

How to determine essential values of landscape to be preserved? An Interdisciplinary challenge in Trong Village of Zhemgang, Bhutan

Akiko Yoshimura¹, Keiji Yamada², Yoshinori Iida³, Hideaki Kawasaki⁴, Yuko Nagamura³, Naho Dokyu¹, Tashi Penjor⁵ and Ugyen M Tenzin⁶

¹*Department of Architecture and Civil Engineering, Chiba Institute of Technology*

²*Department of Architectural Design, Kanazawa Institute of Technology*

³*Urban Planning Division at CTI Engineering Co. Ltd*

⁴*Bureau of Port and Harbour, Tokyo Metropolitan Government*

⁵*Urban Planning and Development Division of Department of Human Settlement, Bhutan*

⁶*Regional and Rural Planning Division of the Department of Human Settlement, Bhutan*

Introduction

How to live in harmony with the environment and lead a sustainable way of life while also managing the place people live in, through their own decisions, is a worldwide issue. The way of life fostered by the peculiar milieu of the place, wisdoms derived from living in harmony with the environment and sharing of the common landscape, which ties the above two, formulate the roots of identities of the people living there.

Among the global discussions on the above issue, the Kingdom of Bhutan has posted a unique idea of pursuing Gross National Happiness (GNH), which sets an alternative development aim against the stream of modernization and globalization. However, it is now facing rapid modernization. In many traditional Bhutanese villages, basic surveys are awaited and so their essential values are not yet determined. Many of their values as living spheres, places of identity, and/or cultural heritages risk disappearance because of rapid modernization and the involved changes. Preservation and promotion of cultural heritage is one of the four pillars of GNH. The Royal Government of Bhutan has started promoting community-based tourism to revitalize the region while preserving the village. But it may witness significant effect as infrastructure for tourism is developed. So long it is the place for people to reside, perform activities and lead life, changes are inevitable. It is necessary to draw a new framework to preserve those that are not merely physical and to manage the region while allowing changes to a certain extent.

Against this background, the authors conducted an interdisciplinary survey in a traditional village in Bhutan to grasp both the physical facts and social interrelations, aiming to draw a conjecture on possible changes and points to be considered for the future, which is to think what values there are to be preserved and how.

Survey Site: Trong heritage village in Zhemgang

Trong heritage village in Zhemgang in central Bhutan lies at the foot of Zhemgang Dzong located on the ridge of a mountain and founded in the 12th century. Dzongs are fortress with religious and administrative functions. Inside the residential area of the village, houses made of mixed structure of stones and woods face each other on both sides of the central path. Houses are very close to each other and some houses share walls. Highly concentrated manner of village organization to this extent is rare in Bhutan.

Recognizing the intimacy and beauty of the sequence along the central path and the unique style of traditional houses, His Majesty the King of Bhutan commanded preservation of the village when he visited there in 2014. Now the Government of Bhutan is working to propose suitable measures to preserve the village.

Since Trong village is within the urban area, development pressures are high and house remodelling and extensions are taking place. The local administration prohibited changes to houses while preparing to draw up guidelines and incentive programs for the village preservation and sustainable development of the region.

Bhutan was rather behind in formulating national system for heritage preservation, but recently Bhutan's Heritage Sites Bill has been drafted. The government had drawn up and has been applying a design code, *Traditional Architecture Guidelines* (Department of Urban Development and Housing) to all new constructions. But this just rules the design. Plans for village preservation and sustainable development that covers the whole of the cultural landscape are yet to be prepared.

Survey design

To conduct initial surveys in traditional Bhutanese villages, it is important to approach from multiple points

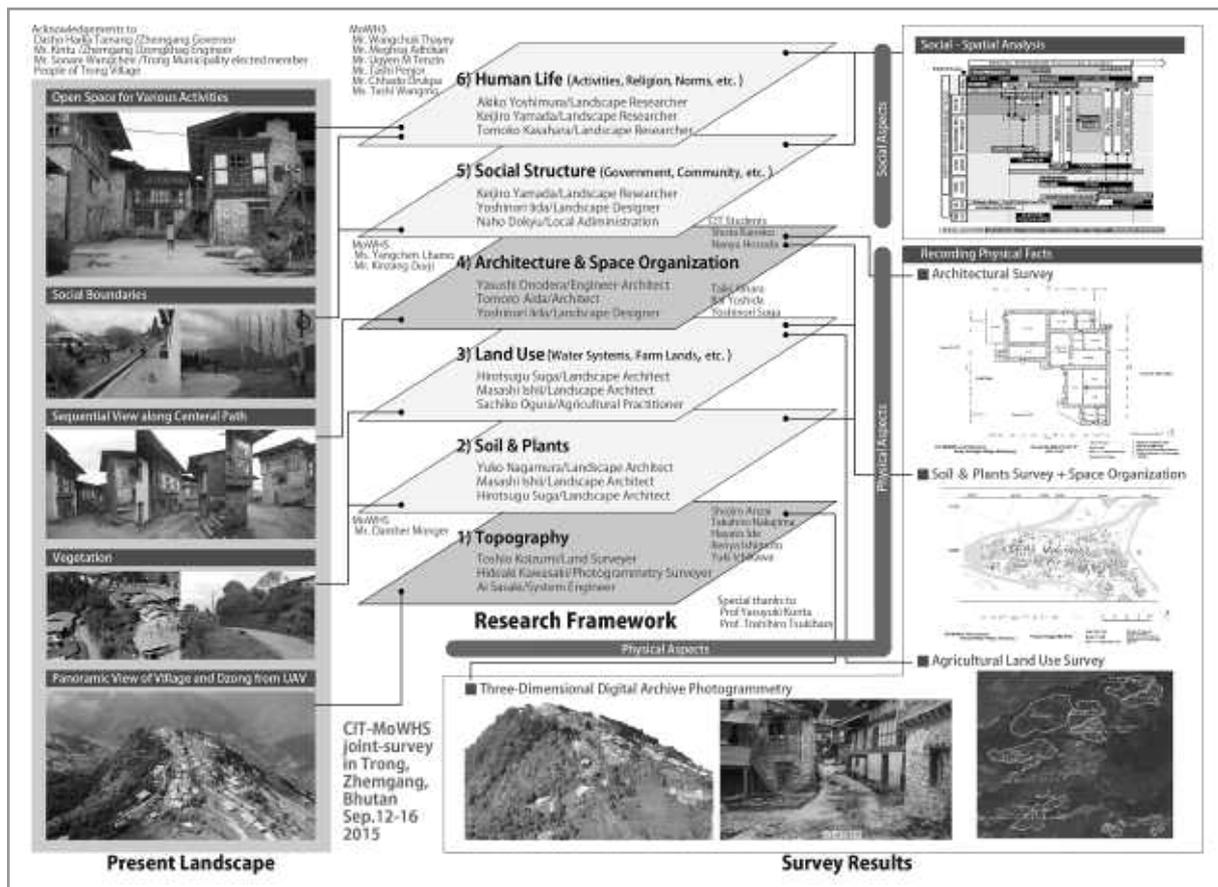


Fig. 1. Trong heritage village survey and research framework

of views, since their values are not yet determined. Therefore, we gathered researchers and practitioners from various fields to conduct survey on both physical and social/humane sides of the village (Fig. 1).

Surveying and recording physical facts

To survey the location, shape and type of physical substances those comprise the village, we conducted interdisciplinary surveys to grasp the physical facts on topography, soil, plant, land use, farmlands, water systems, architecture and spatial organization of the village.

Investigation on social/humane aspects

In-depth interviews were carried out on relations between spatial and social elements of landscape, applying the methodology of socio-spatial structure analysis (Yamada *et al* 2013). Social involvements for each spatial element in production and formulation processes, social schemes such as ownerships, maintenance, management, activities and rules that control their use and applications, and explicit and tacit knowledge on local technique, culture and life were investigated.

Compiling survey results

From collating the results, interrelations, changes, triggers, socio-spatial meanings and transitions from the past to the present can be grasped within the limit of acquired empirical data. Further, cause-and-effect, resulting consequences and relations between causes are analyzed to conjecture the transformation mechanisms to derive a future direction. This aimed to open a horizon to discuss, identify and share with villagers the essential values to be preserved while determining extents of allowable changes.

Changes in Trong village up to the present: Physical facts studied

Topography: Basic land surveys were done with Total Stations. Aerial and Terrestrial photogrammetry was conducted to generate 3D point cloud comprising of 182,595,685 points and coordinates. This model establishes a three-dimensional digital archive of the village form (Fig. 1).

Soil and plants: Soil surveys were conducted at five points in residential areas and farmlands of the village so basic soil characteristics were grasped. Locations, species and sizes of all 155 middle-tall trees within the residential area

Tree No.	Tree Name	K'hangsa (Local Language)	H (m)	C (m)	W (m)
1	Cupressus tomentos	Tsenday	30.0	7.50	12.00
2	Wuex amolata		4.0	0.20	4.00
3	Wuex amolata		3.0	0.15	3.00
4	Erythrina arborescens	Chassee shing	5.0	0.40	4.00
5	Erythrina arborescens	Chassee shing	7.0	0.80	10.00
6	Erythrina arborescens	Chassee shing	5.0	0.45	5.00
7	Ficus roxburghii	Opshingla shing	5.0	0.50	4.00
8	Ficus roxburghii	Opshingla shing	5.0	0.50	4.00
9	Delonix regia		4.0	0.70	5.00
10	Erythrina arborescens	Chassee shing	5.0	0.50	5.00
11	Ficus roxburghii	Opshingla shing	5.0	0.50	4.00
12	Erythrina arborescens	Chassee shing	5.0	0.50	4.00
13	Erythrina arborescens	Chassee shing	5.0	0.70	7.00
14	Erythrina arborescens	Chassee shing	3.0	0.50	3.00
15	Erythrina arborescens	Chassee shing	5.0	0.60	4.00
16	Ficus roxburghii	Opshingla shing	5.0	0.50	4.00
17	Persea caroliniana		3.0		4.00
18	Erythrina arborescens	Chassee shing	4.0	0.40	3.00
19	Pharus spp.		7.0		
20	Musa spp. Pflawa		5.0		
21	Amigdalus persica	Kham	5.0	0.20	3.00
22	Hibiscus spp		1.2	1.3m	0.75
23	Juglans regia	Tago shing	12.0	0.97	11.00
24	Amigdalus persica	Kham	5.0	1.05	2.00
25	Cupressus tomentos	Tsenday	15.0	1.51	5.00
26	Erythrina arborescens	Chassee shing	5.0	0.67	5.00
27	Erythrina arborescens	Chassee shing	5.0	0.65	5.00
28	Erythrina arborescens	Chassee shing	5.0	0.52	4.00
29	Hibiscus sylvicus				
30	Euphorbia pulcherrima	Wangchenmeto	2.0		
31	Euphorbia pulcherrima	Wangchenmeto	2.0		
32	Euphorbia pulcherrima	Wangchenmeto	2.0		
33	Euphorbia pulcherrima	Wangchenmeto	2.0		
34	Euphorbia pulcherrima	Wangchenmeto	2.0		
35	Ficus roxburghii	Opshingla shing	5.0	1.53	7.00
36	Euphorbia pulcherrima	Wangchenmeto	2.0		
37	Euphorbia pulcherrima	Wangchenmeto	2.0		
38	Euphorbia pulcherrima	Wangchenmeto	2.0		
39	Erythrina arborescens	Chassee shing	1.0		1.00
40	Salix babylonica	Changmashing	5.0	0.55	5.00
41	Juglans regia	Tago shing	5.0	0.50	5.00
42	Juglans regia	Tago shing	5.0	0.40	2.00
43	Juglans regia	Tago shing	5.0	0.55	5.00
44	Solanum betaceum	Lam benthia	2.5	0.15	2.00
45	Solanum betaceum	Lam benthia	2.5	0.15	2.00
46	Solanum betaceum	Lam benthia	2.5	0.15	2.00
47	Ficus roxburghii	Forder tree	4.0	0.20	4.00
48	Salix babylonica	Changmashing	5.0	0.55	4.00
49	Erythrina arborescens	Khangshing	7.0	0.55	3.50
50	Achlatode lasica		3.0		3.00
51	Juglans regia	Tago shing	7.0	0.50	7.00
52	Juglans regia	Tago shing	7.0	0.50	7.00
53	Gulhala argyrata		1.5		2.00
54	Ficus roxburghii	Opshingla shing	7.0	1.75	6.00
55	Ficus roxburghii	Opshingla shing	2.5	0.43	3.00
56	Ficus roxburghii	Opshingla shing	2.5	0.57	1.50
57	Juglans regia	Tago shing	0.92		
58	Ficus roxburghii	Opshingla shing	2.5	0.30	2.00
59	Juglans regia	Walnuts	5.0	0.45	3.00
59	Juglans regia	Walnuts	3.0	0.21	2.00
60	Ficus roxburghii	Opshingla shing	7.0	0.65	5.00
61	Musa spp	Ngangla	4.0		4.00
62	Erythrina arborescens	Chassee shing	4.0	0.50	4.00
63	Musa spp	Ngangla	4.0		
64	Ficus roxburghii	Opshingla shing	5.0	0.50	5.00
65	Musa spp	Ngangla	4.0		
66	Ficus roxburghii	Opshingla shing	5.0	0.40	4.00
67	Ficus roxburghii	Opshingla shing	5.0	0.55	7.00
68	Erythrina arborescens	Chassee shing	3.0	1.00	3.00
69	Amigdalus persica	Kham	3.0	0.30	2.50
70	Cupressus tomentos	Tsenday	15.0	0.97	6.00
71	Cupressus tomentos	Tsenday	15.0	1.20	6.00
72	Cupressus tomentos	Tsenday	15.0	1.00	6.00
73	Ficus roxburghii	Opshingla shing	5.0	0.50	3.50
73	Erythrina arborescens	Chassee shing	5.0	0.50	4.00
74	Hibiscus sylvicus		3.0		4.00
75	Euphorbia pulcherrima	Wangchenmeto	4.0		4.00
76	Thuja orientalis	Thuja	5.0	0.55	3.00
77	Euphorbia pulcherrima	Wangchenmeto	2.0		3.00

Tree No.	Tree Name	K'hangsa (Local Language)	H (m)	C (m)	W (m)
78	Amigdalus persica	Kham	5.0	0.50	4.00
79	Callistemon fasciculatus	Beijum	5.0	0.50	3.00
80	Amigdalus persica	Kham	2.0		2.00
81	Solanum betaceum	Lam benthia	2.0		1.50
82	Thuja orientalis	Thuja	2.0		1.50
83	Musa spp	Ngangla	3.0		
84	Musa spp	Ngangla	3.0		
85	Ficus roxburghii	Opshingla shing	5.0	2.30	11.00
86	Ficus roxburghii	Opshingla shing	5.0	0.50	4.00
87	Juglans regia	Tago shing	5.0	0.45	4.00
88	Ficus roxburghii	Opshingla shing	5.0	0.77	4.00
89	Ficus roxburghii	Opshingla shing	5.0	0.55	4.00
90	Ficus roxburghii	Opshingla shing	5.0	1.15	4.00
91	Ficus roxburghii	Opshingla shing	5.0	1.20	7.00
92	Ficus roxburghii	Opshingla shing	5.0	0.55	5.00
93	Ficus roxburghii	Opshingla shing	7.0	0.50	6.00
94	Juglans regia	Tago shing	5.0	0.55	5.00
95	Erythrina arborescens	Chassee shing	5.0	5.70	6.00
95	Erythrina arborescens	Chassee shing	5.0	1.00	5.00
97	Bambusa cinnata		2.0		2.00
98	Cupressus tomentos	Tsenday	5.0	0.50	3.00
99	Cupressus tomentos	Tsenday	5.0	0.50	3.00
100	Juglans regia	Tago shing	15.0	2.20	15.00
101	Juglans regia	Tago shing	5.0	1.77	6.00
102	Gulhala argyrata		4.0		3.00
103	Ficus roxburghii	Forder tree	5.0	1.50	5.00
104	Amigdalus persica	Kham			
105	Erythrina arborescens	Chassee shing	4.0	0.25	2.00
106	Erythrina arborescens	Chassee shing	4.0	0.25	2.00
107	Thuja orientalis	Yutashup shing	3.0	0.15	1.00
108	Thuja orientalis	Yutashup shing	2.5	0.15	1.00
109	Thuja orientalis	Yutashup shing	2.5	0.15	1.00
110	Cupressus tomentos	Tsenday	15.0	1.20	1.00
111	Cupressus tomentos	Tsenday	15.0	1.20	1.00
112	Persea americana	Goodshing	11.0	2.25	14.00
113	Salix babylonica	Changmashing	3.0	1.00	1.50
114	Cupressus tomentos	Tsenday	5.0	0.77	2.00
115	Cassia ornata	Sekey	5.0	0.72	5.00
116	Cupressus tomentos	Tsenday	5.0	0.35	2.00
117	Ficus roxburghii	Forder tree	5.0	1.70	5.00
118	Musa spp.	Ngangla	4.0		
118	Salix babylonica	Changmashing	3.0	0.50	5.00
120	Juglans regia	Tago shing	5.0	1.32	10.00
121	Pharus mume	Churi	4.0	0.50	3.00
122	Pharus mume	Churi	4.0	0.50	3.00
123	Salix babylonica	Changmashing	5.0	0.84	3.00
124	Erythrina arborescens	Chassee shing	4.0	0.53	3.00
125	Erythrina arborescens	Chassee shing	5.0		3.00
126	Solanum betaceum	Lam benthia	2.0	0.17	2.00
127	Erythrina arborescens	Chassee shing	3.5	0.50	2.00
128	Erythrina arborescens	Chassee shing	4.0	0.54	2.00
129	Solanum betaceum	Lam benthia	2.5	0.30	5.00
130	Erythrina arborescens	Chassee shing	5.0	0.50	2.50
131	Erythrina arborescens	Chassee shing	5.0	0.72	2.00
132	Salix babylonica	Changmashing	4.0	0.55	3.50
133	Salix babylonica	Changmashing	3.0	0.73	4.50
134	Salix babylonica	Changmashing	2.5	0.70	1.00
135	Bambusa cinnata		4.0	0.45	3.50
136	Persea botanica	Goodshing	3.0	0.32	5.00
137	Persea botanica	Goodshing	3.0	0.13	1.50
138	Achlatode lasica		2.0		1.00
139	Juglans regia	Walnuts	4.0	0.30	2.00
140	Achlatode lasica		2.0		2.00
141	Fraxinus granatum	Tsenday	1.8		1.00
142	Fraxinus granatum	Tsenday	1.1		0.50
143	Cupressus tomentos	Tsenday	4.0	0.35	2.50
144	Hibiscus spp		3.0		2.50
145	Datura stramonium		2.5		1.50
146	Salix babylonica	Changmashing	3.5	0.55	4.00
147	Amigdalus persica	Kham	2.5	0.15	2.00
148	Euphorbia pulcherrima	Wangchenmeto	2.5	0.20	1.00
149	Salix babylonica	Changmashing	4.0	1.74	2.00
150	Ficus roxburghii	Opshingla shing	3.5		3.00
151	Ficus roxburghii	Opshingla shing	5.5	1.50	5.00
152	Persea americana	Goodshing	5.0	0.55	5.50
153	Amigdalus persica	Kham	4.5	0.57	4.00
154	Solanum betaceum	Lam benthia	3.0	0.21	2.00
155	Amigdalus persica	Kham	3.0	0.14	3.00

Table 1. Tree survey results

of the village were grasped (Table 1, Fig. 2). Trees that are used in everyday life were densely planted near houses.

Architecture and village space organization: Locations and exterior scale of all 16 main houses comprising the heritage village were surveyed. These houses accommodate 30 households. One architectural feature of Trong village houses is that there are common walls separating households within the same building. Interior measurements were done for nine of these buildings accommodating 16 households and compiled as 1/100-

scale plan drawings (Fig. 3). House walls were studied to find traces of change. Further, house owners were interviewed on house history, reasons of changes, room use, family members and occupations.

Socio-spatial investigation

Significant points on values and trends of changes of the village are listed below.

- (i) Some houses were so old that no residents knew when it was built, while houses to no small extent were extended, plastered, or newly built. Newly

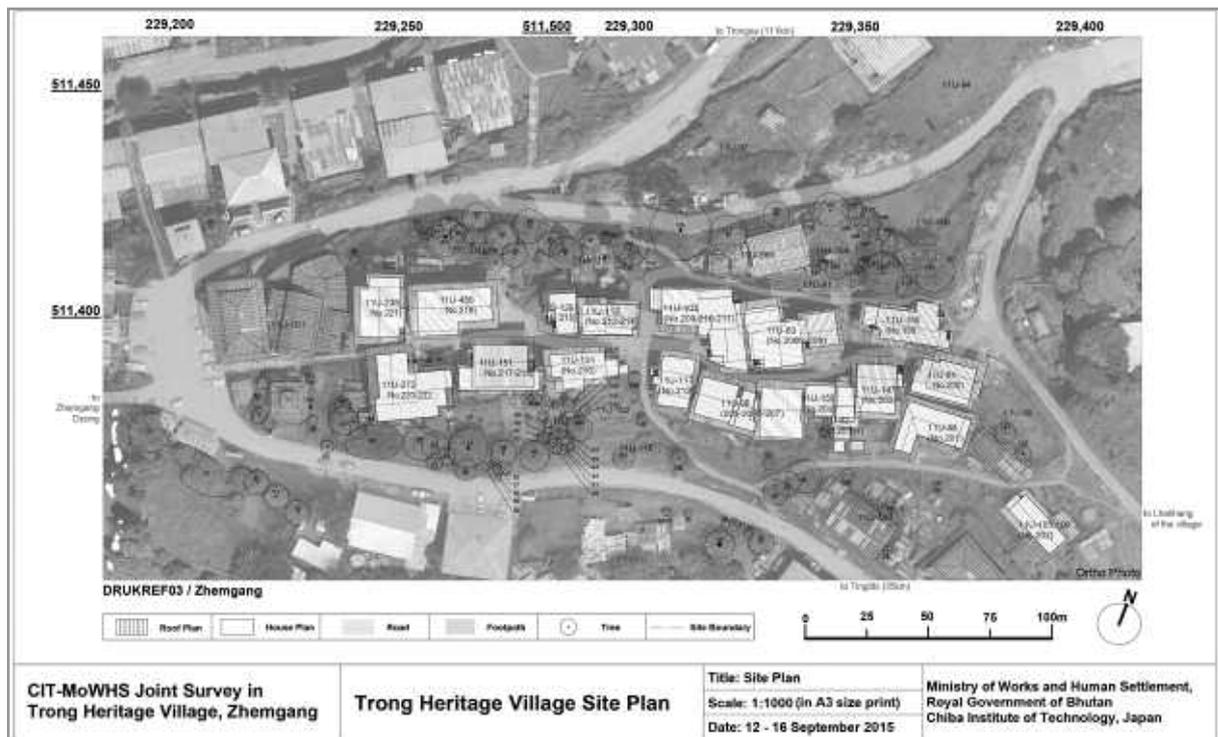


Fig. 2. Trong village site plan

constructed houses follow the *Traditional Architecture Guidelines*, so they look traditional. However, these were constructed with new materials. Also, we found some differences in construction method. Therefore, these new houses may not possess the authenticity of materials and craftsmanship, essential heritage elements recognized by the World Heritage guidelines. For all the houses in the village, the main roofs were already changed from wooden to galvanized iron sheets, promoted as a part of the policy to save forests.

- (ii) However, at the same time, exactly because the old and the new exist together, and with its intimate composition showing fine excellence, this multi-layered space organization produces an attractive sequence. This is a value that is indeed different from above-mentioned authenticity but one that has its own significance. (iii) The average space of the main living floor (mostly the second floor) among the nine measured buildings (accommodating 1.8 household av. per building) was 87m². Dividing this simply by number of residents, the average living floor space per person is around 9.5m². This is too small to accommodate the increasing number of family members and modernized commodities (furniture, cloths, electrical appliances, and so on) and results in building extensions.
- (iv) After the government prohibited keeping livestock in Trong village for sanitary reasons, some families

remodelled the ground floor (eg to change it to children's room), opening windows in the wall. Also, after provision of water supply services, many families added small annexes to their houses for kitchens and toilets.

- (v) Extensions were also seen in larger houses. There were families who rent some floors in which case they tend to convert the interior to suit the modernized lifestyle such as adding westernized bedrooms, baths and toilets and also plastering the walls. Also, there were families who quit farming the fields because they can now live on rents.
- (vi) Looking at the socio-spatial relationships, actual land use did not strictly follow the land ownership. The way people use the space was rather loose and free (in a good sense) seen in Table 2, which consequently fosters a peaceful atmosphere forming a part of what this village is like.

Towards the future: Change in houses and the value of architectural designs or authenticity

From the present trend of changes seen in Trong village, it can be expected that remodelling or extensions of houses may increase consequently leading to changes in forms of architecture and village organization using modern materials without careful consideration of its authenticity and essential values. Architectural styles/forms could be one value we should respect. However, mere imitation of style may turn out badly if it

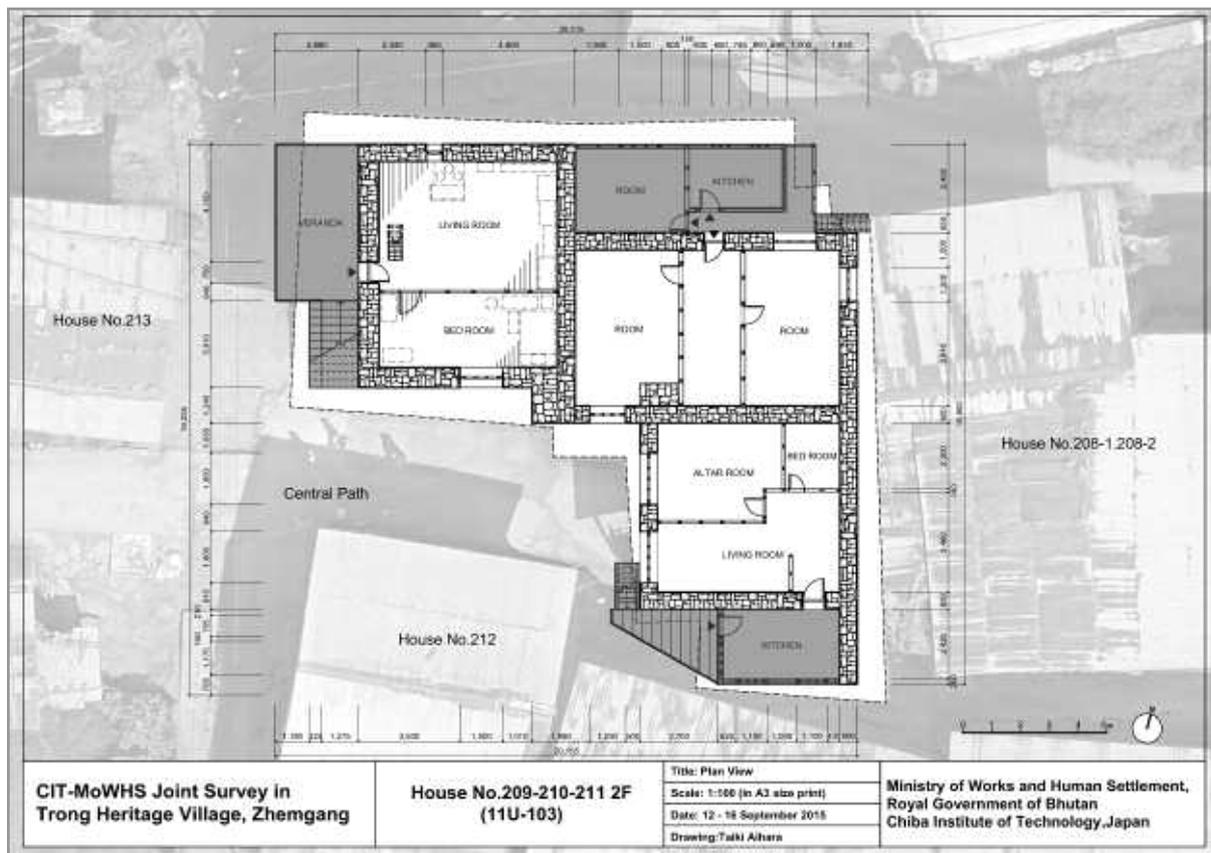


Fig. 3. House plan drawing

loses its authenticity. Here we can draw a point: to what extent the changes should be allowed?

Change in place/milieu/land use and its values: human right and the value of life

Similarly, if the present socio-economic situation continues, it can be expected that such trends as migration of younger generation to urban centres where they have more opportunities, possibilities and choices including career decisions, decreased need to engage in agriculture or forestry because of increased alternative sources of income, resulting in abandoning of farmlands, and so on. This poses the following questions.

Land use as reflections of human activities (therefore prone to changes)

Current trends of modernization and the involved changes will considerably decrease the stretch of (and the recognitions of) lands, places and milieu that are engaged with people. We cannot deny the right of young people and families from making choices to pursue their possibilities. This poses a more difficult question: how and where can we place the value of the stretch of lands that engraves what it is to be there into common/public values?

Since those (places/milieu, land uses) are made of human activities, it should naturally have a public aspect to a certain extent. However, at the same time, these values postulate changes. The workings of people are based on activities to earn living, which is a fundamental purpose of life, so they are justifiable. This means the involved changes on place/milieu/land use are justifiable as well. Then, it becomes very important to think of **who** manages the changes at the very scene of the place that are facing changes, which reflect the trend of the times on people's aspirations derived from the ways of life and driven by the situations at the time.

Possibility of the value of views: as representations/symbolizations of life there

It may be possible that the value of the view of the stretch of milieu including land use acquire more important meanings. To save the view, ideally, we should keep engaging on farming and forestry that are the original source of value. Alternatively, we may be able to maintain the view by making it an attraction for tourism or restricting the land use. However, in that case, how can the authenticity of the view of landscape that symbolizes life of the place be preserved, or be trusted upon? This may be a difficult question for Japan and other Asian

No	Spatial Elements	Social Elements											
		WHO OWNS?						WHO CONTROLS / MAINTAINS?					
		Individual / Family	Local Community	Quasi-public Organizations	Religious Organizations	Government		Individual / Family	Local Community	Quasi-public Organizations	Religious Organizations	Government	
Municipality / Dzongkhak	National Government					Municipality / Dzongkhak	National Government						
1	Forest	●	●										
2	Fields	●											
3	Fence (with Wood / Iron Wire)	●											
4	Shoulder, Slope (South)						○ ²	○					
5	Building (Checkpoint)												
6	Garbage Can												
7	Building (In Memory)	●											
8	Electric Pole / Wire												
9	Road (old NH4)												
17	MANI-DUNGKHOR (Pvt.)	●			●								
18	Water Supply Chamber												
19	Car Parking (West)												
20	Retaining Wall (beside Parking)												
21	Slope (behind Parking)	●											
22	Water Supply Chamber												
23	Buildings (Pvt. Com. below Parking)	●											
24	Buildings (Pvt. Com. etc.), Walls	●											
25	DHARSHING (beside Bank)	●			●								
26	Fire Hydrant												
27	MANI-DUNGKHOR (Gvt.)				●	●		○	○		●	●	□
40	Incense Burner (SANG THAB)	●			●						●		
41	Steps (beside Mani (Gvt.))											●	
42	Slope (beside Steps)	●											
43	Drainage Ditch (on the Slope beside Steps)											●	
44	Backyard (below Steps)	●											
45	Open Terrace												
46	Passage	●											
47	Benches	●											
48	Building (Pvt. Com.)	●											
61	Prayer Flags (LUNG TA)	●			●						●		
62	Electric Pole / Wire												
63	Electric Light												
71	Market												
72	Market (Pvt. Com.)												
73	Public Toilet												

All the spatial elements that exist on a certain section passing through Trong village were investigated and grasped in great detail. Spatial elements shown with a gray background are the elements in complex with cross-sectional space use and activities by heterogeneous actors.

These results are based on the unofficial remarks of the village mayor in the field survey and the interview on the 15th of September 2015. They ought to be validated through further multiple field surveys and interviews.

*1: ● shows the main actors related to each spatial element.
 *2: ○ shows the complementary actors related to each spatial element.
 *3: □ shows the actors related to each spatial element through social systems such as laws, policies, or subsidies.

Table 2. Socio-Spatial matrix

countries where the concepts of modernization are often interpreted too simply, equating land to its economic values. Addressing this question may lead to a more fundamental question: what is 'land' to us?

Communal/public value for the future: Public nature of place/milieu/land use

As mentioned above, taking the workings of people (such as farming and forestry) as sources of fundamental values of life casts yet another question of what is the value of life in harmony with nature, or more fundamentally, the value of nature itself. In here, nature is not taken as an

abstract scientific concept nor an ecological system, but a value of something somatic, and at the same time, religious. It should be a corporal value for the community deeply engaged in everyday life with various human activities, in which the traces of the past time or ancestors of the community are deeply engraved. In many cases something that fundamentally has a nature of public value is engaged to individual ownership/properties. These are vulnerable because mostly only individuals maintain them. How can we consider these as public values?

Placing private land/property to a public value

For now, as stated above, the actual land use across the ownership in Trong fosters a peaceful atmosphere. But if people start claiming their rights and exclude others from their own lands, the atmosphere will be changed. While the boundary will be clarified visually, the wholeness of the place will be lost, creating disconnected, unpleasant places. In Japan, ownership of private lands is considered one of the fundamental human rights that should be respected. Japan lags behind on discussions to recognize, treat and place public values. In Bhutan too, discussions on this matter have just started. Now it is a real concern how to manage private land with public/community use or value.

Further, regarding the above, it is time to consider how to establish the processes and procedures of urban planning so that people can choose and decide for themselves the future of the whole lands of the region they live including private lands. Whether or not we choose such kinds of urban planning, emphasis should be put on the significance of considering **how** we engage people in discussions for establishing the public values, in the way that enables people to realize vividly and

References

Department of Urban Development and Housing, *Traditional Architecture Guidelines*, (Royal Government of Bhutan).

somatically the meaning of the place and its changes. In this viewpoint, it is important to provide information for people living there through concrete and tangible facts/forms of public values, eg common walls, community water place, etc., with information on their public meanings, what are related to and who are involved in. Our survey provides opportunities to share and discuss the matter with the villagers with vivid actuality.

Conclusion

Analyses results of this interdisciplinary surveys on physical facts and in-depth interviews shed lights on multifaceted meanings and values of landscape; therefore have possibility to provide villagers the bases for judgments and clues to think for the future.

Acknowledgements

We are grateful to the people of Trong and Zhemgang Governor Dasho Harka Tamang, Mr Kintu and Mr Sonam Wangchen; Yangchen Lhamo, Kinzang Dorji and other MoWHS officials; CIT team experts and students; Prof. Yasuyuki Kurita and Prof. Toshihiro Tsukihara; and KAKENHI (25501004).

Yamada, K., Fujikura, H., Hagai, M., Nishi, K. 2013 'On the Interactive Relationship between Sustainable Landscapes and Local Governance: Interdisciplinary Approach to "Milieu", in C. Newman, Y. Yussaume & B. Pedroli (eds), *Landscape and Imagination International Scientific Conference*, (Florence: UNISCAPE) 631-636.