International Journal of the Commons

Nested Institutions for Nested Problems: Commoning for Rural Revitalisation in the Peri-Urban Setting

RESEARCH ARTICLE

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ABSTRACT

Rural areas comprise complex social and ecological systems that are nested in sub-systems at higher spatial and governance levels. At times, influence from higher level (sub) systems may threaten the integrity of local communities. Commoning designed and implemented across levels can address such challenges. A rural village is utilised to extend understandings of how commoning can be structured to tackle these challenges in the revitalisation process. This paper analyses how agricultural commoning at the village level can become nested with the wider system to restore the sub-systems integrity. This aids the identification of favourable designs of commoning and provides alternative ways to address challenges rural areas face.

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KEYWORDS:
interconnected systems; commoning; rural revitalisation; peri-urban; polycentric governance; nesting

TO CITE THIS ARTICLE:
Williams, J. M., Chu, V. H. Y., Lam, W. F., & Law, W. W. Y. (2024). Nested Institutions for Nested Problems: Commoning for Rural Revitalisation in the Peri-Urban Setting. *International Journal of the Commons*, 18(1), pp. 456–474. DOI: https://doi.org/10.5334/ijc.1266

INTRODUCTION

Rural systems are composed of both biophysical (natural resources, landscapes, built infrastructure) and social (governance structures, resource users) subsystems. Although these subsystems may be organised around community boundaries, they are still connected with sub-systems at a higher-level, which are organised to manage issues at a larger scale. As such, rural systems themselves become nested within broader social and ecological systems and processes, as they form part of larger urban/rural system as well as even larger global systems. This creates a series of hierarchical levels where multiple subsystems are found to be coupled with one another (within the same level or across different levels) to varying extents. As localised systems become nested in broader social, political and ecological systems, certain problems arise that are often referred to as nested problems. Analysing the ways in which commoning can be designed in a nested manner, to manage problems arising from nested systems and subsystems and aid the sustainability of local sub-systems, enable us to inform the crafting of effective governance structures, which are less prone to collapse (Ostrom, 2009, Lam & Chiu, 2016). This paper extends the theory and understanding of commoning by applying it to the analysis of the ways in which complex issues arising from the hierarchical interconnections and interdependencies between the urban-rural interfaces can be addressed. As a response to such complexities, diverse commoning systems have emerged in a peri-urban village in Hong Kong where nesting arrangements have been built to enhance complementarity and embeddedness. As a result, the collaborative revitalisation efforts have strengthened the peri-urban community's ability to cope with nested problems and the sustainability of the relevant sub-systems. Certain processes and phenomena between social and ecological systems at higher levels create negative externalities at more local levels, namely here for villages at the rural-urban interface, which more traditional governance approaches have been unable to address. Attention is given to how some of these challenges are tackled through commoning in the revitalise process of a village in Hong Kong. The village, Lai Chi Wo (LCW), is a traditional Hakka village, which historically maintained many commons through farming, education and being the cultural hub for the area. Over the years most of these commons had collapsed due to outmigration, which caused the abandonment of farming, closure of the village school and threatened the loss cultural knowledge and heritage, as a result, the village was largely desolate. Revitalisation efforts from 2013 worked to revive the village and adapt it to the modern context. Focusing on this study area, the paper explores the relevance and application of the commoning framework to rural revitalisation to support more in-depth analysis of revitalisation efforts and processes. It does this by analysing how commoning can be designed to manage negative externalities from higher-tier systems and harness the benefits of nesting LCW's agricultural production chain with these higher level agricultural systems to achieve a more sustainable set of sub-systems.

Rural revitalisation in this peri-urban context is considered as a process to reverse rural decline in terms of natural and cultural resources, stabilising and increasing the population, diversifying the economy and employment base, maintaining an acceptable level of service and preserving rural attractions (Meyer 2014). Concurrently, traditional institutions around common resource use can be maintained, revived or transformed through improved management. Revitalisation can also improve rural governance by enhancing local government accountability (Steiner & Fan 2019). Revitalisation contributes to rural areas becoming productive, sustainable, healthy and attractive places to live (Williams et al. 2021).

THE NEED FOR ALTERNATIVE GOVERNANCE APPROACHES

Rural and urban areas are economically, socially and environmentally interlinked, mutually benefiting from these interlinkages. Urban areas import nearly all their ecosystem services from rural areas, in return, rural areas gain markets, farm inputs and employment opportunities. The interface between rural and urban areas should be managed to ensure that urban development does not adversely impact rural ecosystems and rural life. Rather, rural populations and ecosystems should be supported and protected for their sustainable service delivery (Gebre & Gebremedhin 2019).

In a rural community, the functioning of its biophysical subsystem, such as its farmlands, influences and is influenced by social sub-systems. For example, the ownership structures of land and irrigation institutions. In turn, the rural community is nested at a higher level within a city. The linkages between these scales means that seemingly minor changes at one level has the potential of triggering a chain of effects that create substantive impacts at other systemic level (Lam 2006, Chu et al. 2023). Globally, rapid urbanisation has led to rural decline, with some rural areas becoming characterised by urban influences and considered as the peri-urban interface (Simon et al. 2006). This results in management regimes for common resources collapsing and/or undergoing transformations (Brondizio et

al. 2009, Singh & Narain 2019). As traditional institutions disintegrate, rural communities and resources become vulnerable to pressures related to urban processes.

Governance arrangements that work in essentially isolated settings are often ineffective or counterproductive when applied in settings that possess a high level of functional interdependence between resource and social systems (Lam, 2006). However, research on the revitalisation of rural resources by managing urban and rural interconnections has received little attention. Such research is essential to analyse the interactions between different levels and the governance challenges that accompanies increasing interconnections (Sarker et al. 2008).

The interdependency between different level resource or social systems means that when looking to protect or revive a local area, changes that target institutional rules at a single level are inadequate at supporting resilient or sustainable social and ecological systems. The dynamics of these coupled systems can generate nonlinear changes, tipping points and emergent proprieties that have far reaching consequences for human-environment interactions. Institutions nested in, and that link, multiple levels are required as these can accelerate learning processes, providing for faster responses and adaptation (Brondizio et al. 2009). The complex nature of cross-level resource systems necessitates institutional arrangements that facilitate the coproduction, mediation, translation and negotiation of information across and within levels (Cash et al. 2006).

INTERCONNECTED SYSTEMS IN THE PERI-URBAN CONTEXT

Being better connected to urban processes can be double-edged. Increased availability of public resources can also mean increased government control, which could lead to conflicts between formal and informal governance (McGregor et al. 2006). Additionally, although the relative availability of manpower is a great asset facilitating revitalisation in the peri-urban, increased human activity inevitably puts pressure on natural resources. Rural/urban interlinkages and interdependencies, therefore, need to be appropriately managed to take advantage of opportunities and minimise challenges to ensure the health and integrity of subsystems. The commons provide an analytical lens to unpack social change by drawing attention to collective initiatives that act outside state-centric control and neoliberal transformational processes (Baud et al. 2019).

The outmigration of local communities brings about additional challenges for revitalisation as rural communities are not always welcoming of outsiders. While collaborations between rural/Indigenous communities and professionals/non-Indigenous communities have been found to strengthen resource management capacities and community social capital (Kilpatrick et al. 2011, Pinkerton 2019), governance can be problematic. This can be due to 'culture-clash' that originates from extensive in-migration of people with different socio-economic backgrounds (Matarrita-Cascante & Luloff 2008). There may also be concerns about rural community identity becoming diluted (Kilpatrick et al. 2011). While the revitalisation and sustainability of rural areas is likely to be predicated on the in-migration of urban dwellers to the community, it must be handled with care to safeguard rural culture, ensure coherency and cooperation within the community.

COMMONING FOR MORE SUSTAINABLE SOCIAL-ECOLOGICAL SYSTEMS AT THE PERI-URBAN INTERFACE

Inadequacies with solely top-down or bottom-up approaches to rural development have led to the need for more collaborative approaches, ones that incorporate the needs of the wider community by linking rural and urban areas (Williams et al. 2021, Woods 2011, van der Ploeg et al. 2000, Brondizio et al. 2009, Lam & Chiu 2016). In certain contexts, this can be met by the incorporation of 'commoning'.

The conceptualisation of 'commons' has evolved from the traditional focus on Hardin's 'tragedy of the commons' (1968) and Ostrom's focus on institutional design and economic incentive structure of rational choice (1990, 2000). It has shifted to a process-orientated perspective and its use as a verb, 'to common' or 'commoning' (Linebaugh 2008, Baud et al. 2019). This conceives commons as a set of social relations, which are constantly changing, and processes that are constituted in the general reproduction of the community and so encompasses the active role of the community and evolution of common resource (Sandström et al. 2017).

The blurred nature of the commons is emphasised as it comprises the set of property rights related to natural resources as well as the associational practices around places/buildings that are collectively managed. It comprises the important social resources that bind people together in a place for a common purpose, creating new forms of collective action (Sandström et al. 2017). The question thus shifts from how commons are governed to how and under what circumstances do commonly managed spaces and resources come into being, who initiates the process and how these spaces and resources evolve over time (Baud et al. 2019).

Following this perspective, commoning becomes a logical approach in ensuring the sustainability of biophysical systems. This approach recognises that ecosystem services are not generated solely by ecosystems but by the combined activities and interactions of social and ecological systems (Carpenter et al. 2012) and so people and their actions are essential to sustaining healthy, functioning ecosystems and their services. Rural communities can be understood as comprising natural and man-made resources, resource users, stakeholders and a governance structure. The survival of social systems depends on their interrelations with the system of natural resources and the environment, and natural resources are conditioned by the actions of the population (Ambrosio-Albala et al. 2008).

Different forms of governance have been proposed to manage the increasing interconnected nature of common pool resource systems, particularly to handle negative externalities such as urbanisation from higher levels (Brondizio et al. 2009). Of these, polycentric governance is notable for its emphasis on smaller, autonomous, self-organised resource governance system nested at different jurisdictional levels as these may be more effective in learning than a centralised authority. Polycentric governance systems have long been argued to be successful in sustainably managing common pool resources (Ostrom 2010).

When dealing with issues of increasing connectivity between different systems and levels, however, it can be difficult to separate the impacts of different governance arrangements (Brondizio et al. 2009) and so the cause/effect relationship in decision making is blurred, leading to unintended effects and repercussions at different levels. Commoning has been found to benefit from polycentric governance (Meinzen-Dick et al. 2021), be able to design polycentric governance tools (Kolioulis 2022) and resources managed in polycentric self-organising systems are held to constitute a common (Ostrom 2020). In this way, commoning can further contribute to managing negative externalities from actions at different resource levels through its involvement of, and contribution to, polycentric governance practices.

Notable here, is the possibility of designing and institutionalising commoning processes to harness the opportunities made available from the nesting of organisations or governance structures across levels (Carlisle & Gruby 2019, Ostrom 2005). Local governance mechanisms in many rural communities are supported by a broader institutional setting, which can be provided by government agencies. Such nesting of local organisations within higher levels is important for providing complementarity and embeddedness with local level operations, providing the coercion and resources to make local negotiations efficient (Mansbridge 2014).

Here, complementarity refers to the mutually beneficial division of labour among those with different capacities. Different expertise and resources are required to address tasks at different scales and so systems need to be flexibly decomposable so that units within the system can be reorganised to cope with problems at different scales (Lam 2006). Complementarity also contributes to the robustness of a system through the provision of redundancy, enabling the system to continue to function in the face of shocks and disturbances (Lam 2006, Chu et al. 2023).

Embeddedness is the interconnections of rules and processes, which creates added value and support. This can be in the form of units at a higher level controlling excesses by units at a lower level (Lam 2006). Importantly, an effective nesting structure should still allow for the crafting and enforcement of rules at the most appropriate level and scale. The appropriate scale of governance is that where users at that level can access to the relevant information and be able to respond to disturbances (Lam & Chui 2016, Ostrom 2005).

Following Sandström and colleagues (2017), commons are understood as a contextually grounded process and so can be shaped and maintained over time in relation to the social, political and historical trends of wider society. Commons can encompass primarily economic resources, termed as productive commons, be comprised of social resources, known as associational commons, or be concerned with perceptions of belonging, ownership and contribute to the identity of the village, symbolic commons (Table 1). These forms of commons comprise different types of collectiveness and so have different social boundaries against outsiders. Taking a commoning

COMMON	RESOURCE INVOLVED	ADDITIONAL DETAILS
Productive	Primary economic resources	Resource extraction Labour intensive
Associational	Social resources	Joint social and economic resources
Symbolic	Perceptions of belonging and ownership	Contribute to identity of village
(Sandström et al. 2017)		

Table 1 Breakdown of types of commons identified by Sandström and colleagues (2017).

perspective contributes to aims to critically assess the binary contrasts and presumed dualisms, such as urban-rural, informing policy approaches to social change. This will further understandings of the interactions and practices of transformations at the peri-urban interface (Baud et al. 2019).

It is important to note that commoning is not a panacea. Often, the management of commons is dependent on a self-managed organisational structure that requires a core stable community. For physical resources, the number of people who can sustainably be active members of this structure must be limited. This can result in a more closed grouping and creates issues between balancing accessibility and sustainability. This is even more evident when communities are constantly in flux, where there is a risk that institutions supporting commoning processes can inadvertently favour more stable populations, creating a privileged community (Bingham-Hall 2016). Commoning also requires an ongoing process, involving mutual transformation of relations, practices, subjectivities and resources as well as the generation of new ideas. As such, it requires the continual commitment and engagement of the community and appropriate institutions. As a result, the process is highly resource intensive, often harder to achieve at higher levels and can be challenging in transient contexts (Bingham-Hall 2016).

METHODS AND METHODOLOGY

An in-depth case study of the revitalisation process of a rural village, Lai Chi Wo (LCW), in Hong Kong was undertaken to illustrate the different types of commons, the interdependencies and interconnections between them and the wider urban system. In particular, how these interconnections were managed, and even leveraged, during the revitalisation process to deal with challenges related to or originating from higher urban levels. This will progress understandings on how the institutionalisation of commoning can be nested and to address problems originating from the nesting of rural subsystems in broader peri-urban or urban systems as well as how these nested institutions are supported by different actors at different levels to build more sustainable rural-urban relationships.

A critical instance case study methodology was employed as this method is suited to examining a specific situation and testing theoretical and conceptual understandings. This allows for a deeper investigation into a specific phenomenon (Hayes et al. 2015) and so for the interconnections between different hierarchical levels to be elucidated and explored. Specifically, it allows for the relationship between cause and effect to be more deeply investigated and understood (Hayes et al. 2015, Eplar 2019). In this instance, to examine the relationship between different approaches to commoning and the sustainability of peri-urban social and ecological systems. This was done by investigating how commoning can be implemented to manage the nesting of different subsystems to help address negative externalities associated with the peri-urban context. The LCW case incorporates urban and rural manifestations of resource use, evolving social and cultural needs as well as urban-rural interfaces and interconnected flows of people and resources.

Due to the social, and at times political, elements involved in conceptualising commons and commoning (e.g., Euler 2018, Varvarousis 2020), commoning is a rather abstract and fuzzy concept. As such, the case study analysis will identify different types of commons, productive, associational and symbolic, as defined by Sandström et al. (2017). It will look at the social practices surrounding these commons, how they were created, supported and managed, and to what effect. This will elucidate how the different commoning processes can manage the pressures from higher level governance and resource (sub) systems, these pressures can be taken as the physical manifestation of the connections between the rural and urban.

In developing the case study, the vast number of documents and data generated by the revitalisation programme will be utilised. This data is qualitative and quantitative in nature and includes in-depth interviews with key project collaborators, observations of key processes and meetings, programme impact assessment surveys, independent reviews undertaken by relevant experts on the Programme's impact, publications and material compiled for various international award applications. The main sources of data drawn on in this study are detailed in Tables 2 and 3.

A total of 24 interviews were conducted with 18 people over the revitalisation process (2017–2022). Care was taken to select interviewees from the village, the institutions carrying out the revitalisation process and those involved in the process from outside the village to ensure representation. Multiple people were interviewed from within each group to ensure a more complete understanding of the revitalisation process and outcomes could be captured. Participants were asked questions related to the revitalisation process, their particular activities and their relationships with the other actor groups. Interviews were conducted with individuals or took the form of focus groups and were conducted by a pair of researchers, translated into English where necessary and transcribed. Members of the programme team were interviewed multiple times to get an accurate overview of the different stages of the revitalisation process and of the different processes and components involved.

TYPE OF DOCUMENT ANALYSED	DEPT./ORGANISATION	SOURCE
Government	Planning department	Meeting minutes
		General papers
	Environmental Protection Department	Website
	Agriculture, Fisheries and Conservation Department	Information booklet
	Legislative Council Panel on Environmental Affairs	Papers
	Legislative Council	Policy address
LCW Programme	The University of Hong Kong	Meeting minutes
		Reflective documents
		Progress report
		Information book
		Funding proposal
		Final report
		Programme impact assessment surveys and report
Media	South China Morning Post	News report
	China Daily	News report
	Clear the Air news	Green group blog

Table 2 Document data analysed.

ORGANISATION/GROUP	POSITION	DATE
The University of Hong Kong/Programme team	Principle investigator	2017, 2018, 2019
	Senior project manager	2017, 2018, 2019, 2022
	Project manager	2021
	Senior project officer	2021, 2022
Partner organisations	Collaborating NGO A	2020
	Collaborating NGO B	2020
	Local agri-food advocate	2018
Village community	Village chief	2017
	Indigenous villager 1	2021
	Indigenous villager 2	2021
	Non-Indigenous villager 1	2021
	Non-Indigenous villager 2	2021
	Non-Indigenous villager 3	2021
	Non-Indigenous villager 4	2021
	Non-Indigenous villager 5	2018
Programme incubation scheme	Food producer incubatee 1	2022
	Food producer incubatee 2	2022
	Food producer incubatee 3	2022

Table 3 Interview data analysed.

HONG KONG'S PERI-URBAN LANDSCAPE

There are several factors relevant to the local context that can influence the urban/rural relationship and contribute to sustainable rural revitalisation. Namely, political factors, such as supportive or absent legislation, policies and regulations, and social factors, including the relationships between urban and rural communities.

On the political front, the revival of rural communities requires all-round support to fulfil the various interdependent aspects of sustainability, however, this had been lacking in Hong Kong. Hong Kong's urban areas have received greater local and international attention than its rural territory. Only 24.3% of Hong Kong is characterised as urban/built-up land (The Planning Department of HKSAR, 2023), while its predominantly hilly territory houses 695 Indigenous villages (Home Affairs Department 2023). From the 1960s, population pressure, urbanisation and shifting food systems has seen the decline of rural villages and agricultural land in the SAR (Strauch 1984, Tam 2018, Chan 1999). The remaining farms in Hong Kong are small scale and land for agricultural uses are usually fragmented and privately owned. These landowners generally offer short-term leases, awaiting development opportunities.

The HKSAR government, prior to 2017, had largely focused on ecological conservation, with minimal attempts to support rural communities as part of a sustainable society. Several departments were involved in different aspects of rural affairs management and communication between these departments and villagers was lacking. This resulted in incoherent visions for rural communities and impeded efforts at forming a coherent top-down rural revitalisation strategy.

Bottom-up based approaches to rural revitalisation are problematic in Hong Kong due to a lack of diversified connections between urban and rural areas. Urban communities often perceive rural affairs as private issues that concern only the Indigenous population, while holding a negative perception towards Indigenous villagers due to their right to land, which is a scarce commodity in Hong Kong (Chu et al. 2022). Following, rural areas of concern are equated with country parks, making them recreational spaces to be protected rather than being integral to Hong Kong's cultural landscape.

THE LAI CHI WO REVITALISATION PROCESS

The case study, LCW, is a village located in an ecological important area, containing a marine park, Feng Shui forest and ecologically important stream (Figure 1). The village itself is of about 1 km^2 and, from the surrounding agricultural land, once generated sufficient produce for its few hundred villagers. The village was inhabited by two Hakka clans in the late 17th Century (Chick 2017) who maintained a closely interdependent relationship with the natural environment to ensure sustainable resource use. The local communities were able to devise and enforce their own rules to self-govern resource extraction and management, for example in protecting the cultural and ecologically important Fung Shui Woods behind the village settlement, agricultural practices and the maintenance of reservoirs and irrigation channels. This state of equilibrium collapsed with the emigration of its population overseas or to urban areas. LCW is located in a remote valley on the north-eastern shore of Hong Kong, which has protected it from developers but creates challenges for revitalisation (Williams et al. 2021, Chu et al. 2022).

The lack of opportunities for the public to participate in issues related to villages meant that the wider community considered rural development to be irrelevant to them. The younger generations of Indigenous villagers also felt little, if any, connection with rural development. More recently, interest has been piqued alongside rising public awareness on localism, self-sufficiency and the mental benefits of outdoor spaces. This interest is not sufficient to drive bottom-up rural revitalisation (Williams et al. 2021).

Figure 1 Map of Lai Chi Wo village and surrounding area.

Instead, the revitalisation movement at LCW was driven by civil society, which worked to reconnect the public with rural areas and create a collaborative approach to managing rural areas. In particular, approaches such as commoning were introduced to better manage urban-rural interconnections and prevent the local system reverting to a state of collapse.

After years of ongoing debate between green groups and villagers over the use of village land in ecologically sensitive areas and government inactivity (see Chu et al. 2022), a revitalisation project[1] to formulate and implement sustainable rural development at LCW was initiated by the University of Hong Kong (HKU) in 2013, with the support of the Hongkong and Shanghai Banking Corp. Ltd. (HSBC) via its Hongkong Bank Foundation. The initial four-year project raised public awareness and rebuilt the community and its livelihoods, which led to the return of Indigenous villagers and the introduction of new settlers. The next four-year project starting in 2017, 'HSBC Rural Sustainability', focused on mobilising actions of the local community for the benefit of the wider society (Williams et al. 2021) (Table 4). Efforts have been made to establish sustainable farming in the village throughout the programmes' lifespans and progressively more farmlands have been recovered. Innovative approaches have also been adopted to conserve and enhance the cultural capitals of the village, these range from tangible heritage such as the Hakka village construction and handicrafts to intangible heritage such as Hakka cuisines and festivals.

The success of these revitalisation projects has been recognised by the United Nations Development Programme (UNDP) and the community was a finalist for the Equator Prize in 2019.[2] In 2020, the LCW Programme achieved the inaugural Special Recognition for Sustainable Development in the UNESCO Asia-Pacific Awards for Cultural Heritage Conservation. The LCW case shows how associational, symbolic and productive commons were revived, evolved and developed to adapt to changes in the wider society, contributing to sustainability at the village level, while strengthening the wider system.

To enable the revitalisation of LCW, HKU took on the role of a bridging organisation to facilitate the commoning process (Chu et al. 2022). They did this by providing an interface between the different stakeholders involved in the village and its revitalisation as well as coordinated programmes and initiatives to restore the village community, revive its economic development and interlink it with the wider Hong Kong society. Notably, the Programme team conducted a range of initiatives to motivate the active involvement of local community members and interested individuals to build and sustain a nested governance system. In this way, HKU functioned as an external actor to co-create and support the conditions for community self-governance practices with the Indigenous villagers and interested individuals, but it also helped to connect rural agricultural sub-systems with the city's agri-food system to enrich and support the rebuilding of villages at the peri-urban interface.

	HISTORICAL CONTEXT	PERIOD OF INACTIVITY AND DECLINE	PERIOD OF REVITALISATION
Number of villagers	Approx. 300–800 villagers Approx. 200 houses	A few maintaining the temple	Villagers in residence:18 households, 30 residents Active members: 70 Houses under restoration: 16+ Trained: 300+ farmers.
Links with broader community	Hing Chun Yeuk (alliance of 7 villages) Local markets in nearby region Fishing community and island links	Hing Chun Yeuk (maintained for festival purposes) Occasional hiker	Hing Chun Yeuk (increasingly active role) Rural-urban links established – Increased boat transportation to link with broader local area and community Volunteers: 573 Farmers markets (monthly) Visitors: 108,600+
Farmland (hectares)	40	minimal farming in the 1960s	6 (11 farms)
Economy	Agricultural	Limited operation of a stall for hikers	Diversified – agriculture production and processing Start-ups (in situ or linked): 17 Hackathons: 2 Social enterprises: 2
Cultural events	Traditional village festivals	Limited traditional village festival	Traditional village festivals (revival of cultural events) 3 Village Fests 200+ other events

Table 4 Transition periods in LCW.

COMMONING AT THE PERI-URBAN INTERFACE: MANAGING INTERLINKAGES AND INTERCONNECTIONS AT MULTIPLE LEVELS

A constellation of initiatives in the LCW revitalisation programme stimulated social innovation with the intention of improving connections and collective empowerment. The local community's connections internally and externally were enhanced by building new linkages between LCW and other socio-political levels and spatial scales. This improves its capacity to organise collective action to support and maintain proactive and sustainable social and ecological systems at the village community level. Simultaneously, the LCW village becomes better integrated with the wider community through the creation of a nested system, which is crucial to developing the rural-urban interface and has great significance to the wider community in Hong Kong.

While commoning is adopted across the revitalisation of LCW, this paper focuses on agricultural revitalisation and the building of agricultural related socio-economic models. The farming-processing-product development chain is a prime example of how HKU facilitated the development of various village commons and connected the urban and rural communities through nesting different subsystems and processes at different levels. The process allowed those from urban societies to become part of rural communities and for the benefits of rural areas to be shared, while protecting the integrity and characteristics of rural areas. Establishing this chain involved commoning processes associated with resource extraction (namely farming), which has a long history at the village. It also involved introducing additional production and associational commons, through adding value to farm produce and creating joint social and economic interests associated with LCW, and preserving symbolic commons, those important to identity and heritage of the village (Sandström et al. 2017) (Tables 5 and 6).

ACTION	INSTITUTIONS TO SUPPORT COMMONING	DATA SOURCE	EXAMPLE
Expanding communities	Recruitment through: 3 Dous scheme Forest village, Citizen scientists, Co-creation of the community scheme VillageFest Farmer's markets	- Interviews: Principle investigator (2017, 2018, 2019), Senior project manager (2017, 2018, 2019, 2022), Project manager (2021), Senior project officer (2021, 2022), village chief (2017), Indigenous villager 1 (2021) and Indigenous villager 2 (2021) - Documents: meeting minutes, progress reports, information book	- Had to re-define concept of community to include those working in the village (not just those living in the village). - Outsiders have bought 'liveliness to the village' The increase in the number of settlers has motivated indigenous villagers to return to the village more frequently
Agricultural revitalisation	3 Dous Scheme Farm apprenticeship scheme Farmers' market	- Interviews: Senior project manager (2017, 2018, 2019, 2022), project manager (2020), project officer (2020), village chief 2017, Collaborating NGO B (2020) - Documents: progress reports, programme records	- Rebuilding of water channels and the resumption of paddy farming in farming rehabilitation works can help restore the ecological value of Lai Chi Wo instead of destroying it - Villagers are an example of human-nature symbiosis - Farming brings a sense of belonging and community cohesion to LCW - Farm apprentice have established small farm at LCW at the completion of the apprenticeship
Management structures	Village management Farmers' meetings Days' of community farming	- Interview: Senior project manager (2017, 2018, 2019, 2022), Village chief (2017), Non-Indigenous villager 1 (2021), Non-Indigenous villager 2 (2021), Non-Indigenous villager 3 (2021), Non-Indigenous villager 3 (2021), Collaborating NGO B (2020) Documents: Farmer group meeting minutes, progress reports	- Non-Indigenous villagers contribute to the village by taking part in village cleaning activities and other maintenance work, while Indigenous villagers have also offered help to them at their farms. - Indigenous and Non-Indigenous villagers work together in resource and infrastructure management. - The annual maintenance of the village reservoir highlights the culture of collaboration. - During farmer group meetings, rules are established and clarified, e.g. on the collective management of boundary areas and electric fences surrounding the farms

Table 5 Examples of data for incubating communities of interest for village revitalisation.

ACTION	INSTITUTIONS TO SUPPORT COMMONING	DATA SOURCE	EXAMPLE
Value adding	LoCoKITCHEN Diversification/Coffee farming Educational and best practice farming initiatives	Interview: Senior project manager (2017, 2018, 2019, 2022), Documents: meeting minutes	- LoCoKITCHEN provides a 'one-stop' approach to incubate local agricultural produce into commercially attractive products - the LCW Programme implemented agroforestry to diversify the production modes in LCW and developed an agroforest coffee and native forest species model to serve production and conservation purposes. The native forest trees provide shade and shelter for the coffee trees as well as moderate temperature
Local food producer business viability	LoCo-AgroFood Challenge Scheme Local food production incubation Farmers' market	Interview: Food producer incubatee 1 (2022), Food producer incubatee 2 (2022), Food producer incubatee 3 (2022)	- The training programme has helped improve the brands' production process, improving efficiency, precision and offered manpower assistance. - The brands also found the training provided on marketing, sales, connection building with farmers and retailers very useful. The incubation process prepare the food processors for more stable business growth.
Connecting actors in the food system	Establishing platforms and partnerships between small group food processors, local agri-food advocates, wholesaler, retailers	Interview: Non-Indigenous villager 5, Local agri-food advocate (2018)	- Small food processors develop partnerships with small to large retailers and other businesses for cross-over events. - The importance of helping consumers to feel like they are part of a larger community working towards rural revitalisation. Consumers developing an interest in learning more about LCW products and revitalisation project, as well as continuing to support LCW products.
Start-up schemes	Rural in Action start-up scheme Hackathon	Interview: Senior project manager (2017, 2018, 2019, 2022), Project manager (2021), Senior project officer (2021, 2022)	- The Rural in Action Start-up Scheme generated innovative ideas regarding rural-urban connections, such as how to manage or enhance the flow of resources and create new networks between urban and rural areas. Similarly, the Hackathon generated innovative ideas for sustainable food systems in Hong Kong

Table 6 Examples of data for economically sustainable agriculture.

INTERCONNECTIONS AND CHALLENGES BETWEEN THE LCW VILLAGE AND THE LOCAL AGRICULTURAL SUBSYSTEM

The interconnections of processes across social and ecological subsystems at different levels have created governance issues for rural revitalisation. Namely, changes in the wider system such as the decline of the local agricultural sector, influx of cheap produce from Mainland China and the increasing urbanisation of Hong Kong, had a negative impact on the village population and its rural agricultural lifestyle. The village's near abandonment meant that LCW faced management and governance challenges. To manage these challenges, commoning processes enabled resource and manpower input from the urban context to support the revitalisation of local agricultural sub-systems. This facilitated the establishment of an inclusive self-governance structure involving Indigenous villagers, farmers and organisations coming from higher levels.

Management and governance challenges stemmed not only internally, at the village level, but also as it was traditionally difficult for outsiders (non-Indigenous villagers) to join and become active in the village. Indigenous villagers in particular were concerned about newcomers bringing "cultural conflicts" (interview: collaborating NGO A) and had a deep distrust of environmentalists or any actions by the government that may infringe their traditional rights, "these groups would prevent them from constructing small houses, which is a right of the indigenous villagers" (interview: village chief) As a result, the village was vulnerable to negative externalities from the higher levels and unable to engage with outside systems to manage interdependencies. The decline of the local agricultural sector then led to the collapse of agricultural activities in the village as well as corresponding governance system.

The lack of manpower available in the village was a major management and governance issue that had to be tackled to implement revitalisation efforts. Many

Indigenous villagers were living abroad or in urban Hong Kong and while some Indigenous villagers were willing to assume an active role in the revitalisation process, the rejuvenation of the village could not rely solely on them. The revitalisation of the village required the creation of economic vibrancy to ensure its sustainability, which had to be pursued simultaneously with repopulation. It was recognised by the programme team that while an "integral part of urban areas", rural villages "can no longer…be an independent system isolated from the outside world" (interview: senior project manager).

The guiding principle of the LCW project was that the revitalisation and long-term management of rural communities could not be confined to Indigenous villagers and/or the government. Rather, revitalisation should be expanded to interested individuals/organisations from the wider territory. The approach emphasises leveraging people who are concerned about rural communities from the wider society with the aim of preserving and revitalising the natural resources and cultural capitals embedded in the village.

To this end, an overarching approach was to recruit and incubate communities of interest in rural-related affairs. Interested individuals from the urban community were recruited, such as volunteers, apprentice farmers and artists, some of whom are provided with training and opportunities in the village. The project team then linked these new community members with resources, such as accommodation and farmlands, and helped them to plan and setup their living/involvement in the village. Through working and/or living in the village, participants learnt new skills and knowledge through the creation of production commons, but they also develop a more thorough understanding and built essential connections with the place and the people. Participants in the programmes reported gaining "new knowledge" and that they now consider themselves to be "part of the LCW community" (interviews with non-Indigenous villagers 4 and 5)

Agricultural revitalisation was an important pillar in reviving the village community. For this purpose, the 3 Dous Community Building Scheme[3] and Farm Apprentice Scheme were implemented. Interested individuals were recruited to be trained in sustainable agriculture alongside Indigenous villagers. The Programme encouraged relationships to be built and the formation of small groups to establish smallholder farms. Currently, 11 groups of community farmers and producers are in operation and 6 ha of farmland has been restored. The multiple farming schemes present at the village ensured complementarity within the village system, enabling farming to be more productive and robust.

The LCW Programme also supports business start-up schemes,[4] one of which focuses on a plant native to the area, pu giong (*Vitex negundo*). The plant has great historical significance to the Indigenous villagers due to its medicinal

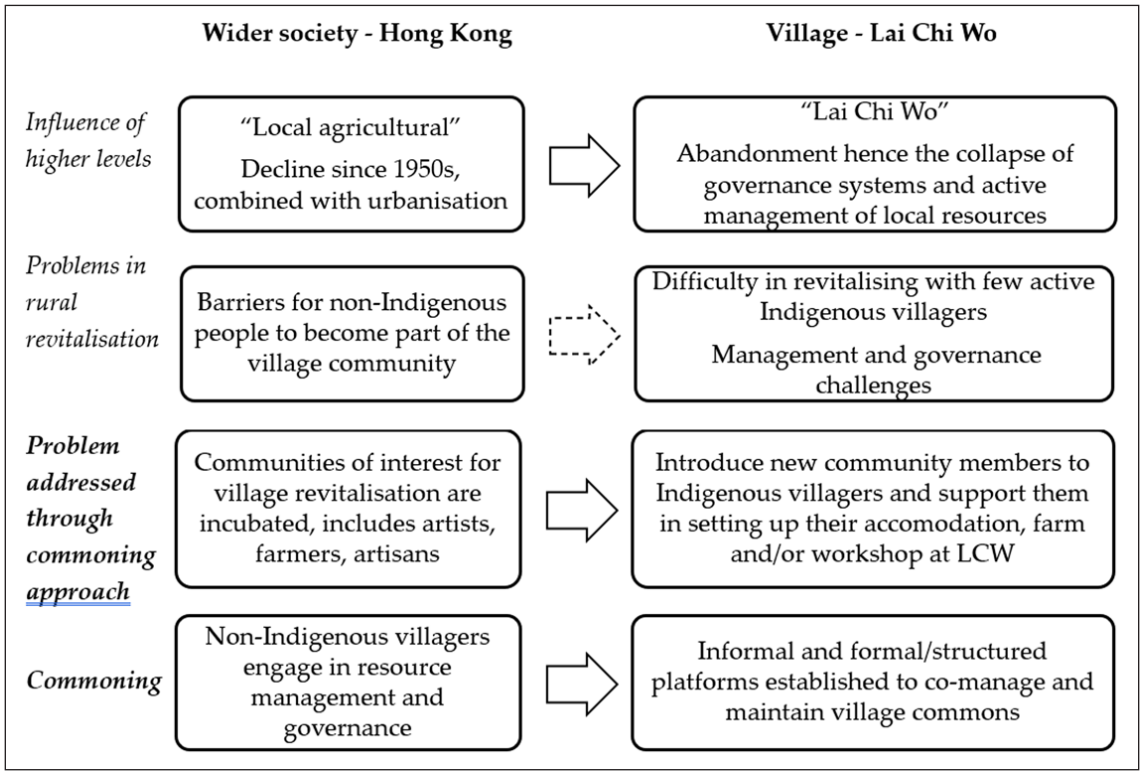

Figure 2 Overview of the interconnections and challenges between the different levels and the commoning approaches undertaken.

proprieties and symbolic representation of the Hakka people's perseverance, but recently it has come to be viewed as a weed. Under this scheme, the start-up collaborates with villagers to develop new products using pu giong, such as soap and incense. Rediscovering the value of this symbolic common helps to develop a possible business opportunity and helps maintain the village, while fostering and reinforcing Indigenous villagers' sense of belonging and identity.

Through this process, these resources and capitals are safeguarded, redefined and co-created. As such, they can be shared and so contribute to the resources available for the benefit of the wider society. The involvement of people who are willing to contribute resources, ideas and time form an important basis for the development of a sustainable rural-urban interface.

Commoning requires systems to manage shared resources, particularly those that support social practices, such as the provision of mutual support, negotiate conflicts and provide communication and allow innovation (Bollier 2016). The approach provides a basis for reforming the village governance structure and builds new management platforms where non-Indigenous stakeholders are included, connecting the social and ecological processes of the village. This enriched village governance structure allows for self-governing within the village, maintaining legitimacy and Indigenous support. The village management committee was revived to create an associational common, which comprises members of four of the five Indigenous families of LCW and makes decisions regarding village affairs, supporting the involvement of the village community. The management committee has become responsible for sub-letting farmland in the village. This ensures the integrity and appropriate use of traditional land as well as providing reassurance that the ultimate control of the land remains with the village. As a result, Indigenous villagers became "more willing to work with newcomers" and were willing to "lease out their village houses" (interview: collaborating NGO B).

To manage commons of resource extraction and farming, platforms to manage the physical infrastructure and aid decision making were established. In terms of physical infrastructure, the Programme is developing a facility sharing community to draw the farmers together and strengthen their mutual support. The majority of farms share responsibilities to maintain infrastructure and equipment and so members are encouraged to take collaborative actions when problem solving. Consequently, "knowledge exchange takes place very naturally and commonly amongst the community members" and community members increased their participation in LCW activities over the programme period (Chu et al. 2023). There are also regularly scheduled 'day of community farming' to pool manpower from every farm to undertake essential maintenance works.

Community farmer meetings are held regularly as a decision making platform that offers flexibility for rule-crafting and rule-modifying to take place. The legitimacy of the platform and the need for a facilitator to mediate this self-governance platform made up of representatives from each farm in the village was considered to be important to develop a robust local agricultural subsystem (Chu et al. 2023). The role of host and facilitator for this platform was then taken up by the land tenant and the manager of the Hong Kong Countryside Foundation, a local NGO, demonstrating complementarity with HKU activities. These meetings serve to provide farming news, follow up on maintenance work, formulate and discuss community rules, plan collaborative marketing and promotion events, resolve disputes, share and exchange resources as well as to identify potential risks and discuss preventative and mitigation measures. A WhatsApp group is frequently used to facilitate information exchange and for ease of communication and coordination between the farms, which compliments regular face-to-face meetings.

Under the Programme, voluntary support and the exchange of manpower are encouraged within the community. The co-management approach and communal nature of the farmers community encouraged under the Programme is evocative of the village's traditional management system for resource sharing. These forms of communication have been crucial in continuing to build trust within the farming community, facilitating the shaping of shared values and norms. Consequently, the community's capacity to resolve conflicts arising internally and/or deal with threats from broader contextual factors or other SESs it is nested within, is enhanced and a more effective governance system is built. The programme found community members are more likely to "negotiate peacefully to avoid conflicts" (interview: village chief) and participants felt that there is "lots of respect between Indigenous villagers and farming groups" (Interview: Non-Indigenous villagers 1 and 4) (Figure 2).

MANAGING CHALLENGES BETWEEN THE LCW SUB-SYSTEM, THE LOCAL AGRICULTURAL SUB-SYSTEM AND THE LOCAL FOOD SUB-SYSTEM

Another challenge for revitalisation was making agriculture environmentally and economically sustainable. Hong Kong relies extensively on imported food, the city imports 98% of the vegetables it consumes (AFCD, 2020), the majority of which come from Mainland China. Cheap agricultural imports make it difficult for local produce to compete. Alongside this, obstacles, such as the lack of policy support, have contributed to the poorly

developed local agricultural sub-system. Local farms have long struggled with issues ranging from a lack of stability of farmland leases, unjust prices in distribution and wholesale, unstable and limited consumer support. It was pointed out that "insufficient income" was a major factor in preventing people from staying at LCW or moving there to practice farming (interview: Indigenous villager 2).

Agricultural revitalisation at LCW faced additional hindrances due to its remote location. Accordingly, the cost of transporting produce and/or products to be sold outside of the village is high, which reduces their economic competitiveness. Fresh produce, which has a short shelf life, is particularly problematic as its value is low and transportation costs lead to significant increases in price. Consumers have many alternative options, such as buying from other local farms closer to urban areas or produce from Mainland China.

In the LCW case, the impact of higher level systems means that it is important to develop processed products rather than to focus on the direct sale of fresh produce. Processing produce creates more unique products, which contributes to the creation of a stronger brand and means that there are fewer alternatives. The subsequent increase in value and shelf life negates the higher transportation costs. To this end, the Programme created associational commons through platforms to develop and sell produce as well as supported the continuation and evolution of symbolic commons.

To aid the production of produce and its processing, HKU initiated several incubation and apprentice schemes aimed at revitalising farming at LCW. These schemes added value to the resources available at LCW, cultivating productive commons. Initially, the Programme reintroduced rice paddy farming, the traditional agricultural staple of the village. However, the level of heavy metal naturally present in the soil had accumulated due to the abandonment of farming. While safe for consumption, productivity was low and difficult to sustain. Consequently, coffee, a more suitable crop, was introduced, creating a new productive common for the village and some rice farming was maintained for its symbolic importance.

The Programme team and the farming and producer groups have all contributed to increasing the variety of crops and products produced at LCW. The groups maintain frequent dialogue and to grow different crops. This reduces direct competition and creates more economic opportunities

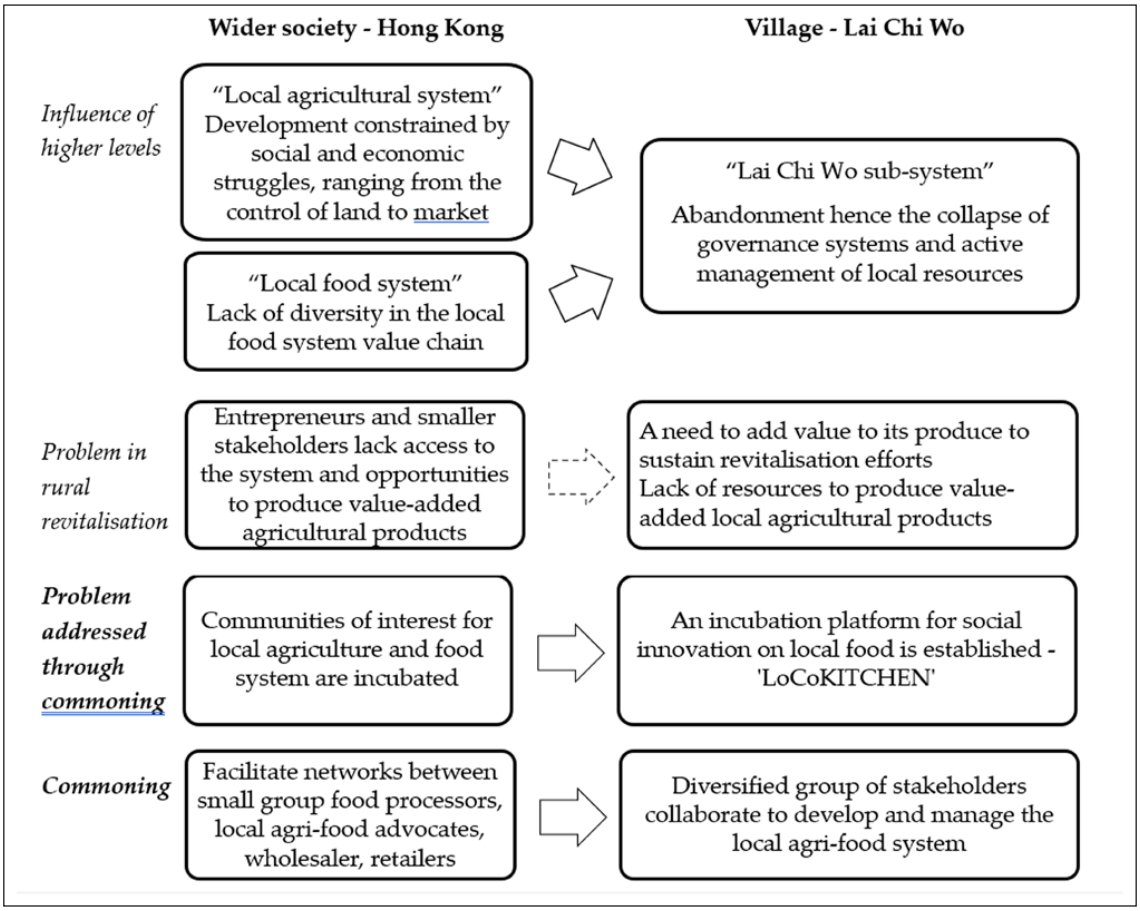

Figure 3 Overview of interconnections and challenges between nested sub-systems and the commoning approaches undertaken.

for the village by offering more choices for consumers. Meanwhile, the Programme experiments with sustainable farming practices, develops new produce and products (we "are developing a more diversified range of products" (interview: Non-Indigenous villagers 4 and 5)) such as coffee (Lam et al. 2022) and brown sugar ginger tea) as well as collaborates on the reinvention of traditional products (e.g., pickled mustard greens, a key ingredient in a Hakka dish), which are important symbolic commons for the village.

An associational common in the form of a shared kitchen, LoCoKITCHEN, was set up in 2020.[5] The kitchen supports farmers and processors who seek to share their traditional or innovative products and recipes using local produce with the wider community. In Hong Kong, regulations constrain the sale of pre-packed processed food, which must be produced within licensed food factories/restaurants. Proper sewage, water supply and fire safety measures are also required for the license application, which is incompatible to many village houses and involve high investment inputs. These requirements were cited to be a "stumbling block" to creating higher valued products (interview: Indigenous villager 2). LoCoKITCHEN resolved this licensing issue by obtaining food production related licenses and installing the relevant machinery and infrastructure. As a result, it is the first local incubation platform for social innovation on local food in Hong Kong.[6]

As an incubation platform it improves the embeddedness of rural sub-systems with the local agri-food system, creating an intertwining of processes between agricultural activities, food processing, food preparation, product development, sales and distribution. Bringing together local farmers, producers, start-ups, chefs, advocates of local produce and macrobiotic diet, the platform serves to nurture community-based local agriculture and production development as well as incubating food-based social entrepreneurs. Different actors converge to be trained or provide training in processing local produce, develop new recipes and products and the marketing of these products. Business and marketing strategies are also shared, with participants reporting that they have learnt "how to start a small business" (interview: non-Indigenous villager 3). Some are involved in inventing new recipes or rediscovering traditional family recipes using local produce, further promoting the value of maintaining sustainable rural communities to the wider community. This aids the production of social capital, which serves to bridges these communities.

The shared kitchen is nested between the village and urban level as it establishes a spatial presence outside of LCW, where residents of the Sha Tau Kok Frontier Closed Area have been engaged. Individuals have been recruited from the local community, for example, six women from the Northern District and a farm apprentice have formed a processing team to support fresh produce processing in LCW and Sha Tau Kok. They have been offered training on work safety, hygiene, relevant skills and knowledge and employment opportunities at the kitchen. Other members of the Sha Tau Kok community have also been engaged to participate in activities that align with the food education mission of the kitchen, which helps to create social capital by linking these neighbouring communities' together (Chu et al. 2023).

Sales channels for LCW produce and products have also been diversified and nested across subsystems through partnering with a local agricultural advocacy organisation, Kong Yeah, and collaborated with food wholesaler, supermarket chain Yata. A regular farmers' market was established in LCW in 2017[7] to sell and promote LCW agricultural produce and a coffee production and

COMMONING APPROACH/PROCESS	TYPE OF COMMONS BUILT	EXAMPLE FROM LCW
Incubate collective identity/avenues for collective action	Associational	LoCoKITCHENKitchen
	Symbolic	Use of traditional ingredients/recipes
	Symbolic	Rice paddy farming
Incubate diversified communities of interest for managing resource flows	Associational	Community farms
	Productive	3 Dous, farm apprenticeship schemes
	Symbolic	Start-ups that use local plants in new and traditional ways
	Productive	New crops (e.g., coffee)
	Productive	Partnerships with wholesalers/coffee production-development chain
Multiple co-management platforms	Associational	Village management committee
	Associational	Farmers meetings
	Symbolic	Reviving a communal farming system

Table 7 Breakdown of the commoning approaches/processes and the types of commons institutionalised with examples from LCW.

development chain has also been established, connecting coffee grown at LCW with brewers and the coffee industry across Hong Kong. This includes developing and offering the first comprehensive course on coffee production, consumption and value change management in Hong Kong[8] to allow practitioners and interested members of the community to acquire practical knowledge to incubate sustainability change agents for coffee related sectors in Hong Kong. These have helped to link the rural farmers with customers, generate deeper understandings amongst the broader community and strengthen the urban/rural relationship (Figure 3).

DISCUSSION AND CONCLUSION: DEVELOPING THE URBAN-RURAL INTERFACE

Commoning is demonstrated to provide an analytical lens for understanding interdependencies between different levels and system through its application to examine social change and transformation in the context of urban-rural interconnections in this paper. This generates insights into how revitalisation efforts can manage challenges originating from higher (urban) levels to contribute to building sustainable rural areas through creating nested subsystems.

The incorporation of nesting arrangements in the implementation of commoning to manage the pressures from larger context has attributed to the success of the LCW revitalisation effort. This is evident in the Programme receiving the 2020 UNESCO Asia-Pacific Awards for Cultural Heritage Conservation. It has also brought about policy change in the local context. The HKSAR government announced, in 2017, the creation of the Countryside Conservation Office and associated fund for conservation and revitalisation efforts explicitly referencing the approach taken at LCW (Policy address 2017).[9] On a more local level, it was found that "many participants [had] positively changed the way they feel about sustainable living and rural community" (Final Report VC) with Indigenous villagers expressing that "Having outsiders here is a good thing, as it has brought liveliness to the village" (interview: village chief) and partnering institutions expressed a commitment to 'continued cooperation with the villagers of LCW' (Interview: partner organisation B).As a result of the development of the farming-processing-development chain established at LCW, increased integration between rural and urban communities in managing the lower level LCW village has occurred. The interconnections between the different subsystems, from the village through to the wider local agricultural subsystem, have become strengthened and are managed through commoning to better handle knock-on negative externalities and ensure sustainable resource flows. Noteworthy, the LCW Programme involves urban communities in the commoning of several types of rural commons, not just associational commons, which are more amenable to outside involvement (Sandstrom et al. 2017).

This has resulted in the increased integration and interaction between urban and rural communities (Table 7). Urban communities work alongside the rural in farming and developing produce through associational commons, such as LoCoKitchen, while the Indigenous villagers' share symbolic commons, for example traditional plants and recipes, with the wider community. As a result, these arrangements become nested and more deeply embedded with processes at higher levels. The assets from urban areas have been made more readily available to LCW, and vice versa. Jobs and economic opportunities were created for urban dwellers seeking an escape from city life while the villagers benefit from new ideas, innovations and manpower. The village now hosts a semi-permanent population of Indigenous residents, artists, entrepreneurs, farmers and producers, many of whom split their time between urban Hong Kong and LCW and were inspired by the natural beauty and rural nature of the village and its agricultural potential (interviews: non-Indigenous villagers, Chu et al. 2023).

The villagers are also able to share their culture and traditional products with the wider society, reconnecting individuals with their heritage and providing education, learning opportunities and growing a sense of community cohesion. The natural and ecological beauty of LCW has also become more accessible to the wider community. Revitalisation efforts undertaken through the adoption of commoning have integrated the LCW village into the local agricultural and food subsystems. Thus, functional social and ecological systems have become more nested within and across levels and can sustain and support each other while contributing to the development of the rural-urban interface by interlinking local agricultural production and processes with the wider Hong Kong community.

Through nested institutions for commoning at LCW, several subsystems were integrated, which improved the sustainability of the rural community. The greater nesting of LCW subsystem with those at other levels means that the system has greater adaptability and complementarity, which was demonstrated at the farm level. Initially, the Programme sought to re-establish rice farming, a symbolic common for the village. When it became evident that this was no longer viable the Programme switched to growing coffee and established a sub-chain for coffee production and sale within the village farming-agricultural sector–

	PROBLEMATICS ORIGINATED FROM HIGHER SPATIAL LEVEL	HOW THE PROBLEMATICS PLAY OUT AT THE RURAL LEVEL (NESTED PROBLEMS)	COMMONING INSTITUTIONS/PROCESS
General issues at the rural-urban interface	Factor embedded in socio-economic conditions, development constraints faced by local agricultural sector	Limitations in agricultural revitalisation as challenges in revitalisation in general	Setting up common platform
	External trends (imports and urbanisation)	leading to dilapidation, collapse of agriculture and rural resource management regime	Incubate communities of interest, draw on manpower from wider community Partnerships
Context specific issues	Social factors: Lack of public involvement (rural affairs separate from urban)	Indigenous and non-Indigenous collaboration	Multiple co-management platforms to address different issues with open participation and enable self-governance
	Political factors: Existing legislation/policy approach		

Table 8 Relationship between challenges of interconnected (sub)systems and commoning institutions and processes in rural subsystems.

wider food system chain. The creation of a new productive commons at LCW and new links with different sectors and industries builds in redundancies and creates a more developed food system. This further links, integrates, and so strengthens, the different levels involved and supports the village's socio-economic viability and local agricultural system.

Various rules and mechanism were established to enable self-governance of commoning processes and help mediate disagreements and conflicts, especially between the Indigenous villagers and new community members. Mutual monitoring serves to enforce or clarify rules for farming communities, with the regular meetings handling any need for conflict resolution. The programme team and partner organisations did, however, have a prominent role during the early stages of the project in building trust between the two groups (Chu et al. 2023, Williams et al. 2021).

The LCW revitalisation case illustrates how the commoning lens can be applied to explore pressures and interactions associated with social and ecological transformation, i.e., revitalisation, at the peri-urban interface (Table 8). It breaks down the urban-rural binary to highlight the interconnected systems at different spatial levels and to demonstrate how pressures from higher levels can be mediated and managed. Thus, it has contributed to theoretical development by demonstrating how ways of implementing commoning can be adopted to capitalise on interlinkages between subsystems nested at different levels and mitigate common problems that originate from higher systems during rural revitalisation. By focusing on how commoning can be designed and implemented across various levels, we have paved the way for future research to extend understandings of the conditions where commoning is appropriate and how it can be structured.

NOTES

1 Full project name: "Sustainable Lai Chi Wo: Living Water & Community Revitalization – An Agricultural-led Action, Engagement and Incubation Programme at Lai Chi Wo".

2 Equator initiative database of solutions: https://www.equatorinitiative.org/2017/06/19/new-socio-economic-models-for-rejuvenate-desolated-rural-village/ and https://www.equatorinitiative.org/2017/06/19/nature-culture-based-training-and-education/.

3 https://ccsg.hku.hk/ruralsd/en/pages/eco-production/farmers-and-producers/.

4 The Rural Start-up Scheme has incubated 10 start-up projects, the Co-creation Scheme has incubated 7 projects, held 209 events, involved 2,500 participants and hosted 3 Village Fests.

5 For more information about LoCoKITCHEN, and the sustainability impact of the programme in general, see Chu et al. 2023, Sustainability Impact Assessment: Framework and report on HSBC rural sustainability.

6 Has incubated five products and three brands as well as provides original equipment manufacturer (OEM) and original design manufacturer (ODM) services.

7 Information on the farmer's market can be found on the programme website (https://ccsg.hku.hk/ruralsd/en/pages/eco-production/farmers-market/). In addition, a facebook page is maintained to provide updates regarding the farmer's market (https://www.facebook.com/LaiChiWoFarmersMarket), the page is mostly in Chinese.

8 Certificate in Sustainable Coffee Value Chain (https://ccsg.hku.hk/courses/certificate-in-sustainable-coffee-value-chain/) run by the Academy for Sustainable Communities established by the Centre for Civil Society and Governance at The University of Hong Kong in 2018.

9 As of Oct 2023, the Countryside Conservation and fund have apportioned approximately HKD 209 million of public funds to supported 43 revitalisation projects in over 29 rural communities.

FUNDING INFORMATION

The authors would like to thank the HSBC Rural Sustainability Programme team for making their wealth of resources available to the researchers. The authors would also like to express their appreciation to the Hongkong

Bank Foundation (grant no. AR180016) for its funding and support of the Living Water and Community Revitalisation: An Agricultural-led Action, Engagement and Incubation Programme at Lai Chi Wo and the HSBC Rural Sustainability Programme.

COMPETING INTERESTS

The authors are employed by the University of Hong Kong, who was in charge of and received funding for the Living Water and Community Revitalisation: An Agricultural-led Action, Engagement and Incubation Programme at Lai Chi Wo and the HSBC Rural Sustainability Programme, the study of which this article is based.

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TO CITE THIS ARTICLE:
Williams, J. M., Chu, V. H. Y., Lam, W. F., & Law, W. W. Y. (2024). Nested Institutions for Nested Problems: Commoning for Rural Revitalisation in the Peri-Urban Setting. *International Journal of the Commons*, 18(1), pp. 456–474. DOI: https://doi.org/10.5334/ijc.1266

Submitted: 06 March 2023 **Accepted:** 19 May 2024 **Published:** 29 July 2024