

# 森林村落

Forest village

梅子林蛤塘永續鄉村計劃

Mui Tsz Lam Kop Tong sustainable village programme

## Designing rural stewardship incubation

Informing approaches for citizen participation in  
the Forest Village Programme  
(Phase 1: 2021-24)

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# Table of Contents

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<b>1. Introduction .....</b>	<b>4</b>
<b>2. Defining rural stewardship .....</b>	<b>5</b>
<b>3. Assessment framework for rural stewardship.....</b>	<b>6</b>
3.1 Sense of rural stewardship .....	6
3.2 Activity design variables.....	8
<b>4. Activities to nurture rural stewardship .....</b>	<b>11</b>
<b>5. Data collection and analysis .....</b>	<b>13</b>
<b>6. Results .....</b>	<b>16</b>
6.1 Knowledge, skills, and satisfaction.....	16
6.2 Rural stewardship results.....	19
<b>7. Discussion .....</b>	<b>28</b>
<b>8. Conclusion .....</b>	<b>32</b>
<b>9. References.....</b>	<b>33</b>
<b>Appendix 1 – Pre- and post- survey .....</b>	<b>36</b>
<b>Appendix 2 – Interview Questions.....</b>	<b>62</b>

# 1. Introduction

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Ensuring healthy, sustainable rural areas is an increasing challenge as urbanisation and globalisation have contributed to the erosion of rural societies and their livelihoods, resulting in rural decline (MEA 2005, Wästfelt & Zhang 2016, Kestemont et al. 2011). Collaborative approaches have been put forward as an effective strategy to revitalise the rural areas and attain wide range of sustainability objectives as they are often successful in building sustainable social-ecological systems (Bodin et al. 2017, Li et al. 2019, Ostrom 2010), in particular, those that involve civic actors and individuals in caring for the land and each other as stewards (Andersson et al. 2014, Koontz & Thomas 2006).

As a part of the Forest Village Project, the team is conducting research to develop the concept of rural stewardship, which is adopted into an assessment framework to measure an individual's sense of rural stewardship. This approach is then applied to measure a programme participant's sense of rural stewardship before and after the programme to identify any changes they experienced. This enables us to assess the effectiveness of relevant programmes that were designed to educate and enhance participants' understanding and awareness of rural issues and examines participants' interactions and involvement in various activities.

The rural stewardship framework enables the team to better measure the outcomes of the engagement and training programmes. This differs from basic programme reporting practices that focus on measuring and reporting programme outputs, for example, through tracking key performance indicators. This is because the rural stewardship framework is developed to unpack a participants' values, attitudes, and behaviour. By collecting their responses both before and after the programme, it enables us to detect the changes they might experience within any of those areas, which fall under the expected outcomes of the programmes.

## 2. Defining rural stewardship

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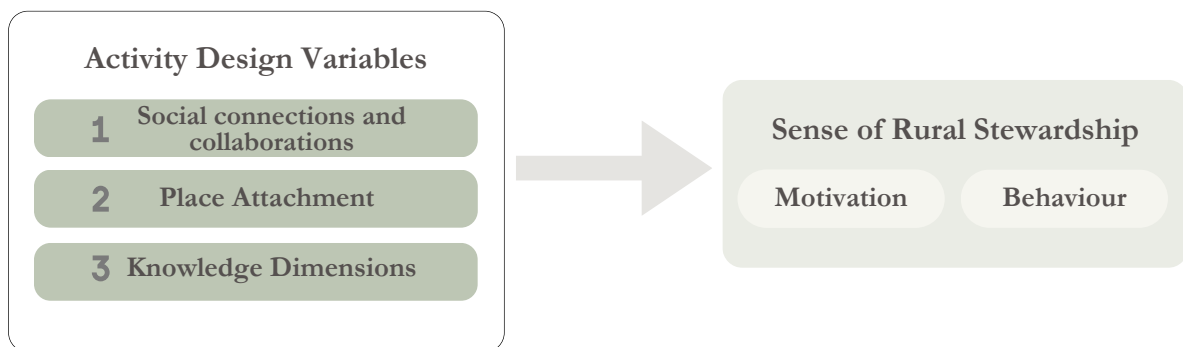
The concept of rural stewardship is developed to blend sustainable environmental management with the safeguarding of traditional cultures and values to ensure the long-term protection of such rural assets for future generations. Stewardship is a broad, altruistic and eco-centric concept (Worrell & Appleby 2000, Turnbull 2020), which can materialise in a strong desire to ‘do the right thing’ and behave ‘morally’ (Worrell & Appleby 2000, Gill et al. 2010, Welchman 2012). It requires continued management, monitoring and evaluation of social and ecological environments (Bennett et al. 2018). The human relationship with place is inherent in understanding stewardship as locality often has an influential role in stewardship motivations and interactions (Stern et al. 2008, Gallay et al. 2016).

Rural areas often possess a rich cultural heritage and history (Williams et al. 2021), which need to be accounted for in rural stewardship activities. The rural locality of stewardship is incorporated into Bennett and colleagues’ (2018) definition of environmental stewardship. Rural stewardship is considered as ‘the actions taken by individuals, groups or networks of actors, with various motivations and levels of capacity, to care for the rural environment and culture in pursuit of environment and/or social outcomes in diverse rural-related social-ecological contexts. Emphasis is placed both on the environmental dimension of rural stewarding but also on the intangible assets embedded in rural communities.

### 3. Assessment framework for rural stewardship

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In this framework, sense of rural stewardship is broken down into motivations and behaviour (section 2.1). The main elements of stewardship are identified and interpreted in light of the rural focus. These include a person's relationship with a rural area, how this relationship may comprise a rural identity or inform their sense of self as well as the cultural history that may be associated with rural areas (Yarker et al. 2020, Gill et al. 2010, Gallay et al. 2016). These elements inform understandings of rural stewardship motivations and behaviours and forms the first half of our framework (**Figure 1** 'Sense of Rural Stewardship'). Three key activity design variables were identified to be relevant for incubating participants' sense of rural stewardship (**Figure 1** 'Activity design variables') from the literature.



**Figure 1** Assessment framework for rural stewardship

#### 3.1 Sense of rural stewardship

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##### *Motivations*

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Rural stewards are found to be motivated by rational, norm-based, or affective influences (**Table 1**). More specifically, rational individuals are likely to be motivated by activities through which they benefit, such as the direct costs and benefits that can be provided from nature as well as the expectation of external rewards or sanctions. Economic, social, or legal rewards or sanctions can also be motivating forces. Another rational motivation is personal learning, such as expanding ecological and cultural knowledge of an area (Schroeder 2000, Ryan et al. 2001,

Bramston et al. 2011). Relatedly, the need for humans to continue to learn and grow to reach their true potential can also act as a motivating force (Bennett et al. 2018).

**Table 1** Motivations for engaging in rural stewardship activities

Motive	Description	Rural stewardship motive
<b>Rational</b>	Individual utility maximisation	Personal learning
		Perceived direct cost and benefits from nature
		External rewards and sanctions
		Self-determination and self-actualisation
<b>Norm-based</b>	Actions by efforts to conform to norms	Sense of belonging
		Caretaking of the environment
<b>Affective</b>	Triggers of behaviour grounded in emotional response to various social contexts	Ethics, morals values

Norm-based motivations for rural stewardship are likely to emerge from a desire for self-belonging and belief in caring for the environment (Krasny et al. 2014, Lakocz et al. 2011 Galloway et al. 2016, Bramston et al. 2011, Yarker et al. 2020). A person's emotions may also be influential in motivating them to proactively engage in rural areas, especially if they feel they have an ethical, moral or social responsibility towards the area (Bennett et al. 2018, Worrell & Appleby 2000).

## *Behaviours*

Stewards can undertake a range of activities to protect, conserve, educate, restore, or sustainably use an environment (Worrell & Appleby 2000, Krasney et al. 2014, Bennett et al. 2018, Stern et al. 2008). Here, behaviours relating to particular actions/strategies, such as restoring, preserving, and monitoring (Turnball et al. 2020), are classified as rural stewardship 'action strategies' (Liu et al. 2015). Action strategies allow for a broad range of behaviours, as well as for concurrent behaviours (strategies), to be considered. Change advocacy, complemented by education, is also thought to be an important rural stewardship behaviour (Turnball et al. 2020, DeWaters & Powers 2013) and necessary for the continuation and scaling of stewarding activities throughout a community (Romolini et al. 2012, 2016). Finally, effective decision-making behaviours are highlighted due to the collaborative nature of stewardship activities (Andersson et

al. 2014, Koontz & Thomas 2006) and the complex nature of social and ecological problems (Berkowitz et al. 2005).

### 3.2 Activity design variables

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Activities can be designed to test the influence of certain factors on a person's sense of rural stewardship. Here, we looked at the influence of a person's place attachment, the type of knowledge they possess and social connections and collaborations. These factors are expected to impact the aims, scope and scale of stewarding activities.

#### *Place attachment*

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Place is an integral element of rural stewardship, both as a site of action (rural landscapes) and as a motivational force (place attachment). The social and physical dimensions that provide insights into place attachment have been identified and explored in various studies (e.g. Hidalgo & Hernandez, 2001; Hernandez et al., 2007, Raymond et al., 2010, Lewicka, 2011, Scannell & Gifford, 2010), which identify several components that provide insights into how building place attachment can contribute to nurturing stewardship (Baldwin et al. 2017). Place is also considered in a geographical sense to explore if place attachment is specific to a particular locality or can be transferred across a broader area (**Table 2**).

**Table 2** Processes of place attachment

Process of attachment	Description
<b>Affective</b>	Socially constructed deep emotional ties to a place. Place is part of the person's identity
<b>Functional</b>	Attachment through behavioural interactions through practicing activities. Satisfying a personal need/goal
<b>Cognitive</b>	Constructed meaning and intellectualised interpretation of the setting's physical attributes (e.g. the 'naturalness' or cultural history). Why a place is valued/meaningful

Adapted from Baldwin et al. (2017)



## *Social connections and collaborations*

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Sense of belonging and social bonds are considered important (e.g. Kudryavtsev et al. 2012, Gallay et al. 2016, Krasny et al. 2014, Lockoz et al. 2011) as connections between individuals have been found to reinforce their connections to, and willingness to care for, a place (Baldwin et al. 2017). It has also been found that collaborations between multiple stakeholders are necessary to bring about stewardship in practice (Cockburn et al. 2018).

## *Knowledge*

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Knowledge is widely held as an important antecedent for developing competence that leads to environmental action and behavioural adjustments (Jenson 2002), but it often falls short in inspiring pro-environmental action (Jenson 2002, Berkowitz et al. 2005). Knowledge needs to be action orientated to develop an individual's ability to act and effect change. To better understand this, knowledge can be broken down into four different dimensions through which a given environmental problem can be viewed and analysed. The combination of these four dimensions results in action-orientated knowledge (Jenson 2002).

**Table 3** Knowledge dimensions for understanding environmental problems

Knowledge dimension	About	Description	Area (examples)
1	<u>Effects</u> and context	Knowledge about existence and spread of environmental problems. Starting point for willingness to act.	Scientific
2	Root <u>causes</u>	Causal dimension of environmental problems. Associated social factors influencing our behaviour	Sociological, cultural, and economic spheres
3	<u>Strategies</u> for change	Knowledge about how to control one's life and how to contribute to changing living conditions in society, and thus embraces direct as well as indirect possibilities for action.	Psychological, political, and sociological studies
4	Alternatives and <u>visions</u>	Necessity of developing one's own visions and having the support and surplus energy to realise them, is an important requisite for the motivation and ability to act.	

Adapted from Jensen (2002)

Bringing all these insights together, we build a framework to explore the influence of different activities looking to cultivate and support rural stewards. This enables more nuanced findings into the operation of rural stewardship and how different variations may materialise. This is pertinent as, instead of looking at how to 'make' a rural steward, it is more informative to focus on how variations between activities can result in different stewardship attributes and behaviours. These insights can then contribute to building a spectrum, or map, of stewards in the context of rural revitalisation. This will provide guidance on how to incubate stewards with the appropriate skills, capacity and interests to match the needs of a particular context and scale of action.

## 4. Activities to nurture rural stewardship

Several of the activities involved in the Forest Village Project are compared using the framework developed above to analyse how variations in their contents, in terms of place attachment, knowledge and social connections, affected changes in the motivations and behaviours of their participants. This was done through a combination of surveys and observations.

**Table 4** Forest Village activities

Programme	Date and no. of participants	Overview
<b>Citizen Scientist Programme</b> (included a mix of CS and IB)	32 ppl / Nov 21 30 ppl / Nov 22 24 ppl / May 23 17 ppl / Oct 23 12 ppl / Jan 24 19 ppl / Apr 24	<ul style="list-style-type: none"> <li>- <u>Forest Carbon Stock (CS) day camp</u> Participants were taught forest survey skills and practices such skills</li> <li>- <u>InsectBlitz (IB) day camp</u> Participants learned insect species and were guided to conduct species identification and recording.</li> </ul>
<b>Village Volunteer Scheme</b>	30 ppl / Jul-Sep 21 29 ppl / Aug-Sep 22	<ul style="list-style-type: none"> <li>- Lectures and field trips are included in the training, followed by an assessments</li> <li>- Trained volunteers will act as tour guides, story house docents and helpers at public events.</li> </ul>
<b>Forest track volunteer scheme</b> (Historic trail repair programme)	26 pl / May-Jun 22	<ul style="list-style-type: none"> <li>- Lectures and practical training are provided for volunteers to learn the significance of historical forest trail to the Hakka culture, skills and technique of sustainable forest track construction and repair.</li> <li>- This is followed by volunteering opportunities in forest track development where participants practice their skills and develop traditional craftsmanship</li> </ul>

## Activity variation

The activities varied in the type of knowledge they imparted, their relationship with place and social or collaborative elements (Table 5). These are integrated within the activities in various combinations to allow observations into potential complementary or conflicting combinations.

**Table 5** Programme activities variations

Activity	Knowledge	Attachment	Social connections/ collaborations
<b>Citizen scientist programme</b>	(1) Effects	Functional	Team formation and Group work
<b>Village volunteer scheme</b>	(1) Effects (2) Strategies (3) Causes	Cognitive	Individual
<b>Forest track volunteer scheme</b>	(2) Strategies	Functional	Individual



**Figure 2** Citizen Scientist Carbon Stock



**Figure 3** Citizen Scientist Insect Bioblitz



**Figure 4** Village Volunteer Scheme



**Figure 5** Forest Track Volunteer Scheme



## 5. Data collection and analysis

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Surveys were conducted prior to the start and on completion of each component of the initiatives. The survey was designed based on findings on environmental stewardship motivations (Bramston et al. 2011, Bennett et al. 2018, Krasney et al. 2014), environmental literacy (Liu et al. 2015, DeWaters & Powers 2013), citizen scientist and volunteer literature (Alender 2016, Domroese & Johnson 2017), understandings of place attachment (Lokocz et al. 2011) and studies seeking to measure environmental stewardship (Turnbull et al. 2020). These were adapted to the rural context and adjusted for each programme. The resulting surveys addressed different aspects of rural stewardship behaviours and motivations, consisting of **seven sections**:

- (1) background information,
- (2) ways of involvement,
- (3) value (e.g. “I am very connected to the natural environment of rural areas),
- (4) attitude (e.g. “I feel connected with my ancestors/history of rural Hong Kong”),
- (5) behaviour (e.g. “When I notice people harming the rural environment, I warn them or report such cases”),
- (6) skills (e.g. “I take systematic records of the rural environment”) and
- (7) knowledge (e.g. “I use evidence and knowledge to support my position on rural issues in Hong Kong”).

The full sets of pre- and post- surveys can be found in appendix 1. Both surveys were conducted through an online platform and accompanied with an explanatory note giving an outline of the research and purpose for data collection. The surveys were provided in Traditional Chinese. Participants were asked to complete the Pre survey at the initial briefing, and where possible, time was allotted for this activity. On completion of the programme, participants were asked to fill out the post survey and a reminder was emailed one to two weeks after to increase response rates.

A total of **334 surveys** were collected, **190 pre-surveys** and **144 post-surveys**. After the initial stage of data sorting, 89 successfully matched pre- and post-survey responses (through personal identifiers collected in the questionnaire) were identified across four incubation programmes. These include citizen science programmes (45), village volunteer scheme (24), forest track volunteer scheme (13) and the campsite hackathon (7). The variation in sample size

was inevitable due to the difference in the number of participants the programmes were designed to engage (and the number of times the programmes were conducted). We conducted hypothesis testing using *R software* for statistical data analysis. Given the variation in sample sizes, we used t-tests to compare the pre- and post-surveys. It was feasible to separate the full dataset and explore the changes for participants of the citizen science programmes (Group 1 - 45), village volunteer scheme (Group 2 - 24) and forest track volunteer scheme (Group 3 - 13)<sup>1</sup>.

**Table 6** Total number of matched surveys

<b>Total number of matched surveys</b>	<b>89</b>
Citizen science programme – Group 1	45
Village volunteer scheme – Group 2	24
Forest track volunteer scheme – Group 3	13
Campsite hackathon – Group 4	7

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### *Supplementary data collection*

To complement the main data collection method through conducting questionnaire survey for this study, supplementary interviews with village volunteer scheme participants were considered useful. This is because while administering the post-surveys at or as soon as possible after the final session helps to ensure a higher response rate, it meant that the surveys were only able to capture changes until that point in time. As the citizen science programmes were designed as a short and intensive programme without expectations of future commitments from the participants, and a high number of respondents (and matched surveys of 45), the surveys were sufficient to capture the relevant changes. In contrast, the village volunteer scheme included a final assessment where it is expected that successful participants would contribute as volunteers for the revitalisation of the village, making the target group more specific.

About ten of the village volunteer scheme participants were identified as being more active over the past two to three years. An interview invitation was sent to them and four agreed to be interviewed. Interviews were conducted in either English or Cantonese, depending on the interviewee's stated preference and lasted between 30 to 45mins. The interviews were structured

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<sup>1</sup> Except the Hackathon due to the lower sample size (7)

by 6 key questions (please see appendix 2). The interview data adds further insights into the quantitative data. Interviewing these highly involved individuals could provide us with further insights into what motivates rural stewardship, impactful elements of the programme, and how these relate to their behaviours.

**Table 7** Interview conducted

	<b>Date</b>	<b>Years since graduating from the volunteer programme</b>
<b>1</b>	21/05/2024	2
<b>2</b>	24/05/2024	3
<b>3</b>	27/05/2024	2
<b>4</b>	27/05/2024	2

Observations of various components of the programmes were also conducted by the programme coordinators and research team. Due to the large number of programme components, it was not possible to observe every single element, therefore, these observations are used to inform and enrich discussion. An Observation Record Sheet following Ballantyne et al. (2005) was adopted to record behaviours that indicate engagement in learning during different components of an activity. These categories are defined by Griffin (1999) and scored on a scale of one to four based on the frequency of engagement observed. Where possible, more than one observer was present for each observed programme component, so that findings could be cross checked.

Focus was on participant's engagement in learning as this can help determine the likelihood of knowledge uptake as well as the social interactions that occur. Insights into the social interactions of the participants within the programme can inform the dynamics of social connections, leadership roles and collaborations in decision making and group work.

## 6. Results

### 6.1 Knowledge, skills, and satisfaction

While most of the questions in the pre-survey and post-survey were designed based on the rural stewardship framework and to enable comparison and the identification of changes as a result of the programmes, the post-survey also included a few questions that were designed in the style of standard satisfaction surveys that are usually distributed to participants at the end of an event or programme. The findings from these satisfaction-orientated questions are reported here.

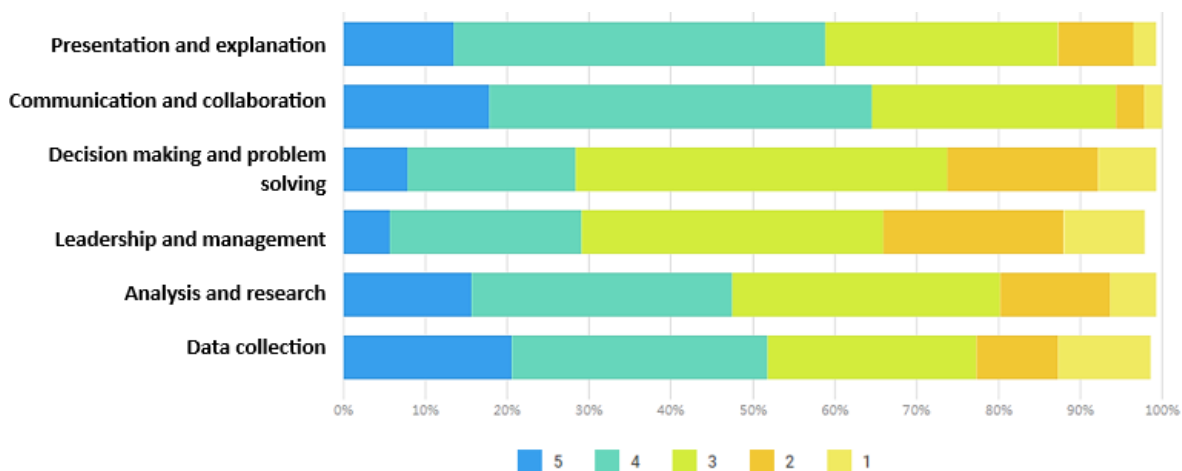
#### *Skills and knowledge*

Questions were designed to assess if participants of the citizen scientist and volunteer programmes felt they had learnt any skills or knowledge from the programmes. The self-reported results are provided on a 5-point Likert scale.

**Table 8** Skills participants reported to have learnt during the programmes (n=140)

Skills	5	4	3	2	1
	New skills acquired in depth				No new skills acquired
Presentation and explanation	19	64	40	13	4
Communication and collaboration	25	66	42	5	3
Decision making and problem solving	11	29	64	26	10
Leadership and management	8	33	52	31	14
Analysis and research	22	45	46	19	8
Data collection	29	44	36	14	16



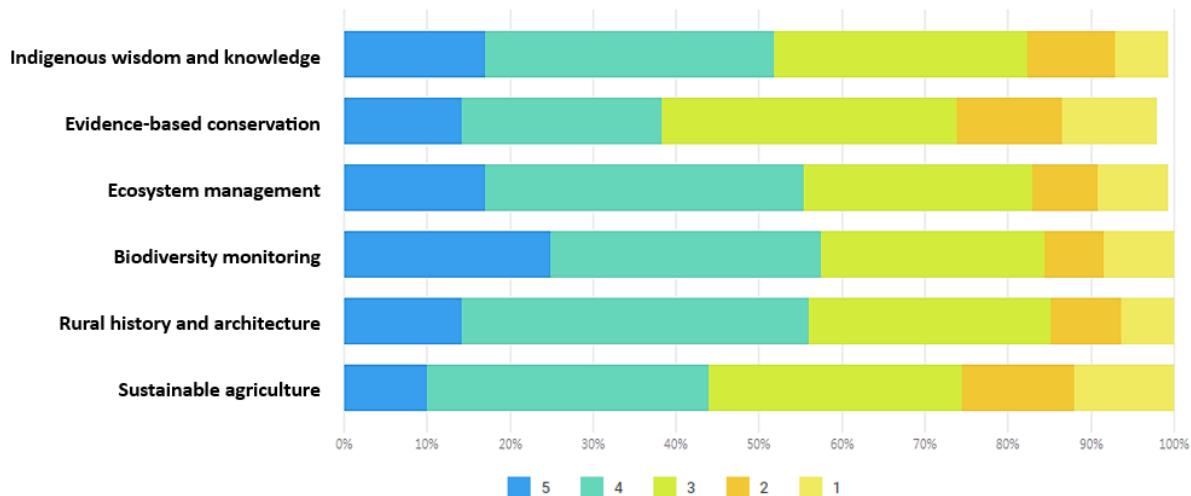


**Figure 6** Skills learnt over the citizen scientist and village volunteer scheme

Over 85% of the respondents scored at least 2 or above for all aspects of skills, showing that the majority felt that the programmes were useful. Notably, over 50% of the participants felt they gained a significant increase (Scoring 4 or 5) in their skills regarding ‘presentation and explanation’, ‘communication and collaboration’, ‘analysis and research’ and ‘data collection’.

**Table 9** Knowledge participants reported to have learnt over the programmes (n=140)

Knowledge	5 New knowledge acquired in depth	4	3	2	1 No new knowledge acquired
Indigenous wisdom and knowledge	24	49	43	15	9
Evidence-based conservation	20	34	50	18	16
Ecosystem management	24	54	39	11	12
Biodiversity monitoring	35	46	38	10	12
Rural history and architecture	20	59	41	12	9
Sustainable agriculture	14	48	43	19	17



**Figure 7** Knowledge learnt over the citizen scientist and village volunteer scheme

Again, over 85% of the respondents scored at least 2 or above for all options, showing that the majority felt that the programmes had helped them gain knowledge across various aspects.

### Overall satisfaction

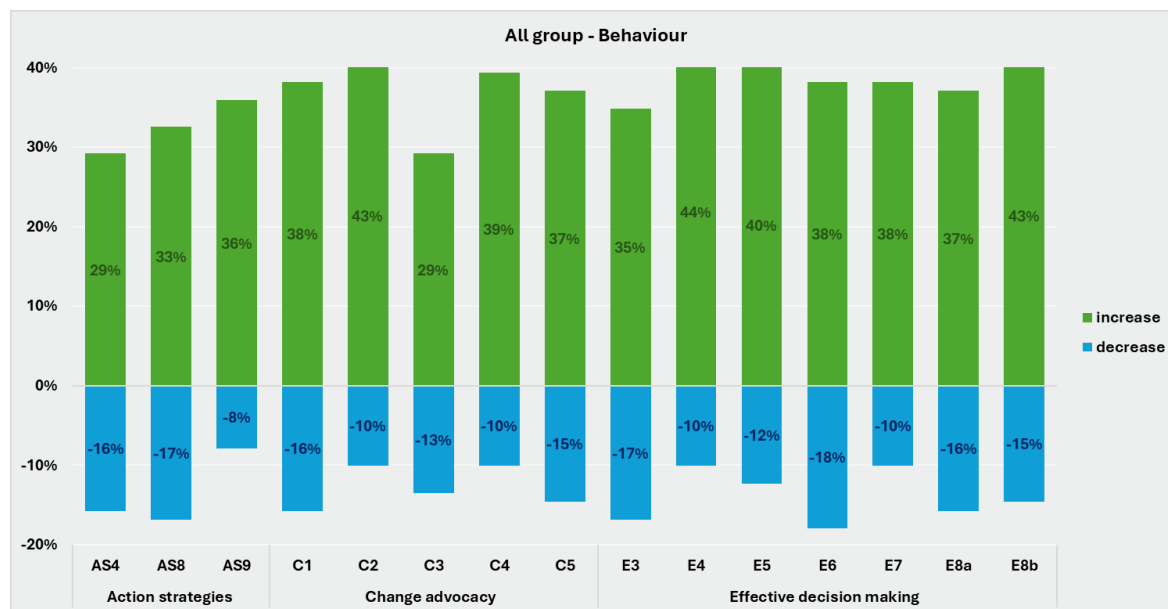
Respondents were asked whether they plan to participate in rural revitalisation activities/programmes in the future, and 94.9% (133 respondents) reported that they had plans. Amongst them, 94 plan to participate in other activities organised under the Forest Village project, and 39 plan to participate in rural revitalisation programmes through other means.

### Scientific findings

The Citizen Scientist programme has made contributions to understanding the biodiversity and ecological status of the rural village environments. Notable, the InsectBlitz camps have recorded three new species of butterfly in the area, the Banana Skipper (*Erionata torus*), Contiguous Swift (*Polytremis lubricans*) and the Falcate Oak Blue (*Mahathala ameria*). In terms of overall biodiversity, different approaches were trailed to expand surveys beyond butterflies and dragonflies. By using a light trap, 99 different species of moths were recorded by the participants, demonstrating that more extensive biodiversity surveying and monitoring is required to establish biodiversity baselines and better understand rural-village ecosystems.

## 6.2 Rural stewardship results

Overall, the combined results (total 89 matched responses) for the four stewardship programmes were found to have influenced the participants motivations and, more notably, their behaviour. For motivations, facets of rational, affective and norm-based motivations increased. There were even more significant changes in terms of participants' behaviours (**Figure 8**), with increases in variables related to action strategies, all of change advocacy and the majority of effective decision making. It is unsurprising that there were greater changes in participants' behaviour than motivations, as it is likely that individuals who joined the programmes would have already possessed a high degree of motivation. More interesting are the differences between the participants who joined the different programmes, reported in the following subsections.



**Figure 8** Changes in behaviour across the rural stewardship programmes

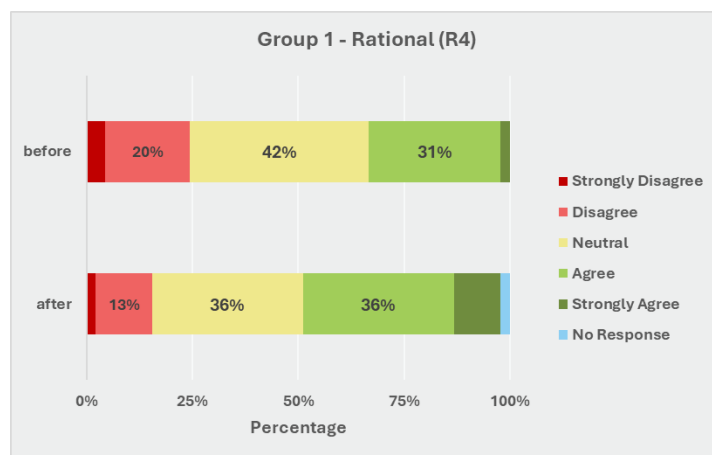
### *Findings by programme*

Overall, the results suggest that the citizen science programme has led to significant changes in the highest number of variables amongst its participants. This is compared with the village volunteer scheme, where significant changes were found in a few variables. The results did not

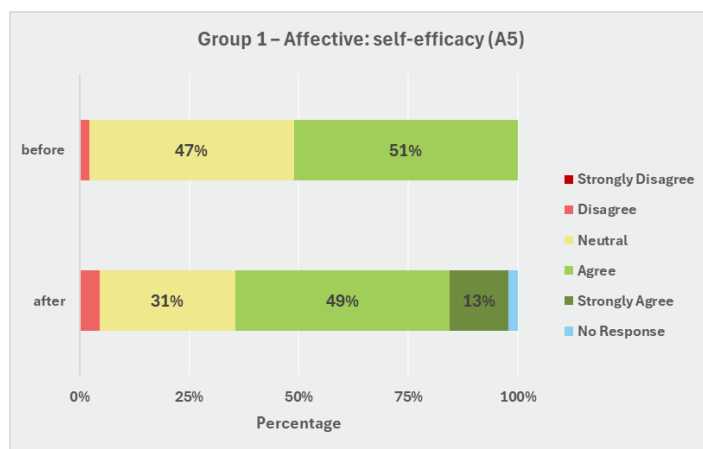
reveal significant changes for any of the variables amongst the forest track volunteer scheme<sup>2</sup>, therefore, more attention will be paid to conduct a cross-programme comparison between the citizen science programme and the volunteer training programme.

### *Changes in motivation: rational*

In terms of motivation, citizen science participants (group 1) demonstrated the most significant changes as a result of the programme. In particular, they were the only group that showed an increase in rational motivation (**Figure 9**) and affective motivation, namely self-efficacy (**Figure 10**). In contrast, the other two groups did not show any changes in rational- or affective-based motivations.



**Figure 9** Changes in external rewards and sanctions (rational motivation) for citizen science participants

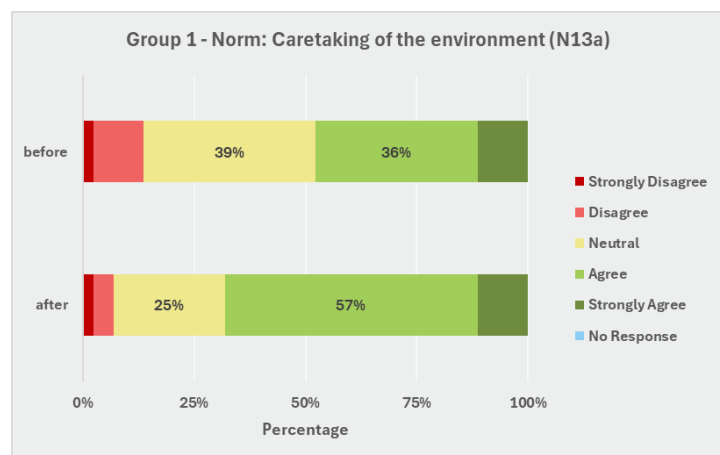


**Figure 10** Changes in citizen science participant's belief that they have the power to make meaningful impact in sustainable urban and rural development (affective motivation)

<sup>2</sup> This could be due to reasons such as the smaller sample size (14), and that a few dedicated volunteers overlapped between the village volunteer scheme and the forest track volunteer scheme (revealed through the interviews) who may have completed the survey selecting the village volunteer scheme.

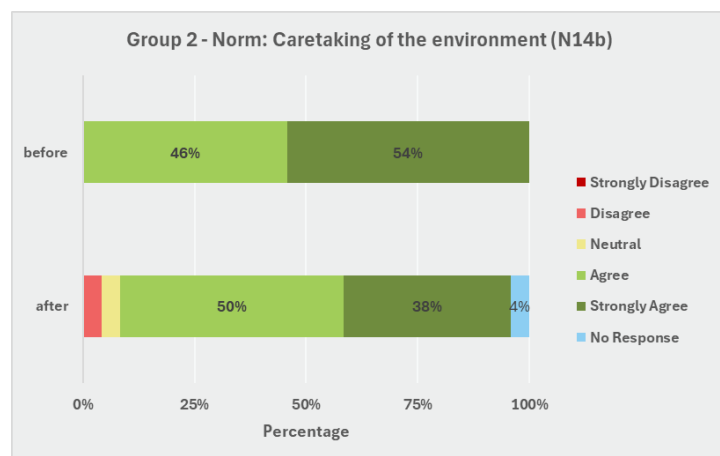


In terms of norm-based motivation, caretaking of the environment, the citizen science participants demonstrated a significant increase in support for “limiting development in open fields and agricultural areas” after the programme (**Figure 11**).

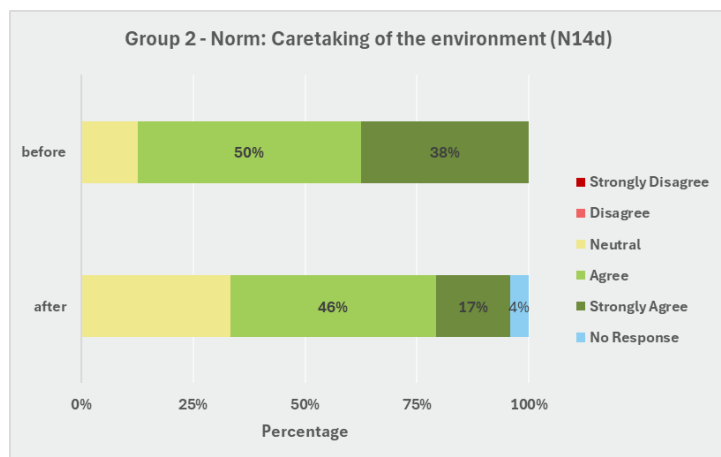


**Figure 11** Changes in support for limiting development in open fields and agricultural areas (norm-based motivation) amongst citizen science participants

Interestingly, a significantly higher percentage of participants of the village volunteer scheme (group 2) reported they were supportive of the statements regarding the need for a territory wide conservation plan (N14b), and public-private partnerships to conserve important places (N14d) before the programme than afterwards (**Figures 12 and 13**).



**Figure 12** Changes in village volunteer scheme participants' support for a territory wide conservation plan



**Figure 13** Changes in village volunteer scheme participants' support for public-private partnerships to conserve important places

The change noticed in N14b (**Figure 12**) is a 12% reduction (3 respondents out of 24) in those who agreed in the pre-survey and changed to no response (1), neutral (1) and disagree (1). For N14d (**Figure 13**) “the pre- and post- survey responses for this group of participants who agree with the statement changed from 88% to 63%.

Interview data collected from the graduates of the volunteer training programme may help to shed some light on these findings. For example, interviewee 4 shared that previously she did not realise there were so many organisations working on rural revitalisation related projects with government funding, but now that she has seen various projects, she feels that some are much better than others. For some organisations, she has a feeling that they are less driven by the mission of revitalising villages and suspects that they might be motivated by the recent increase in availability of government funding. This may help to explain why some of the volunteers have become more hesitant towards being supportive of different kinds of partnerships if the mission and vision are not clear.

The citizen science programme participants were the only group that reported a significant increase in their sense of belonging in a general sense (N3 When I am with other people, I feel included), and in relation to rural areas (N7 I feel connected with my ancestors/history of rural Hong Kong).

Interviews with village volunteer participants reveals that many of them were already involved in working or volunteering in (other) rural areas prior to the programme. The interviewees also tended to have a personal interest in a mix of outdoor activities, natural environment and some

had a pre-existing place attachment to rural areas in general (or specific rural areas where they have volunteered), which motivated them to engage in the programme. Through the interviews, it is also evident that their motivations did change, as all the interviewees have expressed their love for the place [Mui Tsz Lam], in terms of the natural environment, culture and the personal connections they have built with the villagers and how they feel relaxed in the area (interview 1). Interviewee 1 reported that after the programme he wanted to continue to share the story of the village to inspire others, demonstrating how his motivation had changed from purely enjoying the personal benefits from nature to wanting to share the history and culture with his community (i.e. motivated by a sense of belonging). This indicates a shift from being motivated for rational reasons to being norm motivated.

### *Changes in behaviour*

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As with motivation, citizen science programme participants (group 1) experienced the most significant changes in behaviour, with more variables showing an increase between the pre and post surveys than the other groups. This includes reporting an increase in the number of hours spent in rural areas. A significant increase was also seen in all the change advocacy variables and in all but two of the variables regarding effective decision making. Comparatively, respondents from the village volunteer scheme (group 2) only reported a significant increase in two variables under the behaviour category of effective decision making<sup>3</sup>.

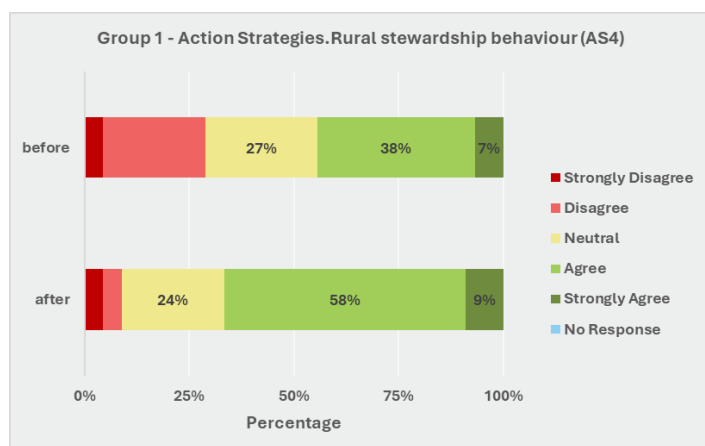
### *Changes in behaviour: action strategies*

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Those who “have contributed money or time to an environmental or wildlife conservation group” (**Figure 14**) changed from 45 to 67% after completing the citizen scientist program.

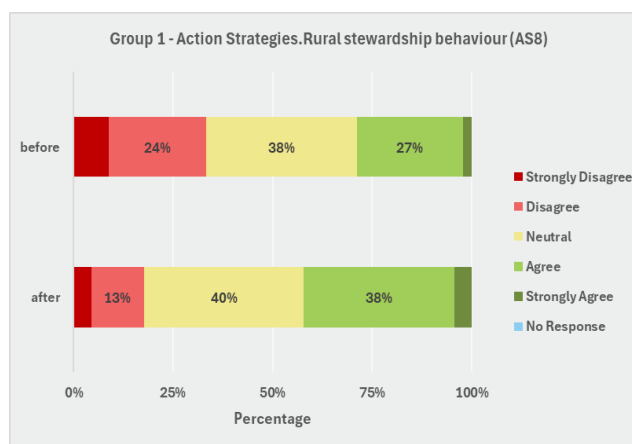
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<sup>3</sup> i.e. none in the other two sub-categories under behaviour: action strategies and change advocacy

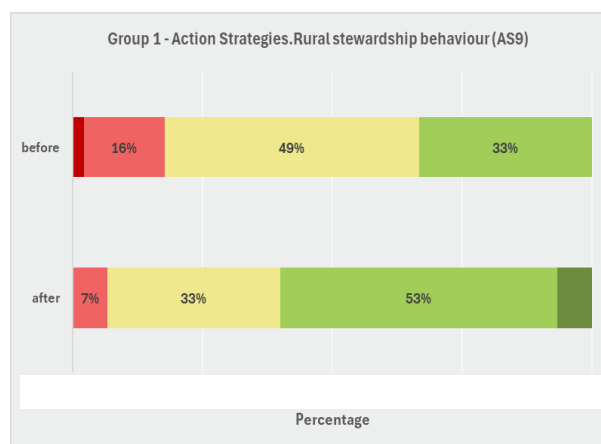


**Figure 14** Changes in citizen scientist participants who have contributed money or time to an environmental or wildlife conservation group

Significant positive changes in the following two variables in this category correlates with the change noted above in AS4, where they have “take[n] systematic records of the rural environment” (**Figure 15**) and that they are now “actively participat[ing] in rural community activities in Hong Kong” (**Figure 16**).



**Figure 15** Changes in citizen science participants in taking systematic records of the rural environment (left)

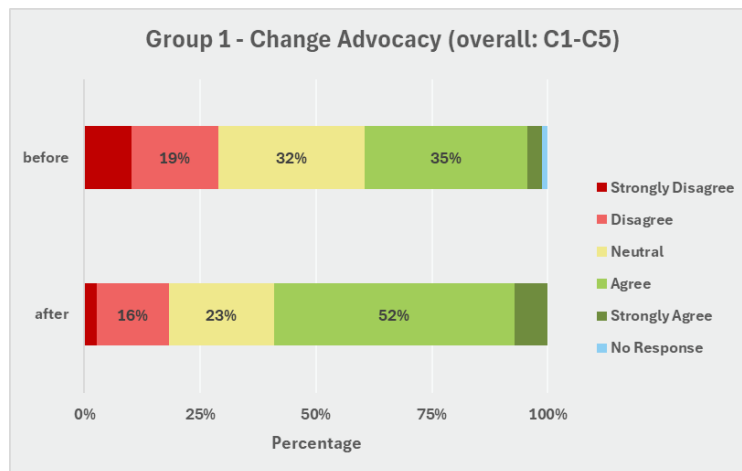


**Figure 16** Changes in citizen science participants in their participation in rural communities in Hong Kong (right)

### *Changes in behaviour: change advocacy*

It is encouraging to note a significant and positive change across all five variables of change advocacy (**Figure 17**) as a result of the citizen science programme. These actions included reporting cases of people harming the rural environment and educating people about how to contribute to protecting and managing rural areas in Hong Kong.

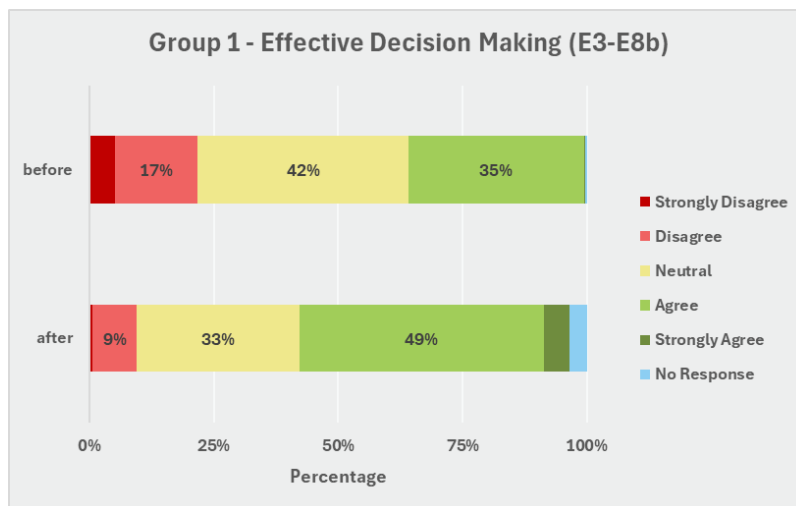




**Figure 17** Overall changes in citizen science participants change advocacy behaviour

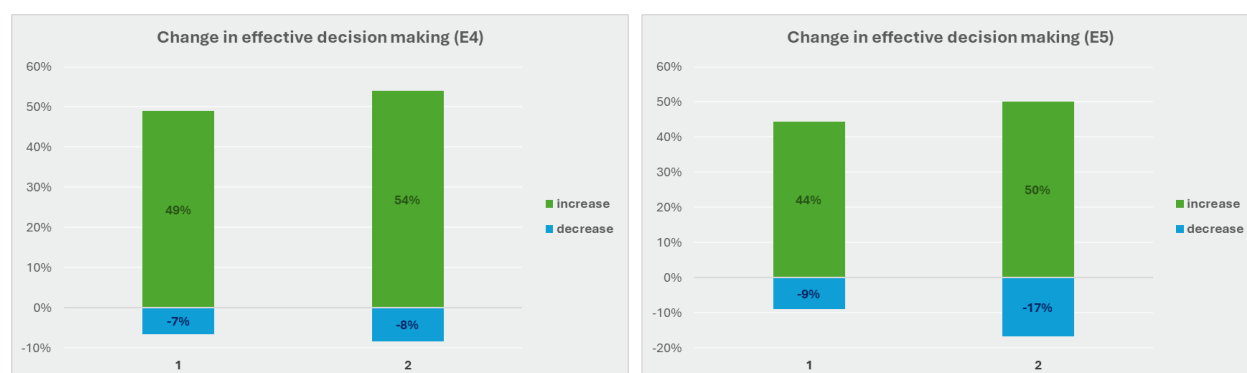
### *Changes in behaviour: effective decision making*

An interesting comparison between group 1 (citizen science program) and group 2 (village volunteer scheme) could be made based on the survey findings of the variables in this category. For group 1, significant positive changes were noted across seven out of nine variables for effective decision making (**Figure 18**).



**Figure 18** Changes in citizen science participants effective decision-making behaviour

Meanwhile, group 2 demonstrated significant positive changes in their understanding of “the challenges currently faced by rural areas in Hong Kong” (E4) and “issues regarding the management of natural and cultural resources in rural areas in Hong Kong” (E5). What should be noted here is not only that both programme/schemes were able to increase participants’ understanding in these aspects, but the village volunteer scheme seems to have had a greater effect than the citizen science programme (**Figure 19**).



**Figure 19** Comparison of changes in effective decision-making behaviour between group 1 and group 2

## Involvement

**Table 10** Comparing sharing score from the observation records

Activity	Sharing score	
	Group 1	Group 2
Talk	1.75	2.89
Exercise	3.42	N/A
Game	3.38	N/A
Tour	3.25	3.21
Survey	3.83	3
Field work	4	N/A
Presentation	4	N/A
Overall average	3.34	3.033

From the observation records, the ‘sharing’ score is taken as a quantitative indicator for social interactions. This is as the score is based on the interactions between participants and between the participants and the programme leaders. The higher the score, the more observations there were of the participants talking with each other and engaging together in activities, working together and sharing knowledge. Unsurprisingly, the sharing score for participants in both group

1 and group 2 was lower during the talks than in the more active elements of the activities. The programme for group 1, in particular, employed a range of elements that required active participation, resulting in a higher overall score (3.34).

These differences may be due to the structure of the programmes. The observation record notes indicate that the talks in group 2 were framed as being 'classes' and so followed a classroom-style format and included some activities or class discussion sessions. In contrast, the talks in group 1 were slightly more formalised, being distinct elements to the interactive activities. The participants in group 2 are also likely to have been able to contribute more to the class discussions, resulting in a higher sharing score, as they likely possessed more knowledge or relevant personal experiences. The knowledge being taught to group 1 was more scientific in nature, meaning the participants were not able to contribute as much during the teaching sessions.

The village volunteer scheme (group 2) aimed to train eco-tour guides, so the participants needed to be able to run guided tours individually. This may also have been why the focus was less on creating collaborative learning environments and there was a smaller range of activities involved.

From the interviews, more details on changes in the participants behaviour in group 2 can be discerned. Notably, those interviewed took up an increasingly active role, which includes acting as the docent in the MTL story house, conducting tours as a part of their volunteer commitment to the project and during their spare time for friends and family as well as seeking out additional work, such as helping to develop and manage the butterfly gardens. Interviewees 1,2 and 3 felt they now had a more active role in the community and encouraged their friends to engage more in rural areas. This is likely why there was such a significant increase in change advocacy between the pre and post surveys.

## 7. Discussion

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The overall results show that the stewardship programmes are impactful in instigating more rural stewardship-related behaviours, particularly in terms of change advocacy and effective decision-making behaviours. There were less changes in terms of motivations, which is unsurprising as those joining the programmes are likely to already possess the required motivation to engage in stewardship activities. Nonetheless, there was growth in the desire to look after the environment, sense of belonging and ethics, morals and values, demonstrating that the increased knowledge and/or involvement in rural areas can still be effective to further increase the motivation of participants to act as a rural steward.

Looking at the variations between the two categories of programmes gives us a better understanding of rural stewardship and the associated incubation programmes. The results for the types of incubation programmes are much more nuanced than when analysed together.

*Social connections in activity design and changes in motivation: norm – sense of belonging*

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Comparing the design of the citizen science programme and village volunteer scheme, the format of the citizen science programme in forming teams and engaging in group tasks, may have contributed to the significant positive changes in the participants' sense of belonging in both society and in relation to the history of Hong Kong's rural areas. This is supported by the sharing scores from the observation data.

*The effects of place attachment and knowledge domains on behaviour: effective decision making*

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Through the combination of survey and interview data, this report identifies potential implications of the differences in the programme design and delivery. Specifically, in relation to place attachments and the knowledge domains covered between the citizen science programme and village volunteer scheme.

With its objective of training volunteers who would be able to act as ambassadors for rural revitalisation, e.g. acting as docents in the MTL Story house and giving guided tours, the village volunteer scheme was designed to incubate cognitive place attachment, and to provide a wider

range of knowledge domains (from effects, causes and strategies). On the other hand, the citizen science programme focused on functional place attachment and providing scientific knowledge falling within the domain of “effects”.

The survey findings suggests that the village volunteers increased their understanding of issues and challenges of managing natural and cultural resources in rural areas of Hong Kong to a greater extent than the citizen science programme participants. This could be attributed to the wider range of knowledge domains addressed and the cognitive place attachment developed by the former group. The finding that an increased percentage of volunteers were reluctant to support public-private partnerships to conserve important places after the programme, also suggests that they have gained a deeper understanding of the complexities involved in collaborative rural revitalisation/conservation.

#### *Differences between programme target audience and purpose*

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It should be noted that as the two programmes were designed with different target groups and purposes in mind, there are significant differences between the two groups of participants. The pre-survey responses were grouped into those joining the village volunteer scheme (group 2) and those joining the citizen science programme (group 1). This comparison shows that group 2, in general, had a higher rate of performing rural stewardship behaviour than group 1 (for 6 variables under the behaviour category, with 1 or more in each of the sub-category of “action strategies” “change advocacy” and “effective decision-making”)<sup>4</sup>.

This could be crucial in explaining why more significant changes were detected amongst citizen science programme participants across many of the behaviour variables than those completing the village volunteer scheme. In particular, significant changes were found in action strategies<sup>5</sup> and change advocacy<sup>6</sup> for the former group but none for the latter. This is likely because individuals who join the village volunteer scheme tend to have already been involved in rural revitalisation related work hence the changes, they experience through this programme might be less pronounced and harder to be captured quantitatively.

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<sup>4</sup> Statistical significance was determined through a wilcox test

<sup>5</sup> For example, dedicating more time and money to conservation and actively participating in rural community events

<sup>6</sup> For example, establishing network for collaborative action for rural areas and educating the public on ways they could contribute to protecting and managing rural areas in Hong Kong,

The interviews also revealed that a select group of volunteers have maintained their commitment to the programme and/or related revitalisation activities in MTL. Some were even naturally taking on leadership roles and sought further learning to broaden and deepen their knowledge on the natural and cultural resources of the area. Some of the interviewees were also proactive in suggesting to the programme leaders further improvements for the programme and the village. This indicates that they may begin to develop the capacity to take on more leadership roles and are willing to deepen their engagement with the village locality.

### *The effects of duration and style of training on changes in activity levels and motivation*

There is the potential that the group 2 style of training, which involves longer programmes, more individually orientated and concentrates on more knowledge domains, may cultivate rural stewardship leaders. As they tend to have a higher sense of rural stewardship to begin with, the changes they experience in terms of motivation and behaviour are less apparent. The areas where they are more likely to experience changes relate to a deeper understanding of the complexities of governing rural revitalisation and/or managing rural resources.

While the purpose of the training is to equip participants with sufficient knowledge and skills to support different engagement activities and revitalisation programmes with a focus on MTL (and villages in NE NT), much of the knowledge and skills are also transferrable. This might help to explain why some have chosen to contribute to rural revitalisation activities in other rural areas, especially in light of the remoteness of MTL and the impact of COVID restrictions. Approximately 10 out of 30 trained volunteers maintained a high level of activity in MTL. For the dedicated volunteers, represented by the interviewees, they are partly drawn to maintain their commitment by their own interpretation and appreciation of the physical and social attributes of the village. Therefore, incubating their cognitive place attachment is likely a key strategy that helps to sustain rural stewardship leaders' commitment to a village.

In contrast, group 1 showed significant changes in many facets of behaviour and motivations, which suggests that this style of programme with its short but intensive training coupled with a very specific task and knowledge domain may be particularly suitable for triggering changing perspectives and activity of participants entering the programme with a low level of stewardship.



The differences in sample sizes of the datasets for the citizen science programme (45) and the village volunteer scheme (24) required t-tests to be conducted. When comparing changes in percentages of responses, however, it is inevitable that the changes of responses in the village volunteer scheme would appear somewhat exaggerated compared to the citizen science programme.

It is important to note that over the period that many of these programmes were held (2021-2023), various restrictions were in place due to the Covid-19 pandemic. These may have influenced the results in relation to the behaviour variables, for example, attending public discussions/forums, participating in rural community activities, establishing personal networks for collaborative action for rural areas. This would be particularly relevant to data collected in 2021 and 2022, as there were significant restrictions that prevents group activities during this period. In relation to this, it must be highlighted that 2 out of 6 citizen science programmes were held in 2021-22 (i.e. 4 in 2023-24) and both cohorts of the village volunteer scheme were held in 2021-22.

## 8. Conclusion

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This research discovers that the rural stewardship framework and the methodology of conducting before and after programme survey with participants was particularly useful for assessing the impact of the citizen science programme which is intensive, employs functional place attachment, high social connection and focuses on the “effect” knowledge category, and was designed to target the general public (people with varying sense of rural stewardship). When applied to the village volunteer programme, which engages in more knowledge domains and cognitive place attachment and targets those already possessing a reasonably high sense of rural stewardship (those who are prepared to commit to volunteering at the village), its impact was less clearly shown through the survey. The latter programme required more qualitative data to be collected to identify the changes experienced at a more advanced type of rural stewardship.

Overall, in comparison to basic programme reporting practices that tend to rely on tracking key performance indicators (KPIs) and participant satisfaction surveys (usually conducted only at the end of the programme), the rural stewardship framework certainly offers a more holistic view of the participants’ motivation and behaviour. The rural stewardship framework is not only developed with a focus on the stewardship characteristics relevant to the rural context, but it also includes broader aspects of motivation and behaviour (for example, sense of belonging to society) as it is believed that there is potential for rural stewardship incubation programmes to extend its impact beyond rural parts of Hong Kong to incubate urban-rural harmony.

When considering whether to adopt this framework for programme impact assessment, one should reflect upon the programme design and objectives (and the funding requirements and judging criteria for funding proposals). First, whether it is sufficient to measure and communicate the impact of a programme through tracking KPIs and evaluating the satisfaction of participants alone. If it is not, are there particular individuals, public participants or specific stakeholders, whom the programme intends to influence. Second, one should consider the extent to which the changes expected fall under any of those covered in the stewardship framework. i.e. whether the programme has the potential to bring about effects on different aspects of a participant’s motivation and behaviour to contribute towards rural sustainability and/or the sustainability of the wider society, and if it does not, should the programme design be modified (or not be approved) in order to maximise the impact of the available funding.

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## Appendix 1 – Pre- and post- survey

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「森林村落」項目鄉郊管理評估問卷 (參與活動前)

### Rural Stewardship Questionnaire for the “Forest Village” Project (Before)

#### Introduction

The survey is part of the research study conducted by the Policy for Sustainability Lab of the Centre for Civil Society and Governance at The University of Hong Kong. The purpose of the study is to evaluate the effectiveness of the rural stewardship engagement activities of the Sustainable Villages for All project.

You are invited to participate in a tracking exercise to provide us with information regarding your sense of rural stewardship. This will involve surveys and select interviews (before and after your involvement in rural stewardship activities of the Sustainable Villages for All project). The surveys last approximately 10 minutes each and you may terminate the survey at any time without negative consequences. Any personal details collected will remain strictly confidential. Your email address will be used solely to match and identify the surveys that you have completed. Once your answers for the surveys are combined and included in the final tally, your email address will be permanently deleted from our records.

If you have any questions about the research, please feel free to contact Professor LAM Wai-Fung, Principal Investigator of the study from the Centre for Civil Society and Governance, HKU (Tel: 3917 2391). If you have questions about your rights as a research participant, please contact the Human Research Ethics Committee, HKU (2241-5267).

I understand the procedures described above and agree to participate in this study.

HREC Reference Number: EA210184

#### 介紹

香港大學公民社會與治理研究中心永續坊正進行一項研究，探討項目的鄉郊管理活動的成效。這份問卷調查是研究的一部分。

現誠邀閣下參與一項追蹤研究，為我們提供有關你農村管理意識的資訊。這將涉及問卷和選擇性面試（分別在閣下參與項目活動的前後）。每份問卷需時大約 10 分鐘。你可隨時終止參與問卷調查，有關決定將不會引致任何不良後果。所有收集的資料將絕對保密。你所提供的電郵地址只用作配對你填寫的問卷答案，以便合併分析。完成配對後，你的電郵地址將從我們的資料記錄中永久刪除。

如閣下對是項研究有任何查詢，請與香港大學公民社會與治理研究中心總監林維峯教授（即本研究的首席研究員）（電話：3917 2391）或朱可兒博士助理講師（電話：3917 5539）聯絡。如你想知道更多有關研究參與者的權益，請聯絡香港大學研究操守委員會（2241-5267）。

我明白及同意參與是次問卷調查。

香港大學研究操守委員會參考編號：EA210184



## 基本資料 Background Information

1. 性別 Gender

☐ 男 Male    ☐ 女 Female

2. 年齡 Age

☐ 18 – 24    ☐ 25 – 34    ☐ 35 – 44    ☐ 45 – 54    ☐ 55 – 64  
☐ 65 以上 or over

3. 居住地 Place of Residence

☐ 香港 Hong Kong    ☐ 中國大陸 Mainland China    ☐ 其他 other \_\_\_\_\_

4. 教育程度 Educational Level

☐ 小學或以下 Primary or below    ☐ 中學 Secondary  
☐ 大專或以上 Tertiary or above

5. 職業狀況 Occupational Status

☐ 學生 Student    ☐ 在職人士 Employed    ☐ 退休人士 Retiree  
☐ 非在職人士 Unemployed

6. 家庭成員人數 Household Size

☐ 1    ☐ 2    ☐ 3    ☐ 4  
☐ 5    ☐ 6    ☐ 7 以上 or over

7. 家庭平均每月收入 Family Monthly Income

<input type="checkbox"/> 港幣 10,000 以下 Below HKD10,000	<input type="checkbox"/> 港幣 HKD 10,000 – \$19,999
<input type="checkbox"/> 港幣 HKD 20,000 – \$29,999	<input type="checkbox"/> 港幣 HKD \$30,000 – \$39,999
<input type="checkbox"/> 港幣 HKD \$40,000 – \$49,999	<input type="checkbox"/> 港幣 HKD \$50,000 – \$59,999
<input type="checkbox"/> 港幣 HKD \$60,000 – \$69,999	<input type="checkbox"/> 港幣 HKD \$70,000 – \$79,999
<input type="checkbox"/> 港幣 HKD \$80,000 or more 或以上	

8. 你是原居民嗎? Would you consider yourself an Indigenous inhabitants/Indigenous villager?

☐ 是 Yes    ☐ 否 No

## 參與方式 Ways of Involvement

9. 您將參與哪個項目/活動: Which programme/activity are you joining:

- ☐ 「森林村落」鄉郊大使訓練計劃 2021 Rural leadership training programme 2021
- ☐ 「森林村落」公民科學家日營—森林碳儲存 2021 Carbon stock camp 2021
- ☐ 森林村落手作步道培訓課程 Historic trail repair
- ☐ 永續鄉村露營設計實驗坊 Hackathon
- ☐ 「森林村落」公民科學家日營—森林碳儲存 2022 Carbon stock camp 2022
- ☐ 「森林村落」鄉郊大使訓練計劃 2022 Rural leadership training programme 2022

10. 您是單獨參加還是結伴一起參加該項目/活動? Did you join the programme individually or with company (friends/family/colleagues)?

- ☐ 單獨 Individually    ☐ 結伴 with company

11. 推動你參與的原因? (可選多於一項) What motivated you to join this programme (check all that applies)

- ☐ Learn new skills and knowledge 學習新技能和知識
- ☐ Physical and mental benefits of working in rural areas 在鄉郊工作為身心健康帶來益處
- ☐ The certificate of completion 得到課程完成證書
- ☐ To make new friends 結交新朋友
- ☐ The influence of family and peers 家人或身邊的人的影響
- ☐ Caretaking of the environment 守護自然環境
- ☐ A sense of responsibility towards the society and environment 對社會和環境的責任感

12. 請填上你的電郵地址 Please enter your email address\*:

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\*我們不會公開或向第三方提供問卷所收集的電郵地址。你所提供的電郵地址只用作跟你在課程完結後填寫的問卷答案進行配對以便合併分析。完成配對後，你的電郵地址將從我們的資料記錄中刪除。資料僅用於綜合分析用途。

*We will not disclose your email address to any third party whatsoever. Your email address will only be used to identify and combine the data collected upon your completion of the course. Once your answers are combined and included in the final tally, your email address will be deleted from our records. All data will be used for aggregation and statistical analysis only.*

13. 你在過去三個月內每月花多少個小時在鄉郊(包括郊野公園、農地、鄉村) 進行以下活動？  
How many hours per month do you spend in rural areas (e.g. country parks, agricultural areas, rural villages)?

	0	1-4	5-8	9-12	13-16	17-20	21 或以上 21 or more
遊覽 Visiting							
義務工作 Volunteering							
工作 Working							
居住 Living							

14. 你曾在鄉郊做過甚麼類型的工作（包括有薪及無薪）？ If you have participated in volunteering or working in rural areas, what kind of tasks did you perform? （可選多於一項 Multiple）

- ☐ 農務 farm work
- ☐ 生物多樣性監測 biodiversity monitoring
- ☐ 生境修復 habitat restoration
- ☐ 自然資源管理 natural resource management
- ☐ 建築環境修復 restoration of built environment
- ☐ 教育活動，例如導賞 education activity, e.g. guided tour
- ☐ 藝術和文化項目或活動 art and cultural programmes or activities

15. 以下哪一項最能說明你在項目中的角色或身分？ Which of the following most closely define your role or position in the programme?

- ☐ 遵循主辦機構 / 導師指示的學員或受訓者 trainee following instructions of the organisers/trainers
- ☐ 為主辦機構 / 導師提供支援的助理 assistant to offer support to organisers/trainers
- ☐ 主辦機構 / 導師的夥伴 (共同制定和/或實施該項目) partner of organisers/trainers (jointly develop and/or implement the programme)
- ☐ 獨立於主辦機構 / 導師，朝著相似目標工作的同儕 peer of organisers/trainers working independently towards similar goals
- ☐ 啟發 / 推動進一步行動的人士 (例如: 坐擁資源的人士 / 知識持有者) resource person/knowledge holder to drive/inspire further actions

## 價值觀 Value

16. 請表示你對以下各項的同意程度。 Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A. 保護和保育香港鄉郊人人有責。 The protection and conservation of rural areas in Hong Kong is everyone's responsibility.					
B. 鄉郊永續發展與我有切身關係。 The sustainable development of rural areas is personally relevant to me.					
C. 部份鄉郊地區 (村落、廟宇等) 對我有靈性上的重要性。 Parts of rural areas (i.e. villages, temples) are spiritually important to me.					
D. 我與鄉郊的自然環境有連結。 I am very connected to the natural environment of rural areas.					
E. 參與戶外活動對於我與鄉郊的連結很重要。 Being able to engage in outdoor activities is important to my connection to rural areas.					
F. 參與文化習俗活動對於我與鄉郊的連結很重要。 Being able to engage in cultural practices is important to my connection to rural areas.					
G. 參與宗教 / 靈性活動對於我與鄉郊的連結很重要。 Being able to engage in religious/ spiritual practices is important to my connection to the rural areas.					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
H. 我們有以下道德義務 We are morally obligated to:					
• 幫助比我們不幸的人 help people less fortunate than ourselves.					
• 守護自然環境 look after the natural environment.					
• 守護本土文化和傳統 act as caretakers for local culture and traditions.					

17. 你有否向社會組織(例如：慈善機構、非政府組織、有參與社會工作的社區團體)捐款？如有，在過去三個月內捐款多少？Do you donate to social organisation (e.g charity, NGOs, community groups involved in social work)? If so, how much in the past three months?

- ☐ 沒有捐款 No donation
 ☐ 港幣 1,000 以下 Below HKD1,000  
☐ 港幣 HKD 1,000 – \$1,999
 ☐ 港幣 HKD 2,000 – \$2,999  
☐ 港幣 HKD \$3,000 – \$3,999
 ☐ 港幣 HKD \$4,000 – \$4,999  
☐ 港幣 HKD \$5,000 – \$5,999
 ☐ 港幣 HKD \$6,000 – \$6,999  
☐ 港幣 HKD \$7,000 – \$7,999
 ☐ 其他 Other: \_\_\_\_\_ (請註明 please specify)

18. 你有否在社會組織參與義務工作？如有，在過去三個月內參與多少小時？Do you volunteer in social organisation? If so, how many hours in the past three months?

- ☐ 沒有參與 No volunteering
 ☐ 10 以下 Less than 10  
☐ 11 - 20
 ☐ 21 – 30  
☐ 31 – 40
 ☐ 41 - 50  
☐ 51 或以上 51 or more

19. 你是多少個社會組織（正式或非正式）的成員？（例如：體育、宗教、康樂、環保團體）  
How many social organisations (formal or informal) would you consider yourself a part of? (e.g. sports or religion or recreation or environmental groups)

- ☐ 0
 ☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5
 ☐ 6 或以上

20. 你每星期花多少小時參與社交活動？How many hours do you engage in social activities in a week?

- ☐ 0
 ☐ 1
 ☐ 2
 ☐ 3
 ☐ 4
 ☐ 5
 ☐ 6 或以上

## 態度 Attitude

21. 請表示你對以下各項的同意程度。 Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A 當與其他人在一起的時候，我感到被接納。 When I am with other people, I feel included.					
B 我與家人和朋友關係緊密。 I have close bonds with family and friends					
C 我對自己的社群有歸屬感。 I have a sense of belonging to my community.					
D 我想提高我在社群內的名聲。 I want to enhance my reputation in the community.					
E 我與自己的社群有文化 / 靈性 / 歷史上的連結。 I have a cultural/spiritual/historical connection with my community.					
F 我覺得我與我的祖先 / 香港鄉郊歷史有連結。 I feel connected with my ancestors/history of rural Hong Kong.					



	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
G 我覺得自己與大自然有連結。I feel connected with nature					
H 不管身在何處，我總會留意四周的野生動物。I take notice of wildlife wherever I am.					
J 我有很多有關鄉郊的美好回憶。I have a lot of fond memories about rural areas.					
K 為鄉郊貢獻很大程度上說明了我是怎樣的人。 Contributing to rural areas says a lot about who I am.					
L 我不會介意香港的鄉郊地區沒有被管理。I would not mind if rural areas in Hong Kong were not managed.					
N 我覺得保留和保護以下香港鄉郊景觀或特色是重要的。I feel it is important to maintain and protect the following landscapes or characteristics of rural Hong Kong:					
<ul style="list-style-type: none"> <li>文化特色 ( 大樹 / 老樹、舊房屋、鄉村中心、特別建築物 ) Cultural features (Large/old trees, old homes, village centres, special buildings)</li> </ul>					
<ul style="list-style-type: none"> <li>森林和其他自然資源 Forest, ecosystems and other natural resources</li> </ul>					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
O 一般來說，我覺得以下項目是重要的。In general, I feel it is important to:					
<ul style="list-style-type: none"> <li>限制田野和農地的發展 Limit development in open fields and agricultural areas</li> </ul>					
<ul style="list-style-type: none"> <li>預留土地作公眾康樂用途（遠足路徑、郊野公園）Set aside land for public recreation (trails, country parks)</li> </ul>					
<ul style="list-style-type: none"> <li>限制大部分新發展在市區附近 / 市區內 Keep most new development close to/inside urban areas</li> </ul>					
P 一般來說，我支持 In general, I support:					
<ul style="list-style-type: none"> <li>農業保育策略和規劃 Agricultural preservation strategies and planning</li> </ul>					
<ul style="list-style-type: none"> <li>全港性的保育計劃 Territory wide conservation plan</li> </ul>					
<ul style="list-style-type: none"> <li>以更嚴謹的劃區方式保護鄉郊 More stringent zoning to protect rural spaces</li> </ul>					
<ul style="list-style-type: none"> <li>以公私營合作方式保育重要地方 Public-private partnerships to conserve important places</li> </ul>					

**行為 / 領導能力 Behaviour/ leadership**

22. 請表示你對以下各項的同意程度。 Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A. 我以永續方式使用自然資源。 I use natural resources in a sustainable way.					
B. 我曾經捐款予環保或生態保育組織。 I have contributed money or time to an environmental or wildlife conservation group.					
C. 我曾經根據產品對環境的影響而選擇購買或不購買。 I have selected products based on their environmental impact.					
D. 我已經因為關心環境而改變行為。 I have changed my behaviour because of concern for the environment.					
E. 我總會考慮到自己的決定、選擇和日常行動對環境的影響。 I always think about the impacts of my personal decisions, choices and everyday actions on the environment.					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
F. 我總會考慮到自己的決定、選擇和日常行動對香港鄉郊的影響。I always think about the impacts of my personal decisions, choices and everyday actions on rural Hong Kong					
G. 我曾經出席有關香港鄉郊的保育或管理的公眾聽證會 / 公眾討論 / 論壇。I have attended public hearings/ public discussions or forums related to the conservation or management of rural areas in Hong Kong.					
H. 我曾經就香港鄉郊的保育或管理議題聯絡政府機構獲取資訊或作出投訴。I have contacted a government agency to get information or complain about issues regarding the conservation or management of rural areas in Hong Kong.					
I. 我已經與個人或團體建立網絡，為鄉郊進行協作行動。I have established personal networks with individuals or groups for collaborative action for rural areas.					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
J. 當我發現其他人破壞鄉郊環境，我會警告他們或舉報個案。When I notice people harming the rural environment, I warn them or report such cases.					
K. 我相信我有力量在城鄉永續發展上帶來有意義的影響。I believe I have the power to make meaningful impact in sustainable urban and rural development.					

## 技能 Skills

23. 請表示你對以下各項的同意程度。Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A. 我能夠批判性地分析香港鄉郊的問題。I am able to critically analyse issues regarding rural areas in Hong Kong.					
B. 我對鄉郊環境進行系統性記錄。I take systematic records of the rural environment.					
C. 我積極參與香港鄉郊社區活動。I actively participate in rural community activities in Hong Kong.					
D. 我建議身邊的人如何能夠為保護和管理香港的鄉郊作出貢獻。I advise people around me on ways they could contribute to protecting and managing rural areas in Hong Kong.					
E. 我教育公眾如何能夠為保護和管理香港的鄉郊作出貢獻。I educate the public on ways they could contribute to protecting and managing rural areas in Hong Kong.					



## 知識 Knowledge

24. 請表示你對以下各項的同意程度。Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A 我了解香港鄉郊目前面臨的挑戰。I understand the challenges currently faced by rural areas in Hong Kong.					
B 我了解香港鄉郊的自然和文化資源管理問題。I understand issues regarding the management of natural and cultural resources in rural areas in Hong Kong.					
E 我有搜索和閱讀以下資料 I independently search for and read information on:					
<ul style="list-style-type: none"> <li>與香港鄉郊有關的狀況和問題 the state of and issues related to rural Hong Kong</li> </ul>					
<ul style="list-style-type: none"> <li>鄉郊永續發展的本地和國際現實生活解決方案和最佳實踐案例 local and international real-life solutions and best practice cases in rural sustainable development</li> </ul>					
C 我用證據和知識來支持我在香港鄉郊問題上的立場。I use evidence and knowledge to support my position on rural issues in Hong Kong.					
D 我能為香港鄉郊的管理問題提出實制可行的解決方案。I can outline realistic solutions to issues regarding rural area management in Hong Kong.					

-----完-----

非常感激閣下對這項研究的貢獻

**「森林村落」項目鄉郊管理評估問卷（參與活動後）**  
**Rural Stewardship Questionnaire for the “Forest Village” Project (After)**

**Introduction**

The survey is part of the research study conducted by the Policy for Sustainability Lab of the Centre for Civil Society and Governance at The University of Hong Kong. The purpose of the study is to evaluate the effectiveness of the rural stewardship engagement activities of the Sustainable Villages for All project.

You are invited to participate in a tracking exercise to provide us with information regarding your sense of rural stewardship. This will involve surveys and select interviews (before and after your involvement in rural stewardship activities of the Sustainable Villages for All project). The surveys last approximately 10 minutes each and you may terminate the survey at any time without negative consequences. Any personal details collected will remain strictly confidential. Your email address will be used solely to match and identify the surveys that you have completed. Once your answers for the surveys are combined and included in the final tally, your email address will be permanently deleted from our records.

If you have any questions about the research, please feel free to contact Professor LAM Wai-Fung, (Tel: 3917 2391), Principal Investigator of the study and Dr. CHU Vivian (Tel: 3917 5539) from the Centre for Civil Society and Governance, HKU. If you have questions about your rights as a research participant, please contact the Human Research Ethics Committee, HKU (2241-5267).

I understand the procedures described above and agree to participate in this study.

HREC Reference Number: EA210184

**介紹**

香港大學公民社會與治理研究中心永續坊正進行一項研究，探討項目的鄉郊管理活動的成效。這份問卷調查是研究的一部分。

現誠邀閣下參與一項追蹤研究，為我們提供有關你鄉郊管理意識的資訊。這將涉及問卷和選擇性面試（分別在閣下參與項目活動的前後）。每份問卷需時大約 10 分鐘。你可隨時終止參與問卷調查，有關決定將不會引致任何不良後果。所有收集的資料將絕對保密。你所提供的電郵地址只用作配對你填寫的問卷答案，以便合併分析。完成配對後，你的電郵地址將從我們的資料記錄中永久刪除。

如閣下對是項研究有任何查詢，請與香港大學公民社會與治理研究中心總監林維峯教授（即本研究的首席研究員）（電話：3917 2391）或朱可兒博士助理講師（電話：3917 5539）聯絡。如你想知道更多有關研究參與者的權益，請聯絡香港大學研究操守委員會（2241-5267）。

我明白及同意參與是次問卷調查。

香港大學研究操守委員會參考編號：EA210184

## 基本資料 Background Information

1. 性別 Gender  
☐ 男 Male      ☐ 女 Female
2. 年齡 Age  
☐ 18 – 24      ☐ 25 – 34      ☐ 35 – 44      ☐ 45 – 54      ☐ 55 – 64  
☐ 65 以上 or over
3. 居住地 Place of Residence  
☐ 香港 Hong Kong      ☐ 中國大陸 Mainland China      ☐ 其他 \_\_\_\_\_
4. 教育程度 Educational Level  
☐ 小學或以下 Primary or below      ☐ 中學 Secondary  
☐ 大專或以上 Tertiary or above
5. 職業狀況 Occupational Status  
☐ 學生 Student      ☐ 在職人士 Employed      ☐ 退休人士 Retiree  
☐ 非在職人士 Unemployed
6. 家庭成員人數 Household Size  
☐ 1      ☐ 2      ☐ 3      ☐ 4  
☐ 5      ☐ 6      ☐ 7 以上 or over
7. 家庭平均每月收入 Family Monthly Income  
☐ 港幣 10,000 以下 Below HKD10,000      ☐ 港幣 HKD 10,000 – \$19,999  
☐ 港幣 HKD 20,000 – \$29,999      ☐ 港幣 HKD \$30,000 – \$39,999  
☐ 港幣 HKD \$40,000 – \$49,999      ☐ 港幣 HKD \$50,000 – \$59,999  
☐ 港幣 HKD \$60,000 – \$69,999      ☐ 港幣 HKD \$70,000 – \$79,999  
☐ 港幣 HKD \$80,000 or more 或以上
8. 你認為你是原居民嗎? Would you consider yourself an Indigenous inhabitants/Indigenous villager?  
☐ 是 Yes      ☐ 否 No

## 參與方式 Ways of Involvement

9. 您將參與哪個項目/活動: Which programme/activity are you joining:  
☐ 「森林村落」鄉郊大使訓練計劃 2021 Rural leadership training programme 2021  
☐ 「森林村落」公民科學家日營—森林碳儲存 2021 Carbon stock camp 2021  
☐ 森林村落手作步道培訓課程 Historic trail repair  
☐ 永續鄉村露營設計實驗坊 Hackathon  
☐ 「森林村落」公民科學家日營—森林碳儲存 2022 Carbon stock camp 2022  
☐ 「森林村落」鄉郊大使訓練計劃 2022 Rural leadership training programme 2022

10. 請填上你的電郵地址 Please enter your email address\*:

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*\*我們不會公開或向第三方提供問卷所收集的電郵地址。你所提供的電郵地址只用作跟你在課程完結後填寫的問卷答案進行配對以便合併分析。完成配對後，你的電郵地址將從我們的資料記錄中刪除。資料僅用於綜合分析用途。We will not disclose your email address to any third party whatsoever. Your email address will only be used to identify and combine the data collected upon your completion of the course. Once your answers are combined and included in the final tally, your email address will be deleted from our records. All data will be used for aggregation and statistical analysis only.*

11. 你在過去三個月內每月花多少個小時在鄉郊進行以下活動？ For the past three months, how many hours per month do you spend in rural areas?

	0	1-4	5-8	9-12	13-16	17-20	21 或以上 21 or more
遊覽 Visiting							
義務工作 Volunteering							
工作 Working							
居住 Living							

12. 你曾在鄉郊做過甚麼類型的工作（包括有薪及無薪）？ If you have participated in volunteering or working in rural areas, what kind of tasks did you perform? （可選多於一項 Multiple）

- ☐ 農務 farm work
- ☐ 生物多樣性監測 biodiversity monitoring
- ☐ 生境修復 habitat restoration
- ☐ 自然資源管理 natural resource management
- ☐ 建築環境修復 restoration of built environment
- ☐ 導賞 guided tour
- ☐ 藝術和文化項目或活動 art and cultural programmes or activities

13. 以下哪一項最能說明你在項目中的角色或身分？ Which of the following most closely define your role or position in the programme?

- ☐ 遵循主辦機構 / 導師指示的學員 / 受訓者 trainee following instructions of the organisers/trainers
- ☐ 為主辦機構 / 導師提供支援的助理 assistant to offer support to organisers/trainers
- ☐ 主辦機構 / 導師的夥伴 (共同制定和/或實施該項目) partner of organisers/trainers (jointly develop and/or implement the programme)
- ☐ 獨立於主辦機構 / 導師，朝著相似目標工作的同儕 peer of organisers/trainers working independently towards similar goals
- ☐ 啟發 / 推動進一步行動的人士 (例如: 坐擁資源的人士 / 知識持有者) resource person/knowledge holder to drive/inspire further actions

## 價值觀 Value

14. 請表示你對以下各項的同意程度。Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A. 保護和保育香港鄉郊人人有責。The protection and conservation of rural areas in Hong Kong is everyone's responsibility.					
B. 鄉郊永續發展與我有切身關係。The sustainable development of rural areas is personally relevant to me.					
C. 部份鄉郊地區（村落、廟宇等）對我有靈性上的重要性。Parts of rural areas (i.e. villages, temples) are spiritually important to me.					
D. 我與鄉郊的自然環境有連結。I am very connected to the natural environment of rural areas.					
E. 參與戶外活動對於我與鄉郊的連結很重要。Being able to engage in outdoor activities is important to my connection to rural areas.					
F. 參與文化習俗活動對於我與鄉郊的連結很重要。Being able to engage in cultural practices is important to my connection to rural areas.					
G. 參與宗教 / 靈性活動對於我與鄉郊的連結很重要。Being able to engage in religious/spiritual practices is important to my connection to the rural areas.					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
I. 我們有以下道德義務 We are morally obligated to:					
• 幫助比我們不幸的人 help people less fortunate than ourselves.					
• 守護自然環境 look after the natural environment.					
• 守護本土文化和傳統 act as caretakers for local culture and traditions.					

### 態度 Attitude

15. 請表示你對以下各項的同意程度。Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A. 當與其他人在一起的時候，我感到被接納。When I am with other people, I feel included.					
B. 我與家人和朋友關係緊密。I have close bonds with family and friends					
C. 我對自己的社群有歸屬感。I have a sense of belonging to my community.					
D. 我想提高我在社群內的名聲。I want to enhance my reputation in the community.					
E. 我與自己的社群有文化 / 靈性 / 歷史上的連結。I have a cultural/spiritual/historical connection with my community.					
F. 我覺得我與我的祖先 / 香港鄉郊歷史有連結。I feel connected with my ancestors/history of rural Hong Kong.					
G. 我覺得自己與大自然有連結。I feel connected with nature					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
H. 不管身在何處，我總會留意四周的野生動物。I take notice of wildlife wherever I am.					
I. 我有很多有關鄉郊的美好回憶。I have a lot of fond memories about rural areas.					
J. 為鄉郊貢獻很大程度上說明了我是怎樣的人。Contributing to rural areas says a lot about who I am.					
K. 我不會介意香港的鄉郊地區沒有被管理，我會感到滿意。I would not mind if rural areas in Hong Kong were not managed.					
L. 我覺得保留和保護以下香港鄉郊景觀或特色是重要的。I feel it is important to maintain and protect the following landscapes or characteristics of rural Hong Kong:					
<ul style="list-style-type: none"> <li>文化特色（大樹／老樹、舊房屋、鄉村中心、特別建築物） Cultural features (Large/old trees, old homes, village centres, special buildings)</li> </ul>					
<ul style="list-style-type: none"> <li>森林、生態系統和其他自然資源 Forest, ecosystems and other natural resources</li> </ul>					
M. 一般來說，我覺得以下項目是重要的。In general, I feel it is important to:					
<ul style="list-style-type: none"> <li>限制田野和農地的發展 Limit development in open fields and agricultural areas</li> </ul>					
<ul style="list-style-type: none"> <li>預留土地作公眾康樂用途（遠足路徑、郊野公園） Set aside land for public recreation (trails, country parks)</li> </ul>					
<ul style="list-style-type: none"> <li>限制大部分新發展在市區附近／市區內 Keep most new development close to/inside urban areas</li> </ul>					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
N. 一般來說，我支持 In general, I support:					
• 農業保育策略和規劃 Agricultural preservation strategies and planning					
• 全港性的保育計劃 Territory wide conservation plan					
• 以更嚴謹的劃區方式保護鄉郊 More stringent zoning to protect rural spaces					
• 以公私營合作方式保育重要地方 Public-private partnerships to conserve important places					

### Behaviour/ leadership (行為 / 領導能力)

16. 請表示你對以下各項的同意程度。Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A. 我以永續方式使用自然資源。I use natural resources in a sustainable way.					
B. 我曾經捐款予環保或生態保育組織。I have contributed money or time to an environmental or wildlife conservation group.					
C. 我曾經根據產品對環境的影響而選擇購買或不購買。I have selected products based on their environmental impact.					
D. 我已經因為關心環境而改變行為。I have changed my behaviour because of					



concern for the environment.					
	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
E. 我總會考慮到自己的決定、選擇和日常行動對環境的影響。I always think about the impacts of my personal decisions, choices and everyday actions on the environment.					
F. 我總會考慮到自己的決定、選擇和日常行動對香港鄉郊的影響。I always think about the impacts of my personal decisions, choices and everyday actions on rural Hong Kong					
G. 我曾經出席有關香港鄉郊的保育或管理的公眾聽證會 / 公眾討論 / 論壇。I have attended public hearings/ public discussions or forums related to the conservation or management of rural areas in Hong Kong.					
H. 我曾經就香港鄉郊的保育或管理議題聯絡政府機構獲取資訊或作出投訴。I have contacted a government agency to get information or complain about issues regarding the conservation or management of rural areas in Hong Kong.					
I. 我已經與個人或團體建立網絡，為鄉郊進行協作行動。I have established personal networks with individuals or groups for collaborative action for rural areas.					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
J. 當我發現其他人破壞鄉郊環境，我會警告他們或舉報個案。When I notice people harming the rural environment, I warn them or report such cases.					
K. 我相信我有力量在城鄉永續發展上帶來有意義的影響。I believe I have the power to make meaningful impact in sustainable urban and rural development.					

### 技能 Skills

17. 請表示你對以下各項的同意程度。Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A. 我能夠批判性地分析香港鄉郊的問題。I am able to critically analyse issues regarding rural areas in Hong Kong.					
B. 我對鄉郊環境進行系統性記錄。I take systematic records of the rural environment.					
C. 我積極參與香港鄉郊社區活動。I actively participate in rural community activities in Hong Kong.					
D. 我建議身邊的人如何能夠為保護和管理香港的鄉郊作出貢獻。I advise people around me on ways they could contribute to protecting and managing rural areas in Hong Kong.					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
E. 我教育公眾如何能夠為保護和管理香港的鄉郊作出貢獻。I educate the public on ways they could contribute to protecting and managing rural areas in Hong Kong.					

### 知識 Knowledge

18. 請表示你對以下各項的同意程度。Please indicate your level of agreement towards the following.

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
A. 我了解香港鄉郊目前面臨的挑戰。I understand the challenges currently faced by rural areas in Hong Kong.					
B. 我了解香港鄉郊的自然和文化資源管理問題。I understand issues regarding the management of natural and cultural resources in rural areas in Hong Kong.					
C. 我用證據和知識來支持我在香港鄉郊問題上的立場。I use evidence and knowledge to support my position on rural issues in Hong Kong.					
D. 我能為香港鄉郊的管理問題提出實制可行的解決方案。I can outline realistic solutions to issues regarding rural area management in Hong Kong.					

	非常不同意 Strongly disagree	不同意 Disagree	一半半 Neutral	同意 Agree	非常同意 Strongly agree
E. 我有搜索和閱讀以下資料 I independently search for and read information on:					
• 與香港鄉郊有關的狀況和問題 the state of and issues related to rural Hong Kong					
• 鄉郊永續發展的本地和國際現實生活解決方案和最佳實踐案例 local and international real-life solutions and best practice cases in rural sustainable development					

19. 你覺得你的技能和知識足夠讓你在有興趣的範疇內為鄉郊永續發展作出貢獻嗎? Do you feel you have sufficient skills and knowledge to contribute to the scope of work in rural revitalisation that you are interested in?

☐ Yes 足夠

☐ No 不足夠。你需要補充或加深哪一項技能或知識? What areas of skills and knowledge do you feel you are still lacking or need a deeper understanding on?

\_\_\_\_\_

20. 你覺得從這個計劃學到哪些技能和知識? What skills and knowledge did you acquire through the programme?

	1 沒有學到新技能和知識 No new skills/ knowledge acquired	2	3	4	5 深入了解或學會新技能和知識 In-depth new skills/knowledge acquired
Skills: a) Data collection 數據採集 b) Analysis and research 分析與研究 c) Leadership and management 領導與管理 d) Decision making and problem solving 決策與解難 e) Communication and collaboration 溝通與合作					

f) Presentation and explanation 介紹與解釋					
g) Others, please specify _其他, 請說明_____					
Knowledge: h) Sustainable agriculture 永續農業 i) Rural history and architecture 鄉村歷史和建築 j) Biodiversity monitoring 生物多樣性調查 k) Ecosystem management 生態系統管理 l) Evidence-based conservation 循證保育及管理 m) Indigenous wisdom and knowledge 原居民傳統智慧及知識 n) 其他, 請說明_____ Others, please specify _____					

25. Do you feel that the skills and knowledge learnt from this programme are useful for you to engage in non-rural revitalisation areas of work? 您覺得從本計劃所學到的技能和知識對您參與鄉郊復育以外的工作有幫助嗎?

- ☐ 有, 例如那些哪些工作領域\_\_\_\_\_ Yes, please provide examples of the areas of work they could be useful for
- ☐ 沒有 No

26. 你未來會繼續參與鄉郊保育的工作嗎? Do you plan to continue participating in rural revitalisation?

- ☐ 會, 我打算為「森林村落」項目有關的活動出一分力 Yes, I plan to help in activities related to "Forest Village" project?
- ☐ 會, 我打算用其他方式或途徑參與保育鄉郊的工作。請舉例\_\_\_\_\_ Yes, I have plans to undertake other activities. please specify\_\_\_\_\_
- ☐ 不會。請提供原因\_\_\_\_\_ No. Please specify\_\_\_\_\_

27. 請提議你參與的計劃如果作出哪方面的改變會令你更投入保育鄉郊的工作。  
What changes could be made to the programme that would lead to enhancing your desire to take a more active role in rural revitalisation work?

-----完-----

非常感激閣下對這項研究的貢獻

## **Appendix 2 – Interview Questions**

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1. What are your motivations for joining the programme(s)?
2. What kind of tasks have you been involved in as a village volunteer?
3. Could you describe the changes you have experienced as a result of the programme?
4. What were the main things that you felt were influential/insightful from the programme?
5. Have your behaviours towards rural areas or your motivations about being involved with rural areas changed due to the programme?
6. What actions are you currently undertaking/programmes/activities currently involved in?





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