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RESOURCEFULNESS IN SCARCITY: THE ARCHITECTURE OF KABULI PASTORAL NOMADS

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Abstract

Pastoral nomads play a critical role in the functioning of local and global economies. Due to the rise of ranchers and international borders in the 21st century, they have been marginalized. This article studies the built environment of the Afghan nomads of Khyber, known as the Kabuli people. These nomads historically moved across the borders of Afghanistan and Pakistan, but due to the closing of the Durand Line, the international border between Afghanistan and Pakistan, the Kabuli people were forced to take the role of farmers in the local agrarian society of Pakistan. Their adaptation to poverty, statelessness, and hostility from their agrarian neighbors, has lead them to produce an architecture that can be best described as shuffling between the architecture of scarcity and resourcefulness, or better, resourcefulness within scarcity. This article examines the built principles and cultural significance of their semi-permanent structures. With limited resources, they produced a sustainable and functional, 100% zero waste camp. These structures are examples of a self-built work that holds a mirror to the standards of certified green buildings on carbon, extraction of natural resources, and the logic of economies of scale. Their built response was a hybrid between mud and tensile construction, applying the intelligence of both fixed and mobile systems. The Kabuli people developed a resilient community with natural materials that others would view as refuse and waste. Even under extreme conditions and threats, they have shown great resilience and strength.

Introduction

Although many overlook pastoral nomadism as a way of life, in the global south these people play a crucial role in the local and global economies. They are the primary providers of meat, milk, hides, and other goods. They are also skilled carpet weavers, herders, musicians, and traders. Compared to modern industrialized meat and dairy producers such as ranchers, who have dominated the global marketplace since the 1960s, pastoral nomads have a radically lower carbon footprint. Therefore, it is no surprise that Jonathan Davies, coordinator of the World Initiative for Sustainable Pastoralism (WISP), a nongovernment organization, states, “Pastoralism can be up to ten times more productive than commercial ranching under the same conditions.”[1] These nomads are masterful wayfinders who embody a technique that environmental scientists describe as “seasonal migration.” Similar to landscape behavior and spatial practice, seasonal movement between pastures allows the land to rest and the environment to heal. Davies pleads for the protection of pastoral people as they have seen their practices and lifestyle come under increasingly great threat under the sign of modernity. Pressures from industrial ranches, the growing impermeability of international borders, and the transformation of land into private property has

[1] Davis, Johnathan. “Nomadism Benefits the Economy”. *IUCN.* Feb. 06, 2007. https://www.iucn.org/content/nomadism-benefits-economy-new-study-shows.

had a major impact on pastoral people.[2] For example, to allow their cattle to graze freely, pastoral nomads have had to obtain special grazing permits that challenge their survival. Since the environmental turn of the 1960s, these people have begun to experience the diminishment of their way of living in accord with the land. The land that nurtured them was being pulled from beneath their feet. Even with the odds stacked against them, they refused to submit without a fight. The adaptation of their building practices is a testament to the resistance of a people that the bureaucratic state, nationalism, and the narrative of progress are determined to eradicate. The conceptual paradigm of architecture as a discipline, born of these very same ideologies, is complicit in speeding up the disappearance of their lifestyle.

This article reports on the environment that Afghan nomads of Khyber Pakhtunkhwa (known as the Kabuli, meaning belonging to Kabul, Afghanistan's capital city) have built as a particular example of the response of pastoral nomads in the 21st century. Historically, Kabuli nomads have moved seasonally across the two sides of the Afghanistan and Pakistan borders, spending summer in the cool pastures in the valleys outside Kabul in Afghanistan, and winter in the snow-free agrarian villages in the province of Khyber Pakhtunkhwa in Pakistan. In 1979, the Durand Line, the international border between Pakistan and Afghanistan, was closed. This forced the Kabuli nomads who lived near the Durand Line to take up a sedentary lifestyle in the rural regions of Pakistan. As a result, they built campsites throughout the area that incorporated both mobile and stationary architectural techniques. After the Soviet invasion of Afghanistan in 1979, and the transformation of local pastures into a battleground, these pastoral communities lost most of their livestock. Their animal holdings shrunk further because of the need to get grazing permits in Pakistan, which was troublesome since the formal state administration failed to recognize their informal settlement. Further, clashes with local crop sharers and prominent landowners in Khyber Pakhtunkhwa in Pakistan have narrowed their choices since 2008. Their adaptation to poverty, statelessness, and hostility from their agrarian neighbors has produced an architecture that can be best described as shuffling between an architecture of scarcity and resourcefulness, or better, resourcefulness within scarcity. By applying the intelligence of both fixed and mobile systems, the Kabuli nomads have built structures that have been a hybrid between mud and tensile construction. Most importantly, these structures are an example of self-built work that holds a mirror to the standards of certified green buildings on carbon, extraction of natural resources, and the logic of economies of scale. It reveals the competition between the environmentalism of indigenous communities and the environmentalism of high-tech, affluent, market approximate world and its disciplined architecture.

Figure 1. Camp Overview. Photographed by Shundana Yusaf.

[2] Gall, Carlotta. "A Nomadic Way of Life Is at Risk in Afghanistan". *The New York Times*. Nov. 06, 2002. https://www.nytimes.com/2002/11/06/world/a-nomadic- way-of-life-is-at-risk-in-afghanistan.html

My research methodology began with a set of images photographed by my architectural history professor, Dr. Shundana Yusaf, during two field trips in 2018 and 2019 (Fig. 1). In the spring 2020 semester, I received a grant from the Undergraduate Research Opportunity Program to examine this campsite through a series of study models (Fig. 2). We evaluated the images and the design principles of the settlement built on the commons land. When analyzing the architecture, we began to appreciate the intricate design, building strategies, skills, tools, and the collaboration between men, women, children, and elders in building this structure. It looked flimsy in the beginning, but after our analysis, this structure revealed its exceptional resilience. Though seemingly ad hoc, it was well thought-out. It could be dismissed as dull and unattractive, but it was built with great intelligence and innovation. Kabuli nomads have built a resilient community using natural materials that others view as waste. Their limited resources were offset with machine-like coordination of human capital, skills, and collective memory. The result was a green, zero waste camp that is highly attentive to hygiene, sunlight, shade, humidity, and water-borne disease.

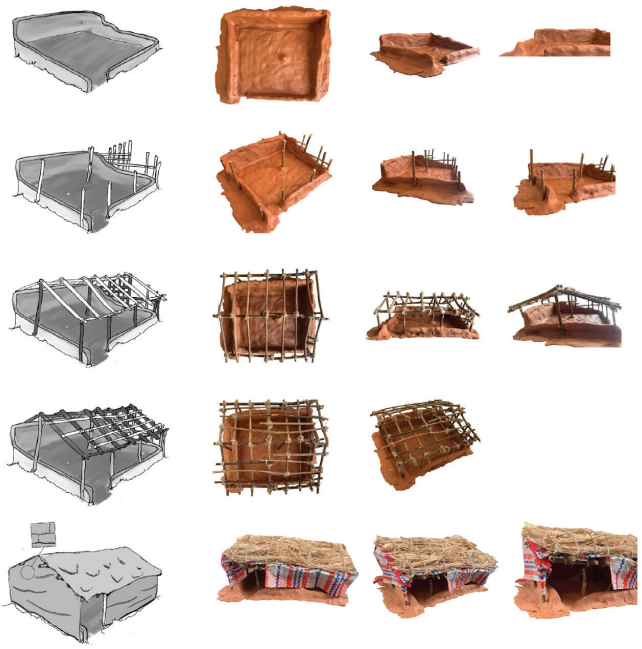

Figure 2. Hut 1 Model funded by the Undergraduate Research Opportunity Program. By Author

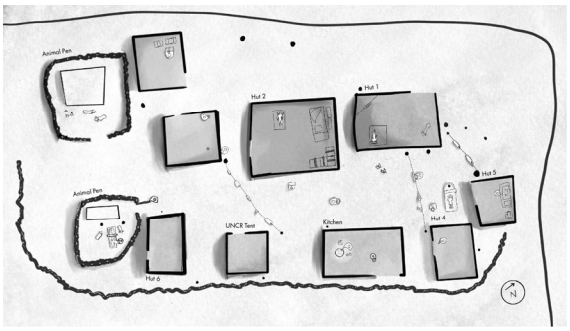

Figure 3. Camp Master Plan. By Author

Figure 4. Prayer Area. Photographed by Shundana Yusaf.

Camp Layout

The documented camp has about 40 members of the same extended family, consisting of two brothers, their wives, six sons, daughters-in-law, and grandchildren. It is strategically situated near the local irrigation canal, an electric pole, a water source, and a road that connects the camp to nearby villages. Small, informal settlements do not have a formal avenue to get electricity and potable water from public facilities, so power for pedestal fans and lights in the camp is poached from the nearby electric pole, and potable water is sourced from a neighboring landowner through an informal financial agreement that indicates that they are allies in the agrarian community. The

Kabuli people are deeply integrated in the rural context in which they find themselves. They have a different safety net than the sedentary locals in the area. Their wealth and networking is mobile and isn't fixed to land or geography; they work in the fields during harvesting season, they sell milk, wool and felt, but they do not butcher their animals. One example of their integration into the rural economy is their participation in village fairs. Unlike the weekly markets, which follow the calendar of agriculture and harvest times, village fairs follow the calendar of animal husbandry, taking into account factors like the pregnancy of animals in a particular season. This leads to a robust system accommodating individual participants.

A deciduous Indian rosewood tree marks the main entrance of the nomadic camp. It leads to a courtyard, whose proportions are reminiscent of a wide meandering street rather than the rectangular hollows that we expect in Islamic cities from orientalist and typological studies. The courtyard serves as a place to meet, work, play, study, rest, dine, and pray. Freestanding, single-cell huts surround the courtyard (Fig. 3). These huts serve the function of rooms, rather than being an entire house, while the courtyard serves as a hall for daily events and affairs. Incorporating their traditional practices in the camp's construction process has created areas that reflect their culture and customs.

A great deal of attention is given to the construction and placement of each single-cell hut. Each is faced in a direction to ensure the most privacy for each nuclear family. They are shaded by tall foliage that was planted during the Green Revolution of the 1960s, when millions of trees were planted along roadsides up and down the country. Now fully matured, they create an airy and shaded greenbelt along the road. The most decorated and auspicious hut in the camp is the common kitchen, an elevated structure located opposite of hut 1 and adjacent to hut 4. The kitchen includes a central firepit, ornamental mud wall, ochre smudges, and floral patterns in ashes from the hearth. The intricacy and detail given to this hut show the people's precision, creativity, and expression of personal values.

The layout of the camp is organized around the concept of corporate living. Men and women of the camp share many activities, like tending to animals, working in the fields, building, cooking, and raising children. Women show significant spatial and creative agency in building, designing, and maintaining their living spaces. They play a crucial role in the functioning and development of the camp. Women use weekly calendars to distribute the responsibilities of collective childcare, cooking, cleaning, laundry, and tending to animals while others go to work in the fields. They swap duties and cover for each other when needed. All work-related negotiations go through the matriarch, who is the wife of the eldest man in the camp. An experienced and skilled person, she is tasked with maintaining the social structure of the camp. By pooling their human resources, they accommodate for the lack of material resources. The recognition of their interdependence is evident in their language and predefined roles. As in every patriarchal society, men have far more license to venture out of their orbit, but there is little room for negotiating expectations and duties to others, gender aside.

A unique structure in the nomadic camp is the fixed prayer area for a single worshipper, located across from the entrance (Fig. 4). A 3'x 6' earthen platform, 6" above the ground, is demarcated by a 6" tall and 6" thick parapet. A semicircular area suggests a mihrab, and a planted, slender tree marks Mecca's direction. The tree, where one prostrates, shows the persistence of animistic traditions that prevailed in this region before the widespread presence of Islam in the 10th and 11th centuries. The logic behind having a single prayer area is based on the tradition of praying in Islam:

while men pray as collective in a mosque, women's daily praying is atomized. They take turns to pray at the same janamaz (praying area). When men pray at home, they follow the female practice of individually performed prayers as well.

The first structures to be erected on the site were animal pens, due to the necessity born out of the conditions (Fig. 5). As a result, it has played a crucial role in the planning of the camp. Bushes and thorny branches demarcate the animal pen, which occupies the farthest end of the courtyard from the entrance. The material and amenities fixed inside the animal pen give life and intricacy to the structure. A tarp-style tent provides shelter for the animals in extreme weather. A discarded bed cot with a light wooden frame and ropes netted from tall grasses is repurposed to serve as a gate. This gate fits with the bush and twigs around it, revealing the relationship between animals and humans, lost in modernity. A feeding trough was assembled using glued cement bags and Y-shaped branches that hold up the structure. Khushkash, dried poppy leaves, and stems are foraged and burned in an open pot to get rid of pests in the camp (Fig. 6). Fumes released from the pots kill pests inside their households, and ashes from the pot are later smudged on the face, arms, or feet of animals and people to protect the bearer from the evil eye, disease, or unforeseen calamity.

Figure 6. Housing practices, cow dung technique and burning of Khushkash. By Author.

Figure 7. Hut 1. Photographed by Shundana Yusaf.

Rituals And Practices

The Kabuli people perform various rituals during the process of building their structures. Before starting construction, they people slaughter an animal, usually a goat or a sheep, drain the blood at the site of first dig, and distribute the meat among themselves and neighbors. During construction, they take two ritual breaks for the afternoon and evening prayers, and they eat a meal together. When the project is completed, they host a feast and perform prayers, and smoke the huts, animal pens, and courtyards to protect them and their bearers from the evil eye.

I studied in depth the design of one of the huts, named Hut 1 by virtue of being the closest to the entrance (Fig. 7). It is a 14'4" x 16' cell with a pitched roof at 6'6" clearance on the interior (Fig. 8). A central rod functions similar to a ridge board in heavy timber construction, but unlike a ridge board, it is not concealed in the ridge joint. Walls are built of rough ashlar, mud bricks, and reinforced mud plaster.

Fresh cow dung collected from the animal pen reinforces the walls and is used to repair water damages and cracks. Cow dung is an organic and natural insect repellent with antifungal and disinfectant qualities. Though overlooked by many as a waste product, cow dung has many applications that enrich the built environment. As a fertilizer, it improves the productivity of the

soil while maintaining the health of the soil in the long term, unlike chemical fertilizer[3] and dried cow dung provides fuel for cooking, heating the rooms, and making fire outdoors on frigid days in December and January.

Figure 8. Hut 1 Section. Photographed by Shundana Yusaf.

Figure 8. Hanging Decorations. Photographed by Shundana Yusaf.

Building Techniques And Technologies

The four sides of the rectangular hut exhibit three different wall conditions. The west wall facing the road is a full-height structural wall reaching 5'6" without any openings. The mud segment of the north wall, along the entrance opening, steps down from 5'6" to only 18" high. The east and south walls only have 8" high mud parapets. A 4-foot-wide opening on the east wall gives access to space from the courtyard. The overall structure is a composite. The one load-bearing wall gives way to a wood frame. A net of ½" diameter sticks, bamboo, and tall grass stems is created by tying them with pieces of rope, rags, discarded belts, and laces. The entire structure is clad not in concrete, but with concrete bags collected from construction dumps. Waterproofed to protect the cement and strengthened enough to carry a ton of material each, the cement bags are lightweight, weather-resistant, and durable. The accompanying ritual is similar to the dressing of a bride. The cement bags are cut open, dusted, straightened, woven, glued together, and hung on the hut's frame. The dressing does not remain consistent throughout the seasons. Each facing is tied in a manner that can be raised during summer evenings and nights to bring in cool air. In winter, a layer of quilt filled with loose cotton wool is wedged between two layers of tall grasses and reeds.

The Kabuli people have developed an innovative roof system that makes use of a braced wooden frame for stability (see Fig. 2). The roof is later covered with empty cement bags, which are water-repellent, portable, and durable. A layer of dry grasses on top of the cement bags offers sound and temperature insulation. Finally, these two membranes are tied to the structure with jute rope. These ropes are locally made, affordable, and easily repaired. As a result of the material construction and housing practices, the huts have withstood the worst of local weather conditions.

[3] Raj, Abhishek. "Cow Dung for Ecofriendly and Sustainable Productive Farming". *International Journal of Scientific Research 3*, no. 10. 2014. p. 201–2.

Though the nomads' architecture has begun to show signs of "putting down roots," the interiors suggest the contrary. Inside the huts, furniture can be transported with ease (Fig. 9). Value is still placed on lightweight, portable furnishings that can be kept on the ledge where the mud wall meets the roof structure, or hung from the wood frame. The only items on the ground are a motorbike and two reed mats under the bedding to protect it from the dirt. A hammock cradle is hung from the column of the roof. The ridge pole supports an electric fan, bags of fruit, decorative paper buntings, fabric flowers, and a miniature replica of a prayer mat protected by the plastic wrapping in which it was bought (Fig. 10). The low ceiling height gives the structure a cozy intimacy and provides a surface from which the occupants can hang all furnishings and decorations. The hut is a living, breathing structure rather than being a template for a house.

Figure 10. Modular Furniture. Photographed by Shundana Yusaf.

Outlook

The Kabuli people face certain pressures that are partly a question of public policy (getting absorbed into the sedentary, rural society) and partly a question of the marketplace (receiving support for development of their social structure, on their terms). The question of absorption has come all too often around the globe in the past sixty years. Modernity has consistently demonstrated an intolerance of the kind of coexistence needed for the survival of nomadic systems. This is a loss, for with it we will lose yet another system of knowledge that holds a mirror to the western model of development. Modern education has created lifestyles that are valued above nomadic ones, not only by others, but at times even by them, too. Industrial modes of food production have institutionalized impersonal knowledge, destroyed meaning in work, and brought the planet to the brink of annihilation.

Yet, 250 years of investment in the superiority of western modernity still remains intact. In regions like North Africa, municipalities have forced tribal and pastoral people into midrise, concrete-framed flats in urban environments. Countries like Libya and Algeria have used guerrilla tactics to create modern nationstates, destroying the nomadic knowledge systems and their function in the local and global economy. In Pakistan this possibility is unlikely, for it is hampered by a weak state and fragile economy.

Another option, as mentioned above, is creating a robust environment in which nomadic societies can thrive on their terms. This direction is only being explored successfully in Mongolia, whose majority population is nomadic. There, the majority of the land is owned by the government as "commons"—an informal arrangement—and it has recently taken an active role in protecting it. This is helped by Mongolia's setting, particularly suitable for the herding economy. Mongolian herders are disconnected neither from the rest of Mongolia, nor from modern technology. They have invested in technological solutions and use solar LEDs for electricity. They use phones and the internet to get the market prices for their meat. They use motorcycles to get to places quickly when needed. They have made these modern inventions work for them, rather than reconfiguring their lives to them. The major advantage that Mongolian herders have over Kabuli nomads is they are valued by the modern state and not seen as "others."

The semi-permanent structures of Kabuli camps in Khyber Pakhtunkhwa are a testament to the resourcefulness of traditionally mobile people attempting to address the challenges of the

contemporary world in an effort to preserve their independence. They have been arrested in areas with extreme weather conditions, endured a proxy war between the United States and the Soviet Union and all its permutations, experienced the rise of radical militarism in Afghanistan, and a weak state in Pakistan. But still Kabuli nomads continue to persist and push past these challenges.

Dire conditions force innovation. As the axiom goes, “necessity is the mother of invention.” Invention is the provenance not only of western science and modern educational institutions, but also of those whose knowledge systems are delegitimized by several registers, like the nomadic people, who demonstrate an astute understanding of the environment. We as architects must approach the world with humility and curiosity about what the historical canon silences. This shift in thinking alone would pave the way for decolonizing building technology, material practices, and design strategies. This is just one story of many that are concealed from our disciplinary imagination.

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