presented in Chapter 3 showed that most of these loci of human activities were occupied over long periods of time and in multiple phases of the chronology proposed above. One of the goals of this project is to understand how people occupied the valley and how this situation changed through time. As shown by previous studies conducted in Northern Peru (Billman 1996; Downey 2015; Willey 1953; Wilson 1988b), site function assessment, and the definition of the location and spatial extent of sites are instrumental steps for estimating the number of people who lived in a given region in the past and to document how they were distributed in the landscape.

This chapter aims to:

1) Define functional categories for the sites identified in the Carabamba Valley and assign archaeological sites to one or more categories;
2) Reconstruct the spatial distribution of those sites;
3) Calculate population estimates for each phase defined in Chapter 3.

These analyses will serve as a foundation for other spatial analyses that will be carried out in Chapter 5. In this and the following chapters, I will focus on the sites located in the lower, middle, and upper valleys (40 sites out of 48).

## 4.1 Archaeological Sites and their Distribution in the Carabamba Valley

The 40 archaeological sites are distributed throughout the lower (2,396.7 hectares - ha), middle (2,608.7 ha), and upper (1,311.5 ha) valleys (Figure 4.1). Sixteen sites are found in the lower valley, while there are 17 in the middle and seven in the upper valley. However, the total number of sites occupied coevally changed over time. As shown in Figures 4.2 and 4.3, and Table 4.1, the number of sites sharply increased between Phase 1 (11 sites) and Phase 2 (29 sites), while the number remained relatively stable during Phase 3a (31 sites), 3b (35 sites), and 4 (34 sites) (Figures 4.4, 4.5, and 4.6).

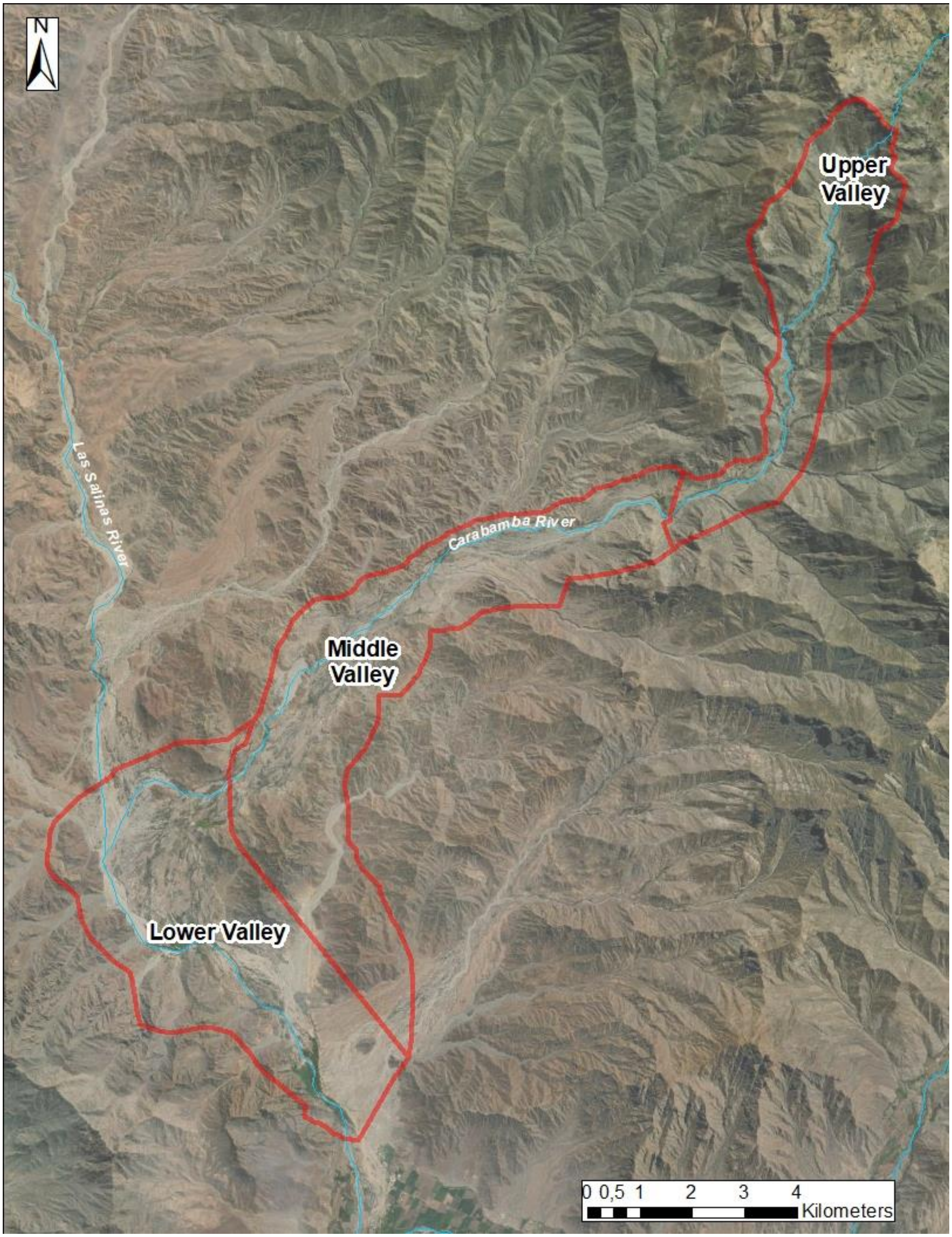


**Figure 4.1: The three macro-areas that compose the study area.**

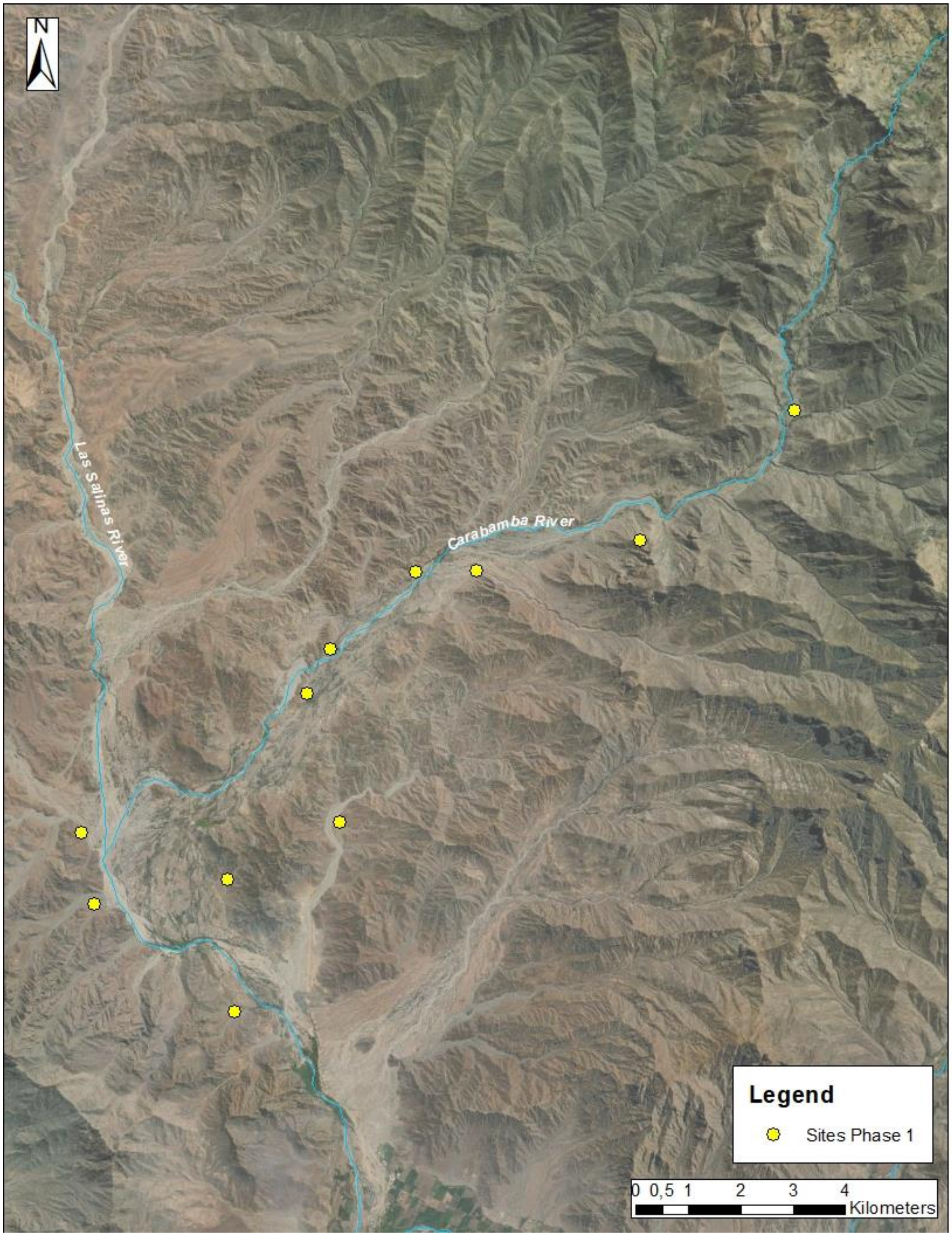


**Figure 4.2: Sites distribution during Phase 1.**

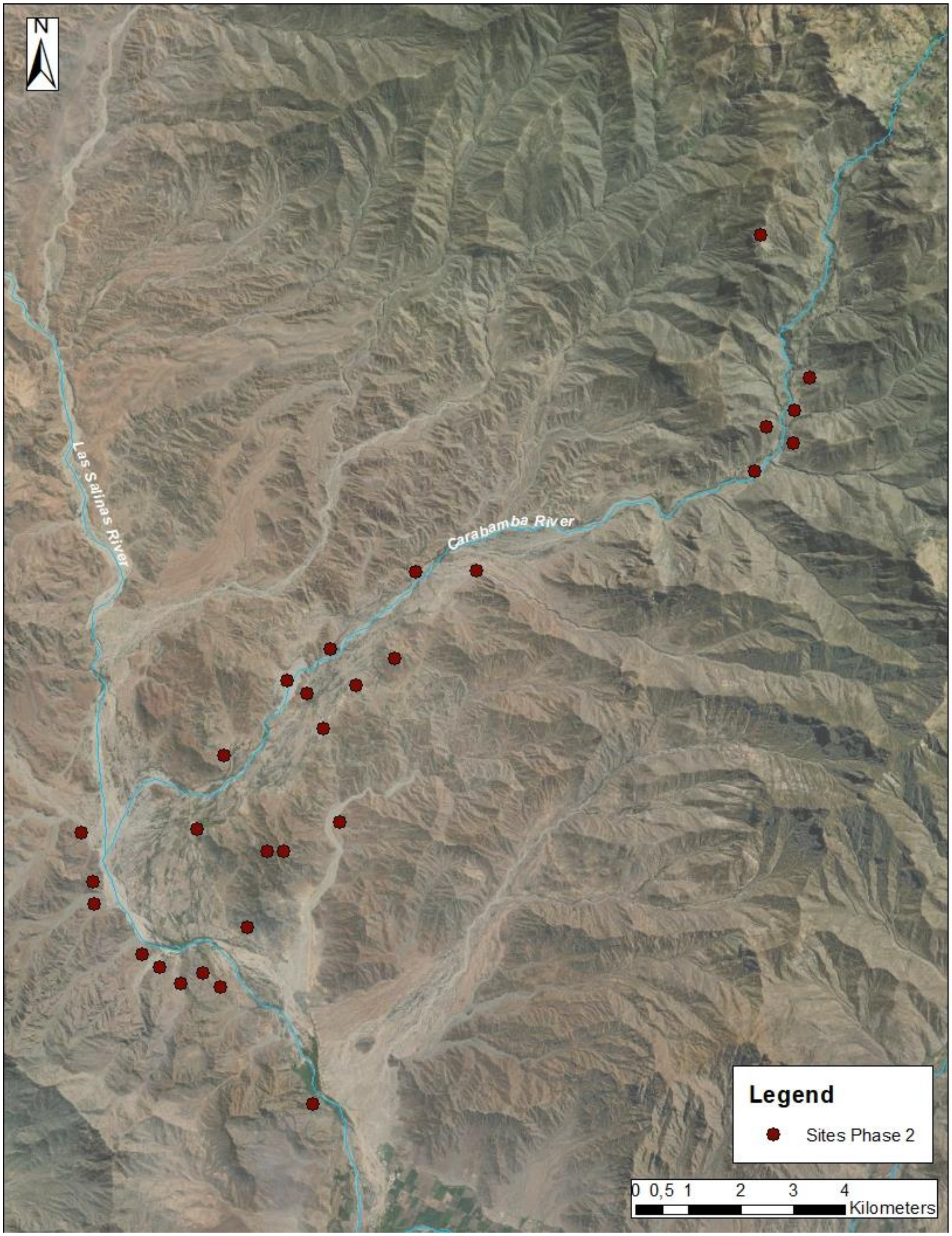


**Figure 4.3: Sites distribution during Phase 2.**

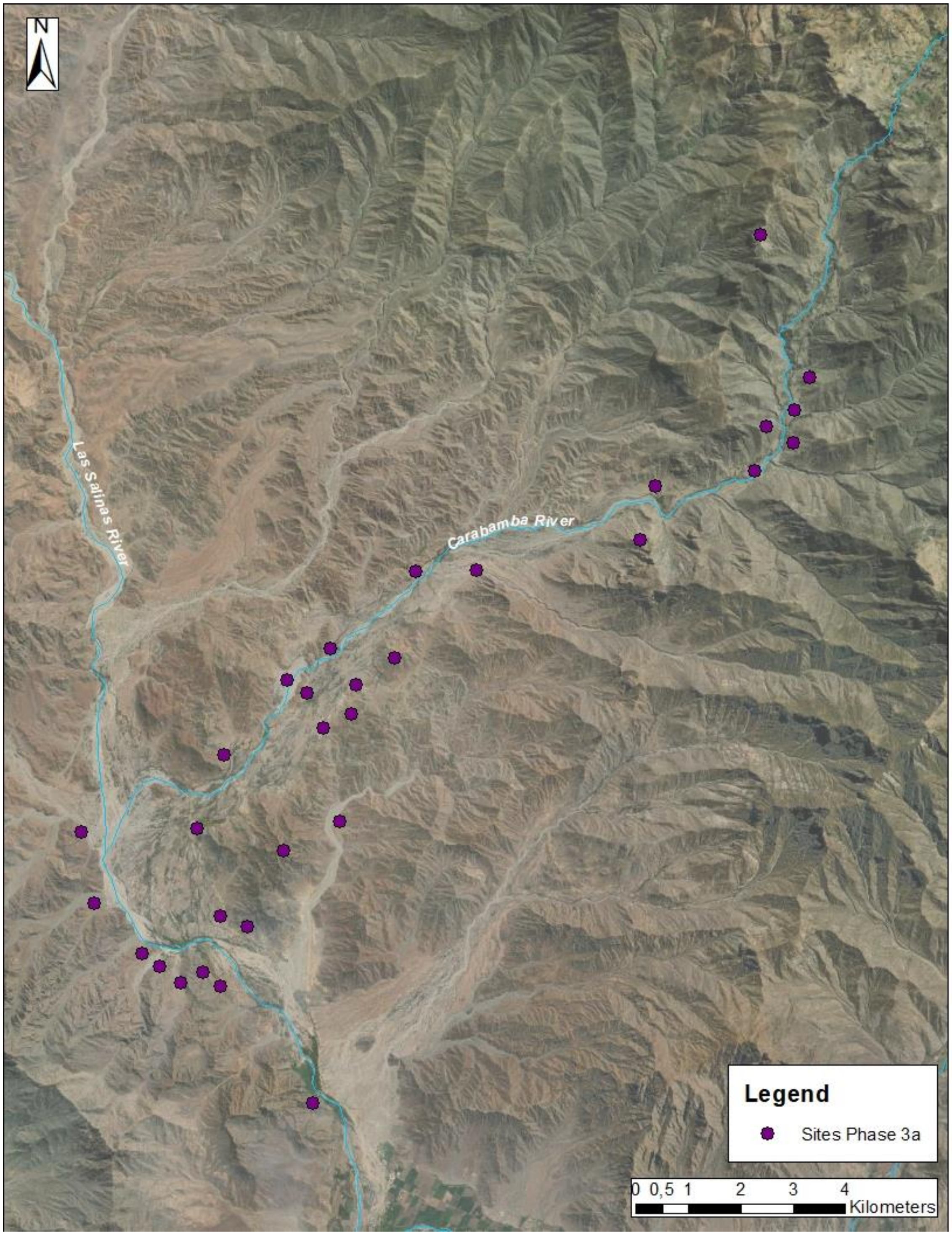


**Figure 4.4: Sites distribution during Phase 3a.**

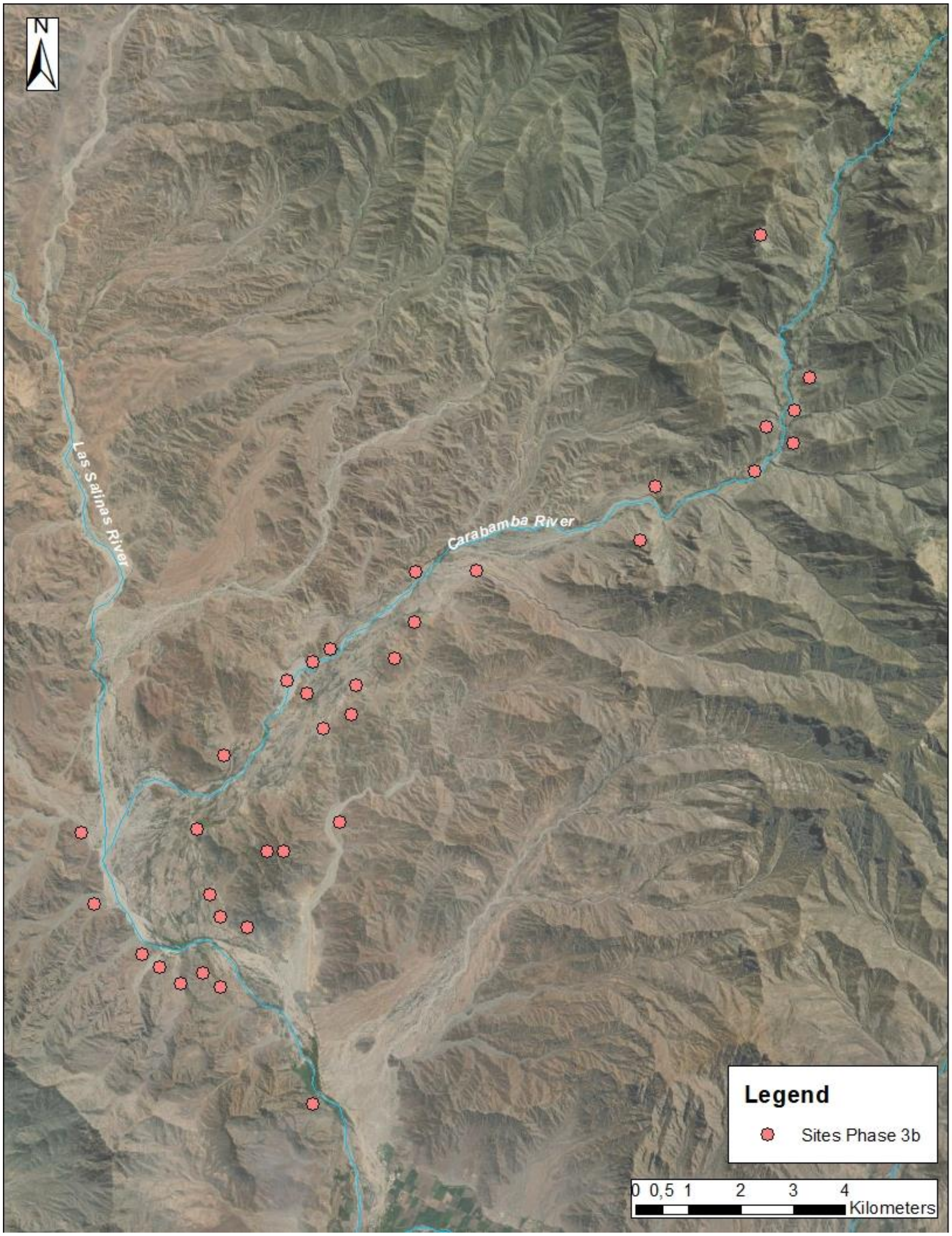


**Figure 4.5: Sites distribution during Phase 3b.**

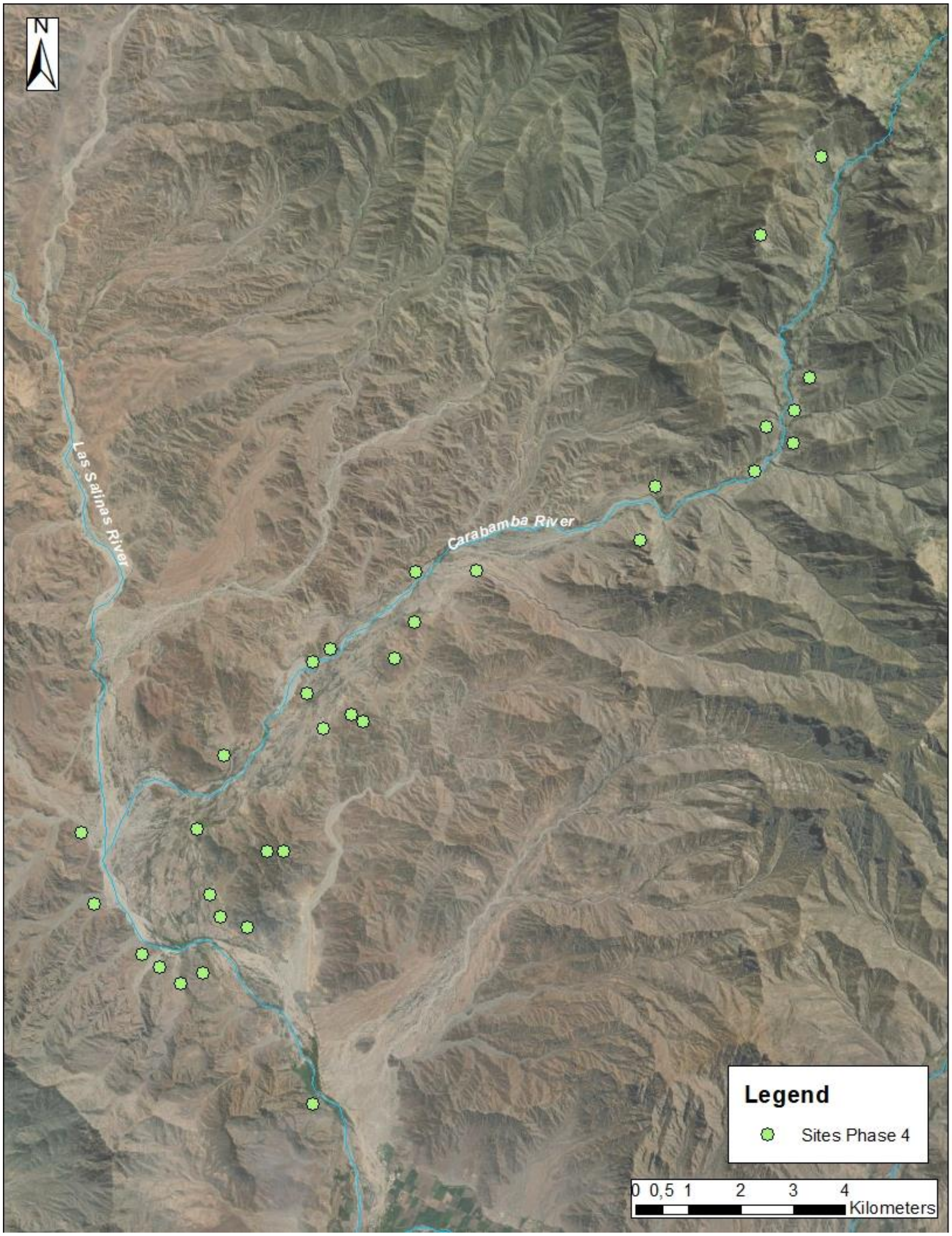


**Figure 4.6: Site distribution during Phase 4.**

**Lower Valley**

| PHASE | NUMBER OF SITES | AREA (HA) |
|---|---|---|
| 1 (1800-400 B.C.) | 4 | 25,2 |
| 2 (400-1 B.C.) | 12 | 133,1 |
| 3a (A.D. 1-650 ) | 12 | 150,0 |
| 3b (A.D. 650-900) | 13 | 150,2 |
| 4 (A.D. 900-1532) | 12 | 165,6 |

**Middle Valley**

| PHASE | NUMBER OF SITES | AREA (HA) |
|---|---|---|
| 1 (1800-400 B.C.) | 6 | 29,9 |
| 2 (400-1 B.C.) | 11 | 186,8 |
| 3a (A.D. 1-650) | 13 | 223,5 |
| 3b (A.D. 650-900) | 16 | 239,3 |
| 4 (A.D. 900-1532) | 15 | 292,5 |

**Upper Valley**

| PHASE | NUMBER OF SITES | AREA (HA) |
|---|---|---|
| 1 (1800-400 B.C.) | 1 | 2,1 |
| 2 (400-1 B.C.) | 6 | 35,2 |
| 3a (A.D. 1-650 ) | 6 | 35,2 |
| 3b (A.D. 650-900 ) | 6 | 35,2 |
| 4 (A.D. 900-1532 ) | 7 | 42,2 |

**Whole study area**

| PHASE | NUMBER OF SITES | AREA (HA) |
|---|---|---|
| 1 (1800-400 B.C.) | 11 | 57,2 |
| 2 (400-1 B.C.) | 29 | 355,1 |
| 3a (A.D. 1-650) | 31 | 408,7 |
| 3b (A.D. 650-900) | 35 | 424,8 |
| 4 (A.D. 900-1532) | 34 | 500,3 |

**Table 4.1: Number of sites per phase and area covered by human settlements.**

In addition to subdividing the study area into three macro-areas, I also used the fishnet mapping technique to display the density of sites over the valley (Downey 2015). On ArcGIS, a grid composed of 2 km$^2$ squares covering the study area was created and the number of sites located within each square was calculated. This process was carried out for each phase. Archaeological sites were particularly spread-out during Phase 1, with at most two sites per square. During the following periods, the number of sites and the density increased, especially in the lower and the middle valley. In the former, up to six sites were located in one cell (Phase 3a and 3b), while in the latter one cell featured at most five sites (Phase 3b) (Figures 4.7 to 4.11).[54]

[54] See also Appendix D – Chapter 4 - Site density.

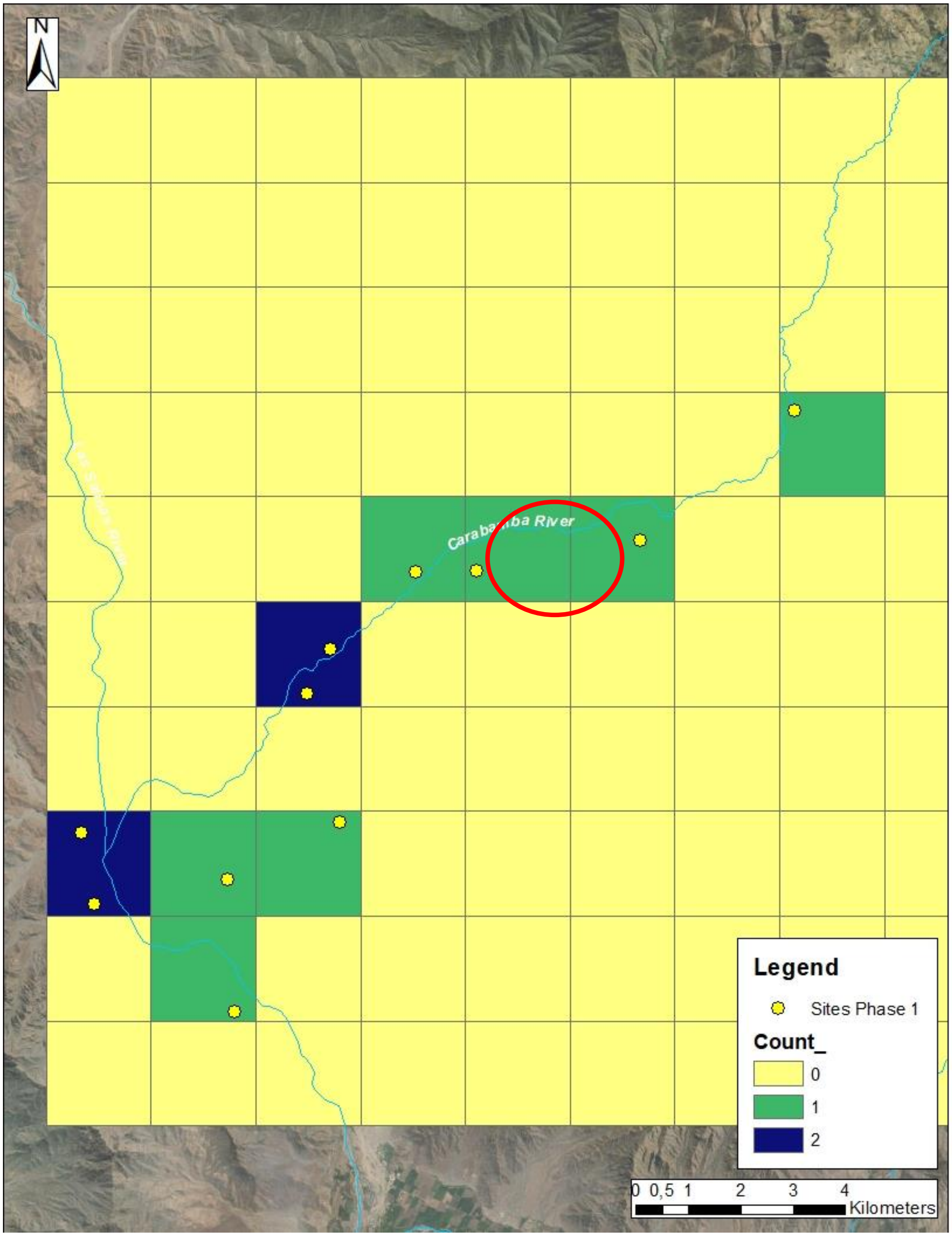


**Figure 4.7: Site density during Phase 1.**

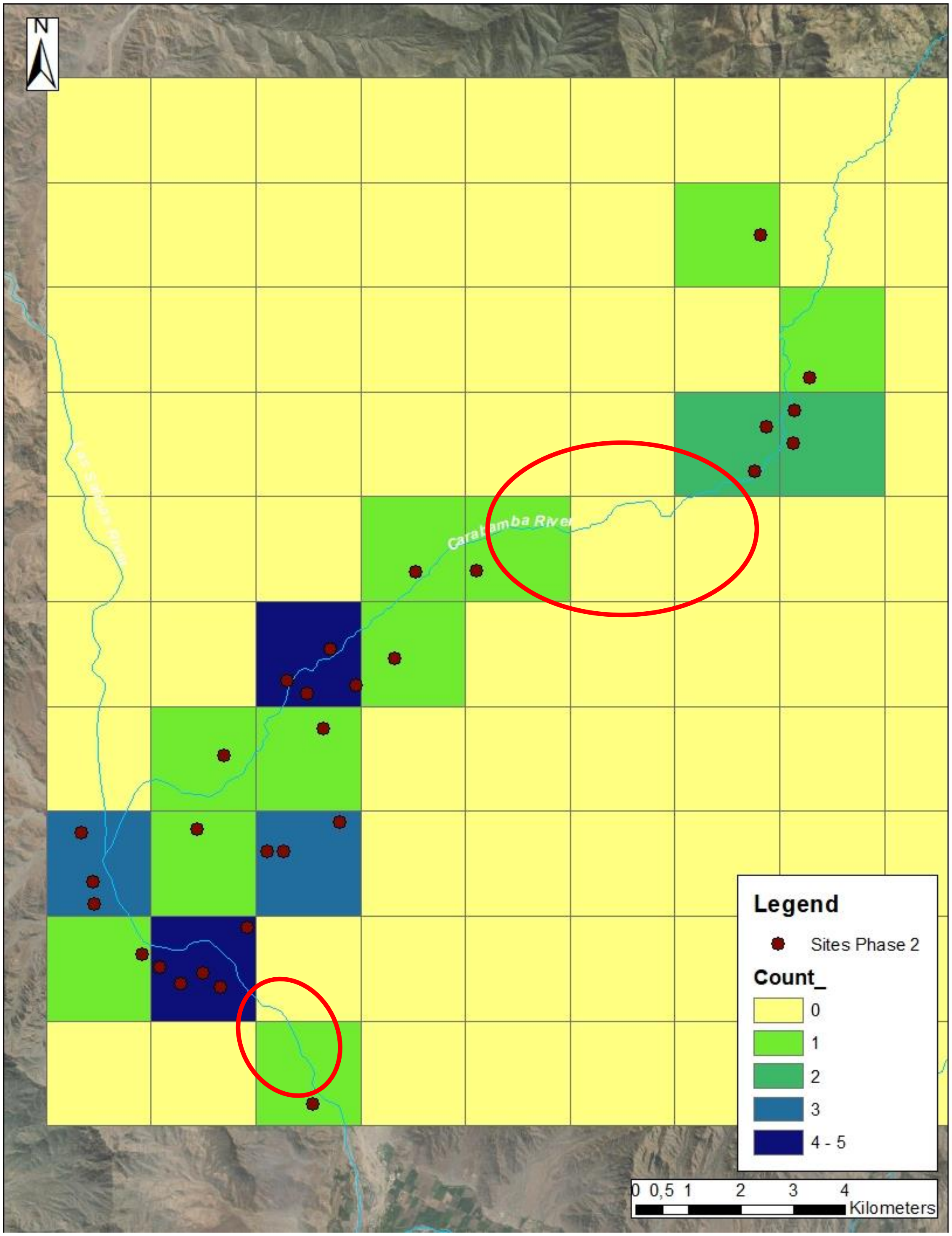


**Figure 4.8: Site density during Phase 2.**

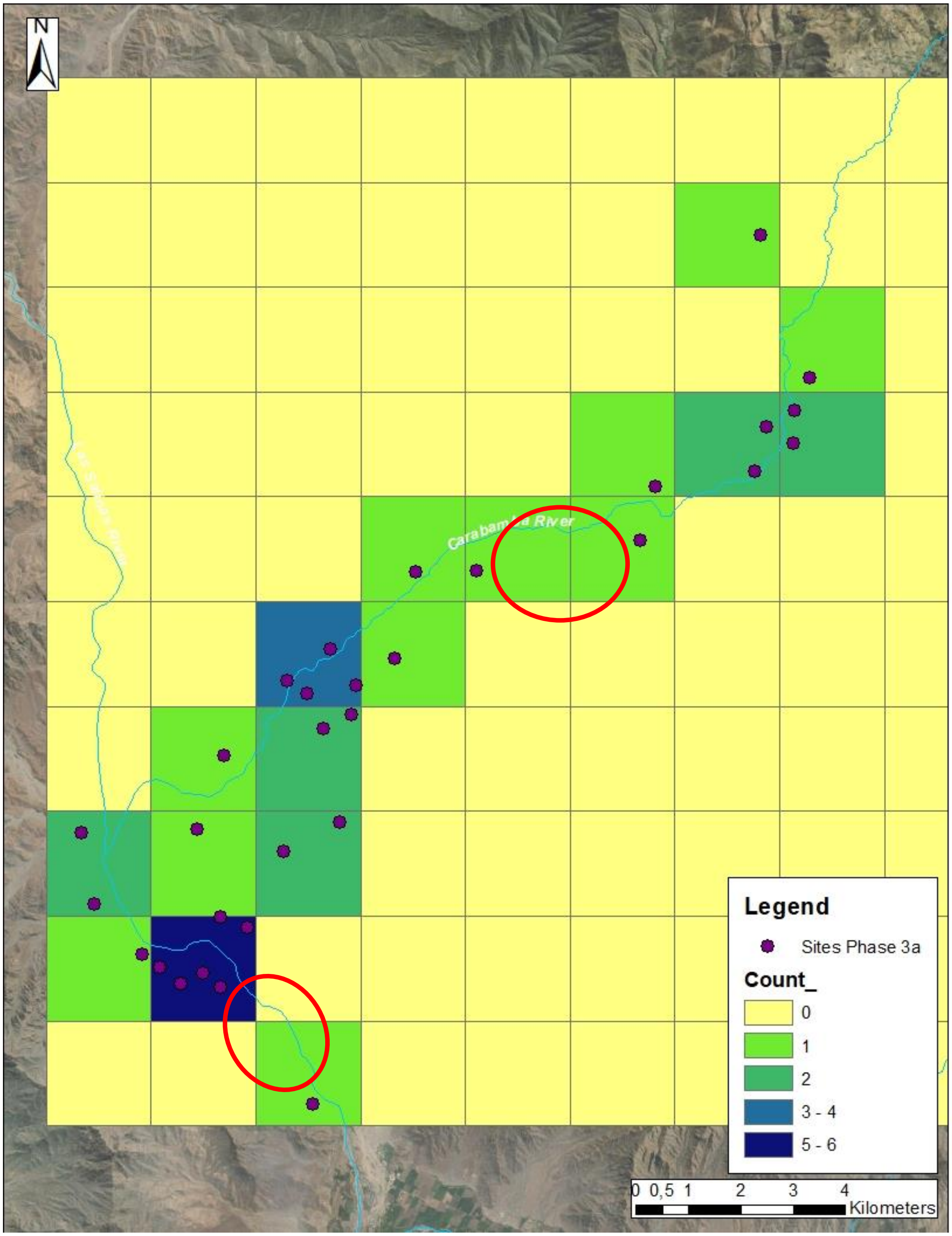


**Figure 4.9: Site density during Phase 3a.**

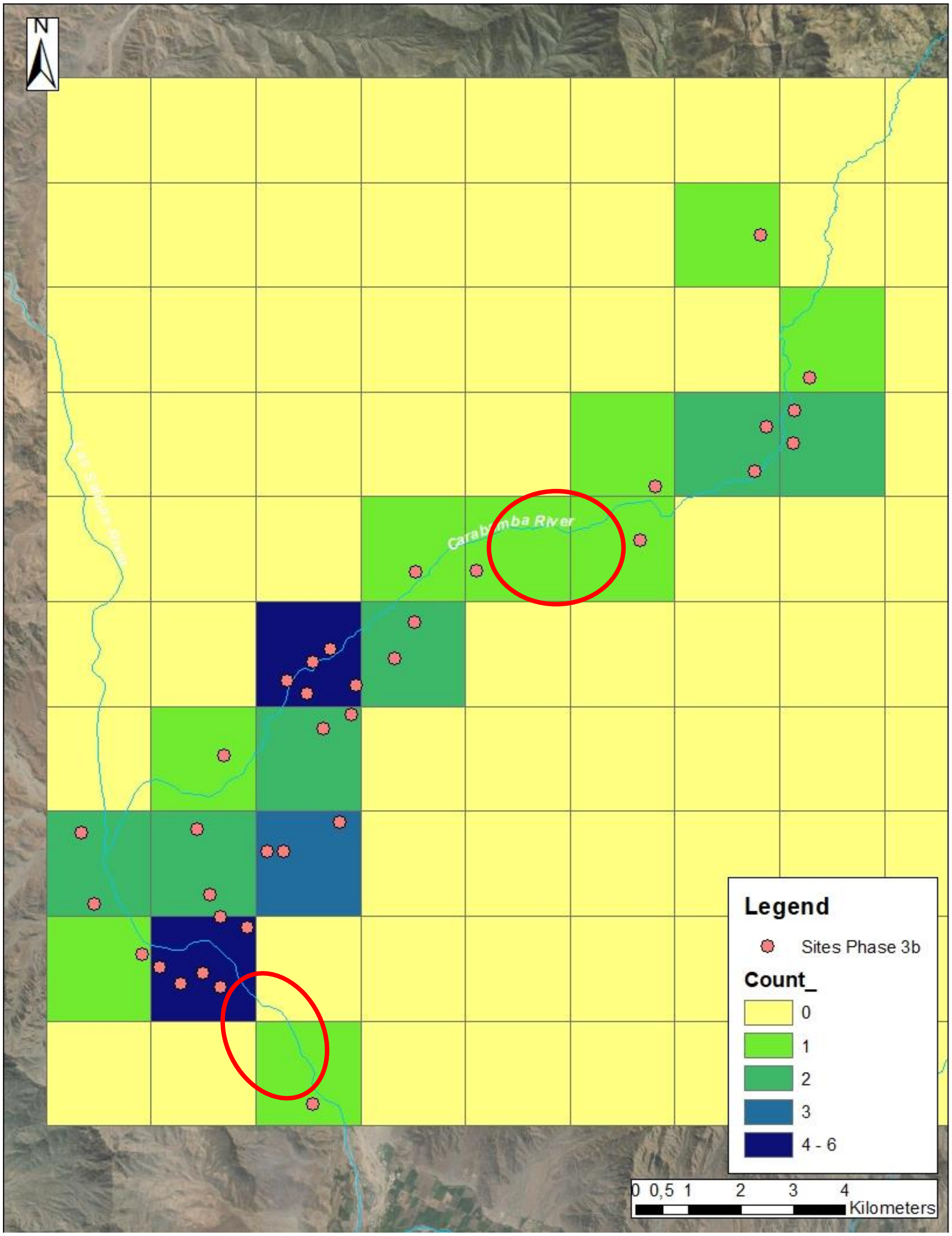


**Figure 4.10: Site density during Phase 3b.**

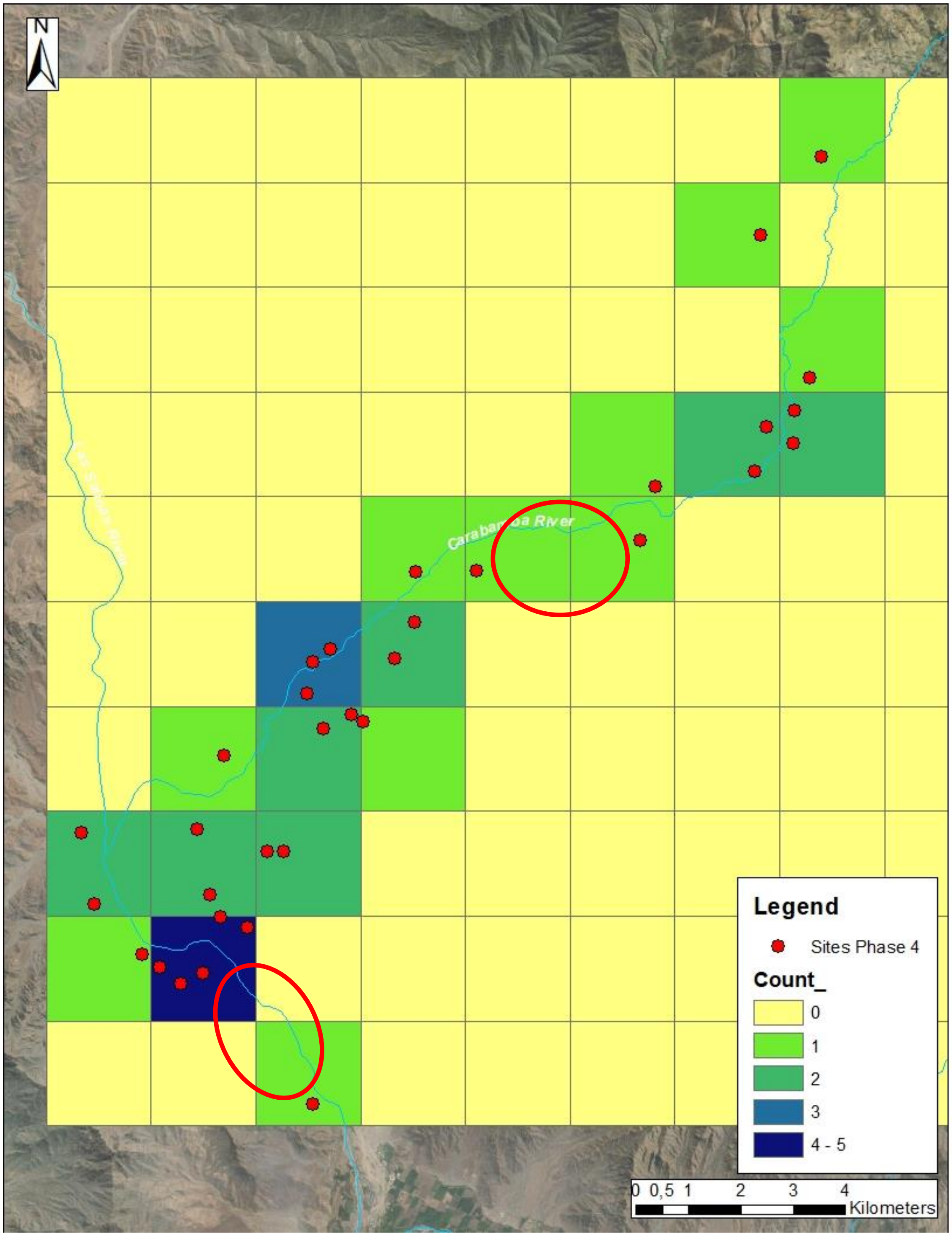


**Figure 4.11: Site density during Phase 4.**

The circles in Figures 4.7 to 4.11 show that there was a gap between sites in the middle and upper valleys marked by an area devoid of settlements. Although the site density maps do not show empty squares, the site distribution maps show that a 3-km gap between human settlements persisted in this part of the middle valley. During Phase 2 the gap was even larger (5.5 km), and this could have been a form of buffer zone between areas showing coastal influence (lower and middle valley) versus settlements that had stronger ties with the highlands (upper valley). The absence of sites in this part of the valley may also be due to its topography: as highlighted in Figure 4.12, the river becomes wider at this point and it merges with two large ravines, Quebrada Algodonal and Quebrada Pates. When strong El Niño events hit Northern Peru, the valley floor could be heavily flooded and thus hard to settle. The local topography could have created a natural buffer zone during Phase 2 and prevented people from occupying it at later periods. However, it should be noted that other ravines that could have been affected by flooding were occupied.

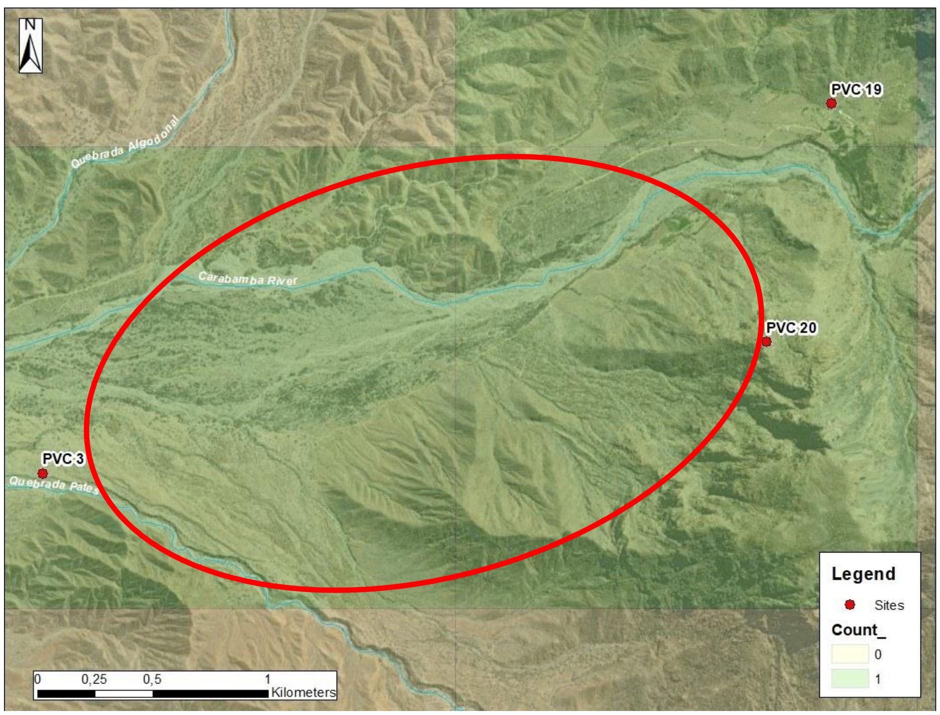


**Figure 4.12: The area devoid of settlements between the middle and the upper valleys.**

Another zone featured a 3-km gap between settlements during Phases 2, 3a, 3b, and 4. It is located at the southern edge of the lower valley. The area features ravines (Quebrada Mayasgo and Quebrada Seca) and steep hills, a harsh landscape that may have prevented people from intensively occupying the area. During Phase 3a, this could have been a buffer zone between the six *castillos* built at the Virú Valley neck by members of the Virú state and the Carabamba Valley settlements. The fortified site called PVC-30 (V-192/V-194 in Willey 1953 and Downey 2015), located 2 km north of Cerro San Juan and its *castillo,* is the only surveyed settlement featuring adobes. This construction material, which was widely used by coastal people, the high percentage of Castillo ceramics, and the fortified nature of the site all suggest that PVC-30 could have been the northernmost stronghold of the Virú state. Furthermore, as visible in Figure 4.13, a northeast-southwest wall was built at the northern end of this space. While the chronology of the wall could not be established, the presence of a structure that restricted access to the Carabamba Valley reinforces the idea that this could have been a buffer zone.

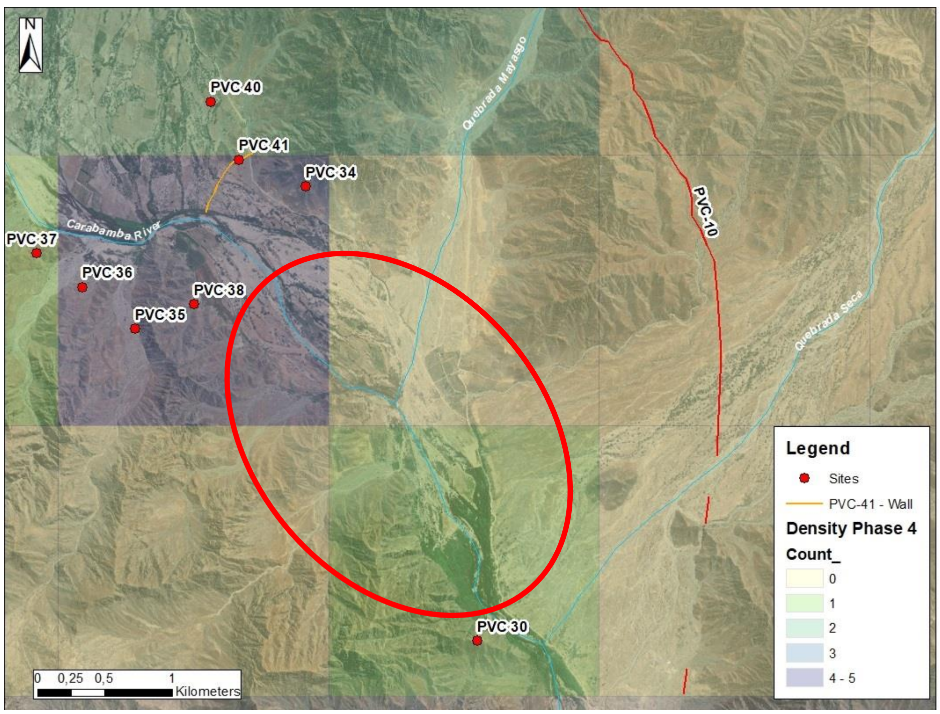


**Figure 4.13: The possible buffer zone in the southeastern part of the lower valley.**

As stated in Chapter 2, a lightweight drone was used to map the archaeological sites and georeferenced orthomosaics were subsequently created using Agisoft Metashape. These detailed photos were used to define the area of each archaeological site using ArcGIS (see Table 4.1). The size of the sites is highly variable and ranges from 0.0012 ha (PVC-7, Phase 4) to 63.5 ha (PVC-11, Phase 4) (see Appendix D – Chapter 4 - Areas). However, as mentioned above, sites are not static entities, and their spatial extent can change through time. In some cases, the analysis of ceramic artifacts distribution on the ground suggested a reduction or an increase in the site size.

## 4.2 Archaeological Sites and their Functions

When conducting studies over large regions like the Carabamba Valley, defining functional categories helps us understand how the population was distributed over space. Along with the analysis of ceramic artifacts (see Chapter 3), stone tools and faunal remains lying on the ground, observations on architectural features of the sites and site location help us determine the function of archaeological sites.

While surveying the 40 sites located in the lower, middle, and upper valleys, I was able to identify two architectural types[55]:

- **Type I:** this architectural type is characterized by simple structures made with stones quarried from the surrounding hills or collected from the riverbed. The stones were very roughly worked or not worked at all. Most structures are small and rounded. Rectangular structures have also been recorded. Type I structures may have served a residential function, but oftentimes they present very few or no ceramics on the surface. 10 sites feature Type I structures. In some cases, they are associated with Phase 1 occupations. However, some of these small structures may have also been built during later periods (Figure 4.14);

- **Type II:** structures were built with worked stones. The walls could be single or double-faced (soil/clay and pebbles were placed between the faces). This is the most common type of structure, likely built over a long period of time (Phases 2,3, and 4). Two subtypes have been identified:

[55] While some Carabamba Plateau sites showed structures built with worked stones and clay mortar, these structures feature peculiar elements (i.e., protruding stones supporting an upper floor, windows, and gable roofs).

- **Type II a:** this subtype is characterized by walls built with finely worked stones. Small chinking stones (*pachillas*) are placed between larger stones. Clay mortar can be found in the interstices between the stones. The walls are both single and double-faced and there is usually no fill between the faces. Most of these structures were built in sloped areas and likely served a residential function. Such structures were recorded at only a few sites (four out of 40) and could have been associated with elite architecture (Figure 4.15);

- **Type II b:** unlike Type IIa, these structures were built with roughly worked stones and/or river cobbles. The walls are both single and double-faced. Double-faced walls were filled with soil, clay, and/or pebbles. This subtype is widespread throughout the valley (36 sites out of 40) and was used to build residential, defensive, and civic-ceremonial structures (Figure 4.16).

**Figure 4.14: Type I structure.**

**Figure 4.15: Type IIa structure.**

**Figure 4.16: Type IIb structure.**

The analysis of artifacts, ecofacts, and architecture led to the creation of the following six functional categories (see Table 4.2 for numerical data):

- **Residential:** these sites show habitational structures like small, rounded huts, agglutinated compounds, or residential terraces that are located either in flat areas or on slopes. Residential areas are usually characterized by the presence of highly polished grinding and pounding stones, storage, and consumption pots, and food remains (e.g., corn cobs, land snail shells, seashells, and animal bones). In the vicinity of such structures, it is not unusual to recover stone tools (some used for agricultural activities);

- **Funerary:** sites with a funerary function feature burials. Oftentimes, the burials have been looted, and human remains and grave goods are scattered around the funerary structure. Subterranean cists (rectangular or rounded) were identified at such sites throughout the valley, but some possible above-ground cists or *chullpa*-like structures have also been recorded in the middle and upper valleys. Another common trait is the use of *algarrobo* posts and clay to seal cists located above or below the ground;

- **Defensive:** such sites are protected by perimeter walls, located in easily defensible areas like hilltops, or provided with lookouts. These characteristics are not mutually exclusive, and their combination could have given even more protection to people. Possible sling stones were recorded on a hillslope (PVC-35), while another site (PVC-11) features parapeted walls looking at the Carabamba Plateau that would have given some level of protection to the defendants;

- **Civic-ceremonial:** sites with such a function are marked by the presence of open spaces (*plazas*), stepped platforms, artificially flattened areas likely used for civic or religious ceremonies, and possible spaces of communal storage;

- **Rock art:** sites with rock art manifestations feature groups of petroglyphs or geoglyphs;

- **Walled road:** this functional category was documented at only one site (PVC-10): A possible walled road that likely connected the lower and middle Carabamba Valley to the middle Moche Valley.

A site could have held multiple functions and such functions may have changed throughout time.[56] However, it should be pointed out that there is a margin of error in assigning site functions based on surface observations alone, and changes in functions may have taken place even within the individual chronological phases defined in Chapter 3. Excavations would represent the only means to shed more light on activities carried out at the settlements at a given time, where they were performed, and at which pace functions changed (if it did), providing us with a finer-grained understanding of the dynamism of sites and valley occupations.

**Lower Valley**

| PHASE | RESIDENTIAL | FUNERARY | DEFENSIVE | CIVIC-CEREMONIAL | ROCK ART | WALLED ROAD |
|---|---|---|---|---|---|---|
| 1 (1800-400 B.C.) | 3 | 2 | 0 | 0 | 2 | 0 |
| 2 (400-1 B.C.) | 10 | 8 | 3 | 5 | 1 | 0 |
| 3a (A.D. 1-650) | 10 | 9 | 3 | 6 | 1 | 0 |
| 3b (A.D. 650-900) | 11 | 10 | 3 | 8 | 1 | 0 |
| 4 (A.D. 900-1532) | 10 | 8 | 4 | 8 | 1 | 0 |

**Middle Valley**

| PHASE | RESIDENTIAL | FUNERARY | DEFENSIVE | CIVIC-CEREMONIAL | ROCK ART | WALLED ROAD |
|---|---|---|---|---|---|---|
| 1 (1800-400 B.C.) | 3 | 0 | 1 | 1 | 3 | 1 |
| 2 (400-1 B.C.) | 8 | 5 | 2 | 5 | 4 | 1 |
| 3a (A.D. 1-650) | 10 | 6 | 3 | 4 | 4 | 1 |
| 3b (A.D. 650-900) | 14 | 8 | 4 | 5 | 4 | 1 |
| 4 (A.D. 900-1532) | 13 | 10 | 6 | 4 | 4 | 1 |

**Upper Valley**

| PHASE | RESIDENTIAL | FUNERARY | DEFENSIVE | CIVIC-CEREMONIAL | ROCK ART | WALLED ROAD |
|---|---|---|---|---|---|---|
| 1 (1800-400 B.C.) | 1 | 0 | 0 | 0 | 0 | 0 |
| 2 (400-1 B.C.) | 5 | 0 | 1 | 0 | 0 | 0 |
| 3a (A.D. 1-650) | 5 | 1 | 1 | 0 | 0 | 0 |
| 3b (A.D. 650-900) | 5 | 1 | 1 | 0 | 0 | 0 |
| 4 (A.D. 900-1532) | 5 | 3 | 2 | 0 | 0 | 0 |

[56] Functions of each site can be seen in Appendix D (Chapter 5 folder, Phase 1 to Phase 4 sites). 1 means that the function was present, 0 shows that the function was absent.

**Whole study area**

| PHASE | RESIDENTIAL | FUNERARY | DEFENSIVE | CIVIC-CEREMONIAL | ROCK ART | WALLED ROAD |
|---|---|---|---|---|---|---|
| 1 (1800-400 B.C.) | 7 | 2 | 1 | 1 | 5 | 1 |
| 2 (400-1 B.C.) | 23 | 13 | 6 | 10 | 5 | 1 |
| 3a (A.D. 1-650) | 25 | 16 | 7 | 10 | 5 | 1 |
| 3b (A.D. 650-900) | 30 | 19 | 8 | 13 | 5 | 1 |
| 4 (A.D. 900-1532) | 28 | 21 | 12 | 12 | 5 | 1 |

**Table 4.2: Archaeological sites and their function/s.**

## 4.3 Reconstructing the Population of the Carabamba Valley Over Time

### 4.3.1 Population Estimates

When reconstructing the occupation of a large region like the Carabamba Valley, it is important to estimate how many people occupied the valley and document how the population size changed over time. Over the last 60 years, a variety of methods have been used to calculate the number of people living in settlements, including ethnographic observations, mortuary data, the roofed area occupied per person, artifact density, number of hearths and storage rooms, residential structures count, and site size (Chamberlain 2006; Drennan, Berrey, and Peterson 2015; Hassan 1978; Steadman 2015).

Archaeological investigations conducted in Northern Peru that aimed to reconstruct population size have relied on agricultural production (Billman 1996), structure count (Gonzalez-Macqueen 2018), or on the spatial extent of archaeological sites (Downey 2015; Millaire and Eastaugh 2011). Defining the spatial extent of the sites and counting the number of habitational structures while conducting fieldwork or on aerial photos, Wilson (1988b) developed an index to estimate the population of the Santa Valley (75 km south of the Carabamba Valley) during different periods. Using ethnographic and archaeological data, this scholar argued that each residential unit could have been occupied by five individuals and created four occupational density categories expressed in people per hectare (p/ha): low (15 p/ha); low-to-moderate (50 p/ha); moderate (100 p/ha) and high (250 p/ha). Due to geographic proximity and environmental similarities (especially with the upper part of the Santa Valley), I decided to use Wilson's (1988b) index to reconstruct the population size of the Carabamba Valley for the four phases identified in the previous chapter. However, because of the scattered nature of habitational structures at most archaeological sites identified during the survey, I decided to use only the low category. The other categories (low-to-moderate to high) were deemed as extremely high, and they were excluded from the analysis.

To account for the sparse nature of the population of the valley, I created another category based on modern occupation[57]. Using ArcGIS and the satellite pictures available in the software, I drew polygons around the residential area of each *caserío* and calculated the area covered by each village. The areas were then divided by the number of people living in the *caseríos* according to the 2017 census (INEI 2018) to obtain the population density of the villages. Subsequently, the average of the seven population densities was calculated and the result (10 p/ha) was used to create the “modern” category (Table 4.3 and Appendix D – Chapter 4 – Caseríos residential areas).[58]

| NAME | POPULATION 2017 | AREA | PEOPLE/HA |
|---|---|---|---|
| MAYASGO | 84 | 6,8 | 12,4 |
| JUYACUL | 51 | 7,1 | 7,2 |
| PUQUIO GRANDE | 21 | 3,1 | 6,7 |
| LA HUACA | 70 | 10,1 | 6,9 |
| LA CALERA | 19 | 5,5 | 3,4 |
| EL HUAYO | 14 | 3,5 | 4,0 |
| LA VIÑA | 93 | 3,2 | 29,0 |
| | 352 | 39,31 | |
| | | AVERAGE | 10,0 |

**Table 4.3: The modern population of the Carabamba Valley (INEI 2018).**

Detailed orthomosaics of archaeological sites were uploaded on ArcGIS and polygons were drawn around areas featuring residential structures and/or artifacts attributable to habitational activities.[59] As underlined above, archaeological sites are dynamic loci of human activities.

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[57] As shown in section 4.4, the main difference between Prehispanic and modern occupation of the valley is the location of archaeological sites rather than population density.

[58] For the purpose of this analysis the *caseríos* of Juyacul and El Olivar were merged.

[59] See also Appendix D – Chapter 4 - Residential areas.

Thus, residential areas were defined following the distribution of ceramic artifacts produced during different periods to reflect the ever-changing spatial extent of human settlements (Figures 4.17 to 4.21 and Table 4.4).

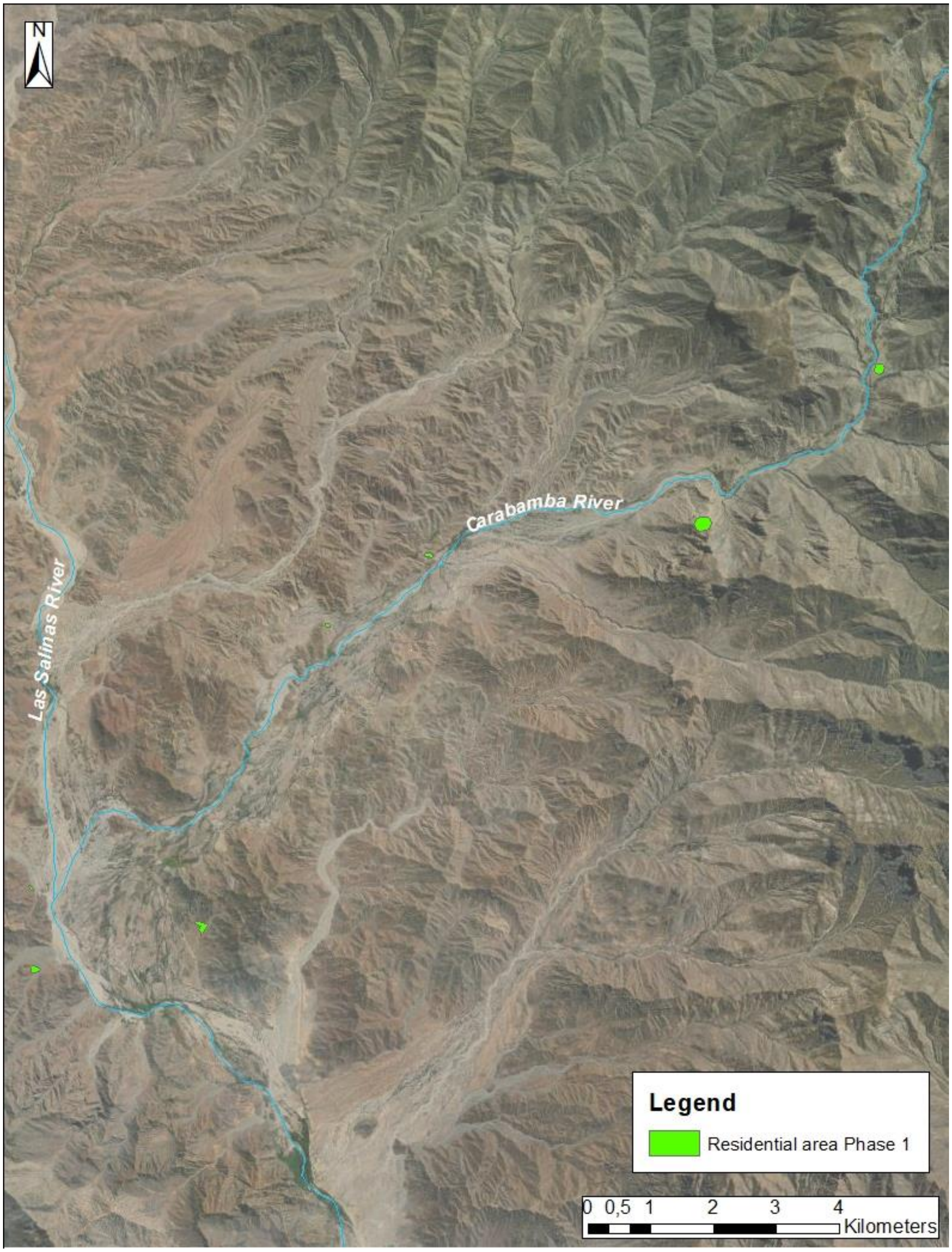


**Figure 4.17: Areas with residential function during Phase 1.**

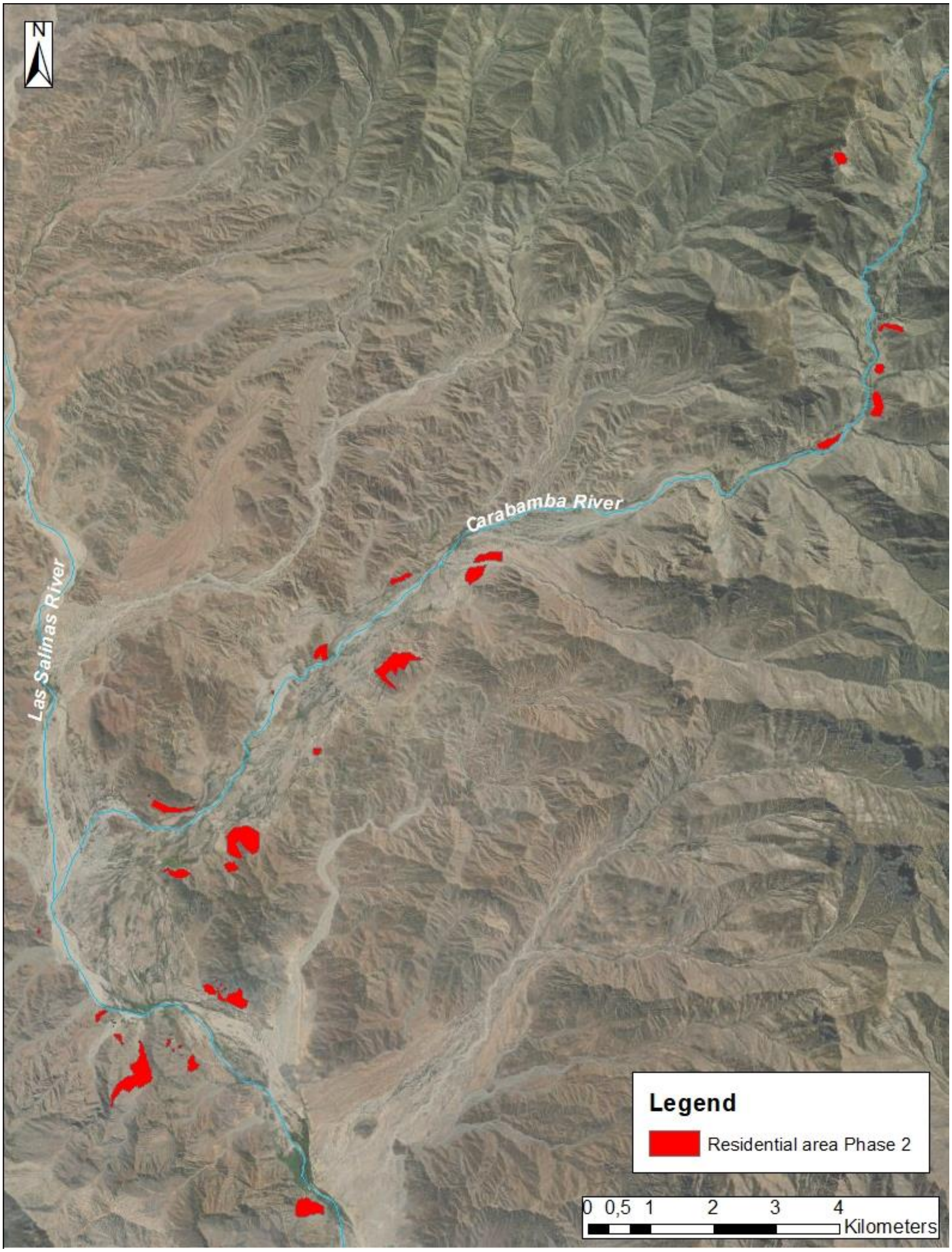


**Figure 4.18: Areas with residential function during Phase 2.**

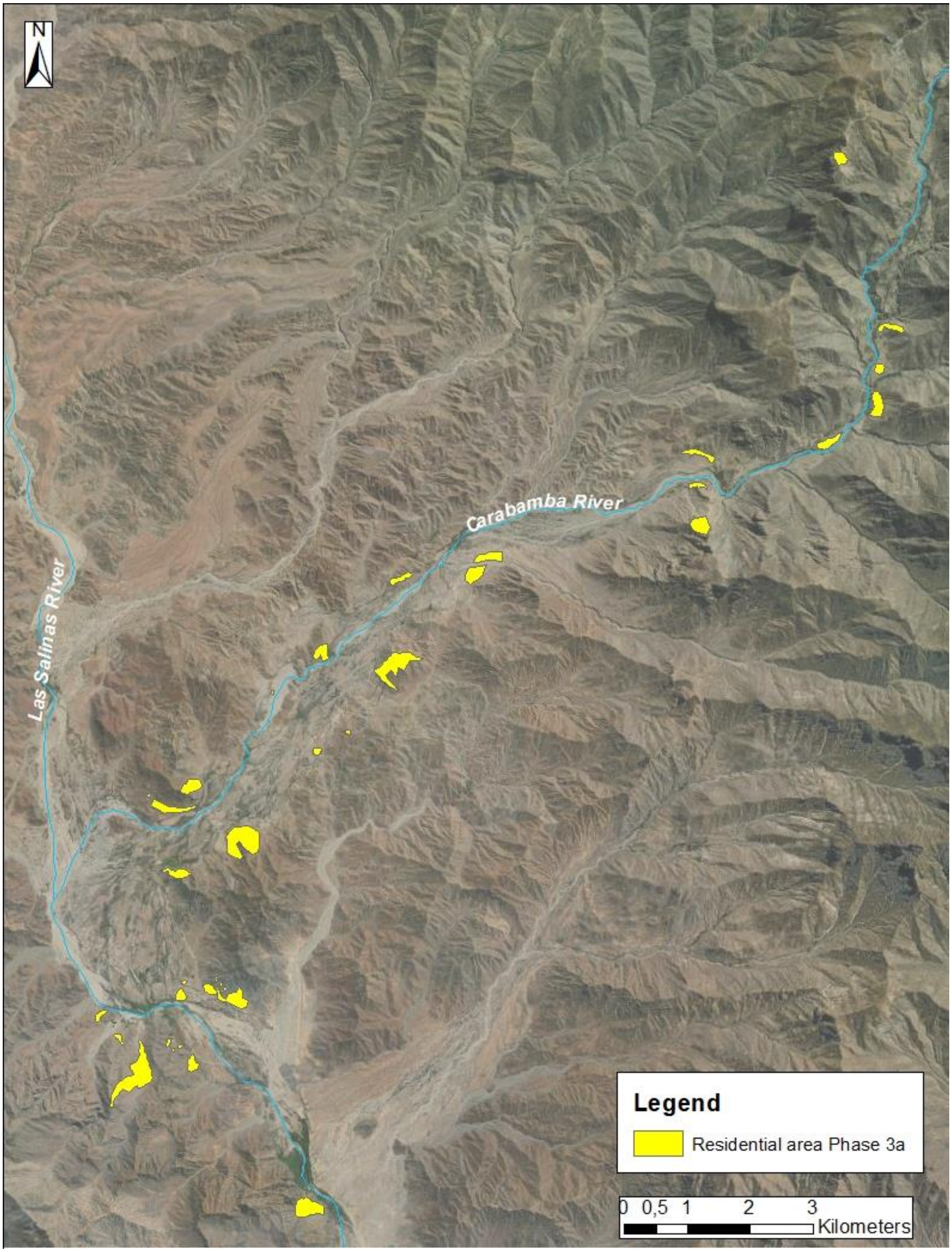


**Figure 4.19: Areas with residential function during Phase 3a.**

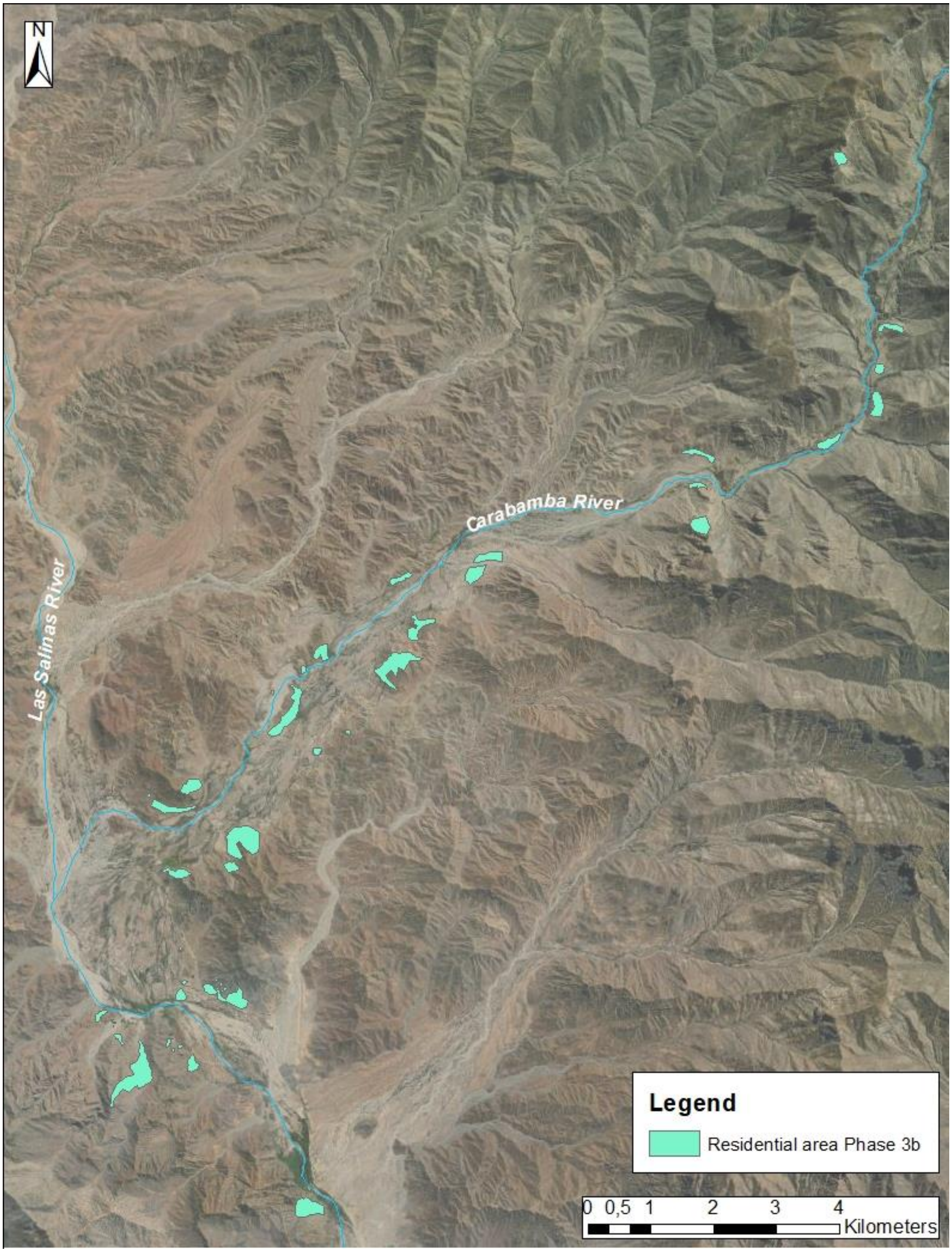


**Figure 4.20: Areas with residential function during Phase 3b.**

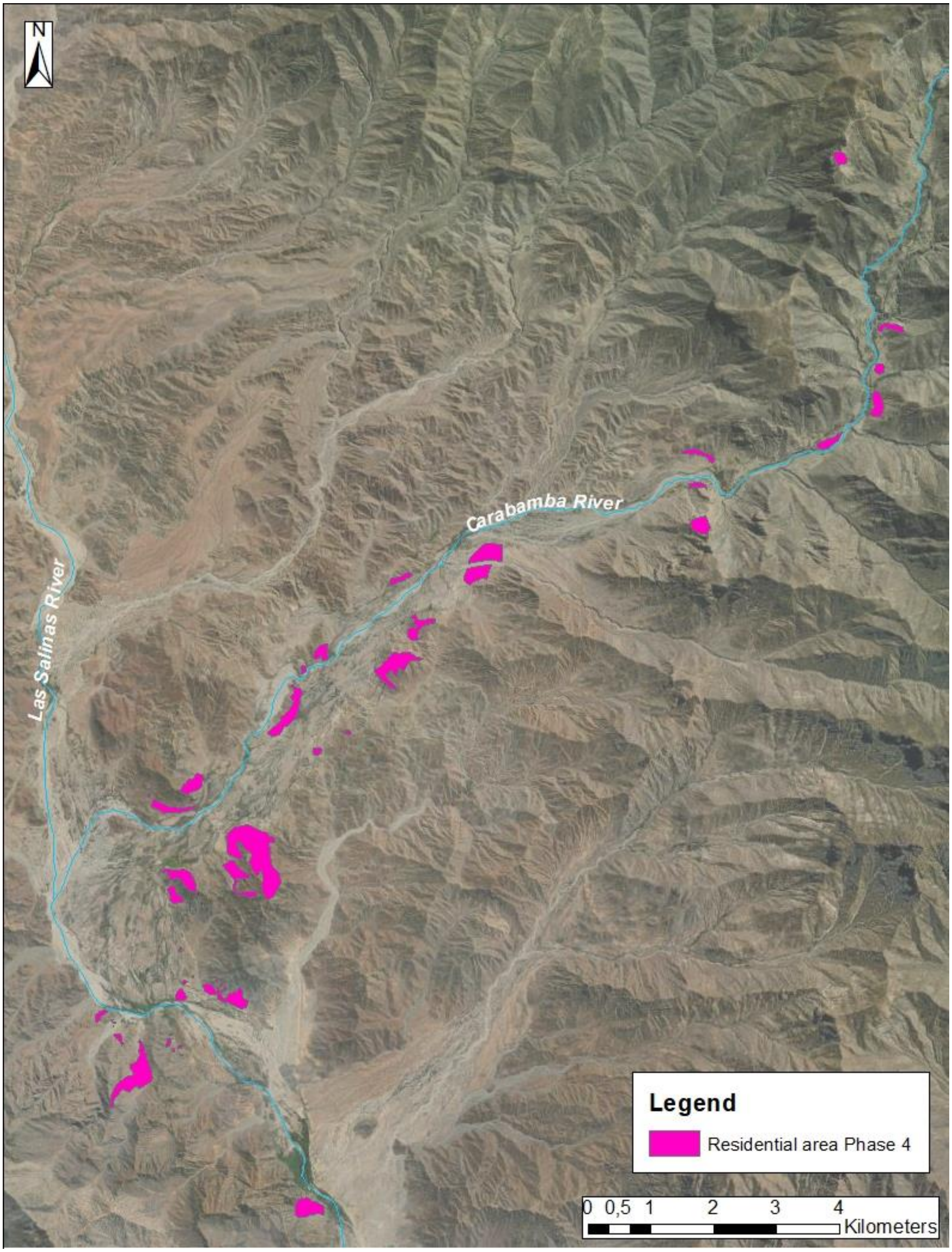


**Figure 4.21: Areas with residential function during Phase 4.**

**Lower Valley**

| PHASE | RESIDENTIAL AREA (HA) |
|---|---|
| 1 (1800-400 B.C.) | 3,7 |
| 2 (400-1 B.C.) | 64,2 |
| 3a (A.D. 1-650) | 72 |
| 3b (A.D. 650-900) | 72,2 |
| 4 (A.D. 900-1532) | 79,7 |

**Middle Valley**

| PHASE | RESIDENTIAL AREA (HA) |
|---|---|
| 1 (1800-400 B.C.) | 6 |
| 2 (400-1 B.C.) | 59,7 |
| 3a (A.D. 1-650) | 69,6 |
| 3b (A.D. 650-900) | 93,2 |
| 4 (A.D. 900-1532) | 136,6 |

**Upper Valley**

| PHASE | RESIDENTIAL AREA (HA) |
|---|---|
| 1 (1800-400 B.C.) | 2,1 |
| 2 (400-1 B.C.) | 20,1 |
| 3a (A.D. 1-650) | 20,1 |
| 3b (A.D. 650-900) | 20,1 |
| 4 (A.D. 900-1532) | 20,1 |

**Whole study area**

| PHASE | RESIDENTIAL AREA (HA) |
|---|---|
| 1 (1800-400 B.C.) | 11,8 |
| 2 (400-1 B.C.) | 144 |
| 3a (A.D. 1-650) | 161,7 |
| 3b (A.D. 650-900) | 185,5 |
| 4 (A.D. 900-1532) | 236,4 |

**Table 4.4: Residential area covered by human settlements in each phase.**

The number of hectares featuring residential activities was multiplied by the low and modern density categories to calculate the population of each site. Next, the results were added up to obtain the population of the lower, middle, and upper valleys, and the whole study area. These steps were carried out for all phases. As highlighted above, the valley is sparsely populated, which brings me to favor the modern and low density to assess the population size in the study area. The number of people that inhabited this stretch of land steadily increased between 1800 B.C. and A.D. 1532. While the lower valley was the most populated zone during Phase 2 (44.6%) and Phase 3a (44.5%), the middle valley was more densely populated in Phase 1 (77.3%), Phase 3b (50.2%), and Phase 4 (57.8%). Through time, the upper valley remained the least populated area, featuring at most 13.9% (Phase 2) of the population (Table 4.5 and Appendix B – Tab 1).[60]

[60] Today (INEI 2018), most people live in the middle valley (142), while the lower valley is the least populated area (91 people) (see Appendix B – Tab 2).

**Lower Valley**

| POP ESTIMATE LOW 15 P/HA | MODERN 10 P/HA | POP PERCENTAGE PER ZONE |
|---|---|---|
| 55 | 37 | 31,2 |
| 963 | 642 | 44,6 |
| 1080 | 720 | 44,5 |
| 1084 | 722 | 38,9 |
| 1195 | 797 | 33,7 |

**Middle Valley**

| POP ESTIMATE LOW 15 P/HA | MODERN 10 P/HA | POP PERCENTAGE PER ZONE |
|---|---|---|
| 91 | 60 | 51,2 |
| 896 | 597 | 41,5 |
| 1044 | 696 | 43,0 |
| 1398 | 932 | 50,2 |
| 2049 | 1366 | 57,8 |

**Upper Valley**

| POP ESTIMATE LOW 15 P/HA | MODERN 10 P/HA | POP PERCENTAGE PER ZONE |
|---|---|---|
| 31 | 21 | 17,6 |
| 301 | 201 | 13,9 |
| 301 | 201 | 12,4 |
| 301 | 201 | 10,8 |
| 301 | 201 | 8,5 |

**Overall population**

| POP ESTIMATE LOW 15 P/HA | MODERN 10 P/HA | POP PERCENTAGE |
|---|---|---|
| 177 | 118 | 100 |
| 2160 | 1440 | 100 |
| 2425 | 1617 | 100 |
| 2783 | 1855 | 100 |
| 3546 | 2364 | 100 |

**Table 4.5: Population estimates per phase.**

### 4.3.2 Maize-Based Carrying Capacity

To test the validity of the population estimates presented above and infer the potential population that could have been sustained by the environment, a maize-based carrying capacity analysis was used. This type of study was first conducted in Northern Peru by Wilson (1988b) and I chose to follow his example for the reasons listed above. As suggested by its name, this analysis uses maize, which had a primary role in the Prehispanic diet[61], to

[61] As pointed out in Chapter 2, beans, squash, tubers, ají peppers, fruits, meat, and fish were also staple foods.

estimate the productivity of each hectare of arable land. To calculate such figures, Wilson used a graph made by Anne Kirkby (1973:126) showing the relation between corn cob length and corn yield in metric tons per hectare. Corn cob length, which increased over time, was obtained from Alexander Grobman and colleagues (1961:60–62).[62] Wilson also highlighted the importance of estimating the average caloric requirements of a preindustrial population living in a dry environment, which is essential in determining the single-crop human carrying capacity (i.e., how many people could have been sustained by one hectare of maize-planted land expressed in people/ha). Drawing from guidelines published by the Food and Agricultural Organization of the United Nations (FAO), Wilson argued that the Recommended Daily Allowance (RDA) for a young individual living in a preindustrial subtropical context was 2,023 kcal/day or 738,395 kcal/year and that 1 kg of maize provided 3,500 kcal. He also noted that a decrease of 10°C in the reference temperature used by FAO (25°C)[63] entailed a 3% increase in RDA. Wilson's "reference individual" lived in an environment with an average temperature of 20°C and he applied a 1.5% increase in RDA.

However, people settled in the lower Carabamba Valley lived in the Desierto Pre-Montano, which has an average temperature of 20.3°C. Sites located in the middle and upper valleys are in the Matorral Desertico Pre-Montano, which features an average temperature of 17°C (ONERN 1973). Thus, people living in the lower Carabamba Valley needed slightly fewer calories per day than the inhabitants of the Santa Valley, while a settler of the middle or upper valleys needed more calories than Wilson's reference individual. To tailor this analysis to the Carabamba Valley environment, I calculated the RDA for each of the three areas of the valley. I determined that settlers of the lower valley needed 2,022 kcal/day (738,030 kcal/year), while individuals living in the middle and upper valleys needed 2,042 kcal/day

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[62] Wilson (1983:216) created a finer grained chronology for the Santa Valley than the chronology proposed for the Carabamba Valley. Thus, Phase 1 uses the cob length of Cayhuamarca period, Phase 2 of Vinzos period, Phase 3a the average of the periods from early Suchimanchillo to Guadalupito, Phase 3b of Early Tanguche and Phase 4 the average of the periods from Late Tanguche to Late Tambo Real (Wilson 1988b:326, Table 11).

[63] The "reference individual" used by FAO lived at 25°C and needed 1,994 kcal/per day according to Wilson (1988b:85).

(745,330 kcal/year). [64] A last fundamental step in conducting the maize-based carrying capacity analysis was estimating the amount of arable land available to the inhabitants of the valley. To do that, I used ArcGIS and I drew polygons around both areas that are currently under cultivation and areas that were likely cultivated during Prehispanic times (e.g., plots of land that yielded agricultural stone tools). The overall amount of arable land is 1385.6 hectares (599 ha in the lower valley, 561.9 in the middle valley, and 224.7 in the upper valley) (Figure 4.22)[65].

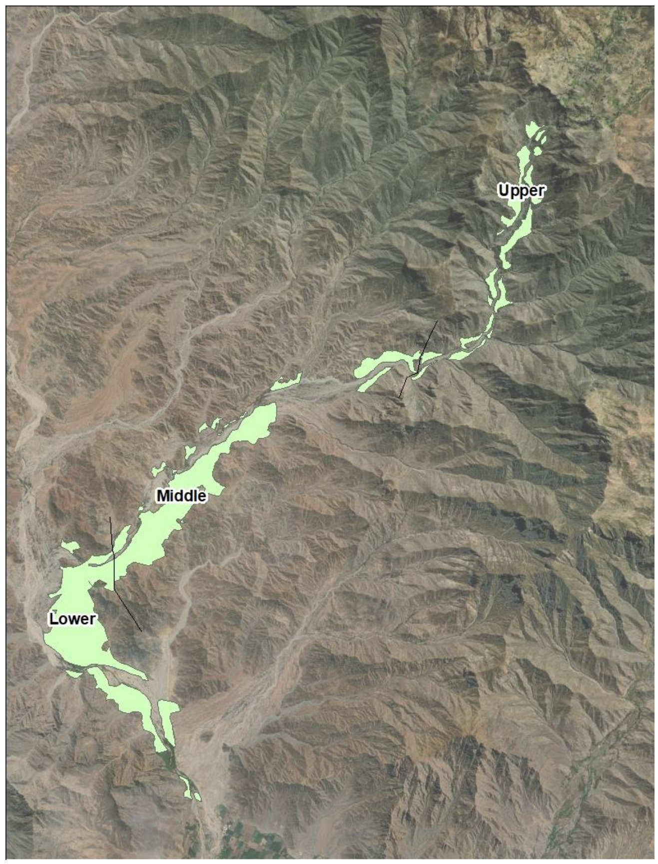


**Figure 4.22: Arable land of the Carabamba Valley.**

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[64] The detailed calculations that led to these results can be found in Appendix B – Tabs 1 to 7.

[65] See also Appendix D – Chapter 4 – Arable land.

As highlighted by Browman (1976), cultivation starts to become uneconomic beyond a 3-kilometer radius from the settlement (about one-hour walking distance). Thus, to determine the amount of arable land that could have been farmed in the different periods, a 3-km buffer around each site with a residential function was created for each phase. Next, the buffers were intersected with the arable land. This procedure shows that during Phase 1 only 1270.1 ha (550.2 in the lower valley, 561.9 in the middle valley, and 157.9 in the upper valley) could have been farmed, while the whole arable land could have been cultivated during the subsequent phases.

Finally, multiplying the single-crop human carrying capacity (people/ha) by the amount of land potentially under cultivation led to the calculation of a carrying capacity based on the assumption that 100% of the arable land was planted. This calculation was carried out for all three areas of the valley. However, following Gillin's (1945) observations on the early 20th century's Moche Valley agricultural practices, Billman (1996) argued that 30% of the arable land could have been fallow during Prehispanic times. I therefore also calculated the number of people that could have been sustained while cultivating only 70% of the arable land. As mentioned in Chapter 2, plots of land in the Carabamba Valley could have been planted with non-food crops like coca and cotton, which were locally consumed and traded with neighboring groups. I therefore calculated how many people could have lived in the lower, middle, and upper valleys while planting only 50% of the land with edible crops (see Appendix B – Tabs 1 to 7).

Results were as follows: if the valley had a very low population density (10 p/ha), it could have sustained its inhabitants, even with 50% of the agricultural land planted with maize, either practicing single or double cropping. However, with a slightly higher population density (15 p/ha) the leeway between population and carrying capacity would have gotten tighter, or, even worse, the valley may have not been able to sustain its population. The upper valley was the least populated area during all phases. Hypothesizing that people were farming 50% of the arable land practicing single cropping and that population density was 15 p/ha, it may have struggled to feed its inhabitants only during Phase 3a. Double cropping is practiced in this area today. If carried out also in the past, this practice would have allowed people to sustain themselves easily. The lower and the middle valleys were the most populated areas during Prehispanic times. Single cropping was likely practiced in these two areas in the past due to water scarcity. If only 30% of the arable land was fallowing, people could have sustained themselves during all phases. However, if only 50% of the arable land was cultivated with edible plants, it would have been hard for the people to feed themselves, especially if the population density was 15 p/ha. Practices like hunting, resource sharing, or trade between settlements and with neighboring ecological niches could have taken place to supplement people's diet. As mentioned above, today single cropping is carried out in the lower and middle valleys, while double cropping is practiced in some spots of the moister upper valley. I suggest that a similar pattern characterized agriculture during Prehispanic times, with fields fed with rainfall water and/or water coming from springs through water canals running on the lower part of the hills (see Figure 4.23).

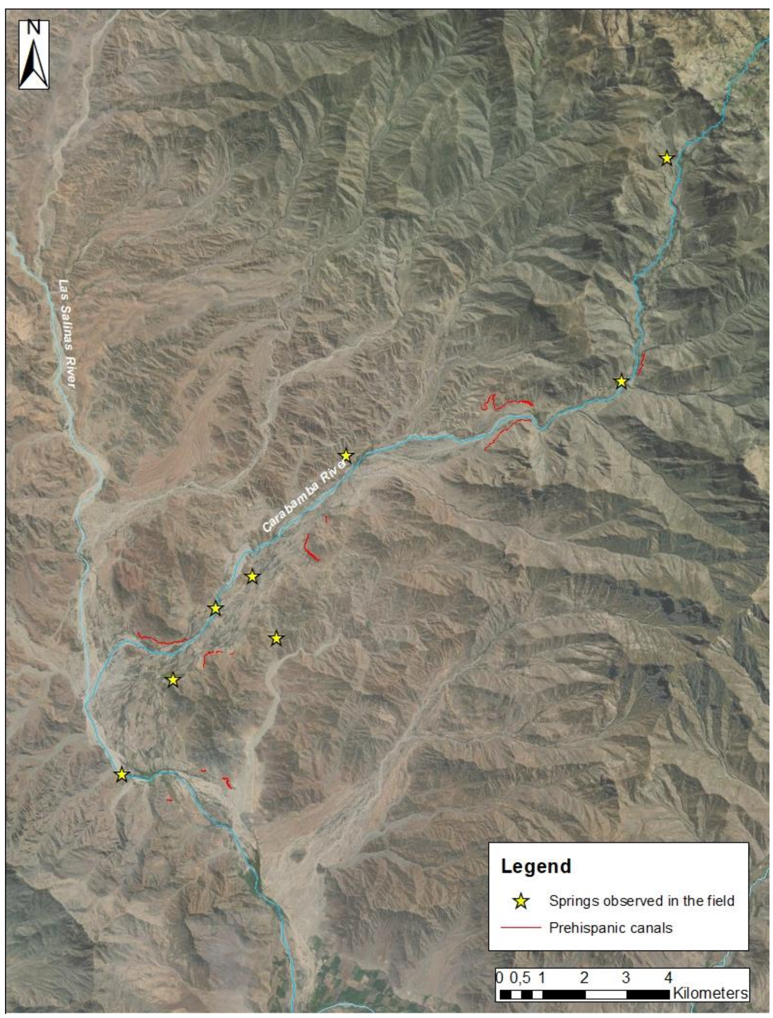


**Figure 4.23: Sections of Prehispanic canals and springs identified during the survey.**

## 4.4 Archaeological Sites and the Landscape

The environment in which people live constitutes a challenge, especially in rugged and dry areas like the Carabamba Valley, but it also creates affordances, providing humans with resources that can be exploited to both respond to local needs and to phenomena that impact larger regions (Steward 1955). The environment therefore shapes settlement patterns, and to shed light on how people distributed over the space and elucidate the possible reasons behind such arrangements, it is essential to define in which topographic areas people decided to build their settlements. However, information such as the elevation of archaeological sites alone does not allow us to fully describe a topographically complex region like the Carabamba Valley. For example, PVC-3 and PVC-5 are both located at about 700 m.a.s.l., but the former sits on a flat area called Pampa Colorada and the latter covers the slopes and the top of a hill.

To appreciate the environmental nuances of the valley, I classified the study area into nine landscape classes that combine elevation and slope data. Such an analysis was recently conducted in the neighboring Moche Valley (Mullins 2016), which features a similar steep topography. Elevation and slope data about the study area were obtained from version 3.1 of the 30-meter resolution Advanced Land Observing Satellite (ALOS) Digital Elevation Model (DEM) produced by the Japan Aerospace Exploration Agency (JAXA 2021). The first step was to calculate an elevation Topographic Position Index (TPI) (Jenness 2006), which "compares the elevation of each cell in a DEM to the mean elevation of a specified neighborhood around that cell" (Weiss 2001:1). Positive TPI values characterize areas that are higher than their neighborhood (e.g., ridges or hilltops), negative TPI values mark locations that are lower than their surroundings (e.g., quebradas), while values around 0 represent locations showing little or no changes in elevation with their surroundings (e.g., valley floors). The average elevation of each 30×30-meter cell of the ALOS DEM was calculated on ArcGIS with the Focal Statistics tool and it was based on a circular neighborhood (250-meter radius). Subsequently, the average elevation was subtracted from the actual elevation value provided by the DEM. Next, the results expressed in elevation values were converted into numbers showing how many standard deviations the results deviated from the average elevation difference.[66] The file that resulted from such an operation was reclassified into three categories to produce the elevation TPI. The three categories are marked by:

- Values ≤ 1: locations lower than their surroundings;
- Values between -1 and 1: locations with little or no elevation changes with their surroundings;
- Values ≥ 1: locations higher than their surroundings.

The next step was to calculate the slope of each DEM cell. The slope (i.e., the steepness of each cell) is expressed in degrees (°) and it was calculated through the ArcGIS Slope tool. The slope values were reclassified into three categories:

- 0-10°: relatively flat areas;
- 10-45°: from moderately steep to very steep areas;
- ≥ 45°: very steep areas.

Lastly, the ArcGIS Raster Calculator tool was used to multiply the two abovementioned reclassified files to obtain nine landscape classes showing the topographic complexity of the research area (Figure 4.24 and Table 4.6).

[66] The following operation was carried out through ArcGIS Raster Calculator:

(Raster file representing the difference in elevation + Mean value of the raster file representing the difference in elevation) / standard deviation value of the raster file representing the difference in elevation.

| Landscape Class | eTPI (mean TPI/σ) | Slope (degrees°) | Description |
|---|---|---|---|
| Valley Floor | -1 < eTPI < 1 | S < 10° | Relatively flat location in an area with little changes in elevation |
| Hillslopes | -1 < eTPI < 1 | 10°< S < 45° | Moderately steep location in an area of little changes in elevation |
| Hill Cliffs | -1 < eTPI < 1 | S > 45° | Very steep area in an area with little changes in elevation |
| Hilltops | eTPI > 1 | S < 10° | Relatively flat area in an area that is relatively higher in elevation than its surroundings |
| High Hillslopes | eTPI > 1 | 10°< S < 45° | Moderately steep location in an area that is relatively higher in elevation than its surroundings |
| High Hill Cliffs | eTPI > 1 | S > 45° | Very steep location in an area that is relatively higher in elevation than its surroundings |
| Quebrada Bottoms | eTPI < -1 | S < 10° | Relatively flat location in an area that is relatively lower in elevation than its surroundings |
| Steep Quebradas | eTPI < -1 | 10°< S < 45° | Moderately steep location in an area that is relatively lower in elevation than its surroundings |
| Ravine Cliffs | eTPI < -1 | S > 45° | Very steep location in an area that is relatively lower in elevation than its surroundings |

**Table 4.6: The nine landscape classes characterizing the study area (after Mullins 2016).**

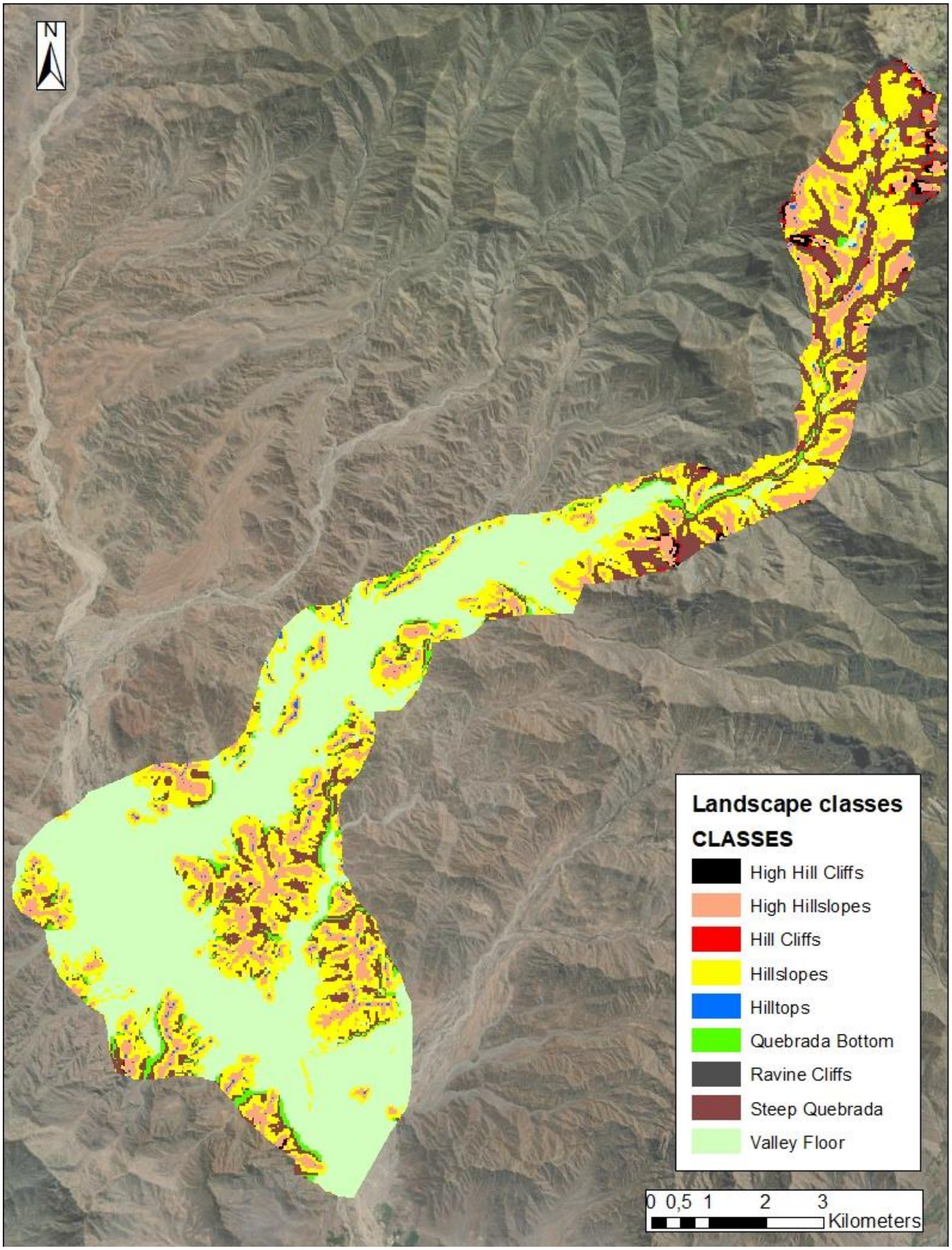


**Figure 4.24: Spatial distribution of the nine landscape classes.**

After subdividing the landscape into discrete classes, I calculated in which class (or classes) each archaeological site falls. This analysis was carried out for both the overall area and the residential area of the sites, for all three areas of the valley and all phases.[67] The results are presented in Appendix B (Tabs 8 to 19) and they show that people preferred to establish their settlements on sloped areas during most of Prehispanic times. Between 43.3% (Phase 1) and 59.4% (Phase 2) of the overall area occupied by human settlements was located either on Hillslopes or High Hillslopes, a pattern also observed by Billman (1996) in the Moche Valley. In the steep upper valley, sites located on sloped areas are very common and the overall area occupying either Hillslopes or High Hillslopes ranges between 85.9% (Phase 2, 3a, 3b, and 4) and 91.4% (Phase 1). Moving towards the coast, more settlements are in flat areas. This is particularly clear during Phase 1 when 76.1% of the area occupied by sites in the lower valley sat on the Valley Floor. A similar pattern characterizes the residential area of archaeological sites. It is also interesting to note that settlements are mainly located in unprotected areas during Phase 1, a period that was not marked by tensions in Northern Peru (see Chapter 2). From Phase 2 onwards, people tended to settle on naturally defensible sloped areas and this change may have been caused by increasing hostilities among communities/site clusters (Phase 2), states (Phase 3a and 3b), and empires (Phase 4) (see also Chapter 2). However, it is possible that settlements were placed on sloped areas to clear out potential arable land, increasing the crop yield of the valley (Downey 2015). The same analysis was run on the area covered by the modern *caseríos*.

The difference between Prehispanic and modern times is striking, given that 76.4% of the area of modern villages is now found on the Valley Floor, next to the Carabamba River. Such a high percentage of residential area located on flat and unprotected zones is surpassed only by Phase 1 residential sites located in the lower valley (94.3%). As highlighted by Downey (2015) for the Early Intermediate Period in the coastal Virú Valley, the increase in public safety was linked to a shift in settlement patterns. A centralized state (the Virú state) emerged and its control over the use of force reduced intravalley conflicts. People moved away from defensive settings and the number of settlements located in open, non-defensive areas

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[67] The Intersect ArcGIS tool was used to perform this task.

increased significantly. Similarly, in the Carabamba Valley during the Viceroyalty of Peru (A.D. 1542 - 1821) and the Republican era (A.D. 1821 - today), tensions between opposing highland and coastal sociopolitical formations waned and the presence of a centralized state that enacted new social and economic policies (i.e., the creation of *reducciones* and *haciendas*) led to the foundation of villages close to both the Carabamba River and agricultural plots.

To illustrate the differences between Prehispanic and modern times, I analyzed two modern villages located in the middle valley (La Calera and Juyacul) and two nearby archaeological sites (PVC-11 and PVC-20). The modern village of La Calera is located in the lower part of the middle valley, a few hundred meters from the Carabamba River. During the rainy summer, people can gather water from the river in a few minutes. Conversely, the bulk of the nearby site called PVC-11 is located on sloped terrains and habitational terraces are located 1.5 km from the Carabamba River. In this context, people had to walk for one hour on rugged terrain carrying large jars to collect water and bring it back to their settlement. A similar pattern can be detected when hypothesizing that the main water source would have been the spring located east of the village of La Huaca (Figures 4.25 and 4.26, and Tables 4.7 and 4.8).[68]

[68] To calculate the planar distance the ArcGIS Near tool was used. The travel time was computed using the procedure presented by Nico Tripcevich (2015). The square along the PVC-11-spring path is likely due to the coarseness of the DEM.

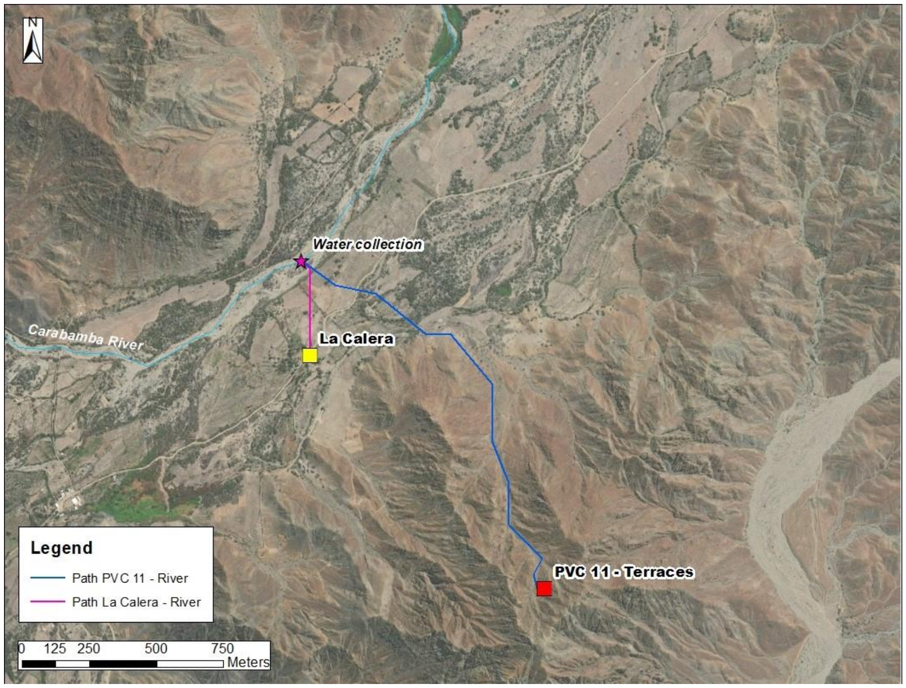


**Figure 4.25: Path between La Calera and the Carabamba River (purple), and path between PVC-11 and the Carabamba River (blue).**

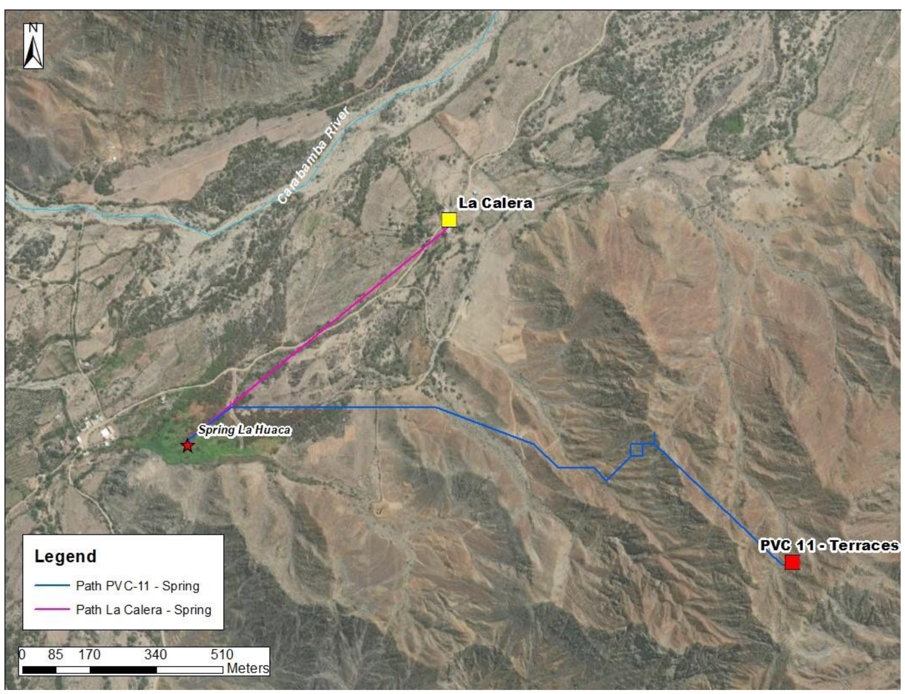


**Figure 4.26: Path between La Calera and the spring (purple), and path between PVC-11 and the spring (blue).**

A similar situation characterizes the *caserío* of Juyacul and PVC-20 at the northeastern edge of the middle valley. Despite being located on steep terrain, the *caserío* of Juyacul is close to the river, which can be reached in minutes. As for PVC-20, it is located on steep slopes 1 km from the river and people had to undertake an 82-minute return trip to reach the water source[69] or the nearby agricultural fields (Figure 4.27 and Table 4.9).

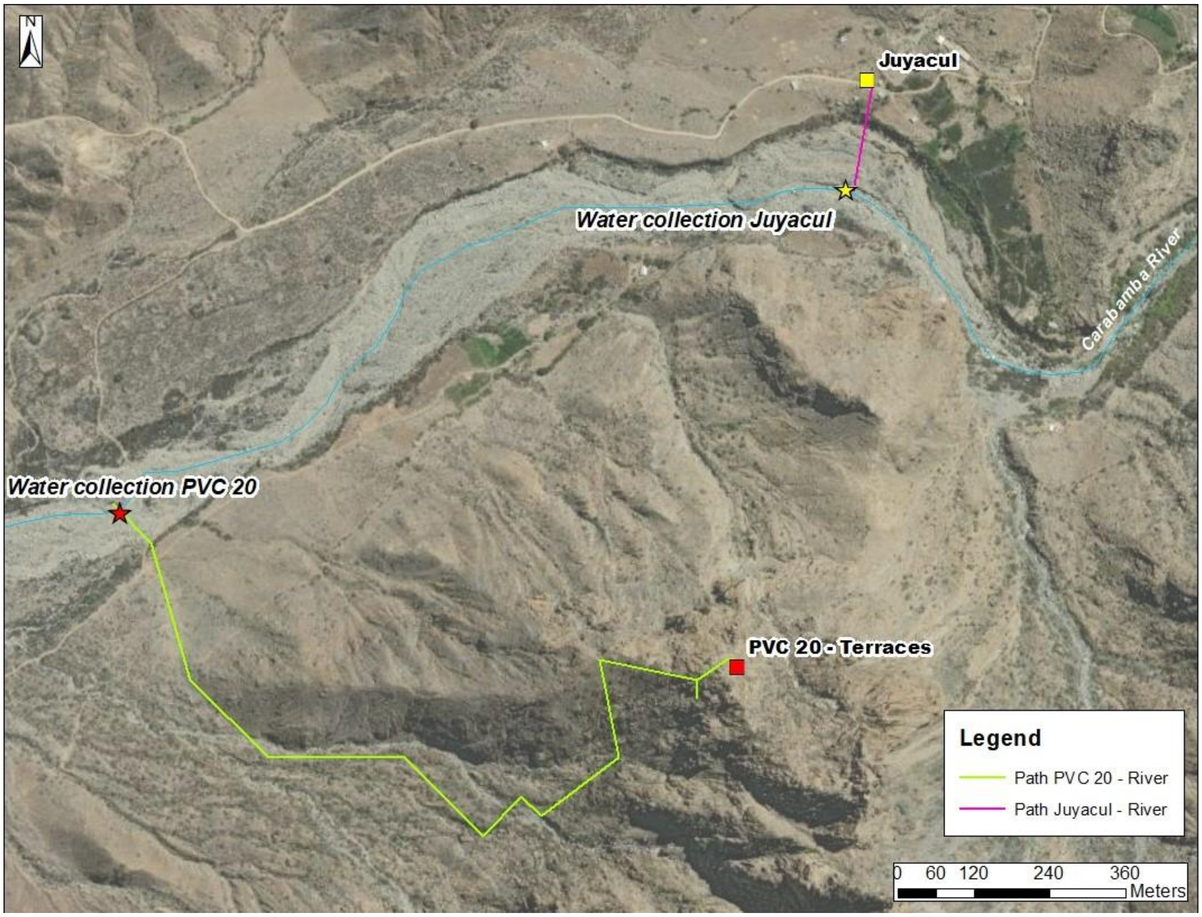


**Figure 4.27: Path between Juyacul and the Carabamba River (purple), and path between PVC-20 and the Carabamba River (green).**

69 The Carabamba River has a limited amount of water only during the rainy summer. Water could have been collected and stored in large jars or this area may have featured springs not identified during the survey.

**Caserío La Calera**

| PREDOMINANT CLASS | PLANAR DISTANCE FROM RIVER (m) | OUTWARD JOURNEY (min) | RETURN JOURNEY (min) | TOTAL TRAVEL TIME (min) |
|---|---|---|---|---|
| Valley Floor (98,8%) | 336,07 | 4,9 | 4,3 | 9,2 |

**Habitational Terraces PVC-11**

| PREDOMINANT CLASS | PLANAR DISTANCE FROM RIVER (m) | OUTWARD JOURNEY (min) | RETURN JOURNEY (min) | TOTAL TRAVEL TIME (min) |
|---|---|---|---|---|
| Hillslopes (42,8%) | 1523,1 | 27,1 | 33,8 | 60,9 |

**Table 4.7: Distance between La Calera and the Carabamba River (top), and distance between PVC-11 and the Carabamba River (bottom). Distance is expressed in meters and minutes.**

**Caserío La Calera**

| PREDOMINANT CLASS | PLANAR DISTANCE FROM SPRING (m) | OUTWARD JOURNEY (min) | RETURN JOURNEY (min) | TOTAL TRAVEL TIME (min) |
|---|---|---|---|---|
| Valley Floor (98,8%) | 878,6 | 9,6 | 12,2 | 21,8 |

**Habitational Terraces PVC-11**

| PREDOMINANT CLASS | PLANAR DISTANCE FROM SPRING (m) | OUTWARD JOURNEY (min) | RETURN JOURNEY (min) | TOTAL TRAVEL TIME (min) |
|---|---|---|---|---|
| Hillslopes (42,8%) | 1567,9 | 30,1 | 40,7 | 70,8 |

**Table 4.8: Distance between La Calera and the spring (top), and distance between PVC-11 and the spring (bottom). Distance is expressed in meters and minutes.**

**Caserío Juyacul**

| PREDOMINANT CLASS | PLANAR DISTANCE FROM RIVER (m) | OUTWARD JOURNEY (min) | RETURN JOURNEY (min) | TOTAL TRAVEL TIME (min) |
|---|---|---|---|---|
| Hillslopes (52,7%) | 175,7 | 2,9 | 3,7 | 6,6 |

**Habitational Terraces PVC-20**

| PREDOMINANT CLASS | PLANAR DISTANCE FROM RIVER (m) | OUTWARD JOURNEY (min) | RETURN JOURNEY (min) | TOTAL TRAVEL TIME (min) |
|---|---|---|---|---|
| High Hillslopes (76%) | 1007,9 | 34,0 | 48,2 | 82,2 |

**Table 4.9: Distance between Juyacul and the Carabamba River (top), and distance between PVC-20 and the Carabamba River (bottom). Distance is expressed in meters and minutes.**

It can thus be argued that the need for safety was a key factor during Prehispanic times in choosing settlement location in the Carabamba Valley, in some cases even more important than proximity to water sources or arable land. The argument is also supported by the fact that the few archaeological sites located on flat areas were either strictly controlled by defensive features (e.g., PVC-23 monitored by lookouts at PVC-26) or monitored and protected by walls (e.g., PVC-3 was surrounded by sites like PVC-20 and PVC-5 and protected by a northeast-southwest wall).

## 4.5 Summary

This chapter analyzed the landscape of the Carabamba Valley, showing how it influenced settlement patterns and how it was shaped by the inhabitants of this stretch of land. The maps presented in this chapter show that the study area was intensively occupied, especially between Phases 2 and 4. However, two areas devoid of settlements have been located, and their topography and the characteristics of the sites that are at their edges suggest they could have been buffer zones. The analysis of architectural materials and types identified in the valley indicates some variations through time, but, overall, the inhabitants of the valley were conservative when building residential, funerary, civic, and ceremonial structures, preferring the use of local stones and river cobbles. The archaeological sites identified in the lower, middle, and upper valleys are usually multi-functional and the identification of residential areas and the definition of their spatial extent allowed me to calculate how many people were living in the valley during Prehispanic times. In addition, a maize-based carrying capacity analysis showed that the scarcely populated valley may have struggled to sustain its inhabitants. Lastly, the landscape was subdivided into nine classes that were created by looking at both altitude and slope. Such subdivision showed that, unlike their modern counterparts, Prehispanic inhabitants of the valley preferred to settle in sloped or naturally defensible areas, revealing possible tensions or the need to free up land for farming. Using the wealth of information presented in this and the previous chapters, Chapter 5 will delve deeper into the social, political, and economic processes that marked the Prehispanic occupation of the Carabamba Valley.

# Chapter 5

## 5 Prehispanic Settlement Patterns of the Carabamba Valley

Since the first half of the 20th century, archaeologists have committed time and energy to understand the cultural and ecological processes that influence how people occupy the land and arrange themselves over regions (Steward 1937; Willey 1953). Regions are coherent swaths of land whose extents can be defined by topographic features (e.g., a plain, a river valley, a mountain range) or according to cultural developments (e.g., the presence of one or more politically autonomous groups) (Kowalewski 2008; Parsons 1972, 1990; Stanish 2003). Influenced by Julian Steward's (1937, 1955) cultural ecology, which focuses on the dialectical relation between humans and the environment in which people live, American archaeologist Gordon Willey (1953, 1999) conducted a pioneering project in the Virú Valley with the goal of reconstructing the settlement patterns of this river valley. Willey (1953:1) defined settlement patterns as "the way in which man disposed himself over the landscape on which he lived. It refers to dwellings, their arrangement, and to the nature and disposition of other buildings pertaining to community life. These settlements reflect the natural environment, the level of technology on which the builders operated, and various institutions of social interaction and control which the culture maintained".

The Virú Valley Project was the first study that aimed to reconstruct the prehistoric cultural processes of an entire region through an analysis of the distribution of human settlements in space and through time (Parsons 1990; Wilson 1988b). Regional research aims to tie together dots in the space, piecing together the relations between loci of human activities, the forces that drive the disposition of people over the landscape, and the reasons behind alterations through time (Stanish 2003). The basic unit of investigation in regional settlement pattern studies is usually the archaeological site. Sites can be defined as places where people lived permanently, or for short periods of time (Kowalewski 2008; Willey 1953), and as loci that were socially meaningful to those who occupied them (Sanders 1999).

Surface collection is by far the most popular research method used by archaeologists in settlement pattern studies since it allows the collection of information within time and financial constraints (Kowalewski 2008). Artifacts lying on the surface of archaeological sites can provide information about the chronology of the settlement, the cultural affiliation of the people occupying it, and the activities that were performed at the site. However, little attention has been paid to the correlation between what is on the surface and what lies below the ground.

As noted in Chapter 3, research conducted by Downey (2017) in the Virú Valley showed the frequency distribution of ceramic types on the surface resembles the frequency distribution of types from excavated contexts. Downey (2017:40) argued that “the surface seems to be a reasonably good proxy for the upper ∼100 cm of subsurface remains”.

Considering that excavations conducted in the neighboring middle and upper Moche Valley did not reveal depositions deeper than 1 m (Boswell 2016; Briceño Rosario and Billman 2018), it can be argued that surface assemblages match with subsurface contexts in the area under investigation. Surface surveys can therefore produce a rich corpus of information and the significance of such data becomes even higher when studying a region that has been neglected in the past, such as the Carabamba Valley.

## 5.1 Fernand Braudel and the Three Historical Temporalities

In his work, French historian Fernand Braudel (1996, 2009) argued that three different types of history and historical temporalities coexist. The first is an episodic history (*histoire événementielle*), which was compared by Braudel to “surface disturbances, crests of foam that the tides of history carry on their strong backs” (Braudel [1949] 1996:21). This type of history is composed of both mundane events that take place in individuals’ everyday life and ‘great events’ that (apparently) have a great impact on human lives. The second type of history is characterized by a slower but still perceivable pace: social history, the history of states, empires, and economic systems. Lastly, there is an almost motionless history, the *longue durée*, marked by cycles and repetitions, and by the presence of structures (realities that last for long periods of time and wear down very slowly). Structures create opportunities and limitations for development. The environment and its characteristics are some of the structures presented and analyzed by Braudel, who showed how, along with other structures (e.g., mental frameworks or long-lasting social units), topography, climate, vegetation, and available crops have heavily influenced the life of many generations.

In the context of the present study, the first type of history refers to mundane activities such as daily trips to the river to collect water, the production of objects like pots, interactions among the inhabitants of different sites, or events like battles between the Inka and Chimú empires. However, the information presented in the previous chapters is particularly useful to document Braudel's social history and the *longue durée*, the long-lasting structures that marked the lives of people living in such a unique environment.

The goals of this chapter are: 1) to analyze the Prehispanic settlement patterns of each phase using the data presented in the previous chapters, and to conduct additional spatial analyses, and 2) to identify slow-pace movements and long-lasting trends transcending the chronological phases defined in Chapter 3.

## 5.2 Phase 1 (1800 - 400 B.C.)

### 5.2.1 Material Culture and Population

In Chapter 3, it was shown that only four potsherds were assigned to the Guañape ceramic style, the material culture used to define this phase. Three of those potsherds came from the middle and upper valleys.[70] This small number of potsherds is not the only indicator of occupation during Phase 1. As highlighted in the previous chapter, small rounded or rectangular structures built with one course of stones and featuring few or no ceramics on the surface possibly date from this period. These structures may reveal the spatial extent of Phase 1 residential areas and provide a relative measure of the number of people that inhabited the region at the time.

Table 4.5 shows that in Phase 1 the study area was likely inhabited by a population ranging between 118 and 177. Most people (60-90 - 51.2%) were concentrated in the middle valley. During this phase, about half (49%) of the residential areas were located on flatlands. Most

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[70] See Appendix A – Tabs 1,5, and 6, and Appendix D – Chapter 5 - Phase 1 sites.

people inhabited the valley floor, especially in the lower part of the research area (94.3%). Conversely, the percentage of residential areas located in flat areas decreased in the steeper middle and upper valleys (19.9% and 0.3%, respectively; see Table 4.5 and Appendix B – Tabs 1, 3, 10, and 15).

This phase features only one site (PVC-20) located in a defensive setting (Table 4.2). A near absence of fortifications during this phase was also noted by Willey (1953) in his survey of the coastal Virú Valley, by Billman (1996) in the Moche Valley, and by John and Theresa Topic (1987) in their survey of fortified sites located in Northern Peru. Thus, this may indicate that there were few or no intra and intervalley conflicts during this phase.

### 5.2.2 Subsistence Strategies

The maize-based carrying capacity analysis (Appendix B – Tab 1) shows that people could have easily sustained themselves even while cultivating 50% of the arable land with edible crops and harvesting once a year. As argued in the previous chapter, 30% of the land was likely fallowing, and another 20% of the land may have been used to grow non-edible crops like cotton or coca. However, maize was probably not the main staple food during this phase. Indeed maize was cultivated, but it was likely not the principal source of nutriment, as suggested by excavations conducted at Initial Period and Early Horizon sites located in Moche Valley like Caballo Muerto (Nesbitt 2012; Nesbitt, Gutiérrez and Vásquez 2008; Pozorski and Pozorski 1979) and Gramalote (Pozorski and Pozorski 1979; Prieto 2015), Huaca El Gallo and La Gallina in the Huacapongo Valley (Zoubek 1997), and major sites in the central Peruvian highlands like La Galgada (Washburn et al. 2020) and Chavín de Huantar (Burger and van der Merwe 1990).[71] The diet of people living in the *chaupiyunga* zone may have been composed of domesticated plants like squash, beans, manioc, potatoes, and peanuts, fruits like avocados and lucuma, terrestrial meat from deer, guinea pigs, and camelids, and marine proteins from mollusks and fish at low altitudes.

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[71] In the Ayacucho region of the southern Central Highlands, maize may have been a staple food since 800 B.C. (Finucane 2009).

Research conducted in the Virú, Huacapongo, and Moche valleys failed to identify canals from this period, but some archaeologists (Billman 1996, 2002; Willey 1953; Zoubek 1997) argued that such public works may have been in place even at this early time. Through an analysis of archaeological and ethnohistorical data, Netherly (1984) argued that irrigation systems on the Peruvian North Coast were not controlled by state formations during Chimú and Inka times, but were instead built, maintained, and managed by *parcialidades* and their members. During colonial times, the connection between communities and their water canals was so strong that groups of people claimed plots of land because they were watered by their canal. The lords of such social units had the authority to mobilize the workforce to both build and maintain water canals, and the presence of the *caciques* was required when people were constructing or upkeeping the canals since these activities had a ritual significance.[72] These infrastructures were made using locally available materials (wood, stones, mud) and required neither high labor investments nor the intervention of state officials. With this information in mind, small irrigation systems could have been built and managed by communities living along the Carabamba River during the Initial Period and the Early Horizon.

### 5.2.3 The Carabamba Valley and the Upper Virú Water Temple System

The Water Temple Model hypothesized by Zoubek (1997) for the Huacapongo and the Virú valleys between 1800 and 800 B.C. is of particular interest to the Carabamba Valley and its settlements. Zoubek argued that the landscape of the Huacapongo and Virú valleys was marked by the presence of large ceremonial centers such as Huaca El Gallo, Huaca La Gallina, and Huaca Verde (V-37 in Willey 1953) in the Huacapongo Valley, and Huaca San

[72] The Huarochirí Manuscript (Salomon and Urioste 1991), an early colonial document that recounts the world of the Checa/Yauyo people in the central Peruvian *chaupiyunga*, contains information suggesting that the maintenance of canals was followed by dancing and drinking, and feasting may have reinforced ties between members of the communities, and between the latter and the leaders that may have sponsored these gatherings. The Cumbemayo canal, located in the Cajamarca region, is an example of how rituality and water infrastructures were intertwined. The 9-km long canal was carved into the bedrock and finely decorated, it is located close to the centers of Layzón and Agua Tapada, and shorter canals would have easily fed the agricultural land of the region (Burger 1992).

Juan I (V-77 in Willey 1953)[73] and the Sea Temple of Huaca Negra (V-71 in Willey 1953) in the Virú Valley. The scarcity of water and the growing reliance on irrigation agriculture fueled the emergence of fertility rituals, which possibly aimed at pleasing supernatural forces that were believed to control the flow of such a key resource in the dry Peruvian coast. Among these beings, there may have been the spirits that inhabited outstanding mountain peaks (*apus*), which are primary sources of water and are still revered today through offerings at given locations (Allen 2002; Moseley 2001; Reinhard 1985; Sánchez Garrafa 2014). Along with the *apus*, people likely worshipped deities that featured anthropomorphic and animal attributes. Initial Period clay friezes and stone sculptures featuring animals connected to water and fertility, such as spiders, felines, snakes, birds, fish, and frogs, were found at ceremonial sites located throughout the Andes, such as Limoncarro (Sakai and Martinez 2014), Collud (Meneses Alva 2008), Caballo Muerto (Pozorski and Pozorski 1993), Garagay (Burger 1992; Ravines and Isbell 1975), Huaca El Gallo and La Gallina (Zoubek 1998a), and at the recently discovered site of Huaca Tomaval in the Virú Valley (Castillo Luján 2021b).

According to Zoubek (1997), these sites were temples that shared an ideology centered around water and fertility. Each center may have had its own pantheon, but some deities may have been revered at more than one temple and monumental sites like Caballo Muerto could have had regional importance. Zoubek argued that the temples were at the center of their universe, attracting people from the surrounding villages, and communities may have been competing through the expansion of the ceremonial centers. As noted above, the centers were ideologically linked with each other, but they were also physically linked since they were relying on water coming from the Huacapongo and the Carabamba rivers. Temple authorities were probably religious specialists in charge of ensuring the constant flow of this sacred resource through their privileged connection with deities and by taking decisions regarding the management of water sources (e.g., the construction and maintenance of canals, conflict

[73] Willey (1953) and Downey (2015) dated this site to the Early Intermediate Period based on surface ceramics. Zoubek (1997) argued that the site was built during the Initial Period due to the fact that Willey (1953) found conical adobes at the site.

resolution, etc.). Despite the prominent role priests likely played at these temples, no evidence of social stratification has been documented in the archaeological record. The Carabamba Valley did not feature large ceremonial centers and the small communities inhabiting the lower end of the valley, such as PVC-42 and PVC-48, may have been linked to temples located at the Virú Valley neck like Huaca San Juan I and Huaca Tomaval.

At Huaca El Gallo and Huaca La Gallina, Zoubek (1998b) identified collar tombs (circular funerary structures usually one course wide and one or two courses deep), which he argued may have hosted important ancestors, suggesting that an *ayllu*-like social organization emerged during the Initial Period in this region. The presence of ancestral tombs may have been a way to "legitimize linkages to scarce or crucial resources" (Buikstra 1995:241). While surveying the Carabamba Valley, collar tombs were noted at PVC-42 and PVC-48. Like the burials observed by Zoubek (1998b), these tombs have an interior diameter of 1 m and an exterior diameter of 2 m. The scarce resources that communities claimed were the arable land and the water coming either from the Carabamba River or from the nearby spring called Puquio Grande. Thus, such cemeteries could have been the focus of ritual activities that reinforced the link between people, land, and water. The presence of Guañape ceramics in the middle and upper valleys may show that there was interaction among *chaupiyunga* people and coastal groups. Due to the very small size of the sample, it is hard to infer the nature of such interaction, but, as argued above, there were probably no tensions. The distance between the sites identified in the middle and upper valleys and the ceremonial mounds located at the Virú Valley neck is substantial, which makes it unlikely that these *chaupiyunga* people were actively involved in the Water Temple system described by Zoubek (1997) (Figure 5.1).


**Figure 5.1: Phase 1 sites, and other Initial Period and Early Horizon sites.**

## 5.2.4 Petroglyphs and Geoglyphs

While no large Initial Period or Early Horizon temples were identified in the study area, the Carabamba Valley features several sites with rock art, in particular petroglyphs and geoglyphs. Petroglyphs are depictions produced on rocks through a reductive process (Bednarik 1998) and only a few boulders located in three sites may include motifs that could be dated to Phase 1. As reported by Castillo Benítez and Barrau (2016), the iconography of petroglyphs at PVC-18 (called Mayasgo-1 in their publication) suggest that they may have been produced between the Early Horizon and the Early Intermediate Period. After surveying the same site, Maarten van Hoek (2017) argued that one boulder may feature an MSC-Style motif, which stands for Manchay, Sechín, and Cupisnique, three Initial Period cultures that developed along the Peruvian coast. The style is mainly characterized by biomorphs showing specific facial features such as the ‘eccentric’ eye, fangs, and claws (van Hoek 2011; see also

Burger 1992; Burger and Salazar 2008; Pozorski and Pozorski 2008). A human head with fangs was identified at PVC-15, while a panel with a possible Cupisnique-like motif was found at PVC-3. Ceremonial activities may have also been carried out at PVC-3, which feature rounded and rectangular structures outlined only by one course of stones (see Appendix C). Following the work of Guffroy (2011) and previous studies conducted at these sites, it can be argued that most petroglyphs identified in the study area were produced during Phase 2, 3a, 3b (see section 5.4.5).

Geoglyphs are ground drawings depicting anthropomorphic, zoomorphic, and geometric motifs located either on flat or sloped areas. Such drawings were produced using or combining the additive and the subtractive technique. The additive technique adds and/or rearranges rocks lying on the ground to outline the desired motif. The subtractive technique produces the drawing by clearing the ground of rocks and exposing the underlying lighter-colored soil (Gálvez Mora et al. 2012; Hostnig 2003; Troncoso, Armstrong, and Basile 2018). Ground drawings were produced in today's Peru since about 2000 B.C. (Shady Solís, Machacuay, and Aramburú 2003) and the Nasca geoglyphs in Southern Peru are undoubtedly the most famous geoglyphs in the country and among the best-known rock art sites in the world (Aveni 1986; Masini, Orefici, and Lancho Rojas 2016). Less is known about geoglyphs made in Northern Peru (Alva and Meneses de Alva 1982; Corcuera Cueva and Echevarría López 2010, 2011; Gálvez Mora et al. 2012; Hostnig 2003, 2021; Wilson 1988a), and the ground drawings found in the Carabamba Valley expand the record of geoglyphs located in this part of the country. A group of five geoglyphs was identified at PVC-44, while another possible geoglyph was recorded at PVC-47.[74] PVC-44 is located in the lower Carabamba Valley, along the right bank of the river and on the eastern slopes of Cerro Misia (Sghinolfi et al. 2021). Most of the site sits on rugged terrain and it looks toward the highlands. The site is also close to the Puquio Grande spring, only 1 km north of PVC-42 and its collar tombs, and it overlooks the confluence of the Carabamba River and the Las Salinas River (Figure 5.2).

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[74] See Appendix C for detailed information, photos, and drawings of the geoglyphs at both PVC-44 and PVC-47.

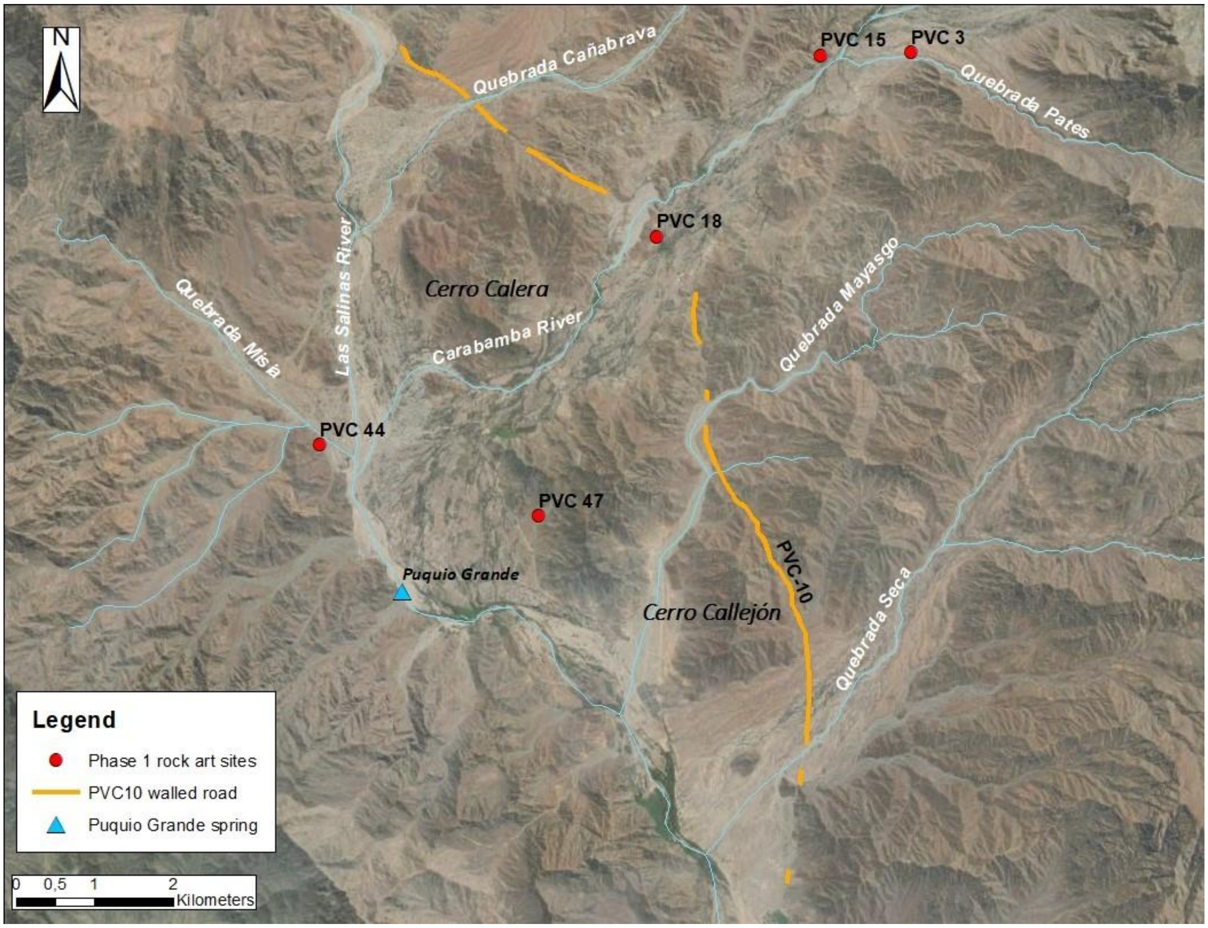


**Figure 5.2: Phase 1 rock art sites.**

Geoglyph 1 (52 × 58 m) features an anthropomorphic figure, likely a warrior, and a spotted animal, perhaps a jaguar (*Panthera onca*). The warrior wears a long braid and holds a sacrificial knife (*tumi*) on the right hand and a war mace (*porra*) or spear on the left hand. Two ornaments hang from a waistband and the one on the right may be a snake (Figure 5.3). The remaining four geoglyphs are in a narrow *quebrada* 560 m south of Geoglyph 1. Geoglyph 2 (8.5 × 1 m) is on a flat area at the bottom of the *quebrada* and features a snake or a tadpole that faces the highlands and the river. Geoglyph 3 (88 × 45 m) is the largest of the group and it is located on a steep slope right below a yellow-colored hill. The geoglyph is heavily eroded and hard to interpret. At the bottom, there is a bird-like figure and above it, there is a head or half-moon motif. The geoglyph also features several horizontal, vertical, and diagonal lines. Like Geoglyph 2, Geoglyph 4 (11.5 × 9.5 m) and 5 (13 × 7.5 m) are located at the bottom of the *quebrada* and show a camelid and a spiral motif, respectively.

The tip of the spiral points towards the yellow-colored hill, while the camelid looks towards the rivers' confluence (Figure 5.4).


**Figure 5.3: Geoglyph 1. On the left (a) the orthomosaic of the geoglyph, on the right (b) a drawing made by Jeisen Navarro.**


**Figure 5.4: Geoglyph 4 (right) and 5 (left). On the left (a) a orthomosaic of the geoglyphs, on the right (b) a drawing made by Jeisen Navarro.**

The location of PVC-44 at the confluence of two rivers recalls the concept of *tinku*. The latter is usually related to ritual combats that took place during Prehispanic times and are still occurring in some areas of Peru and Bolivia among the members of the moieties that compose a community. Despite its violent nature, such encounters are perceived as positive. Blood shed during the battle feeds the *apus* and their spirits, and Pachamama, the earth. High bloodshed is also a good omen and predicts a good harvest (Allen 2002; Platt 1987; Topic and Topic 2009). More broadly, Theresa and John Topic (2009:26) defined *tinku* as "the point where complementary things join to create a larger whole; the term describes things like the center line of a person's face or the junction of two rivers". *Tinkus* are also considered dangerous locales and places where brave individuals may find powerful objects (Allen 2002). Therefore, the geoglyphs may have not been placed in this part of the valley fortuitously, but the confluence of the two rivers may have been chosen because it was deemed as a powerful place.

No ceramic was found on the surface of PVC-44, but the iconography of Geoglyph 1 is clearly associated with the Initial Period and Early Horizon. The warrior shows similarities with the Cerro Sechín stone carvings, in particular the waistband, the feet, and the possible 'Eccentric Eye' (Bischof 1994). Such features and the ankle ornaments also resemble a clay frieze found at Garagay in the Peruvian Central Coast (Burger 1992), and some petroglyphs located at the nearby site of Alto de la Guitarra (Disselhoff 1955) and Palamenco in the Lacramarca Valley (Guffroy 1999). Parallels can also be drawn with the clay friezes discovered at Caballo Muerto in the Moche Valley (Pozorski 1975) and Huaca Partida in the Nepeña Valley (Shibata 2017). The warrior's stance, the hair, and the possible snakes hanging from the waistband recall petroglyphs and wall paintings from Poro Poro, in the Cajamarca region (Del Carpio Perla, Mac Kay Fulle, and Santa Cruz Gamarra 2001) and stone carvings from the Chavín heartland (Burger 1982; Lumbreras 1977). Geoglyph 2 to 5 are harder to date because of the absence of iconographic motifs that can be linked to a specific period.

Despite possible differences in chronology among the geoglyphs, most of them show motifs that are associated with water and fertility. Snakes are depicted in Geoglyph 1 and perhaps in Geoglyph 2, and such reptiles are usually connected to water in Andean cosmology (Guffroy

1999; Venturoli 2005). The Huarochirí Manuscript mentions that snakes helped the local deity Paria Caca to build and clean irrigation canals (Salomon and Urioste 1991). In the eastern slopes of the Andes, a one-headed snake called *yacu mama* is believed to be the tutelary deity of water, while a two-headed snake named *sacha mama* provides fertility (Hocquenghem 1997). A feline-bird-snake triad characterized the Cupisnique and the early Chavín iconography, and such animals may have represented earth, sky, and water, respectively (Burger 1992). The character depicted in Geoglyph 2 may also be a tadpole, which would have eventually become a frog/toad, an amphibious animal that is believed to provide water (Venturoli 2005). In the 20th century, people living in the Southern Peruvian highlands believed that loud croaking in September and October announced abundant rainfalls and rich crops (Urton 1981). Felines represented male fertility (Kaulicke 2005) and modern rainforest groups claim that jaguar roar announces rainfalls (Reichel-Dolmatoff 1972). Birds were considered the gods' messengers or a manifestation of the *apus* (Reinhard 1985), while sea birds symbolized the ocean and provided an important fertilizer like guano (Kaulicke 2005). The spiral depicted in Geoglyph 5 may be related to the *caracoles de tierra* or seashells (Masini, Orefici, and Lancho Rojas 2016). Camelids were said to have originated from lakes and springs (Steele and Allen 2004). Each October the Inka used to starve and tie black llamas to poles in Cuzco's public plaza so the animals would have helped them to implore for rain (Poma de Ayala 1615). The intestines of sacrificed llamas were also interpreted by priests to predict crops (Cieza de León [1553] 2005). Camelid-shaped vessels filled up with camelid blood and fat were also buried in pastures to ensure the fertility of flocks (Benson and Cook 2001).

### 5.2.5 Intervalley Communication Routes in the Lower Carabamba Valley

As highlighted in Chapter 2, llamas were important pack animals during Prehispanic times, and they have played a key role in moving goods between the coast and the highlands since at least the Early Horizon (Miller and Burger 1995). As shown by Izumi Shimada and Melody Shimada (1985), remains of domesticated camelids were found at Initial Period and Early Horizon sites like the Caballo Muerto Complex (Nesbitt 2012; Pozorski and Pozorski 1979), Huaca Negra (Strong and Evans 1952), and Huaca La Gallina (Zoubek 1997) and it is interesting to note that the geoglyphs are located along a possible walled road (PVC-10) connecting the Moche and the Carabamba valleys through the Las Salinas River and the rock art site of Alto de la Guitarra (Castillo Benítez and Barrau 2014, 2018; Disselhoff 1955). Coleen Beck (1979) reported that the Quebrada Alto de la Guitarra features the remnants of several intervalley roads that were built and used since the Initial Period/Early Horizon. These roads and PVC-10, which features a walled road like Cupisnique roads described by Beck (1979), were likely part of a communication system running between the Santa/Chao and Moche valleys that van Hoek (2018) called Coastal Cupisnique Road and that was used over the millennia.[75] Satellite images show that PVC-10 runs parallel to the lower part of the Carabamba River through Quebrada Seca, Cerro Callejón and Quebrada Mayasgo, passes between sites with petroglyphs (PVC-3, PVC-5, PVC-15, PVC 16, and PVC-18), and continues on Cerro Calera before descending to Quebrada Cañabrava and Las Salinas River. van Hoek (2018) suggested that people may have avoided the area where the modern *caserío* of La Huaca is located because of the recurring floods caused by El Niño events. While this is a plausible explanation, it should be noted that such events take place every two and a half to eight years (Rodbell et al. 1999) and the road also runs on large ravines. Moreover, the least cost pathway identified between two major centers like Huaca La Gallina and Caballo Muerto ran on the valley floor (Figure 5.5 and 5.6).[76] The possibility that people could have traveled on the valley floor is also suggested by the presence of the camelid geoglyph at PVC-44.

Peter Bikoulis and colleagues (2018) posited that geoglyphs located in the Sihuas Valley in Southern Peru may have represented shrines along paths, resembling the role played by *apachetas*. The latter are piles of rocks placed along trails[77] representing *huacas* to which people offered (and still offer today) coca leaves, alcohol, clothes, maize, stones, or other

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[75] Cristóbal Campana (2005) reported that traders like the Wong family, which came from China and settled in the middle Moche Valley in 1864, used this north-south corridor to transport their goods from the Virú Valley to the Moche Valley until the 20th century.

[76] See also Appendix D – Chapter 5 – Phase 1.

[77] Carolyn Dean (2006) argued that the piles of stones were offerings, while the actual *apachetas* were particular rocky landscape features like large boulders representing mountains.

objects to reinvigorate and receive protection during the trip (Dean 2006; Jett 1994). The geoglyphs at PVC-44 could have had a similar function: as mentioned above, Geoglyph 2 to 5 are in a secluded *quebrada* that may have been an ideal place for travelers to stop and carry out propitiatory rituals to appease the deities symbolized by the geoglyphs, have some rest, and wish for a safe journey. The focus on animals associated with water and fertility also suggests that the inhabitants of the Carabamba Valley may have conducted rituals aiming to ensure a regular flow of water and good harvests at PVC-44. PVC-47 is located along the left bank of the river and also presents a possible rectangular geoglyph (25 × 2.5 m) with a northeast-southwest orientation. No ceramic was found at the site, but Type I structures were identified east of the geoglyph. Produced with the additive technique, the geoglyph features two piles of rocks at its extremities that are connected by two parallel lines. Due to location and shape, it can be argued that the geoglyph was a stylized representation of a road, perhaps the east-west corridor that connects the highlands to the coast.


**Figure 5.5: Least cost pathway between Huaca La Gallina and Caballo Muerto Complex.**

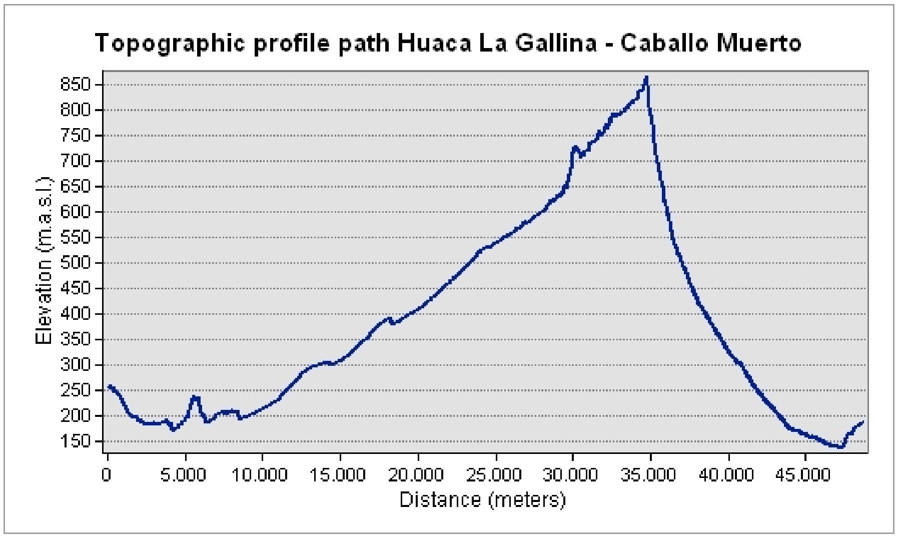


**Figure 5.6: Topographic profile of the least-cost pathway between Huaca La Gallina and Caballo Muerto Complex. The highest point is Alto de la Guitarra.**

### 5.2.6 The Carabamba Valley During Phase 1: A Summary

During Phase 1, the valley was scarcely populated, and it was occupied by small communities that were mostly living in flat areas. As mentioned above, the presence of collar tombs suggests that groups living in the lower valley were likely connected to large temples located in the Huacapongo Valley and at the Virú Valley neck. Moreover, the geoglyphs (in particular Geoglyph 1) suggest that the locals shared the Initial Period and Early Horizon belief system documented elsewhere in the Northern Andes. The circulation of such ideas was facilitated by a road system including PVC-10 that may have connected large ceremonial centers like Caballo Muerto Complex, Alto de la Guitarra, and Huaca El Gallo and La Gallina, and that featured shrines like PVC-44, which were the focus of rituals carried out by both travelers and residents who were wishing for safe journeys and bountiful crops. In addition to this north-south route, the east-west route connecting the coast to the highlands may have become increasingly important and this is witnessed by the presence of Guañape sherds in the middle and upper valleys.[78]

## 5.3 Phase 2 (400 – 1 B.C.)

### 5.3.1 Material Culture, Population, and Subsistence Strategies

The number of ceramic artifacts assigned to this phase is significantly higher than the number of sherds assigned to the Guañape type: 203 Salinar sherds were collected in the lower, middle valleys, while 144 Early Sierra artifacts were found in the research area (Appendix A – Tabs 1, 5 and 7). The increase in clay artifacts is also connected to a sharp increase in the number of archaeological sites (especially sites with a residential function), whose density is particularly high in the lower valley around the Puquio Grande spring (see Table 4.2). The inhabitants of this valley may have started to build residential, civic-ceremonial, and funerary Type II structures during this period.

The increase in the number of settlements was related to a population surge. Table 4.5 suggests that the study area featured a population that likely ranged between 1,140 and 2,160. The lower valley was the most populated zone (44.6%, 642-963 people), with 41.5% (597-896 people) of the population occupying the middle valley and 13.9% (201-301 people) the upper valley (Table 4.5 and Appendix B – Tabs 1 and 4). The creation or the expansion of the irrigation network, like the one that took place in the Salinar phase in the Moche Valley (Billman 2002), may have been one of the factors that led to population growth and some of the canals identified during the survey may have been built during this period.

Assuming that the population density was very low (10 p/ha), the maize-based carrying capacity analysis shows that locals were able to sustain themselves, even cultivating 50% of the land with edible plants. However, with a slightly higher population density (15 p/ha) the situation would have been different, especially if people were conducting single-cropping and farming 50% of the arable land with food plants. In this context, their diet should have

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[78] A possible Guañape sherd was also found in the westernmost part of the Carabamba Plateau at PVC-21 sector 3.

been complemented with meat from wild and domesticated animals and interaction with neighboring communities may have also played an important role in ensuring their sustenance.

Another striking change can be observed in the location of the settlements. The total area occupied in sloped zones (Hillslopes and High Hillslopes) increased to 59.4%, while the residential area located in sloped zones was 62.5%. Sites located in rugged areas are more common in the upper part of the research area, while larger portions of sites in the middle and lower valleys sit on flat areas (see Appendix B – Tabs 11 and 16). The tendency towards the occupation of naturally defensible areas may have resulted from a general feeling of insecurity that affected the Peruvian North Coast and the northern Peruvian *chaupiyungas* at the time (see Chapter 2). Rather than building impressive fortifications like in the Virú (Downey 2015; Willey 1953), Santa (Wilson 1988b), and Nepeña (Proulx 1968, 1973) valleys, people living in the Carabamba Valley likely exploited the topography of this stretch of land, retreating on hills that allowed people to defend themselves from possible threats. Thus, even though some sites were not classified as defensive during the survey, they may have been settled because they were easy to defend. As highlighted in Chapter 2, there is still no consensus around the nature of such conflicts and it is not clear if small communities were fighting with each other (Daggett 1984), with groups settled in neighboring valleys (Wilson 1988b, 1995), with peoples living in the highlands (Chamussy and Goepfert 2019) or if these skirmishes had a ritual meaning (Topic and Topic 1997). In the Carabamba Valley, people may have been concerned with raids coming from highland or coastal groups or other people living in the valley. The existence of conflicts is also suggested by the presence of pebbles that may have been used as slingstones at PVC-35. The pile of rounded stones was found almost at the top of a sloped area. The shape of the pebbles indicates that they were collected from the riverbed, which is located approximately 1.3 km north of the site, and brought to a sloped area from where the inhabitants could have used them to defend themselves against raiders. While analyzing the settlement patterns of the Huacapongo Valley, Downey (2015) argued that these settlements may have been located in sloped areas to free up arable land, which is scarce also in the Carabamba Valley.

### 5.3.2 The Salinar Phenomenon and the Middle and Upper Carabamba Valleys

Due to the proximity to the coast, people occupying the lower and middle valleys may have had close relations with the inhabitants of the Early Virú/Salinar clusters identified by Downey (2015) in the Huacapongo and Virú valleys. The substantial presence of Salinar ceramics suggests that the lower and middle Carabamba areas were home to another Salinar cluster. Like Downey (2015) did with data collected in the Virú Valley, a convex hull (i.e., the smallest convex polygon bounding the input data) was built around 19 sites featuring Salinar pottery using the Minimum Bounding Geometry tool in ArcGIS (Figure 5.7; see also Appendix D – Chapter 5 – Phase 2 sites).[79]

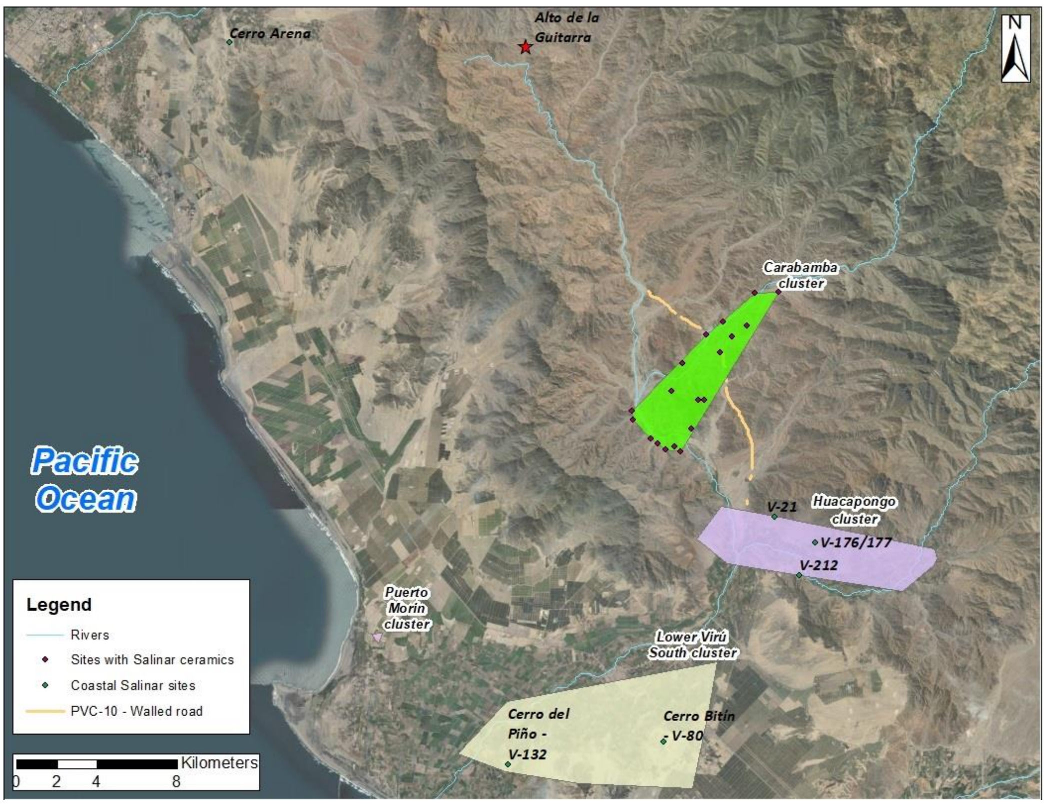


**Figure 5.7: The Carabamba cluster, the three clusters identified by Downey (2015) in the Virú Valley.**

[79] The site PVC-30 was excluded from the cluster since it is only 300 m north of the Huacapongo cluster and it was likely part of it (Downey 2015).

Following the method used by Henry Wright and Gregory Johnson (1975) in their analysis of state emergence during the fourth millennium B.C. in Mesopotamia, where the authors produced histograms of site sizes to study power relations among settlements, Downey (2015) explored the existence of a hierarchy among the sites of the Huacapongo and Lower Virú clusters. The analysis showed that only the Huacapongo cluster likely had a settlement hierarchy, with the three sites highlighted in Figure 5.5 (V-21, V-176-177, and V-212) in the top tier. Carrying out the same analysis on the sites of the Carabamba cluster, we cannot see clear settlement tiers (Figure 5.8).

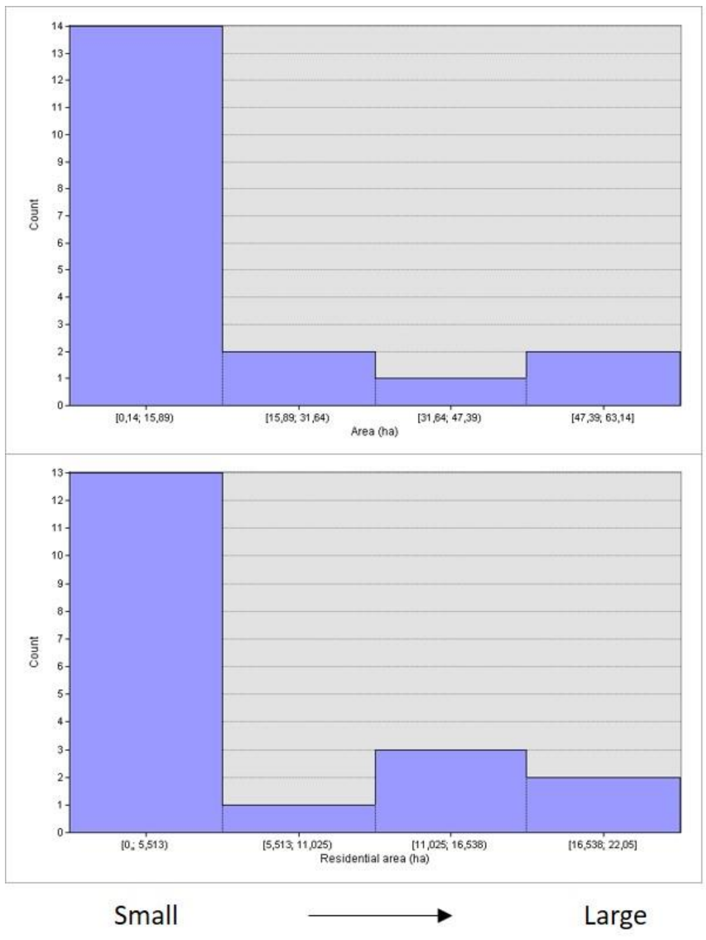


**Figure 5.8: Settlement hierarchy histograms for the Carabamba cluster based on the total (top) and the residential area (bottom) of the sites. Total and residential area are on the X axis, the number of sites of a given size is on the Y axis.**

It can therefore be argued that the Carabamba cluster was composed of communities that were interacting with each other through trade and, perhaps, violent encounters for the control of key resources. Despite the absence of clear tiers, some large sites may have played a significant role in the valley. For example, PVC-35, located in the lower valley and along the right bank of the river, and PVC-34, located in the same zone of the research area but along the left bank of the river, are among the settlements with the largest residential area. Moreover, they both feature what seems to be small ceremonial areas (artificially flattened areas and plazas or courtyards bounded by stone walls), a pattern that resembles what Downey (2015) found in the Huacapongo cluster. Both sites were also located close to the Puquio Grande spring, which would have provided people and fields with a steady flow of water (Figure 5.9).

**Figure 5.9: Puquio Grande spring.**

As we can see in Figure 5.10[80], the sites also visually controlled the paths that connected the Huacapongo and lower Carabamba to the middle Moche Valley through Las Salinas River

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[80] The analysis was conducted using the Viewshed ArcGIS tool. Observer points were collected with a portable GPS at both sites. A correction that accounts for the curvature of the Earth was applied. A 2 m offset was added

and Alto de la Guitarra. Furthermore, the inhabitants, especially those living at PVC-35, could have easily controlled the transit of people between the lower and the middle Carabamba valleys.

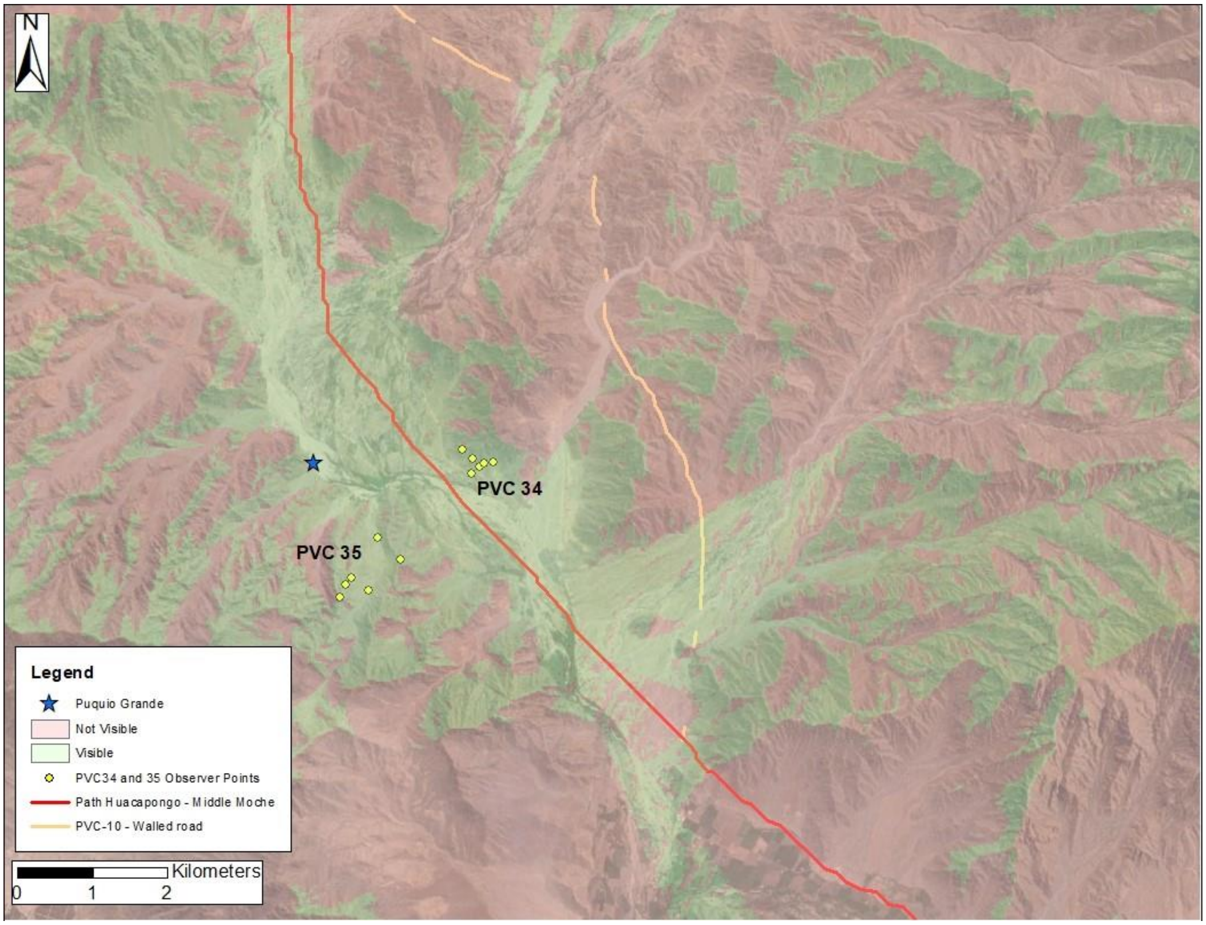


**Figure 5.10: The visual control of PVC-34 and PVC-35 over water resources and routes of the lower Carabamba Valley.**

Other large sites include PVC-3 and PVC-5. The former is located in a flat area south of the possible buffer zone that may have marked the boundary between the middle and upper valleys. In this phase, PVC-3 featured residential structures, small plazas that may have had a civic-ceremonial function, petroglyphs, and funerary cists placed on the hills that surround

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to each observe point to account for human height and any stone or wooden structure used to enhance the view. Since no comprehensive data about Central Andean Prehispanic populations is available, average human height (160.5 cm) was taken from data collected by NCD RisC (2019) on 19 years old Peruvian men and women.

the settlement. PVC-5 is on a steep hill and, like PVC-3, was characterized by rock art, a cemetery, residential structures, and possible ceremonial areas. Figure 5.11 shows that people at PVC-5 were able to see the PVC-3 residential area and to control the transit of people through the middle valley. The proximity between the settlements suggests that PVC-5 could have served as a retreat for people living at PVC-3.

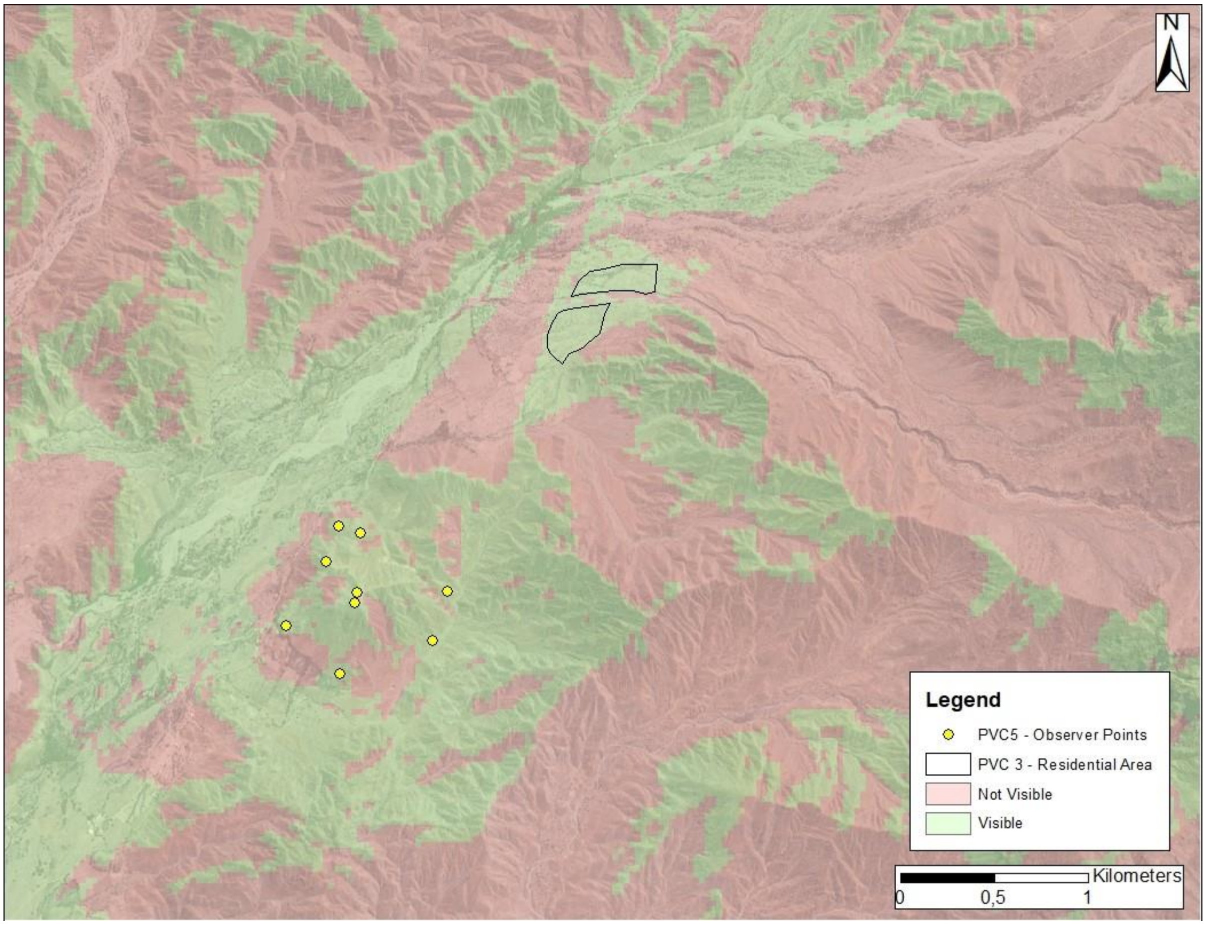


**Figure 5.11: Viewshed from PVC-5 observer points.**

Scant arable land could have been a cause of disagreement and tensions likely existed for the control of agricultural land and water sources like springs. People living in the Carabamba cluster likely controlled the limited amount of water flowing from the Carabamba Plateau and local springs to the Pacific Ocean, and this may have affected the relations with coastal people (see Castañeda Murga and Millaire 2015). Moreover, people living in the Carabamba Valley were able to control coca fields. Interestingly, research conducted on human remains found at Cerro Oreja in the neighboring middle Moche Valley showed that all Salinar individuals had coca fragments in their dental calculus, indicating that at this point in time coca leaves were widely consumed (Gagnon et al. 2013).

People living in the Carabamba cluster may have also controlled the Río Las Salinas area. While not surveyed as part of the present study, the name of the river suggests that it is rich in salt mines, and Campana (2005) reported that salt was extracted in the area surrounding Alto de la Guitarra until the beginning of the 20th century. Salt was used extensively in pre-industrial societies, as a cleaning agent and for food preservation (Multhauf 1978). Salt consumption is also essential to avoid diseases connected to iodine deficiency, which affects human groups living in mountainous regions like the Andes (Aufderheide, Rodríguez-Martín, and Langsjoen 1998), and a higher reliance on agricultural products may have urged people to look for additional sources of sodium (Multhauf 1978).

The presence of coca, salt, and water resources may have caused tensions between the people living at the sites of the cluster, and among clusters located in the Carabamba, Virú, and middle Moche valleys. In addition to the evidence found at PVC-35, sites located at the Virú Valley neck like V-16, V-72, and V-75, in the northwestern end of the Huacapongo cluster, were fortified and this may be additional evidence suggesting tensions. Moreover, as indicated in Chapter 4, a 3-km long stretch of land devoid of settlements separated the southern end of the Carabamba cluster and the northern end of the Huacapongo cluster, suggesting that there was a buffer zone between the coastal and the *chaupiyunga* clusters. Nevertheless, the presence of the previously mentioned goods may have also favored trade among different groups of people. The inhabitants of the Carabamba cluster may have let coastal people use water and exchanged coca for marine resources.

### 5.3.3 The Upper Carabamba Valley and Highland People

The upper valley may have been exploited by people inhabiting the Carabamba Plateau and this could explain both the presence of Early Sierra ceramics and the absence of Salinar pottery. It is interesting to note that sites with Salinar and Early Sierra ceramics seem to be separated by an empty area, which is located at the easternmost edge of the middle valley. As mentioned in Chapter 4, this was likely a buffer zone separating the upper valley influenced by highland people and the lower and middle valleys closer to coastal people. Highland people may have established small settlements in the nearby *chaupiyunga* to farm a different ecological niche and take advantage of grasses and brush-like vegetation to pasture camelids (see Brush 1976; Murra 1975). Assuming that Early Sierra ceramics may have been produced since 200 B.C., such occupation likely occurred towards the end of this phase. Peaceful or violent interactions between the Salinar cluster and highland people may have taken place. The members of the Salinar cluster may have offered coca leaves and salt in exchange for metals, wool, access to water coming from the Carabamba Plateau, and foods like camelid meat, tubers, and quinoa, but the existence of tensions should not be ruled out.

### 5.3.4 The Carabamba Valley During Phase 2: A Summary

Phase 2 was marked by an increase in the number of sites and a population surge. The population may have experienced difficulty sustaining itself only with local agricultural products alone, and the diet may have been supplemented with foods coming from neighboring ecological zones and activities like hunting or land snail collection. This phase was also characterized by a significant shift in settlement location to defensible settings, such as sloped areas. The valley settlement patterns, possible buffer zones, the presence of slingstones, and the wider geopolitical context associated with the Salinar phase in Northern Peru suggest that there may have been tensions among the inhabitants of the Carabamba Valley, highlanders, and coastal people.

As the settlers of the neighboring coastal and upper valleys, people living in the lower and middle Carabamba valleys used Salinar pottery (see Appendix A – Tabs 1, 5, and 7). As argued by Strong and Evans (1952) and confirmed by Downey (2015), Salinar pottery developed out of coastal Guañape wares and this survey showed that no Salinar sherds were found in the upper Carabamba Valley. Continuity in the domestic wares does not support the hypothesis that a highland invasion took place in this part of Northern Peru (cf. Chamussy and Goepfert 2019). The changes described by Chamussy and Goepfert (2019) and the presence of Layzón ceramics at coastal sites may have been the outcome of more intense coast-highland interactions.[81]

Contacts may have taken place in the Carabamba Valley, and goods and people coming from Cajamarca, Huamachuco, and Ancash likely traveled through the area under observation. In the Virú drainage, the high site density of the Huacapongo Valley may have encouraged people living in this area to descend to the coast, which was not yet entirely settled, and offered vast amounts of arable land and marine resources. The border between the Huacapongo and Lower Virú clusters did not feature fortified sites (Downey 2015) and the latter was likely drawing water from a canal whose intake was located in the Huacapongo cluster (Willey 1953). The absence of tensions suggests that the relations between these two groups were peaceful and this may have been due to common ancestry.

Recent research conducted at Cerro Arena (Millaire 2020) suggests that a similar process may also have taken place in the Moche Valley. People controlling the valley neck, near the site of Cerro Oreja, may have planned the construction of the semi-urban settlement of Cerro Arena, rendered possible by a long canal that brought water to the site. Sites located in the lower and middle Carabamba Valley may have constituted a non-centralized cluster of Salinar settlements. These settlements were likely interacting with each other, with other Salinar clusters in the Virú, Huacapongo, and middle Moche valleys, and with people settled in the upper valley and the Carabamba Plateau. Highland people may have also occupied sites located in the upper valley to exploit an ecological niche that was providing them with crops (e.g., coca, fruits, beans, ají peppers) that cannot be grown in the *quechua* region (see Murra 1975). Such interactions may have been peaceful, involving trade or even intermarriages, or violent, as indicated by the abovementioned settlement patterns and findings. Thus, in Phase 2 inhabitants of the Carabamba Valley may have started to act as brokers, facilitating contacts between coastal people and highland groups. Moreover, the

[81] The existence of a wide trade network involving the coast, the highland and the Amazon basin at this time is also suggested by recent research at Pampa La Cruz, Moche Valley. At this coastal site minerals like copper, tungsten and gold were found, and pots showed traces of cocoa (*Theobroma cacao*) likely imported from the Amazon basin (Prieto 2021).

settlers of this intermediate zone may have exerted power over their neighbors through the control of key resources like coca, salt, water, arable land, and communication routes (Castañeda Murga and Millaire 2015; Szremski 2017).

## 5.4 Phase 3a (A.D. 1 - 650)

### 5.4.1 Material Culture, Population, and Subsistence Strategies

The first part of Phase 3 was characterized by a slight increase in the number of sites and the area covered by human settlements, which are particularly dense in the lower and middle valleys (Table 4.2). The increase in the number of sites with a residential function and hectares used for residential purposes corresponds to small population growth (1,617–2,425 people). The lower valley was still the most populous area (44.5% - 720-1,080 people), followed by the middle valley (43% - 696-1,044 people) and upper valleys (12.4% - 201-301 people) (Table 4.5). As noted for Phase 2, if people were farming 50% of the arable land, they may have struggled to sustain themselves, especially hypothesizing a higher (15 p/ha) population density. Hence, hunting and trading between different parts of the valley (e.g., between the upper valley, where crops may have been harvested twice a year, and the lower and middle valleys), and between the valley and the contiguous areas likely kept their role in supplementing people's diet. While the percentage of settlements located in sloped areas (Hillslopes and High Hillslopes) slightly decreased, there still was a tendency towards settling in naturally defensible areas, suggesting that tensions had not entirely disappeared at the time (see Appendix B - Tabs 1, 5, 12, and 17).

Phase 3a saw the appearance of Castillo plainwares, which replaced Salinar ceramics as the main clay artifacts in the lower valley, and the use of Early Sierra ceramics, which may have been used since the second half of the previous chronological phase. The presence of Castillo ceramics (205 sherds in the research area) indicates a marked coastal influence on the Carabamba Valley or at least an increase in contacts between coastal and *chaupiyunga* peoples. Likewise, the Early Sierra potsherds (181 sherds in the research area) suggest that sustained interactions occurred with people from the Carabamba Plateau (see Appendix A – Tabs 1, 5, and 8, and Appendix D – Chapter 5 – Phase 3a sites).

### 5.4.2 The Carabamba Valley and the Coastal Virú State

As posited in Chapter 2, the coastal Virú Valley saw the emergence of the Virú state, which started a northward expansion with the construction of outposts in the Moche and Chicama valleys during the first century A.D. The subsequent development and expansion of the Moche state in the namesake valley likely caused the Virú people to abandon the outposts and focus on developing their homeland (Millaire et al. 2016).

While the Virú and Huacapongo valleys were firmly under the control of the Virú state, the state likely did not expand into the Carabamba Valley. The six *castillos* built at the Virú Valley neck seem to have been designed to protect both the access to the Virú Valley and canal intakes (Downey 2015) and such huge public works suggest that coastal people may have “feared… highlanders who inhabited unknown landscapes, ate strange food, dressed differently, produced commodities and prestige goods that were surely striking, and probably spoke languages that were only partly understood” (Millaire 2008:8).

Likewise, as highlighted above, the inhabitants of the Carabamba kept occupying defendable locations, suggesting that security was also a concern for them. As posited in Chapter 4, PVC-30 is located 2 km north of the Castillo de San Juan (V-16) and it may have been the northernmost stronghold of the Virú state and thus part of the defensive network built by coastal people. The 3-km buffer zone continued to exist, marked on the east by Quebrada Seca and on the west by the steep slopes of Cerro Queneto, separating the Virú Valley neck from the lower Carabamba Valley sites. PVC-41 was first occupied during this phase, a site that features a northeast-southwest wall that restricted access to both the bulk of the Carabamba Valley and the Carabamba Plateau was also likely built during this phase. [82] Travelers or potential invaders may have circumvented PVC-41 using the walled road PVC-10, but this route was likely controlled by PVC-34 and PVC-35, two sites that were also occupied during Phase 3a.

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[82] People may have also reached the Carabamba Plateau through the Huacapongo Valley. Satellite pictures suggest that this area was not densely occupied during Prehispanic times.

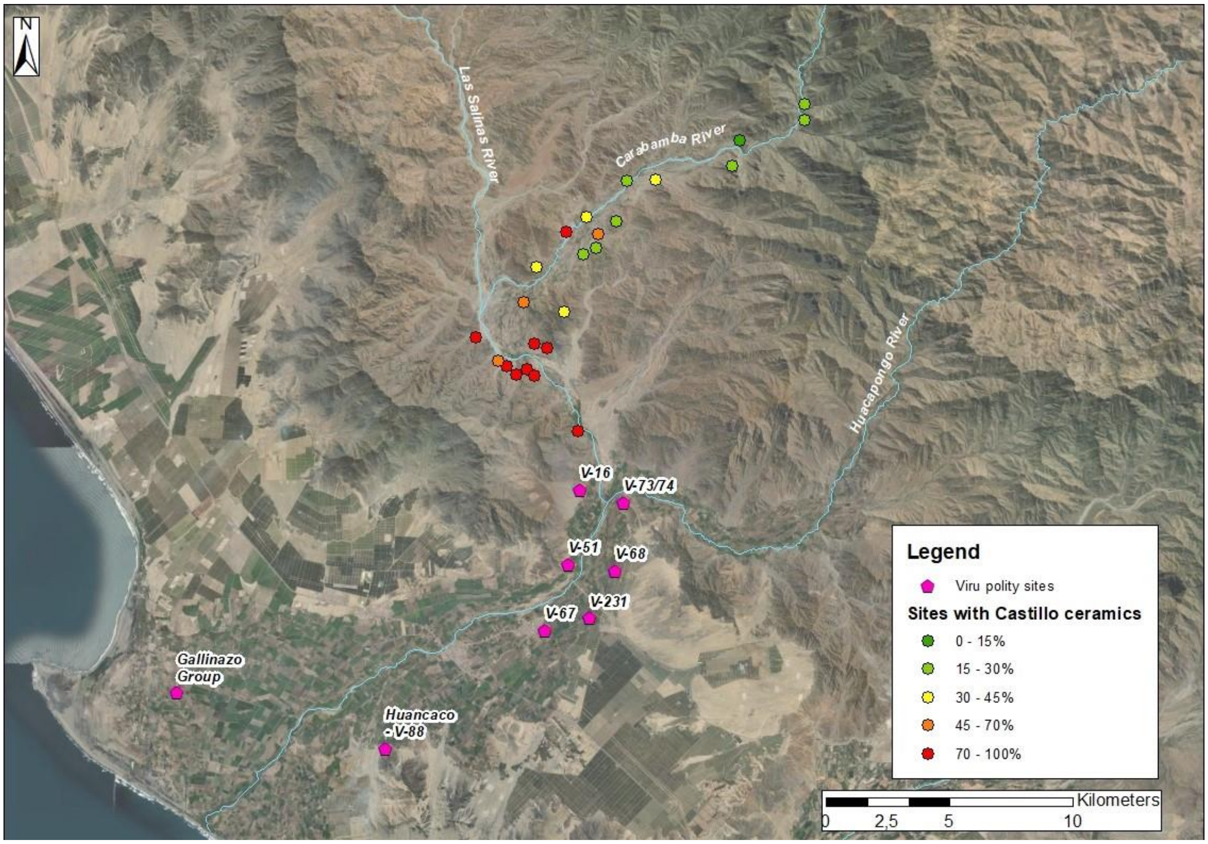


**Figure 5.12: Key Virú state sites and Carabamba Valley sites with Castillo ceramics.**

The lack of direct control over the Carabamba Valley by the Virú state is also suggested by the absence of Virú Negative pottery beyond the Virú Valley neck. As argued by Millaire (2009), Virú Negative was a corporate ware used by Virú elites and the presence of these ceramics marked sites that may have been involved in the state administration or part of the outpost network created by the Virú state in the first century of the Common Era (Millaire et al. 2016).[83] Indeed, during this survey, no Virú Negative potsherd was found, and it can be argued that the abovementioned *castillos* acted as a border. The Virú state seems to have thus focused its efforts on expanding along the Peruvian North Coast rather than on controlling the *chaupiyungas*. Despite the existence of massive defensive systems, borders were not

[83] Only a small percentage of the ceramic assemblages collected at coastal sites was constituted by Virú Negative potsherds. For example, 5.7% of the ceramics collected at the *castillo* and administrative center of Huaca Santa Clara were Virú Negative, while 15.9% of the potsherds found at Huaca Gallinazo were decorated with negative designs (Millaire et al. 2016).

impenetrable and the presence of Castillo plainwares suggests that coastal ceramics and foodways may have percolated beyond defensive systems, becoming part of the local traditions. This is particularly true for the lower Carabamba Valley, where between 41.4% and 100% of the ceramics were Castillo (see Figure 5.12 and Appendix A – Tab 8). In this context, the presence of coastal plainwares can be explained by the nearness between the lower Carabamba and the Virú state heartland, and pots (and their content, such as marine resources) may have been among the products that were bartered for *chaupiyunga* and highland goods. Castillo ceramics may have had different meanings to coastal and *chaupiyunga* peoples, but their easily recognizable structure/form/function allowed to connect rather than separate human groups (Mills 2018).

### 5.4.3 Coast-Highland Interaction in the Early Intermediate Period and the Role of the Carabamba Valley

The presence of highland or highland-influenced artifacts in the coastal Virú Valley suggests interactions between coastal and highland groups may have been facilitated by the people who occupied the Carabamba Valley. Mid-way through the 20th century, Bennett (1939, 1950) collected ceramics and textiles at Huaca Gallinazo (V-59) showing influences from the Recuay area and potsherds that he called Castillo White, Red, and Orange (W/R/O) based on the paint applied to the surface of the sherds. Similar sherds were found at the Castillo de Tomaval (V-51) by Strong and Evans (1952) along with local negative wares. Bennett (1939, 1950) and Strong and Evans (1952) suggested that Castillo W/R/O were non-local and more recently Topic and Topic (1987) argued that the Carabamba Plateau may have been the place of origin of such clay objects. Huaca Santa Clara (V-67) also yielded pots made with local techniques but using kaolin clay, which usually characterized ceramics produced in the Cajamarca and Recuay areas (Czwarno 1983). This could indicate that the raw material was imported from clay mines located in the highlands[84], or that highland itinerant potters may have visited the site.[85]

Several textile bags were uncovered at Huaca Gallinazo and Huaca Santa Clara that were produced with highland or *chaupiyunga* techniques but with wool coming from camelids featuring a diet rich in $C_4$ plants (especially maize) that could have been raised either on the coast or in the *chaupiyunga* (Surette 2015; Szpak et al. 2015). Huaca Santa Clara also yielded the human remains of a young male warrior whose diet suggests that he likely spent his youth in the highlands (Hyland, Millaire, and Szpak 2021). Small quantities of Castillo W/R/O and kaolin clay ceramics (three and two sherds, respectively) were collected at PVC-11, PVC-14, and PVC-36.[86] This and the evidence presented above suggest that coast-sierra interaction likely took place in the Carabamba Valley and local elites may have facilitated interaction between coastal and highland peoples. *Chaupiyunga* elites may have benefited from their role as cultural brokers, perhaps extracting tributes from coastal and highland travelers passing through the Carabamba Valley and obtaining exotic goods to reinforce their prominent role within society. Moreover, the bags found at Huaca Santa Clara tell us that *chaupiyunga* people may have acquired, packed in locally made containers, and resold local and highland goods to coastal people. Intermarriage between coastal people and inhabitants of the lower valley may have also taken place (Mills 2018), and coastal technological knowledge and practices may have been brought to the lower Carabamba Valley (Espinosa et al. in press; Espinosa 2020).

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[84] A kaolin clay deposit was also found in the neighboring Chao Valley *chaupiyunga* near the village of Chorobal (784 m.a.s.l.) and this raw material was used to produce Recuay pottery locally (Shwartz 2010).

[85] Itinerant or 'swallow potters' leave their hometown after the harvest season to produce clay objects for other communities. They usually move temporarily to other towns, where they produce pots using either their own or local raw materials and tools. The potters can create objects on their own or in the local style and exchange ceramics for goods that are not available in their home community. Such practice has been ethnographically documented in modern-day Northern Peru and possibly in the archaeological record (Joffre 2011).

[86] Briceño and Fuchs (2009) also noted Castillo W/R/O and Recuay ceramics on the surface of PVC-13.

### 5.4.4 The Research Area and the Incipient Carabamba Plateau's Polities

In the middle and upper parts of the research area, it is Early Sierra (rather than Castillo) ceramics that were conspicuous. On those sites, Early Sierra potsherds represent between 33.3% and 100% of all clay artifacts (see Appendix A – Tab 8). It can thus be argued that ties with the Carabamba Plateau became stronger in this period. The social, political, and economic organization of the Carabamba Plateau during the Early Intermediate Period is still poorly understood, but research conducted over the last few decades (Leiva González et al. 2019b; Topic and Topic 1987) has shown that this area was more densely populated than previously thought (DeHetre 1979; Haley 1979).

The Carabamba Plateau may have featured a series of site clusters or small polities centered around large settlements like Cerro Quinga, Cerro Mollepuquio, Cerro Sulcha (PVC-27/PVC-28), and Cerro Paredones (Haley 1979; see also Figure 5.13). As reported by Haley (1979) and observed while visiting the Carabamba Plateau, the last two sites have *tambo*-like structures and they may have been connected by pathways to smaller surrounding sites. This area was probably part of a larger interaction network and may have played an important role in moving goods like kaolin clay, ceramics, camelid wool, and mineral ores coming from the easternmost edges of the Recuay area (Lau 2016).

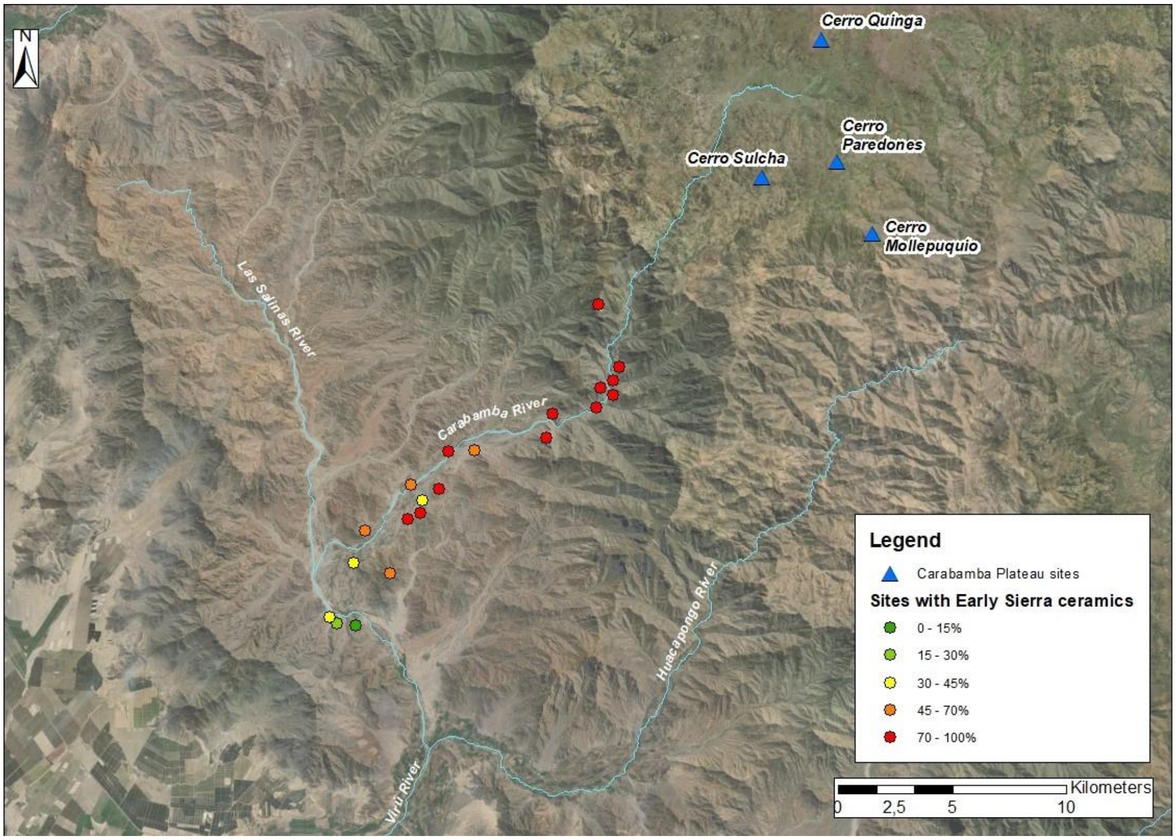


**Figure 5.13: Key sites in the Carabamba Plateau and Carabamba Valley sites with Early Sierra ceramics.**

The differences between *chaupiyunga* and highland architecture suggest that Carabamba polities may not have had the power to conquer the upper and the middle valleys. According to Topic and Topic (1987) architectural features like two-story buildings, windows, or gable roofs and ceramic artifacts reveal a connection between the Carabamba Plateau and the Huamachuco area, and Cerro Quinga may have represented *quimgachugo*, one of the *huacas* revered by the Huamachuco people (Topic 1992). While highland ceramics are common in the upper and middle valleys, these architectural features were not identified in the research area. However, PVC-20, located between the middle and the upper valleys, showed structures with niches and *chullpa*-like rounded structures. *Chullpa* is a term that spread during the 19th century and indicates above-ground structures that served funerary purposes. *Chullpas* or open sepulchers featured a high formal variability, and they were built to preserve the remains of ancestors. Such remains were periodically accessed to revere the ancestors and reinforce ties between kin group members and between the *ayllu* and the land

(Isbell 1997; Zoubek 1998b). William H. Isbell (1997) argued that *ayllus*, *chullpa* mortuary structures, and ritual practices related to them first emerged in the Peruvian Northern Highlands during the Early Intermediate Period and such ideology may have taken root also in areas of *chaupiyungas* that were in close contact with highland people.

Towards the end of this period, the Huamachuquinos began worshipping the mythical founder, rain deity, and oracular *huaca* called Catequil at Cerro Icchal, and at the sites that surrounded this mountain, such as Namanchugo and Chuquicanra (Topic 2015; Topic, Topic, and Melly Cava 2002). According to the myth recounted by Fray Juan San Pedro (Castro de Trelles 1992), Catequil drove out the people that already occupied Huamachuco, the *guachemines*. While Torero (1989) hypothesized that these people may have represented coastal fishermen[87], Topic (1998) pointed out that mountains and ravines with the toponym *guachemin* descend to the *chaupiyungas*. Thus, the inhabitants of the research area may have been considered *guachemines* by the Huamachuquinos. Though the *guachemines* are depicted as enemies in the founding myth of Huamachuco, Catequil's mother was a *guachemin* and a river (Cautaguan River) located northeast of the Huacapongo Valley still bears her name. In addition, according to Catequil's myth, the *paqarina* (place of origin) of the Huamachuco people is Cerro de Huacate, which overlooks the Santa Valley *chaupiyunga*, and one of the *huacas* worshipped by the Huamachuquinos (*pomacama*) may have been located in the Huacapongo Valley (Topic 1992, 1998).

These ancestral connections may have facilitated the relations between the inhabitants of the upper and middle Carabamba valleys and the highlanders (Mullins 2021). As was the case at the site of Cerro León in the Moche Valley (Billman et al. 2019; Ringberg 2012), *chaupiyunga* and highland people may have intermarried, and locals may have lived alongside highland people trying to exploit a different ecological niche and its resources (Brush 1976; Dillehay 1979; Murra 1975), such as coca leaves (Julien 1998). Interestingly, coca leaves were used by the Huamachuquinos as offerings for the creator deity Ataguju

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[87] Alfredo Torero (1989) linked the term *guachemin* with the Quechua words for fishermen *guaxme, uachiminis,* and *uachime yunga*.

(Castro de Trelles 1992). This suggests that the acquisition of this *chaupiyunga* good was likely one of the main motives for interaction between highland and *chaupiyunga* peoples.

Even though the edge of the Carabamba Plateau featured hilltop settlements that may have served to control movements from and to this area, there was a constant flow of goods and people (perhaps including itinerant potters) between the area under investigation and the plateau. Highland people influenced ritual life and material culture of the upper and middle parts of the research area. As argued in Chapter 2, the highland Culle language may have been spoken since the Early Intermediate Period (Lau 2010), and close relation between highland and *chaupiyunga* people could have favored its spread, and this would explain the persistence of some Culle toponyms in the Carabamba and the neighboring valleys' *chaupiyungas*.

### 5.4.5 Early Intermediate Period Petroglyphs

Something else that characterized several sites in the middle valley from this phase is the presence of petroglyphs (Figure 5.14).[88] These rock art expressions have been noted at five sites (PVC-3, PVC-5, PVC-15, PVC-16, and PVC-18) and some petroglyphs may have been produced during the Initial Period and the Early Horizon. However, after analyzing petroglyphs at PVC-18 and PVC-3, Castillo Benítez and Barrau (2016) and van Hoek (2017) posited that the bulk of these drawings were likely made during the Early Intermediate Period. It is interesting to note that the sites with petroglyphs are concentrated in the middle valley and that they are located near the remnants of the walled road leading to the middle Moche Valley (PVC-10). Moreover, the location of the drawings reflects a pattern observed by Guffroy (1999), namely the association between coca-growing areas and petroglyphs.

PVC-3 was likely associated with the route connecting the coast to the highlands. At this site, I observed five petroglyphs that may feature zoomorphic and geometric motifs. Castillo Benítez and Barrau (2016) recorded 19 petroglyphs at this site, called Mayasgo-2 in their publication. The scholars identified geometric motifs, anthropomorphic and zoomorphic (a

[88] Photos of the petroglyphs can be consulted in Appendix C.

rodent, a bird, snakes, an octopus, a camelid) figures, and six feet-like motifs. Like birds and snakes, the octopus depicted at PVC-3 may represent a connection with water rituals. For example, Moche people depicted octopus-shaped headdresses on water deities participating in the Sacrifice Ceremony (Bourget 2008), Along with camelid motifs, feet-like drawings, which were also recorded at PVC-16, PVC-18, Alto de la Guitarra, Pampa Calata, and Santa Rita (van Hoek 2013a, 2017), may be related to communication routes. Motifs connected to journeys account for the importance of trade for people living in the *chaupiyunga*.

Seven petroglyphs were identified at PVC-5, close to a possible Prehispanic canal. Here people depicted geometric motifs, birds, and an anthropomorphic figure surrounded by dots, perhaps an anthropomorphic version of the sun (see Guffroy 1999:121). The dots surrounding the possible sun may represent stars. The group of dots on the right could be a stylized representation of the Pleiades (*Fur* in Quingnam language). The heliacal rising of these stars takes place in early June and it marked the beginning of the Chimú calendar. These stars were also considered patrons of crops and their periodicities defined the fishing seasons of people living on the Peruvian North Coast (Calancha 1638; Rowe 1948; Urton 1982; Zuidema 1982).

Sixty-one petroglyphs were recorded at PVC-15. The site is in a small northeast-southwest *quebrada* near a green patch suggesting the presence of a spring. Other than geometric designs and motifs, anthropomorphic figures, possible celestial bodies, crosses, designs that may represent snakes, birds, frogs, spiders, lizards, deer, a monkey, and a possible *tumi* knife were recorded. Lizards were likely an important food source and they were depicted on Moche ceramics (Holmberg 1957).[89] Deer, another animal depicted by Moche people during ritual hunting (Donnan 1997b), was likely a food source too. Deer were depicted in a stance suggesting that they were performing a mating call, yet another reference to fertility. Monkeys may have also been linked to fertility and water, and show contacts between the Amazon basin and the Pacific shoreline using routes that went through the *chaupiyungas*

[89] Lizards depicted at PVC-15 strongly resemble reptiles identified by van Hoek (2007) at Tomaval in the Virú Valley and at El Vagón, western end of the Quebrada la Guitarra in the middle Moche Valley (van Hoek 2019).

(Carrión Cachot [1955] 2005; Gamboa 2020).[90] *Tumi* knives were depicted in representations of Moche sacrificial ceremonies (Cordy-Collins 2001) and they also appear in the iconography of groups that developed during later periods (Kauffmann Doig 2016; Klaus, Centurión, and Curo 2010; van Hoek 2013b). These crescent-shaped knives were likely used during rituals that reinforced the role of elites and their connection with deities that provided essential resources like water. The depiction of animals and tools related to water and fertility in this point of the valley that features a spring suggests that animals may have gathered here during the wet summer. Rounded structures defined by one course of boulders have been identified and, along with petroglyphs, they may have been the stage of propitiatory rituals. Nine petroglyphs were recorded at the nearby PVC-16 and the motifs (anthropomorphic figures, lizards, geometric designs, feet) do not differ from the ones described above.

Fifty petroglyphs were found at PVC-18[91], spread throughout the east-west outcrop that characterizes the site. Here people depicted anthropomorphic, zoomorphic (lizards, snakes, birds, spiders/octopuses, quadrupeds), geometric designs, celestial bodies, a *tumi* knife, and possible human feet. The peculiarity of this site was that PVC-10 likely passed right east of it and remnants of this route have been identified on the branch of the Carabamba River that runs northeast of the site. Ceramic and architectural evidence suggests that most of the structures of PVC-18 were built during the Late Intermediate Period. The reoccupation of areas that may have been perceived as imbued with ancestral spirits was a common theme during Chimú times, and it has been reported in the Virú Valley (Millaire 2015) and at Huacas de Moche (Castillo Luján 2013). The strong Chimú influence on the Carabamba Valley, which will be presented later, suggests that such practice could have been carried out at a smaller scale also in the *chaupiyunga*.

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[90] Julio César Alvarado (2014) argued that the substantial presence of monkeys in the Peruvian North Coast iconography suggest that during Prehispanic times the environment may have been characterized by wooded areas (*bosques secos*) populated by monkeys.

[91] The number of boulders with drawings is definitely higher than 50, since Benítez and Barrau (2016) and van Hoek (2017) reported petroglyphs that were not noted during this survey. In their publications the site is called Mayasgo-1.

**Figure 5.14: Top: petroglyphs identified at PVC-5 (left) and PVC-15 (right). Bottom: petroglyphs identified at PVC-16 (left) and PVC-18 (right).**

### 5.4.6 The Carabamba Valley During Phase 3a: A Summary

During Phase 3a, the number of people living in the Carabamba Valley slightly increased, and, as was the case during the previous period, the inhabitants of this stretch of land privileged naturally defensible areas. Paired with the six *castillos* located at the valley neck and the wall identified at PVC-41, it can be hypothesized that there were tensions at the southern end of the valley. In this period, the *chaupiyunga* found itself caught between the coastal Virú state and highland polities located on the Carabamba Plateau. That being said, the present evidence suggests that the research area was not conquered by either of the groups that surrounded it. While there may have been tensions, the presence of Castillo and Early Sierra ceramics suggests that both neighboring groups influenced the *chaupiyunga*. As expected, Castillo ceramics were conspicuous in the lower valley, while Early Sierra sherds were more common in the middle and upper valleys. In the middle and upper valleys, the relations with the Carabamba Plateau and Huamachuco may have been particularly strong. This is suggested by some architectural features and ceramic artifacts, and such a relation could have been reinforced by common ancestral origins.

The highland influence on the Carabamba Valley may have lasted longer than in the neighboring Moche Valley, where people living at Cerro León ceased to use highland pottery around A.D. 250. While in the Moche Valley the Moche state expanded eastwards, perhaps to gain direct control of coca-growing land and canal intakes (Billman 2002; Billman et al. 2019), the Virú state may have not had the strength to take over the *chaupiyunga*. This likely allowed *chaupiyunga* people to maintain a high degree of autonomy and keep long-lasting relations with highlanders. It can be argued that during the Early Intermediate Period people living in the Carabamba Valley reinforced their role as brokers, controlling this natural corridor and putting into contact the elites of complex societies that lived along the coast and on the Carabamba Plateau (Obstfeld, Borgatti, and Davis 2014). These dominant groups aimed to strengthen their role within their society both obtaining exotic goods and ensuring the flow of resources coming from different ecological niches. Despite the absence of a state-like organization, the inhabitants of the Carabamba Valley may have had the power to control the movement of such goods, for example imposing tolls on coastal and highland traders (see Flynn 1997) that traveled on routes passing through the valley (Figures 5.15 and 5.16; see also Appendix D – Chapter 5 – Phase 3a), and the control of key resources (e.g., coca, water, and salt) may have allowed them to resist subjugation (Szremski 2017; Wolf 1999). *Chaupiyunga* elites or would-be elites may have controlled trade with coastal and highland people, speaking foreign languages, keeping some prestige goods (e.g., painted pottery, textiles, metalworks, etc…) for themselves, and emerging as key figures within the valley.


**Figure 5.15: Least cost pathway between the Gallinazo Group and Cerro Sulcha (PVC-27).**

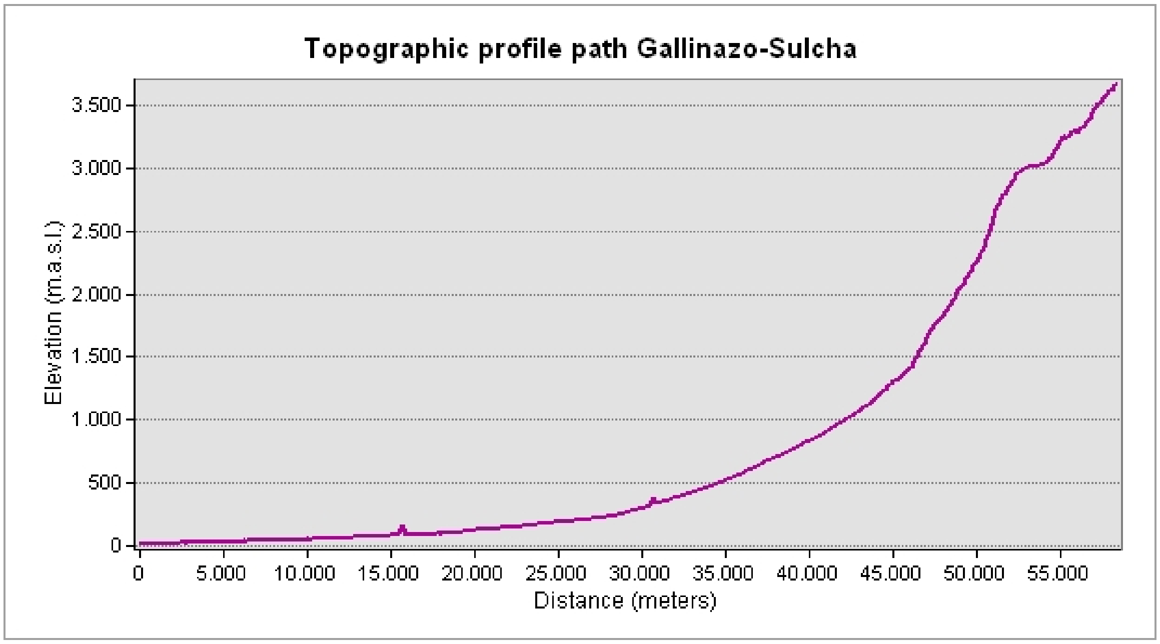


**Figure 5.16: Topographic profile of the path between the Gallinazo Group and Cerro Sulcha (PVC-27).**

It is also likely that, from this phase on, the number of petroglyphs produced in the middle valley increased substantially. Like the geoglyphs described for Phase 1, the petroglyphs may have been related to propitiatory rituals that aimed to ensure good harvests to people living in such a dry environment. Therefore, these groups of petroglyphs may have been sanctuaries where people venerated and made offerings to their ancestors, *apus*, and other deities (Castillo Benítez and Barrau 2018).

## 5.5 Phase 3b (A.D. 650 - 900)

### 5.5.1 Material Culture, Population, and Subsistence Strategies

Phase 3b is marked by a slight increase in the number of sites, most of which were located in the middle valley (see Table 4.2). Large sites like PVC-4 started to be occupied and a residential component was added to PVC-18. The increase in areas occupied for residential purposes led to a small population increase (1,855-2,783 people). During Phase 3b, most people were concentrated in the middle valley (50.2% - 932-1,392 people), while the rest of the settlers occupied the lower (38.9% - 722-1,084 people) and the upper (10.8% - 201-301 people) valley. As was the case in Phase 2 and Phase 3a, the maize-based carrying capacity analysis suggests that foods might have been exchanged within the valley or imported from neighboring areas, such as the Virú Valley and the Carabamba Plateau (Table 4.5 and Appendix B – Tabs 1 and 6). The location of human settlements was almost identical to Phase 3a. People kept occupying sloped areas and the lower and middle valleys show the highest site density (see Figure 4.10 and Appendix B – Tabs 13 and 18).

While there was a strong continuity in the settlement patterns between Phase 3a and Phase 3b, there was also a significant change in the material culture used by the inhabitants of the lower and middle valleys, namely the appearance of Moche pottery, which was used along with Castillo and Early Sierra ceramics (see Appendix A – Tabs 1, 5, and 9, and Appendix D – Chapter 5 – Phase 3b sites).

### 5.5.2 The Carabamba Valley and the Moche Phenomenon

The spread of Moche material culture in the Virú drainage was likely favored by the collapse of the Virú state and by natural phenomena. The main civic building of the Virú capital, Huaca Gallinazo, was occupied until the fifth century A.D. (Millaire 2010b) when the center of power was transferred to the site of Huancaco (A.D. 550 - 680) in the southern edge of the valley. Despite showing similarities in the architecture and material culture with the neighboring Moche state, no pure Moche artifacts were recovered at the site. Huancaco has thus been interpreted as a local cultural phenomenon and an affirmation of autonomy by the Virú Valley's elites (Bourget 2003, 2010; Chapdelaine 2011). The site may have been abandoned after a great El Niño event, which may have further favored the southward spread of Moche people (Bourget 2010). This aligns well with the radiocarbon dates obtained from pure Moche burials at Huaca de la Cruz (Broecker and Kulp 1957; Strong and Evans 1952).[92]

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[92] The radiocarbon dates (1,300 ±80) obtained by Strong and Evans (1952) have been re-calibrated with OxCal 4.4 software (Bronk Ramsey 1995, 2009) using the SHCal20 (Hogg et al. 2020) calibration curve. The range (A.D. 680 - 877) indicates the earliest and the latest dates obtained with the 68.3% of the probability in the probability density function.

While the southward spread of Moche material culture may have taken place through a coastal route linking the Moche, Virú, Santa, and Nepeña valleys (see, for example, the road identified by Willey [1953] at V-282 - La Centinela), the well-established inland route connecting the middle Moche and the lower Carabamba valleys likely played a fundamental role in the radiation of this coastal phenomenon. Billman (1996, 2002) argued that Moche people occupied the middle Moche Valley from about A.D. 400, and this allowed them to control the Quebrada de la Guitarra and the flow of people and goods coming from the Virú and the Carabamba valleys. Interestingly, excavations conducted by Strong and Evans (1952) at the Castillo de Tomaval, located at the southeastern end of the La Guitarra-Lower Carabamba corridor, yielded Moche burials with Huancaco Decorated ceramics.[93] Moreover, Bourget (2010) argued that Moche people may have initially settled the upper Virú Valley since several Moche cemeteries are clustered in that part of the coastal valley.

Evidence collected during this survey confirms the importance of the route running through Alto de la Guitarra and the lower Carabamba Valley. A few Moche sherds have been recorded at PVC-30 (V-192/194), and at the northeast-southwest wall that characterizes PVC-41. About 500 m northeast of PVC-41 is PVC-40. The latter is a small site (0.2 ha) lying close to the riverbed and to the possible least-cost pathway running along the lower Carabamba River (see Chapter 4.1). The settlement features residential structures that have been disturbed by modern agriculture and a knoll (800 $m^2$ – 0.08 ha) with stone structures and looted burials. The surface of the knoll yielded painted Moche pottery and possible fragments of Moche clay figurines, revealing that Moche artifacts were not unusual in this corridor.

However, the strongest evidence of Moche influence comes from PVC-13/La Huaca, a site located southeast of the namesake *caserío*, on a series of hilltops and associated hillslopes, where 61.7% of the ceramics attributed to this phase were Moche. During this phase, people likely occupied the two lower hilltops, and the site covered an area of 9 ha. As already noted

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[93] Members of the Virú Valley Project (Collier 1955; Ford 1949; Strong and Evans 1952; Willey 1953) considered Huancaco a Moche regional administrative center (Bourget 2010) and they lumped together pottery produced by the local Huancaco culture and pure Moche ceramics in the Huancaco Decorated type.

by Briceño and Fuchs (2009), the surface of the lowest peaks and slopes shows a high percentage of Castillo plainwares and Moche decorated pottery. The southern slopes feature human remains coming from looted tombs and the southwestern part of the site is delimited by a massive 120 m long double-faced wall, which is located next to today's Tomaval-Carabamba road. The lowest peak was likely artificially flattened, and it is characterized by a platform (20×20 m) built with rounded boulders coming from the nearby riverbed. The platform may have had a ceremonial function and it overlooks both the lower and the middle valleys. While only detailed excavations and bioarchaeological analyses could help elucidate who those people were, two hypotheses can be formulated.

1) The site may have been inhabited by local people. Moche and Early Sierra[94] ceramics may have been acquired, used, and buried with *chaupiyunga* elites that facilitated contacts between the polities located in the Carabamba Plateau, Recuay and Cajamarca peoples, and the Moche world;

2) As argued by Briceño and Fuchs (2009), PVC-13 may have also been home to people that fully embraced Moche ideology and were part of the Moche world. The site could therefore have been an outpost (*sensu* Algaze 1993; Millaire et al. 2016) that allowed Moche people to gain direct access to both local (e.g., coca leaves, salt, and water flowing from the highlands) and highland products (e.g., camelid wool, metals, and decorated ceramics), and to control key trading routes. At this outpost, Moche emissaries may have also lived alongside *chaupiyunga* people (Dillehay 1979).

Burials with a conspicuous number of Moche ceramics, spindle whorls, clay figurines, and the possible use of adobe bricks[95], point towards the presence of a Moche outpost. An outpost at PVC-13 likely allowed Moche people to control trading routes and the goods that were traveling between the Moche and the Virú valleys, and between the coast and the highlands. The site may have been founded during an expansion wave that aimed to extend

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[94] Briceño and Fuchs (2009) noted Castillo W/R/O and Recuay ceramics on the surface of the site.

[95] Adobe bricks and spindle whorls were noted by Briceño and Fuchs (2009) but not during this survey.

Moche control of the river valleys located south of Moche homeland, eventually reaching Tomaval and Huaca de la Cruz.

Notwithstanding the nature of the occupation of PVC-13 (local occupation or Moche outpost), this settlement may have been a small gateway community during this phase. A. F. Burghardt (1971) and Kenneth Hirth (1978) defined gateway communities as settlements marked by long-distance trade links and located at the entrance into an area, between different ecological zones, at the edge of a central place hinterland, or at key points along communication corridors. Being located between the lower and middle valleys, at a point where the valley is particularly narrow, at the easternmost edge of the Moche territory, along key communication routes (Figure 5.17 and Appendix D – Chapter 5 – Phase 3b), next to two springs, featuring Castillo W/R/O and Recuay ceramics (Briceño Rosario and Fuchs 2009) and fragments of raw metals and bones of pack animals, this site shows most of the characteristics listed by Burghardt (1971) and Hirth (1978). During this phase, PVC-13 therefore likely played a pivotal role in the valley, perhaps exerting influence on small sites scattered around it, and in connecting the coast with the highlands. Raw materials and finished products were flowing into the site and likely redistributed throughout Northern Peru. It is interesting to note that, despite the strong presence of coastal artifacts, the access to the site was probably located in the gentler northern slopes, which were facing the highlands, revealing a connection with both main ecological zones.

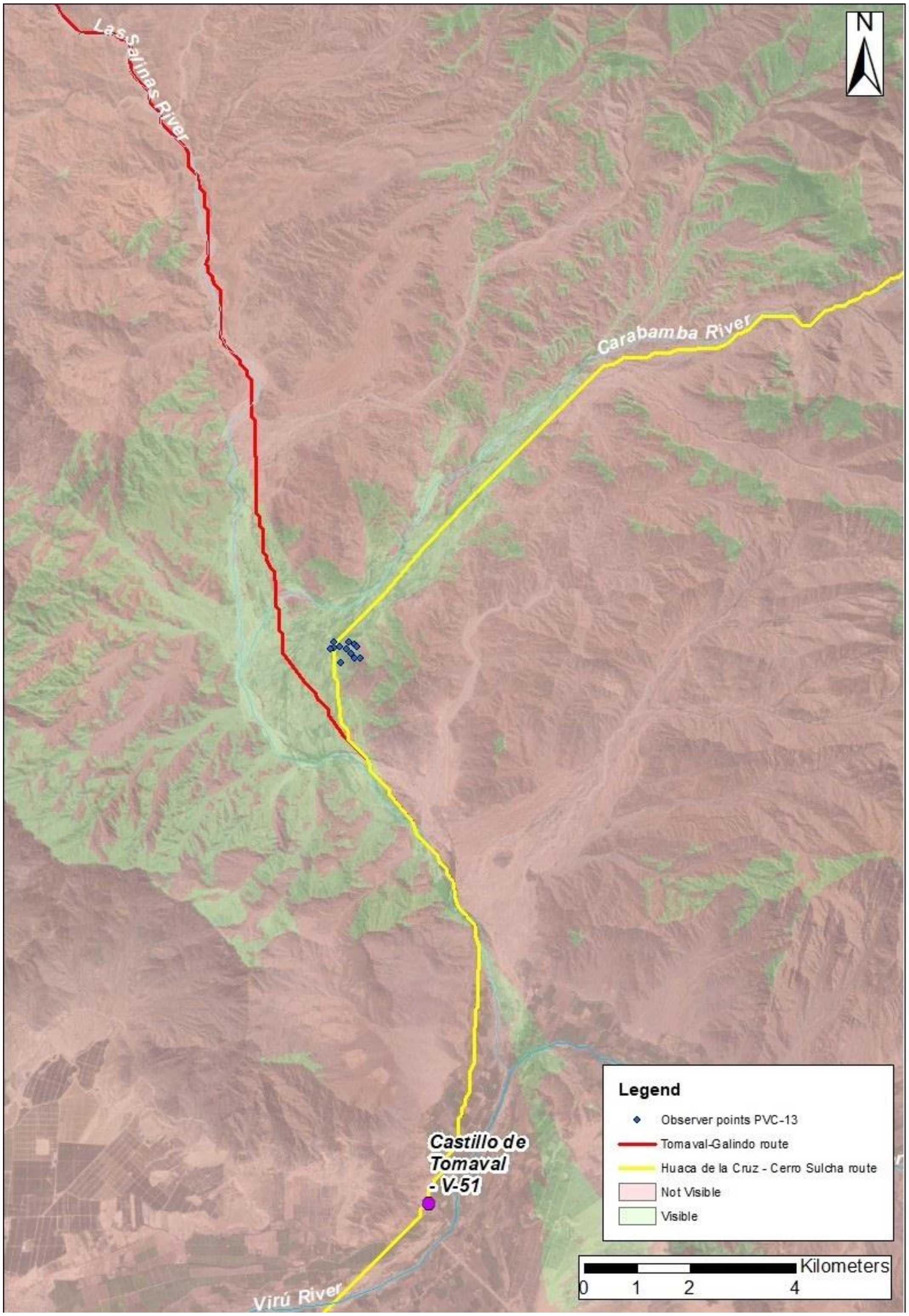


**Figure 5.17: The strategic location of PVC-13.**

Nine out of 16 sites located in the middle valley yielded at least one Moche sherd, showing that the influence of this coastal group may have reached this area (Figure 5.18). At these sites, small quantities of Moche potsherds were recovered from burial contexts. This suggests that Moche ceramics were used as burial goods by local elites, who may have received Moche pottery from the inhabitants of PVC-13 and integrated these artifacts in their mortuary rituals. Most of the ceramics used in this share of the valley were Early Sierra, which suggests that the influence of Carabamba polities was still strong. The sierra influence was even stronger in the upper valley, as was the case in the previous phases. Here, only one site (PVC-23) yielded a Moche sherd and most of the remaining ceramics (between 70 and 100%) were Early Sierra (see Appendix A – Tab 9).

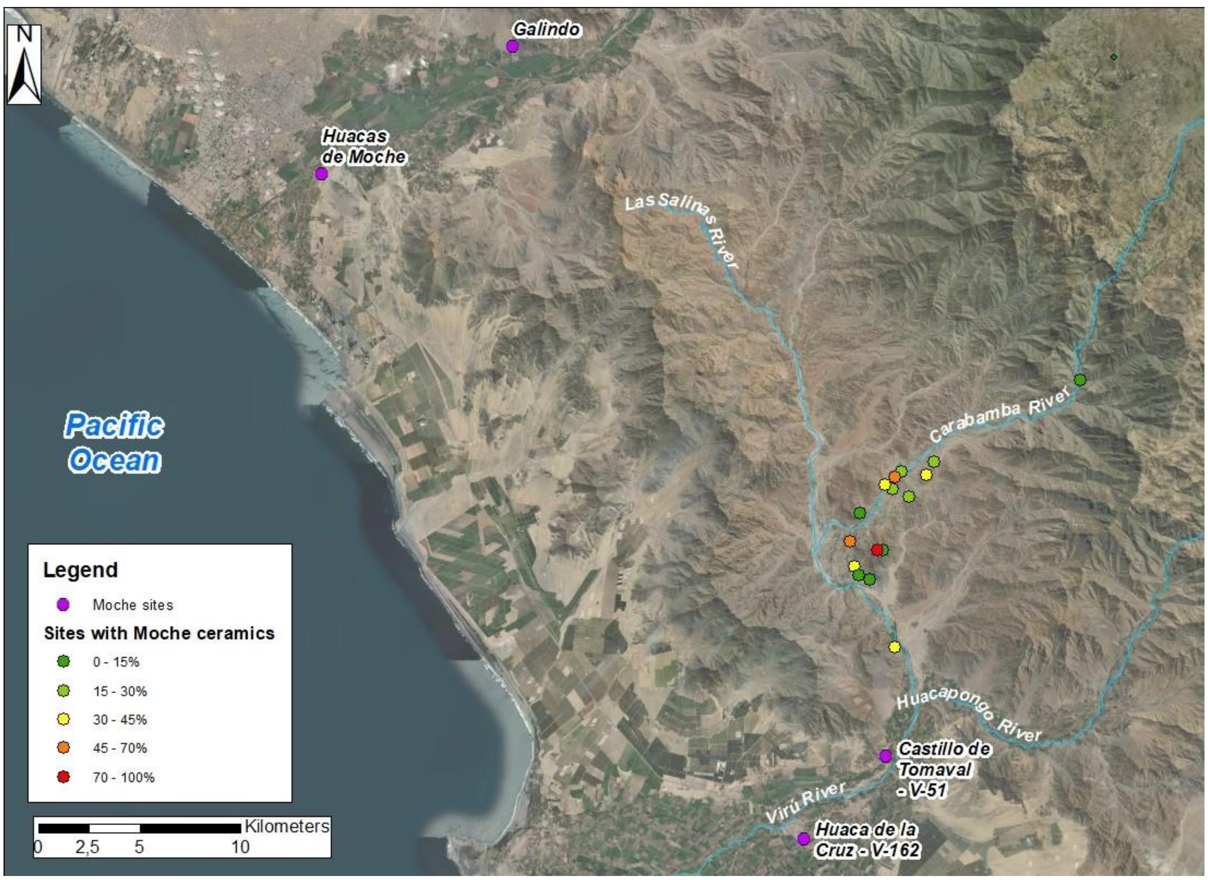


**Figure 5.18: Key Moche sites and sites with Moche ceramics in the Carabamba Valley.**

### 5.5.3 The Carabamba Valley During Phase 3b: A Summary

Phase 3b was characterized by few changes in the demography or site location throughout this stretch of land. However, the lower and (to a lesser extent) middle valleys were clearly the theater of important developments related to the introduction of a new form of material culture (likely accompanied by a new ideology) associated with the rise of Moche society. The presence of Moche pottery was likely connected to a southward expansion of the Moche during the seventh century A.D., which may have used the well-established communication corridor that connected the middle Moche Valley with the lower Carabamba Valley. This coastal group may have also founded an outpost in this area (PVC-13) to control the flow of people and goods and exploit *chaupiyunga* resources. Moche material culture has also been identified in the middle valley, while only one Moche sherd reached the upper valley. As was the case during Phase 3a, the easternmost part of the research area featured strong connections with the neighboring Carabamba Plateau polities. The influence of the Wari state on the Carabamba Valley was very weak, and the whole research area yielded only two sherds showing affinities with clay objects influenced by the Wari state. These clay objects may have been used between Phase 3b and Phase 4.

## 5.6 Phase 4 (A.D. 900 - 1532)

### 5.6.1 Material Culture, Population, and Subsistence Strategies

Phase 4 covers a long period of time encompassing the end of the Middle Horizon, the Late Intermediate Period, and the Late Horizon. During this phase, the Carabamba Valley saw a population increase (2,364-3,546 people). Despite a slight decrease in the number of sites, there was an expansion of residential areas at settlements that were already occupied during previous phases. The middle valley remained the most populous area (1,366-2,049 people), followed by the lower (797-1,195 people), and the upper (201-301 people) valleys (Tables 4.2 and 4.5, and Appendix B – Tabs 1 and 7). As argued for the previous phase, people living in the middle valley may not have had enough resources to feed themselves, and interaction with the other parts of the valley and with neighboring ecological zones likely kept playing an important role. As was the case in the previous periods, the lower and middle valleys show a high site density, and the inhabitants of the Carabamba Valley tended to occupy sloped areas (Figure 4.10 and Appendix B – Tabs 14 and 19). It should also be noted that the number of defensive sites increased from 8 to 12, which could indicate that there were growing tensions. This phase marked important shifts in terms of material culture, with the introduction of both Chimú and Late Sierra ceramics (Figures 5.19 and 5.20; Appendix A – Tabs 1, 5, and 10).

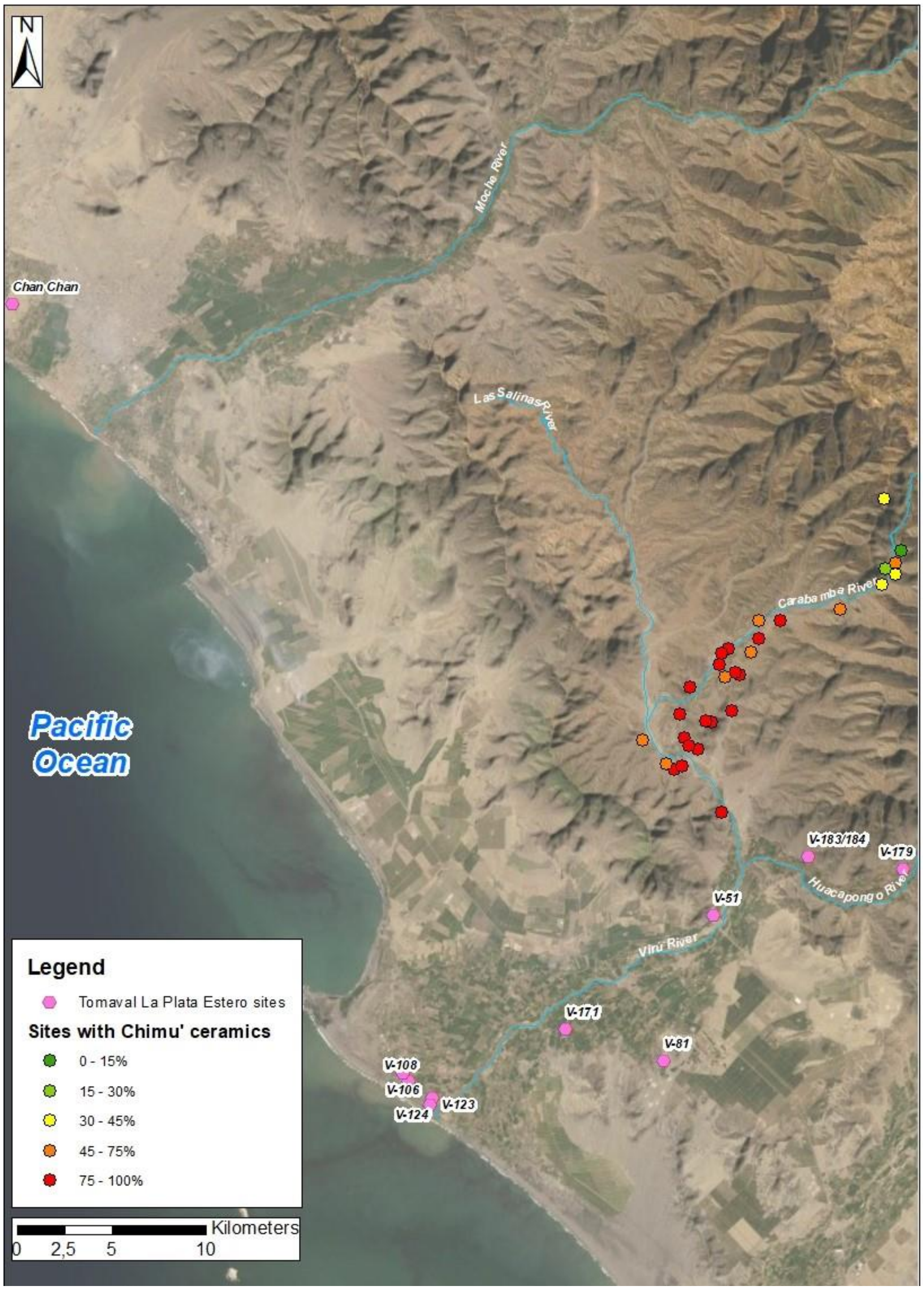


**Figure 5.19: Key sites in the Virú and Moche valleys and sites with Chimú ceramics in the Carabamba Valley.**

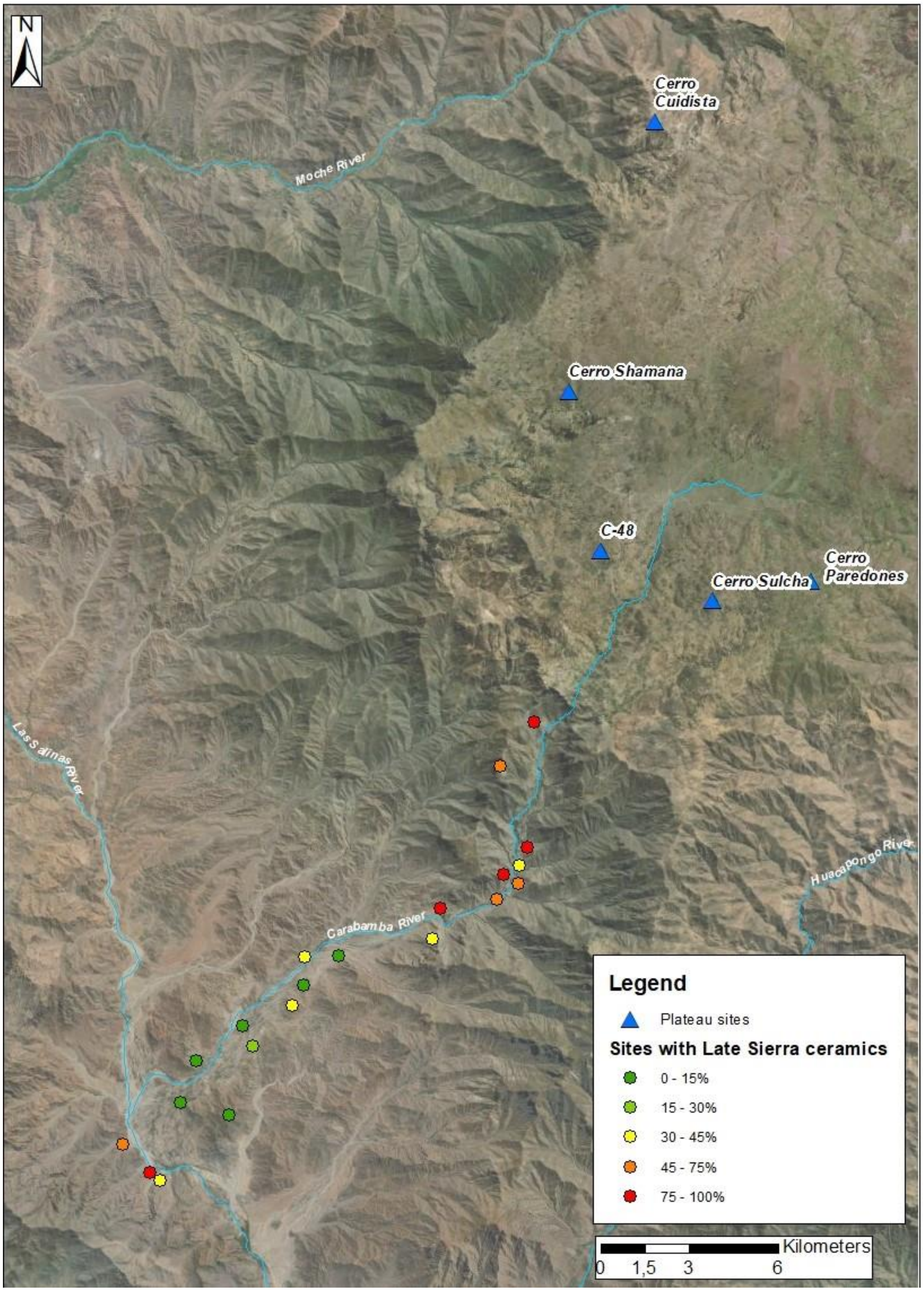


**Figure 5.20: Key sites in the Carabamba Plateau and sites with Late Sierra ceramics in the Carabamba Valley.**

As expected, high percentages of Chimú ceramics can be observed in the lower and the middle valleys. With 521 sherds, this is the most common ceramic type found in the research area. However, unlike Salinar, Castillo, and Moche ceramics, considerable quantities of clay objects used in the sphere of influence of the coastal empire were found also in the upper valley. This is not surprising, since several sites located in the Carabamba Plateau yielded low quantities of Chimú potsherds (Haley 1979), yet another indicator of interaction between coastal and highland peoples at this time. Late Sierra ceramics are clustered in the upper valley, which was located right next to the polities that controlled the Carabamba Plateau.

### 5.6.2 The Lower and Middle Valleys and the Chimú Empire

Archaeological excavations at Huaca Santa Clara in the coastal Virú Valley helped document the nature of the interactions that existed between the *chaupiyunga*, coastal and highland peoples. The site, which was a Virú administrative center and one of the six *castillos* built by the coastal state, was reoccupied for ritual purposes at the beginning of the Late Intermediate Period. A sacrificial event involving six children (one principal burial and five retainers) and 28 young llamas was carried out between A.D. 1044 and 1378[96] (Millaire 2015), recalling similar rituals carried out in the Moche Valley towards the end of the Late Intermediate Period (Prieto et al. 2019). Recent isotopic analyses conducted on human bone collagen have shown that three of these individuals may have spent their childhood in the highlands, while two others (including the principal burial) featured highland cranial modifications and a coastal-like diet (Hyland, Millaire and Szpak 2021). As indicated by the authors of this study, the last two children may have come from the *chaupiyunga*. These findings confirm the importance of the Carabamba Valley as a communication corridor, and it may also reveal strong ties between *chaupiyunga* and coastal people. Interestingly, the principal burial included an individual who may have lived in the *chaupiyunga*, suggesting that in some ways the inhabitants of the frontier zones participated in the ritual life of coastal people. Other than having an annular modification and a diet similar to that of coastal people, the child was

[96] The radiocarbon dates (780 ±60 and 980 ±40) obtained by Millaire (2015) have been re-calibrated with OxCal 4.4 software (Bronk Ramsey 1995, 2009) using the SHCal20 (Hogg et al. 2020) calibration curve. The range indicates the earliest and the latest dates obtained with the 68.3% of the probability in the probability density function.

buried with coastal textiles, feathers that may have come from the Amazon basin, and Spondylus shells that were usually collected along the Ecuadorian coast (Millaire and Surette 2011). This mix of traits and goods coming from different parts of the Central Andean region may be related to the role of cultural brokers played by *chaupiyunga* people. It has been suggested that this ritual may have taken place around A.D. 1150 (Millaire and Surette 2011) and at this time the Chimú empire was still consolidating its control over the Virú Valley (Moore and Mackey 2008; Topic 1990b).[97] Despite their close relations with coastal people, between the demise of the Moche and A.D. 1200, *chaupiyunga* people may have maintained a high degree of autonomy. As described for Phase 3a, they may have resisted subjugation and acted as brokers, supplying coastal groups with local products and highland goods and vice versa, and gaining access to marine and sierra resources.

After consolidating the control over the Moche, Virú, and Chicama valleys by A.D. 1200, the coastal empire likely started exerting a growing influence over the *chaupiyungas* (Topic 1990b). Nevertheless, the absence of Chimú rural administrative sites in the Carabamba Valley suggests that the empire did not conquer or directly control the research area. Following a pattern also documented in the Collambay area of the Moche drainage (Boswell 2016), the Chimú may have signed an alliance with the locals, especially with those living in the lower and middle valleys, an alliance that could have been strengthened through practices like intermarriage. The large quantities of seashells lying on the surface of settlements may also be an indicator of the intense interaction between coastal people and the inhabitants of the Carabamba Valley. This alliance would have allowed the empire to exert hegemonic or indirect control (D'Altroy 1992)[98] over the *chaupiyunga* and its communication routes and may have granted protection and higher status to local people. In addition to gaining easier access to local products like coca leaves, the Chimú would have ensured a steady flow of

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[97] According to a tale from Huanchaco (Moche Valley), their village and Chan Chan were founded by a man that was born from an egg laid by the Moon in the Guañape Islands, located in the Virú Valley (Huamanchumo Valladares 2021). This tale suggests that Chimú people may have originated in the Virú Valley, but this hypothesis needs to be tested excavating sites dated to Willey’s (1953) Tomaval Period.

[98] According to D’Altroy (1992), in a hegemonic system a core state/empire controls client states that are responsible for implementing core’s policies with various degrees of autonomy. In a territorial system, the core intervenes more directly in the administration of subjects’ land.

highland goods like arsenical copper, which was heavily used to produce metalworks during the late Chimú era and was probably imported from mines near the town of Quiruvilca, located between Carabamba and Huamachuco (Topic 1990a), pre-spun camelid wool from the Carabamba Plateau (Topic and Topic 1979a), the Santiago de Chuco area (Briceño Rosario et al. 2021), and the central or southern highlands (Topic, McGreevy, and Topic 1987), and colorful feathers from the Amazon basin that were found in several burial contexts (Millaire and Surette 2011; Prieto et al. 2019; Uceda Castillo and King 2012). These goods were likely transported through the roads identified by Haley (1979) in the Carabamba Plateau and such roads were probably descending to the coast through the steep Carabamba Valley.

### 5.6.3 A *Chaupiyunga Señorío* in the Carabamba Valley?

The expansion of the Carabamba Valley sites led to the emergence of a restricted group of settlements that played a paramount role within the lower and the middle valleys and that may have been part of a small *señorio* that shows two settlement tiers when looking at the residential areas of the sites (Figures 5.21). The largest site in this phase was PVC-11 (total area 63.5 ha – residential area 47.6 ha). Located in the middle valley, this site sits on two hill ranges that meet, giving the settlement an unusual V-like shape covered in residential terraces. In some cases, we identified looted rectangular structures within the terraces that were once sealed with mud and *algarrobo* posts. It can be hypothesized that these rooms were above-ground burials, in which case the inhabitants of the site would have lived alongside their ancestors, a common practice in the Peruvian Central Highlands (Isbell 1997; Mantha 2015). The organic composition of the roof of these structures would have allowed the living to reopen and access the graves to revere the deceased (DeLeonardis and Lau 2004; Millaire 2004). Access to the terraces was protected by two northeast-southwest walls. A rectangular structure was associated with the northernmost wall and it may have been used to control movements from and to the terraces. Northeast of the outer wall is a platform that sits on three different levels. This structure may have had civic and/or ceremonial functions and it may have also featured funerary cists. Outside the walls, are residential structures and a flat area littered with agricultural stone tools. The hilltops show few residential structures, and the easternmost hilltops are protected by parapeted walls that face the Carabamba Plateau.

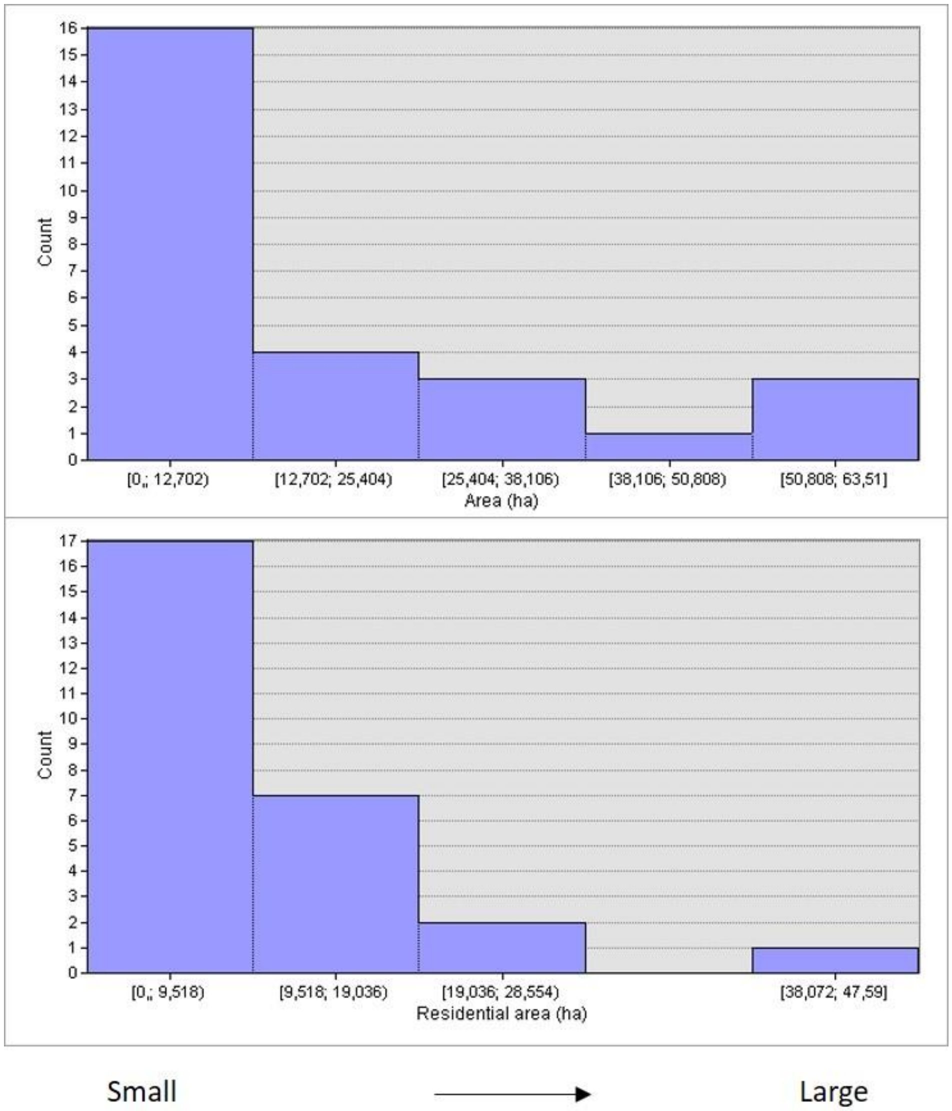


**Figure 5.21: Settlement hierarchy histograms for the settlements of the lower and middle valleys based on the total areas (top) and the residential areas (bottom) of the sites. Total and residential area are on the X axis, the number of sites of a given size is on the Y axis.**

Other large sites featuring residential, civic-ceremonial, and funerary functions include PVC-3, PVC-5, PVC-13, PVC-14, PVC-35, and PVC-18. While it is relatively small, PVC-18 features two large architectural compounds built among petroglyphs likely made during previous phases. As highlighted earlier, the reoccupation of ritual sites was common during Chimú times. This practice may have spread to the *chaupiyunga* and, along with its raised and central location in the valley, the ancestral connection may have been the reason behind the decision to build the compounds here. The northern compound is composed of a series of squared and rectangular structures clustered around a courtyard that may have served as a gathering place. The southern compound features three open spaces. The northernmost is outlined by thin walls, while the two southernmost spaces are bound by massive double-faced walls with a core composed of mud and small stones. A group of structures built with the same masonry style (Type IIb) is located between the last two open spaces. Many of these structures show raised banquettes on one side. Some small rectangular rooms were identified on the eastern side of the compound and they may have had a storage function. The two southernmost open spaces are connected through a corridor located on the western side of the compound. While PVC-18 does not feature typical Chimú *audiencias*, the masonry style, the large open spaces, the corridors, the north/northeast orientation of the compounds, are all typical of Chimú administrative sites in the Moche (Keatinge 1974; Keatinge and Conrad 1983) and other northern Peruvian valleys (Moore and Mackey 2008), suggesting that the site was built under Chimú supervision.

### 5.6.4 The Carabamba Valley and the Inka-Chimú Conflict

The main threat to coastal people was the expanding Inka empire and its highland allies. Alan Covey (2020) argued that descendants of the eighth Inka ruler Viracocha Inka (A.D. 1386-1438)[99] claimed that he subjugated the Chimú empire, while the traditional chronology places the conquest of the North Coast around A.D. 1470. If true, the statement by Viracocha Inka's descendants would place both the beginning of the tensions and the actual conflicts a few decades before A.D. 1470[100] Other than showing the existing issues in defining the chronology of Inka conquests, these discrepancies may reveal that frictions between the two empires went on for decades before the integration of the Chimú lands into the Inka empire.

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[99] Dates based on Miguel Cabello Balboa (1951).

[100] Recent research aiming to re-examine the chronology of the Inka conquests through radiocarbon dates coming from the northern (Ecuador) and the southern (Argentina) extremes of the empire (García, Moralejo and Ochoa 2021; Marsh et al. 2017; Ogburn 2012) suggests that the imperial expansion started at least one or two decades before the traditional chronology proposed by Rowe (1945).

As a response to the Inka expansion, the Chimú may have intervened more directly in the *chaupiyunga*, fortifying the lower and middle Carabamba valleys through a defensive system composed of eight hilltop sites and a northwest-southeast wall built at PVC-3 to protect the middle and lower valleys and the heartland of the empire. In this system, PVC-20 stood out: it is located between the middle and the upper valleys, where the valley gets narrower. The residential terraces featuring a conspicuous amount of Chimú pottery were built in a naturally defensible setting, and the site was further protected by a wall running along the eastern side of the site and some of its structures could be interpreted as watchtowers (Figure 5.22; Appendix D – Chapter 5 – Phase 4). In turn, the Paredones/Sulcha polity built a fortified settlement (PVC-22) to check on the coastal empire and its allies. Sites located in the upper valley feature a mix of Late Sierra and Chimú ceramics, suggesting that this area could have acted as a buffer zone between the alleged *chaupiyunga señorío* and the Carabamba polities.

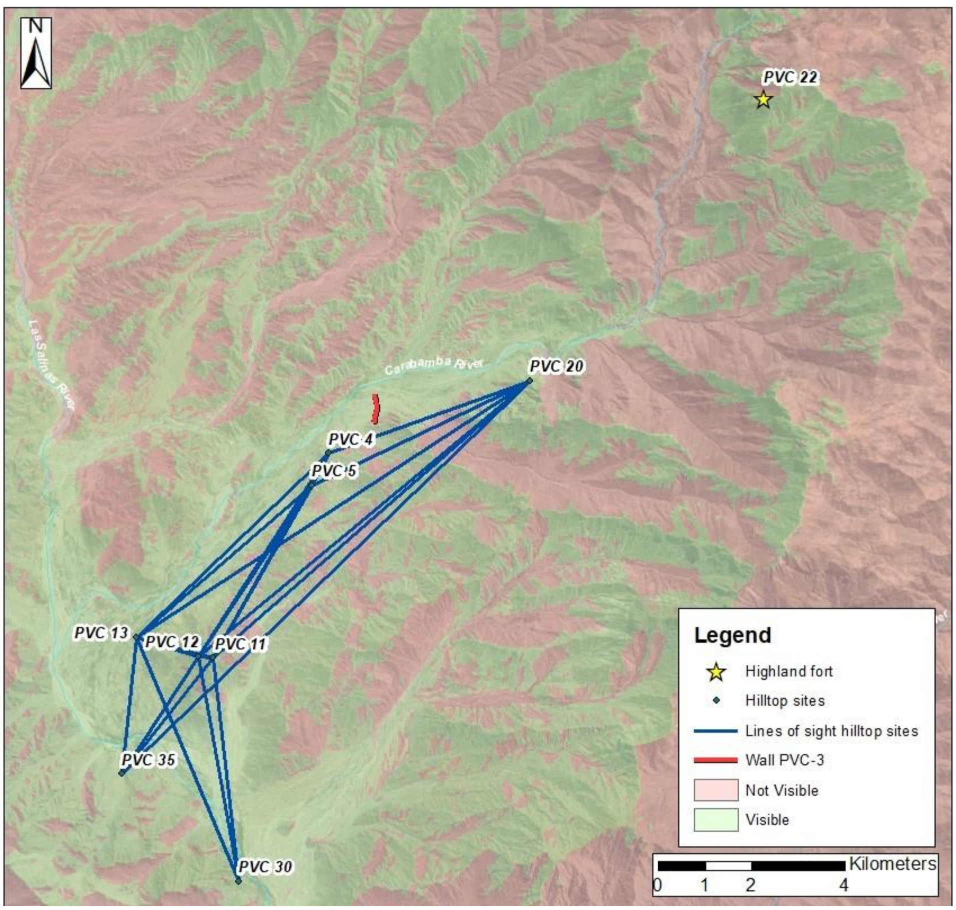


**Figure 5.22: The defensive system established in the Carabamba Valley and its cumulative viewshed.**

Considering that the Inka army walked through Huamachuco unhindered (Rowe 1948), Huayna Capac had a close relation with the Catequil oracle (Topic, Topic, and Melly Cava 2002), and the Inka assigned the *chaupiyungas* to Huamachuco (Netherly 1998), it seems possible that the Huamachuco and the Carabamba polities supported the Inka empire, and this would have been a matter of concern to the Chimú. The latter may have sent troops to the Carabamba Valley and soldiers may have stayed for more or less prolonged periods at sites like PVC-20, whose surface features fragments of large Chimú jars that were likely used to store water and maize beer (see Mullins 2012).

If the defensive outposts in the Carabamba Valley were indeed related to the Inka expansion, the Chimú empire likely intended to create a buffer zone between its core and the lands controlled by the Inka allies, fortifying a hypothetical *chaupiyunga señorío* and enacting a strategy that recalls the creation of client states along the Roman *limes* (Luttwak [1976] 2016) and at the edges of the Aztec empire (Smith 1996), and the enlisting of tribes living at the borders of the Chinese empires (Lattimore 1951).

Despite the efforts carried out by the Chimú, the Inka eventually subjugated the coastal empire. As previously noted, the Inka assigned most of the research area (i.e., until 300 m.a.s.l.) to the Huamachuco province, perhaps as a reward for their loyalty to the Inka. This policy gave highland people the control of agricultural lands that allowed them to grow crops like coca, fruits, beans, and ají peppers that cannot be cultivated in the Carabamba Plateau or Huamachuco. This 60/80-year long period of highland control that preceded the arrival of the Spanish empire may have favored the spread of the Culle and the Quechua languages in the Carabamba Valley.

While the material culture of the inhabitants of the research area does not seem to have changed substantially and people likely kept using Chimú ceramics, Late Sierra pottery likely started to spread towards the end of Phase 4. This could explain the presence of three sites (PVC-36, PVC-37, and PVC-42) with high percentages of Late Sierra ceramics in the lower valley, at about 270 m.a.s.l.[101] It must be noted that this survey did not yield Inka ceramics. However, Inka potsherds were found by Topic and Topic (1982) at Cerro Lechuza (possibly PVC-5), while Briceño and Fuchs (2009) collected Chimú-Inka ceramics at La Huaca (PVC-13).

### 5.6.5 The Carabamba Valley During Phase 4: A Summary

During the phase that preceded the Spanish conquest, there was a population increase caused by a growth of settlements already occupied in the previous phases. The material culture was characterized by Chimú and Late Sierra ceramics and people kept occupying sloped areas. In the first half of this phase, *chaupiyunga* people may have kept a high degree of autonomy, playing the role of brokers. From A.D. 1200 the influence of the Chimú empire became stronger, especially on the inhabitants of the lower and middle valleys. The occupation of naturally defensible areas and the construction of fortifications was likely due to growing tensions between the Chimú and the Inka empires. In this context, the lower and middle valleys may have been home to a *chaupiyunga señorío* allied with the coastal empire, and the construction of a defensive system and the expansion of settlements may have taken place with the support of the Chimú empire (Boswell 2016). The Carabamba Valley thus became a fortified frontier zone between the core of the coastal empire and the lands controlled by the Inka and their allies. The Cuzco empire eventually conquered the Peruvian North Coast and gave highland people full control over the *chaupiyungas*, but the short-lived Inka period (ca. A.D. 1470 - 1532) apparently did not have a great impact on the people living in the Carabamba Valley.

## 5.7 Summary

Along with ceramic, architectural, funerary, and linguistic data, analyses show that this area has constantly been under the influence of the coast and highlands. As expected, the upper valley was under the influence of highland people for most of Prehispanic times, and only during Phase 4 the valley featured a significant coastal influence. Conversely, the lower and

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[101] The number of potsherds assigned to Phase 4 at PVC-37 and PVC-42 is very small, one and two, respectively.

the middle valleys were generally under the influence of coastal phenomena, like Salinar, Moche, and Chimú. Phase 3a marked a break from this pattern during which highland people had a strong influence on the middle valley.

The rugged nature of the research area undoubtedly influenced the distribution of people throughout the landscape. Except for Phase 1, when people were mostly living in flat areas next to the riverbed, the inhabitants of the Carabamba Valley settled on sloped areas. This suggests that persistent tensions existed (between local, coastal, and highland peoples) throughout the history of this frontier zone.

As the population kept growing through time, communities likely started to struggle to sustain themselves in this arid and inhospitable environment. This and the control of key resources (communication routes, salt, water, coca) contributed to the importance of trade between communities scattered throughout the valley and with the neighboring ecological zones. Thus, throughout the whole Prehispanic history (and even today) the Carabamba Valley seems to have acted as a natural corridor that linked peoples with different material cultures, languages, beliefs, and worldviews, and (at least during some periods) its inhabitants seem to have played the role of cultural brokers, connecting these different groups.

# Chapter 6

# 6 Final Reflections on the Prehispanic Occupation of the Carabamba Valley

Research conducted over the past hundred years in the Virú Valley and the Carabamba and Huamachuco areas suggested that the *chaupiyunga* ecological niche (500 - 2,300 m.a.s.l.) played a key role in linking the Peruvian North Coast and the Northern Highlands, representing a frontier between these two environments, a porous contact zone that favored various interplays between peoples who used distinct ceramic artifacts, spoke different languages, had different social and political structures, and worshipped diverse deities. Yet few archaeological projects have focused their gaze on this frontier zone, leaving many questions unanswered. The present study analyzed how people living in the Carabamba Valley (ca. 150 - 3,500 m.a.s.l.) occupied this rugged landscape and interacted with neighboring ecological zones (coast and highlands) between the Initial Period and the Late Horizon. A pedestrian survey in this natural corridor was conducted, and the analysis of ceramic artifacts lying on the surface of archaeological sites led to the creation of a chronology of the valley. Mapping sites, observing architectural features, and analyzing the landscape, this study reconstructed the occupational history of the valley over the *longue durée* (Braudel [1949] 1996), contributing to a better understanding of historical developments of this part of the Central Andean region.

This chapter will present some final thoughts on the occupation of the valley and suggestions for future research in this frontier zone.

## 6.1 The Carabamba Valley’s People and the Landscape

In their seminal study of Prehispanic settlement patterns of the Virú Valley, Strong and Evans (1952) argued that the Carabamba Valley had likely been devoid of human settlements due to its rugged and dry environment. This statement has marked generations of archaeologists whose attention was set on core areas such as the lower valleys or highland plateaus. However, the present study has shown that, contrary to what those scholars hypothesized, this vast swath of land connecting the coast to the highlands never ceased to be occupied and it contributed to the major geopolitical developments that have marked the history of the region. This doctoral project has also shown that elements like the rugged terrain, a limited amount of arable land, the presence of essential resources like water or desirable goods such as coca leaves, and the control of trade routes shaped the lives of *chaupiyunga* people through Prehispanic times. Locals were thus entangled (*sensu* Hodder 2014) with an environment that created opportunities (for example, offered key resources) and constraints (such as little cultivable land), and fueled interactions among local communities (such as coordinated management of rainwater and irrigation canals) and with neighboring groups (for instance trade, resource sharing, and/or conflicts).

In the Carabamba Valley, arable land is confined to the relatively flat areas close to the river and flanked by hill ranges. The amount of cultivable land is greater in the wider and flatter lower valley, while as one walks towards the Carabamba Plateau the landscape becomes steeper and narrower, and arable lands become dramatically scarce. Given the small amount of arable land available to people inhabiting this frontier zone in the past, *chaupiyunga* communities likely aimed to maximize crop yield to ensure their subsistence and economic development.

In this context, water was clearly an important resource, one that created affordance and restricted development, depending on how much of it flowed through the riverbed, when it came during the year, and whether human activity higher up in the valley affected cultivations in the lowlands. Water was generally scarce throughout the year, but especially so during the austral winter (the dry season), when rainfalls drastically reduce in the coast, *chaupiyunga*, and highlands (ONERN 1973). Effective water management was therefore essential to *chaupiyunga* communities and surely held an important role in structuring settlement patterns in the region.

From as early as the Initial Period, agricultural fields were fed through irrigation canals, a critical element of the water management system that made it possible for communities to occupy such an inhospitable environment (Farrington 1980; Netherly 1984).

Springs scattered through the valley were another key element of the water management systems in this frontier zone. These springs could have made the difference during the decade-long droughts that characterized the last two millennia in the Central Andes

(Thompson et al. 1985). These water sources may have been celebrated by people through geoglyphs and petroglyphs depicting iconographic motifs related to water and fertility, identified in areas located close to the Puquio Grande spring (PVC-44) or the possible spring near PVC-15 and PVC-16.

Access and distribution of water were probably important discussion topics in the valley and points of contention between groups inhabiting the *chaupiyunga*, the Carabamba Plateau, and the Virú Valley. While there may have been a sense of hydraulic solidarity (*sensu* Lansing 2007) between *chaupiyunga* settlers, who may have felt part of a larger frontier community and may have cooperated in the management of water resources to maximize yields, local people had to interact with highland polities (which were controlling the Carabamba River springs and the rainy Carabamba Plateau) to ensure that water flowed westwards. In addition, colonial documents suggest that there were constant negotiations with coastal people, who lived farther away from water sources, but who were nevertheless concerned with accessing this scarce yet essential resource. Indeed, as more fields were being cultivated at higher elevations, less water was available for growing crops down in the valley (Castañeda Murga and Millaire 2015). In this context, coca, fruits, beans, ají, and salt may have given bargaining power to *chaupiyunga* people when dealing with groups living in the Carabamba Plateau. In turn, access to water may have been traded with coastal peoples to obtain marine resources.

Relations between groups interacting in this frontier zone were not always peaceful. Since Phase 2, people living in the Carabamba Valley preferred to settle in naturally defensible areas, such as steep slopes and hilltops. Analyses conducted in Chapter 4 show that defensibility was likely an important element in choosing where to locate settlements and, in some cases, defensibility was even more important than vicinity to water sources. This suggests that conflicts and tensions may have marked the lives of many generations that occupied this frontier zone during Prehispanic times and that the landscape offered people a way to cope with possible violent encounters.

The Carabamba Valley environment was characterized by steep slopes, a limited area of arable land, and limited water resources. The region also bordered with coastal and highland polities, states, and empires, which likely desired to gain access to *chaupiyunga* resources.

The control of key goods and the characteristics of the landscape may have been used by local people to their advantage when interacting with powerful neighboring groups. As stated above, the presence of key resources gave *chaupiyunga* people bargaining power. Indeed, the rugged terrain did reduce the amount of arable land available to local people, but in case of increasing tensions among *chaupiyunga* communities or with neighboring groups, sloped areas and hilltops offered a safe retreat against attacks. Few massive defensive structures have been noted in the valley and the topography of this frontier zone may have offered enough protection to local communities. Local people also controlled intervalley and coast-sierra routes. These communication corridors were crucial to coastal and highland elites aiming to obtain exotic goods from distant lands that would have increased their prestige within society. The control of strategic trade routes was yet another factor that afforded locals power over coastal and highland peoples. The environment therefore provided people with advantages and limitations, shaping the life of humans living there through Prehispanic times.

## 6.2 The Carabamba Valley: Coveted Yet Not Subjugated

The previous section highlights that the control of key resources granted *chaupiyunga* people tactical power (Wolf 1999) over their neighbors. This power also allowed the inhabitants of the Carabamba Valley to facilitate interactions between the coast and the highlands, acting as cultural brokers, keeping a high degree of autonomy in choosing what elements of coastal and sierra material cultures, technologies, ideologies, and beliefs were introduced in the *chaupiyunga* (Dietler 1998, 2005; Mills 2018; Obstfeld, Borgatti, and Davis 2014; Stein 2002).

This pattern may have emerged during Phase 2, when the Carabamba Salinar cluster may have facilitated the flow of goods from the Amazon basin and the Northern Highlands to the Peruvian North Coast (see evidence from the Moche Valley; Mujica Barreda 1975; Prieto 2021), and vice versa. This situation persisted until Phase 3a and 3b when *chaupiyunga*-made bags, and kaolin clay and Castillo W/R/O ceramics reached the Virú Valley. Evidence from Huaca Santa Clara (Hyland, Millaire, and Szpak 2021) suggests intense movements of people during early Phase 4. However, in late Phase 4, the Chimú empire may have directly intervened in the valley and the Inka eventually conquered Northern Peru, reducing the autonomy of this frontier zone. While this area featured goods that were desired by nearby polities, states, and empires, the direct control of this scarcely populated area (and thus with few potential taxpayers) may have been deemed uneconomic by these sociopolitical formations (Topic and Topic 1985). Transportation constraints and the challenges associated with raising and maintaining large offensive armies may also have allowed locals to maintain a high degree of autonomy (Topic and Topic 2009).

That being said, the region was not impermeable to influences from the coast and highlands. Indeed, the geopolitical developments of surrounding core areas directly affected the lives of *chaupiyunga* peoples, with areas at lower altitudes usually featuring evidence of influence from the coast and the upper valley featuring evidence of highland influence. This frontier zone had strong ties with coastal people during Phases 1, 2, 3b, and most of Phase 4 (when coastal ideologies spread to the *chaupiyunga* or coastal polities had the strength to impose tighter control on the valley), and a strong connection with the Carabamba Plateau and Huamachuco during Phase 3a, perhaps due to ancestral commonalities and migrations of highland people.

This doctoral project suggests that the inhabitants of the valley (or at least elites or people involved in trade activities) were constantly interacting with coastal and highland traders and travelers, and may have been able to speak both coastal Quingnam and highland Culle languages. Located at the edges of core areas, the Carabamba Valley *chaupiyunga* was therefore a dynamic frontier where people belonging to different sociopolitical formations (and thus with conflicting interests, different material cultures, various religious ideologies, and worldviews) interacted. In this context, local elites likely played a key role in structuring intergroup interactions, playing the role of cultural brokers, gaining prestige in the eyes of both fellow *chaupiyunga* people and foreigners.

## 6.3 Future Research Avenues

This study aimed at reconstructing major social, political, and economic developments that took place in the Carabamba Valley *chaupiyunga* between ca. 1800 B.C. and A.D. 1532 The conclusions are based on data collected as part of a pedestrian survey and surface collection process. Recent research in this part of the Central Andes has shown that *chaupiyunga* deposits are shallow (Billman et al. 2019; Boswell 2016; Briceño Rosario and Billman 2018; Ringberg 2012) and that the surface accurately represents what is buried below the ground (Downey 2017). However, I agree with Alfred Kroeber (1916:20) that "the final proof is in the spade". The results of this study are a first step in reconstructing social, economic, and political developments of the Carabamba Valley in the *longue durée*, and excavations are needed to document those questions in more depth.

No archaeological excavation has been conducted in this frontier zone yet, but the present study has identified several sites that could yield rich data on the occupation by *chaupiyunga* peoples. For example, PVC-13 (La Huaca) is a large site located in a strategic place, was likely occupied for a long time (from Phase 2 to Phase 4), and therefore represents a promising site for excavations in the coming years. The analysis of the Moche occupation of the site would be of particular interest, shedding light on the nature of the Moche presence in the valley and providing more information on the southward expansion of this group. Similarly, excavations at PVC-11, PVC-18, and PVC-20, which likely had residential, civic-ceremonial, and defensive functions, would provide contextual data on the Chimú presence in the *chaupiyunga*.

The chronological framework presented in Chapter 3 is composed of long periods and the collection of organic materials would allow us to obtain radiocarbon dates, yielding a fine-grained chronology of the valley. In many cases, dating the occupation of archaeological sites was not an easy task. For example, there were only subtle differences in the building techniques and materials used by *chaupiyunga* peoples from different periods. Moreover, ceramic types used to date archaeological sites were sometimes in use over long periods of time, diminishing their usefulness as dating tools. In this context, radiocarbon dates would provide us with a powerful means to date archaeological sites throughout the valley. As mentioned in Chapter 3, the seriation of highland ceramic artifacts is also poorly defined, and associating radiocarbon dates with highland potsherds would greatly help in refining their chronology.

Ceramic artifacts collected during excavations could also be subjected to petrographic and technological analyses (see Espinosa et al. in press; Espinosa 2020). For instance, Moche potsherds collected at PVC-13 could be analyzed, and their composition compared to local and foreign clay sources and Moche artifacts collected from the neighboring Moche and Virú valleys. This would tell us if Moche pottery was locally produced or imported, contributing to a better understanding of the nature of Moche presence in the Carabamba *chaupiyunga* (i.e., a Moche outpost vs. import of Moche pottery by local elites). For example, as shown by Espinosa (in press; 2020), people producing Castillo ceramics in the Moche and Virú valleys used different construction techniques; technological analyses on Castillo ceramics from the Carabamba Valley could therefore suggest from which regions traded artifacts and possible colonists may have come from.

Moreover, isotopic analyses on human and camelid remains could be carried out and information compared to data obtained from the coastal Virú Valley (Hyland, Millaire, and Szpak 2021; Szpak et al. 2015). These analyses would tell us what kinds of foods were included in *chaupiyunga* people's diet and if *chaupiyunga* diet changed over time. For instance, these analyses would shed light on what people using Salinar pottery eat. Was their diet different from their coastal counterparts? Did people living at PVC-13 have a coastal diet? Was this site a Moche outpost during Phase 3b? Moreover, isotopic analyses on human remains could help document patterns of mobility of *chaupiyunga* people. For example, we could assess whether they lived most of their life in this environment or if they traveled to nearby ecological niches. Analyses on camelid remains could reveal if these pack animals were raised in the *chaupiyunga* or if they were part of caravans transiting through this natural corridor (Szpak et al. 2015).

Sites with rock art are particularly vulnerable to human and natural post-depositional processes, and they should thus be thoroughly investigated in the near future. Large concentrations of petroglyphs such as the ones identified at PVC-15 and PVC-18 could be mapped through low-altitude drone flights, photographed, and cataloged. Detailed satellite images could be acquired to identify other potential groups of petroglyphs or geoglyphs in the valley. Further iconographic and spatial analyses would clarify when petroglyphs and geoglyphs were made and shed light on the relation between locals and the environment that they inhabited (e.g., the association with landscape features, such as springs or the confluence of rivers/streams).

The archaeological study of the Carabamba Valley (and of the *chaupiyungas*) is still in its embryonic stage. The survey of contacts zones is crucial in the preservation of cultural heritage located in remote and understudied areas at a time when industrial development is carried out at the expense of our collective historical patrimony. Isolated areas such as the Carabamba Valley often fall below the radar of institutions responsible for protecting cultural heritage. They are therefore particularly vulnerable to unlawful and unethical development carried out at the expense of cultural heritage. During the survey, I witnessed the destruction of some archaeological sites (PVC-10, PVC-12, PVC-34, and PVC-47) that had been bulldozed as part of illegal quarrying activities. The valley also features an abandoned gold mine close to the village of Juyacul. Illegal mining activities were also observed next to the site of Huancaco in the Virú Valley while conducting another project.

Looting (or *huaquería*) is another activity that threatens the preservation of cultural heritage. In Peru, this practice has a long history; it started at the beginning of the Colonial Period (16$^{th}$ century) and it was a legal activity until the 19$^{th}$ century (Contreras 2010). Today, looting is still widespread (in particular during periods of economic hardship like the current pandemic) and closely related to the illicit trafficking in antiquities. Most sites identified in the Carabamba Valley (especially funerary areas) were damaged by such activity, which has certainly affected the present reconstruction of settlement patterns in the valley. As stated by UNESCO (2021), cultural heritage is “our legacy from the past, what we live with today, and what we pass on to future generations”. The wealth of data on people that lived in and traveled through Central Andean frontier zones should thus be collected and analyzed (and sites protected) before reckless economic growth will irreparably thwart their cultural patrimony.

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# Appendices

Appendix A: List of tables of ceramic data relevant to Chapter 3. The tables are provided as a supplementary document file.

Appendix B: List of tables of population and landscape data relevant to Chapter 4. The tables are provided as a supplementary document file.

Appendix C: Description of the archeological sites that were surveyed in 2019. It includes a short text featuring names, locations (coordinates and altitude), descriptions, and pictures of the sites. This appendix is provided as a supplementary document file.

Appendix D: Interactive map featuring spatial, ceramic, and population data relevant to Chapter 5. This appendix is provided as a supplementary file.

# Curriculum Vitae

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|---|---|
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