Finding a New Commons: *Architecture's Role in Cultural Sustainability for Japan's Shrinking Regions*

Buscando nuevos bienes comunes: *El papel de la arquitectura en la sostenibilidad cultural de las regiones decadentes de Japón*

Abstract

Media representations of Japan's dynamic cities belie a growing national phenomenon. Urban migration, a declining birthrate and an aging population have transformed Japan's countryside over the past thirty years. These demographic changes have resulted in socio-economic decline, abandoned buildings and loss of regional culture. This paper explores architecture's role in facilitating cultural sustainability, education, and community connections to landscape.

Despite the impacts of depopulation, some rural communities are embracing shrinkage and attempting to preserve their regional cultures. This poses a challenge for architecture, a profession dependent on urban and economic growth. In the unfamiliar context of degrowth, architects need to leverage existing buildings and resources.

Among the leftover buildings in Japan's depopulated areas, the public school is becoming increasingly prevalent. These structures are imbued with collective memory, and this history creates interesting opportunities for reuse. Additionally, the architectural flexibility of these schools makes them compelling sites for interventions, often central places in their communities. My research studies how the re-use of the buildings could generate new micro-economies and lifestyles.

The research studies the potential outcomes of re-using a building type influenced by its country's social, political, and economic forces. The research presents emerging methodologies for designers working in depopulated communities, including ethnographic and participatory strategies. Ultimately, the research questions how architecture can reassemble communities on the verge of cultural decay.

Keywords: Depopulation, Shrinkage, Rural Landscapes, Material Culture, Adaptive Reuse, Culture, Social Design

Resumen

Las representaciones mediáticas de las ciudades dinámicas de Japón ocultan un fenómeno nacional creciente. La migración urbana, la disminución de la tasa de natalidad y el envejecimiento de la población han transformado el campo japonés en los últimos treinta años. Estos cambios demográficos han provocado un declive socioeconómico, el abandono de edificios y la pérdida de la cultura regional. Este artículo explora el papel de la arquitectura para facilitar la sostenibilidad cultural, la educación y las conexiones de la comunidad con el paisaje.

A pesar de los impactos de la despoblación, algunas comunidades rurales están aceptando este declive y están tratando de preservar sus culturas regionales. Esto supone un reto para la arquitectura, una profesión dependiente del crecimiento urbano y económico. En el contexto desconocido del decrecimiento, los arquitectos necesitan aprovechar los edificios y recursos existentes. Del excedente de edificios de las zonas despobladas de Japón, la escuela pública es cada vez más común. Estas estructuras están impregnadas de memoria colectiva y esta historia crea interesantes oportunidades de reutilización. Además, la flexibilidad arquitectónica de estas escuelas las hace atractivas para las intervenciones que a menudo ocupan lugares centrales en sus comunidades. Mi investigación estudia cómo la reutilización de los edificios podría generar nuevas microeconomías y estilos de vida.

La investigación analiza los resultados potenciales de la reutilización de un tipo de edificio influenciado por las fuerzas sociales, políticas y económicas de su país. La investigación presenta metodologías emergentes para diseñadores que trabajan en comunidades despobladas, incluyendo estrategias etnográficas y participativas. En última instancia, la investigación cuestiona cómo la arquitectura puede reagrupar comunidades al borde de la decadencia cultural.

Palabras clave: Despoblación, Reducción, Paisajes rurales, Cultura material, Reutilización adaptativa, Cultura, Diseño social

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Introduction

Shrinking Villages

Japan's dynamic, sprawling, ever-evolving metropolises captivate public attention as centres of culture, economy and contemporary lifestyles. Images such as the one of Shibuya Crossing continue to dominate international media. Contemporary architecture practice has primarily focused on studying and innovating in urban contexts where capital investment drives growth. As a result of the focus on cities, the fragmented states of rural regions only a hundred kilometers outside of centres such as Tokyo are often overlooked, yet many are on the verge of collapse. This research references and builds upon the discussion around shrinking cities, which commonly refers to the effects of aging populations, vacancy, and economic decline in urban areas. Here we focus on how these demographic changes have affected marginal rural areas.

Rural depopulation is a problem that has evolved over the past thirty years, and it is primarily attributed to a rapidly decreasing birth rate and urban migration. The emptying of rural areas has resulted in socio-economic decline and a lack of management of local resources (Kobayashi 2011). Towns and villages dispersed throughout Japan are advancing towards an erosion of traditions, cuisines, and crafts that embody their local contexts. This ongoing deterioration of local cultural activities has resulted in a sense of national distress as Japan's remaining rural settlements become increasingly isolated and forgotten (Coulmas 2007).

This research examines the potentials of regional cultures in Japan's countryside and asks, "what role can architecture play in preserving them?" Through design explorations on three different sites, the research proposes that architecture can facilitate material processes that will generate unique opportunities for cultural, social, and

Figure 1: Shibuya Crossing, Tokyo, 2019. Source: Julia Nakanishi.
Figure 2: Abandoned buildings in Sado Island, Niigata Prefecture. Source: Julia Nakanishi.

economic activity. The research assumes that Japan's many rural cultures come together to establish Japan's identity, and that the maintenance of their unique characteristics is critical. Nevertheless, the goal of this research is not to look backwards, but to imagine how architecture can leverage existing knowledge and imagine local, smaller-scale, and contemporary economies.

Due to the broad nature of the term "culture" and its many historical meanings, this thesis will use the definition of culture as explained in Galen Cranz's book, *Ethnography for Designers* (YEAR 2016). Semantic ethnography uses the word "culture" to describe a certain type of knowledge that is shared among people; in the context of this thesis, some examples include saké brewing, fishing, woodcraft, and rice cultivation. Culture in this case does not refer to the products that result from each activity, such as the saké itself or a piece of furniture; but rather, the knowledge and skills required to produce material objects, or "the knowledge that must be shared for communication to occur" (Cranz 2016). Cranz states that culture is learned, shared, and encoded in the language of a particular group of people, and, that by engaging with it, designers can understand the forces that organize people's behavior in space. By understanding this shared knowledge, designers can interpret the social settings in which they are designing and improve their design interventions.

The questions raised in this research are influenced by a number of forces at play in Japanese society; the national birth rate is rapidly declining, economies are shrinking, the ratio of retired citizens to working-age adults is growing, the presence of cultural heritage is diminishing, and cities are continuously expanding. These demographic changes are influencing other societal evolutions, such as Prime Minister Shinzo Abe's "Womenomics" initiative, which advocates for a greater support of working women with families in response to an increasingly reduced workforce (Nelson and Chanlett-Avery 2014). Among all these factors, exploring a new, sustainable lifestyle in Japan's marginal rural areas is becoming increasingly important.

While the research is focused on the specificities of the Japanese context, these demographic changes reflect emerging trends in other countries in the Global North (Oswalt et al. 2006). In a time when productivity and development are prioritized, the shift in thinking towards communities with slower economies and smaller populations poses a challenge. The work of this thesis imagines what "design after" shrinkage in Japan might look like, contributing to an increasingly acute discourse for architects.

In the face of the negative effects of depopulation in Japan, there are some hopeful prospects. Sado Island, Japan's sixth largest island, located fifty kilometers off the coast of Niigata City, is a region embracing its shrinkage. Often referred to as a "microcosm of Japan" due to its variety of landscapes and cultures, Sado is most well-known for its saké production as well as agricultural practices, fisheries, and forestry (Matanle 2011). Sado Island's number of towns and villages decreased from 26 to ten over fifty years, and in 2004, all remaining municipalities amalgamated into

Figure 3: Empty storefronts, Ryōtsu Port. Source: Julia Nakanishi.

Figure 4: Abandoned elementary school in Niigata Prefecture. Source: Julia Nakanishi.

Sado City. Currently, many rice fields stand abandoned along with lengths of shotengai (shopping streets) that served local residents and sold local goods to tourists in Ryōtsu Port (Figure 3).

The lack of demand for local goods has led to a decline in island-specific production techniques. The deterioration of local processes can be described as a collective loss of regional knowledge. Residents of the island expect that, despite various efforts, the island's population will not experience regrowth (Matanle 2011). Instead of planning for an unlikely future, islanders are learning how to mediate shrinkage through the restructuring of their local industries and lifestyles.

The efforts made towards achieving stability aim at making a link with Sado's character. In addressing shrinkage, Sado Islanders are expressing a need for more educational spaces for saké brewing and farming as well as more public and tourist spaces. The opportunity to design spaces that facilitate these traditional practices in a more public way creates a unique context for architecture. In "Towards a Critical Regionalism", Kenneth Frampton outlines that architecture can highlight the unique characteristics of a region in order to reinforce the identities of the community that lives there (Foster 1983). In addition to the materials and tectonics of a building, these guidelines for critical regionalism can be applied to the design of local industry (Banai, Nuit, and Beck 2017). Lewis Mumford states that regionalist architecture is not only about locally available building material or the recycling of historic ver-

nacular techniques, but a design that closely responds to the conditions of life in a particular area (Banai, Nuit, and Beck 2017).

Saké brewers of Sado are currently developing a new "regionalism" through production and export techniques. Brewers are in the process of identifying new global clients to maintain a demand for their products and share the island's culture while improving the sustainability of the local brewing process. This includes new opportunities for education, working with new waste disposal technologies and rice farming practices (Matanle, Peter, and Sato 2010). The rehabilitation of the traditional, terraced rice paddy system that fosters endangered animal species is gradually becoming part of Sado's agricultural narrative.

The thesis will focus on three geographically distinct sites where depopulation has been documented—Sado Island in Niigata Prefecture Kamocho in Okayama Prefecture and Kamiyama Village in Tokushima Prefecture—and will propose design interventions that serve their primarily elderly populations by integrating them in new economic and educational activities. Although the elderly population is a major stakeholder of each proposal, the main focus will be to develop programmatic scenarios for the surrounding community which might encourage urbanites to return to or move to the countryside. The fieldwork for this research, which involved in-person interviews with local citizens as well as various methods of site documentation, inform the future design proposals

The Abandoned Public School and Theoretical Frameworks

The current state of socio-economic decline in Japan's countryside is possibly most evident in the stark abandonment of buildings. Travelling through these rural locations this past summer, the emptiness was apparent in the vast number of *akiya* (a term meaning 'abandoned house'), shuttered storefronts, and public institutions. A recurring and recognizable type of abandoned building was the public school, which become obsolete after the decrease in child population (Gordenker 2003). In Japanese, the term *haikō* was developed to describe this building phenomenon. The Japanese school building type evokes an architectural monumentality that is connected to the political motives of the curriculum as well as its function as environmental relief infrastructure. When natural disasters damage homes and public infrastructure, the local public school auditorium is converted into temporary accommodation and a hospital. Schools are typically fortified, constructed on top of artificial topography that positions the school above flood lines. The school's high ground and structure provide a resiliency for the natural disasters that Japan faces. In the context of these disasters, the school building is adapted to house displaced members of the community.

The typical haikō is a compelling site for architectural intervention due to the national consistency of its architecture and the curriculum it houses. The public school is a collective experience and memory shared by all Japanese citizens. Some depopulating communities have proposed and implemented strategies for re-inhabitations of haikō with the goal of improving social and economic conditions. The modular construction and immutable structures of the schools have demonstrated flexibility by accommodating a variety of programs. The proposed research will document examples of school reuse and build upon these initiatives.

The Japanese school curriculum is a response to what the Ministry of Education, Culture, Sports, Science, and Technology (MEXT) describes as a "spread of undesirable 'individualism' or 'me-ism'" that "leads individuals in this society to lose their

Figure 5: Abandoned elementary school in Niigata Prefecture. Source: Julia Nakanishi.
Figure 6: Abandoned middle school in Sado Island, Niigata Prefecture (Drone site documentation) Source: Julia Nakanishi.
Figure 7: Abandoned middle school in Kamiyama, Tokushima (Drone site documentation) Source: Julia Nakanishi.

sense of responsibility, sense of justice or ambition" (Current status of education in japan and the challenges of the future 2012). The goal of this education system is not just to provide academic learning but also a sense of public responsibility. This overarching framework was developed after World War II, an era in which Japan was rebuilding itself as a nation and undergoing economic and social reform. These government motives are depicted in the consistent opportunities provided to Japanese children in their schools: from facilities

to learning materials to activities aimed towards educating productive citizens. All proceedings within the school are executed in a highly organized and arguably disciplinary (Foucault 1995) fashion that reflects the rigidity of the building's architecture. I have analyzed these behaviors with reference to Atelier Bow-Wow's research on Behaviorology and Commonalities and have proposed new occupations using Hannah Arendt's theory of plurality.

Behaviorology looks at a building as a network of relationships between humans, the natural environment, and the structure itself. Stemming from Bruno Latour's Actor Network Theory (ANT), Behaviorology challenges designers to understand and visualize how architecture can be positioned as a network of "actors", which includes objects, landscapes, processes, ideas as well as humans (Kaijima, Momoyo, and Tsukamoto 2010). In the case of Sado Island's agricultural practices, the influence of animals and other physical and geographical factors are distinctly integrated with the actions of humans in the community. ANT can be applied to architecture through its inclusion of non-living objects, placing an equal value on their contribution to the making of a building or landscape (Fallan 2011). These contributions, exchanges and relationships between actors constitute a network. Additionally, ANT states that as much as humans construct their artifacts, "artifacts construct and configure us" (Latour 2005). In the context of Japanese public schools, the political influence on the design of schools is evident in its uniform construction and modularity; students are configured by their school building and move in a highly controlled manner. The Behaviorology theory addresses elements of ANT to further discuss the emotional relationships between users and architecture while including non-human actors in the discussion. Commonalities, also developed by Atelier Bow-Wow, is a theory that states that specific relationships between actors repeat themselves in various situations and can be called "common" behaviors of people and objects.

In *The Human Condition*, Arendt writes about the need for plurality and a space of appearance by arguing that healthy communities require a vibrant public life that allows for citizens to disclose their uniqueness (Arendt 1998). This public life is supported by a distinct place of appearance, which relies on community members coming together to act on public matters and, in the context of this research, local concern (Arendt 1998). Using the writing by Atelier Bow-Wow, Arendt, and Latour as analytical tools, the Japanese public school in its original state can be considered, despite government motives, directed towards social responsibility and communal concern, an extreme example of anti-plural space that houses controlled behavior. The school is part of a greater network of societal ideals propagated by MEXT: ideas which this research seeks to challenge as these spaces are adapted for new users and new norms such as enabling women and the elderly to work more consistently, and places where Japan's rural communities can celebrate their "uniqueness".

This research examines the possibility of architectural interventions in Japan's haikō that aim to expand on the fading knowledge (processes and traditions) of its surrounding region. This will be achieved through implementing local production bound to the unique characteristics of the physical landscape and designing spaces for public interaction in selected sites. Some potential programs include educational saké brewing facilities, wood processing and manufacturing, and, as outlined in the case of Sado Island, efficient waste disposal and agricultural practices. The fieldwork in each site will inform the selection and design of these programmatic opportunities.

Inevitably, the designs will propose a change of meaning for these buildings: schools that previously represented a national approach to education and identity will be re-appropriated to accommodate highly specific programs bound to their local community. This will change the current anti-plural structure of the building in order to imagine new collective futures and subtle new social infrastructures that empower historically under-represented groups, such as working mothers and the elderly. It will also establish a new network of relationships between a region's natural resources, production facilities, distributors, consumers, farmers, manufacturers, and architects.
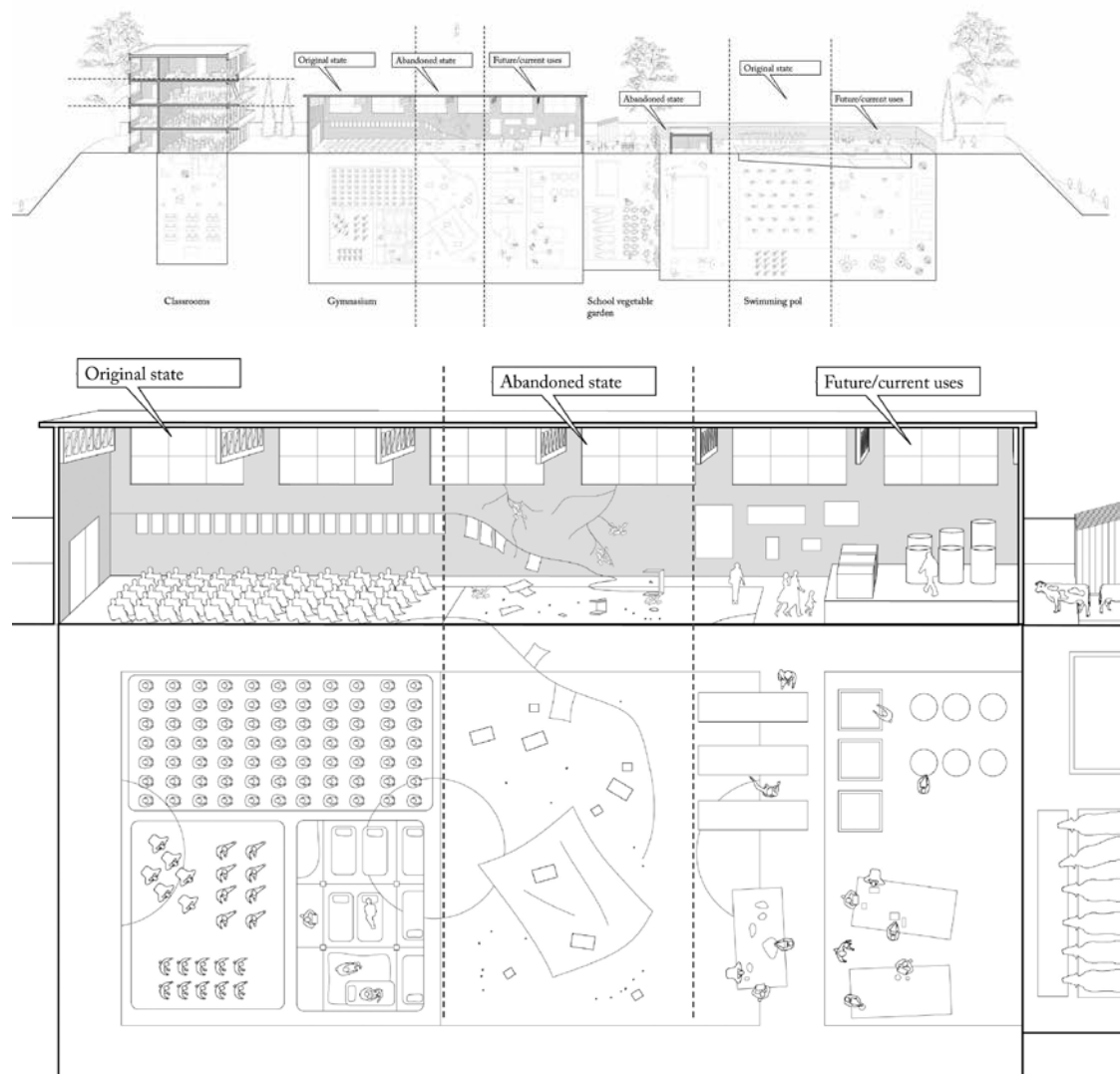
Figure 8: Typological diagram of a typical Japanese public school with overlays of past, abandoned and future states with zoom-in of the auditorium (2018). Source: Julia Nakanishi.

Figure 9: School re-use project in Kyonan, Chiba (2019). Source: Julia Nakanishi.

Architecture's Role in Shrinking Regions

A large portion of architectural discourse and practice responds to urban growth and technological advances associated with the city. This research interrogates how architects can adapt their skill sets and use design thinking to support rural lifestyles. Can architecture facilitate a "slower" daily life instead of a rapidly productive future? Additionally, how can urban dwellers adapted to the characteristics of city life be inspired to move to rural villages? While some published interviews with residents of villages describe scenarios where people moved back to their hometowns after attending university or working in cities for a number of years, predictive demographics indicate that more urbanites will need to move to the countryside to avoid the complete disappearance of most communities (Matanle and Sato 2010).

In a country where so many of its cultural activities are directly tied to rural regions, solutions for restoring them are becoming increasingly urgent. Kenneth Frampton suggests that critical regionalism can be achieved by redirecting the attention from visual stimulus, propagated by the metropolis, back to the physicality and materiality of our environments. Life in cities is framed by similar built environments that serve as products of globalism, while rural life is characterized by the unique relationships a community has with local conditions (Bowring and Swaffield 2004). The productive programming implemented in these schools will aim to highlight these relationships through new forms of agriculture, tourism and other cultural activities.

The abandoned public school buildings provide a potential site for this remediation, due to the existing, environmentally resilient infrastructure and their place in the local imaginary. In addition to addressing programs that could be implemented in the school buildings to stimulate local economies, culture, and knowledge, it is important to address the significance of the embedded meanings of these schools when designing for adaptive re-use. The schools in their existing condition evoke a national narrative of school culture common to every Japanese citizen. In understanding the initial intentions, it is critical that
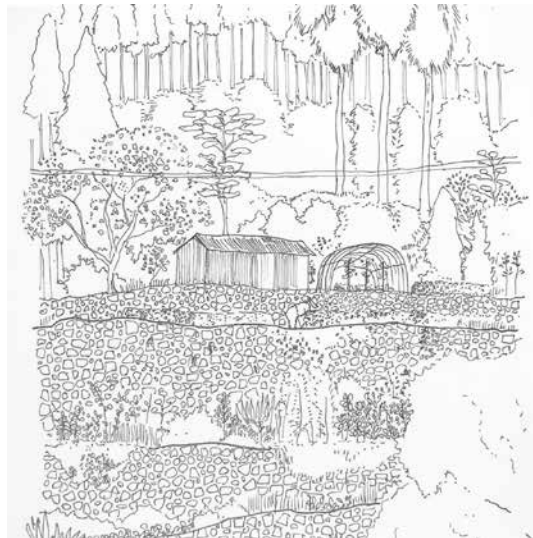

Figure 10: Fieldwork sketch depicting the unique agricultural landscape of Kamiyama Village, Tokushima: vegetables, fruits and teas are produced on steep slopes through the use of terraces supported by stone retaining walls (2019). Source: Julia Nakanishi.

we address the need for a more local approach of sharing knowledge in a way that can sustain cultural processes and production. Through specific educational and productive programs, communities can re-establish relationships with their surrounding landscape, and in doing so, reinforce personal identities.

The design research will seek out untapped opportunities for micro-economies, education, and community interaction and the potential for programmatic overlaps. The buildings will be microcosms of different community elements and demonstrate alternate futures for each region. With different emphases on social interaction, culture, and economy in each, the intention of each "demonstration" is to promote the movement of urban families and young adults to rural areas to the point where shrinkage can be stabilized. These demonstrations will also harness the cultural developments in Japanese society triggered by shrinking populations, such as the growing efforts to support working mothers.

The re-use of each school will, through the design of spaces such as community kitchens, daycares, shared professional duties, and other social infrastructure, promote a new daily life for women with families and leverage their previously overlooked resources.

Methods, Results, and Further Design Work

The background research on Japan's depopulation crisis, regional identities, and political history of public schools was conducted through a mixed-methods approach that incorporates the qualitative methods of cultural studies and semantic ethnography. The cultural studies approach incorporates both theoretical and empirical analyses (Pickering 2008) and will be applied to understanding rural depopulation through data as well as theories relating to urbanization and critical regionalism in a Japanese context. This will support the analysis of cultural meanings of public schools using Arendt's theory of plurality and Latour's ANT. These analyses are illustrated through mapping the existing social and physical relationships, networks, and stakeholders at the scale of the building, its surrounding landscape, and Japan, (as shown in Figures 7-9).

Demographic data and theoretical narratives that emerge through the cultural studies methods have led to the selection of three sites, each with a distinct context. The sites exemplify the diversity of Japanese landscape as well as regional cultures.

The fieldwork was conducted using a semantic ethnographic approach. This included conducting in-person documentation and semantic ethnographic interviews with members of town councils, farmers, craftspeople, and individuals working in tourist industries. Semantic ethnography involves active listening techniques to obtain knowledge provided by people about their own culture (Cranz 2016); these techniques help to uncover underlying spatial patterns that emerge in an individual's way of speaking that will allow for creative interpretation. These patterns, which consist of routes, particular rooms, objects, and characteristic places illustrated specific relationships that each community has with their rural landscape as well as their abandoned public schools. These findings will inform the design proposals in each site, which are in-progress. One such finding was the way in which participants from all three towns described the idea of "gathering". When prompted to provide observations and opinions on the impacts that depopulation has had on their community, interviewees frequently mentioned the lack of spaces that provided opportunities for "gathering". However,

participants from each village described unique forms of conviviality. For example, participants from Kamocho discusses the "irori", fireplaces in traditional rural dwellings. The iori is a sunken hearth which functions as a stove and is designed in a way that people can sit around it on all sides while meals are prepared. Learning from these traditional forms could help in designing community-relevant public spaces that attract people of all generations, such as one that incorporates eating, cooking, and sitting by a fire together.

Conversations with local residents in each site also included the experiences of young parents and other individuals who had moved back home or move to rural locations for the first time after living in urban contexts. The popular opinion was that the countryside provided a healthier and more relaxed setting for children along with a distinct relationship to the surrounding physical environment that felt nonexistent to most people in Japanese cities. One participant, a textile maker in Kamocho, stated: "It was important for me to be able to teach my daughter about how the food and items of our daily lives are made. The rice that we eat is cultivated for a long time, watered for a long time, and then it is harvested and processed. Those transitions and relationships are so visually present where we live". This more integrated relationship with nature also coincides with the common practice of subsistence farming in rural areas. Subsistence farming in this case refers to households that satisfy most of their individual consumption needs through producing their own food, usually while pursuing other forms of employment or work. In conversation with a rice farmer, they stated "life in the countryside provides enough time for self-sufficiency [producing your own food], as well as opportunities for many other creative projects and types of work. I am a farmer, a musician, and a horticulturist." The abundance of natural spaces and resources also provide a platform for projects and experimentation that are less available in the city. A resident of Kamiyama stated, "We were able to reuse an abandoned electronics factory as a fabrication space and maker lab, and there is lots of space for us to work. As a community we are continuously finding new things to make and do, and perhaps the next step is to have a space that is flexible and responds to these different experiments and changing needs".
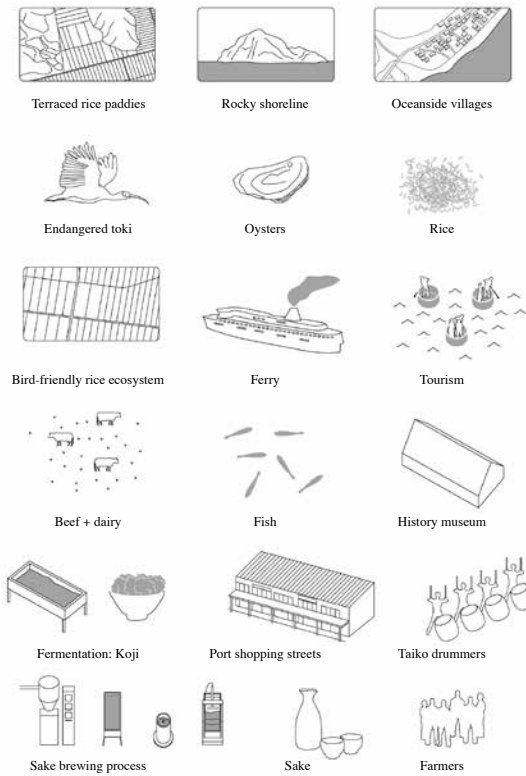
Figure 11: Cultural, economic, and social stakeholders of Sado Island (2019). Source: Julia Nakanishi.
Figure 12: Mapping the stakeholders in the area surrounding Ryotsu Port, then isolating those factors that will contribute directly to the new program and design of the school re-use project. (2019). Source: Julia Nakanishi.
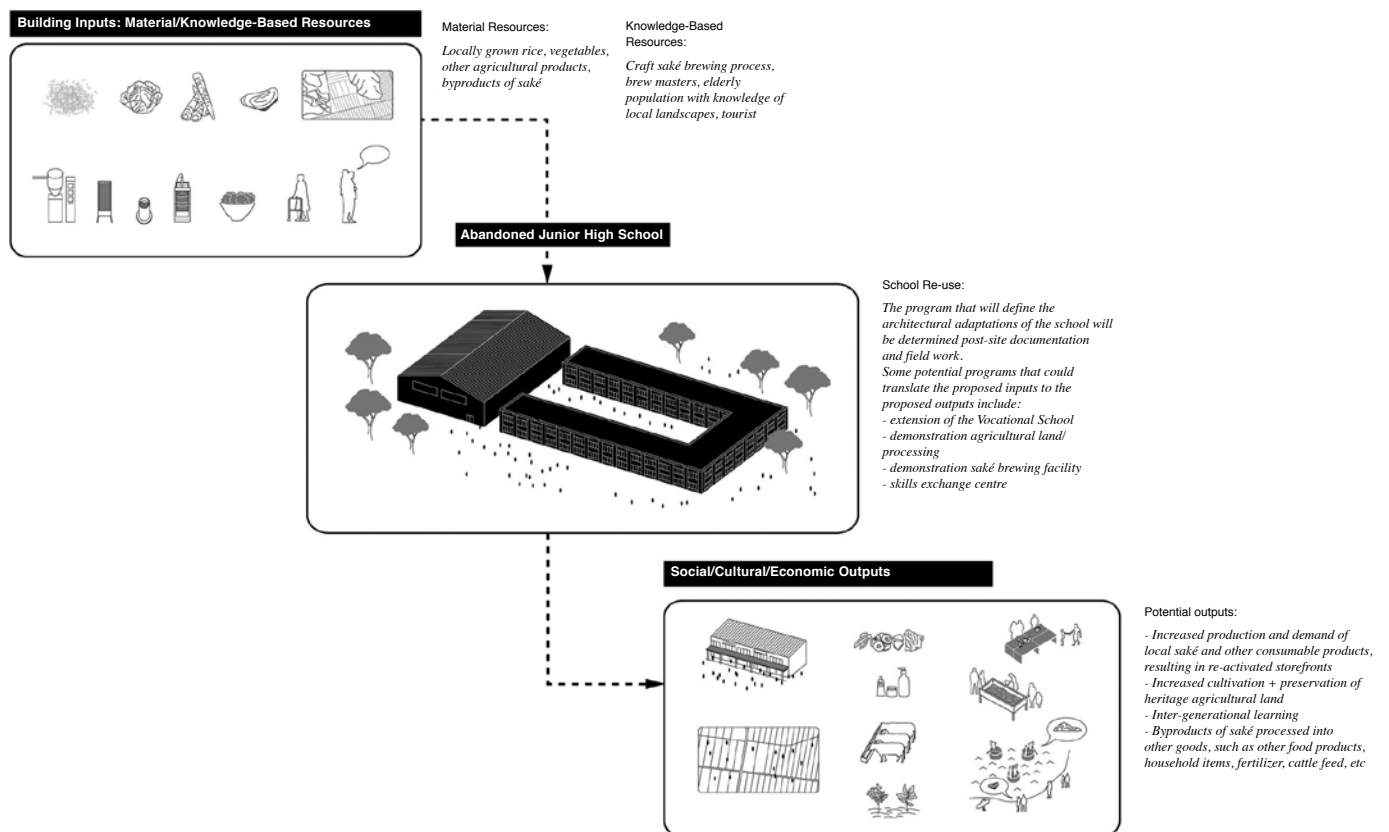

Figure 13: Proposing how the school will take the cultural/economic/social stakeholders as "inputs" and then create outputs that fit and are beneficial to the island network. (2019). Source: Julia Nakanishi.

One of the questions when moving forward with the research is how to incorporate this qualitative data into each school re-use proposal. This is where an interdisciplinary architectural approach becomes important. The interview method proved to be highly informative about the daily lives and needs of the people who would be the users of the proposed building. The gathering of the data, which involved weeks of long conversations with community members, as well as interpreting it to design future programs as well as space, is outside of an architect's typical design repertoire. Developing and exercising skills in interviewing and connecting with strangers, forming parallels within the personal stories of participants as well as spatial interpretations, and proposing social events, functions, and economic activities from the data are all interdisciplinary skills required when designing architecture that addresses the needs of a particular community.

Conclusion

Using a program designed with fieldwork results and an understanding of the existing regional networks as well as schools and their communities, the research explores the potential to support industrial and material processes as well as educational and community activities through adaptive reuse, program design, and economic proposals in each site. These proposals will demonstrate strategies that could be applied to other depopulating regions as well as an interdisciplinary approach to design.

Despite its focus on the Japanese context, the analysis of the embedded meanings of schools as well as their potential as sites for economic and cultural stimulation fits into a growing international discourse for architects. As contemporary lifestyles change, architects are being asked to adjust, restore, and repurpose existing buildings while operating in new economic and demographic contexts where cultural sensitivity and interdisciplinary skills become essential tools.

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