Workshop and Guided field-trip to Lai Chi Wo River Catchment

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How to conduct fieldwork in Lai Chi Wo River catchment

Anthony K. C. Yeung
Hong Kong Geographical Association

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Relevance to the DSE GEOGRAPHY curriculum

- This field study is related to ‘Managing Rivers and Coastal Environments – A continuing challenge’ (Compulsory Part)

Objectives

- To examine the **agricultural landscape in the Lai Chi Wo drainage basin**
- To investigate **how the drainage of Lai Chi Wo River help the sustainable development of the agricultural settlement**
Background Information: About Lai Chi Wo River

- Headwater: at Tiu Tang Lung (吊燈籠)
- Main stream: flows NE into the gentle river valley, joins major tributary near Lai Chi Wo village
- Length of the river: ~ 2.6 km
- Catchment area: ~ 2.7 km²
• An over 300-year old traditional Hakka village

• Main stream: flows NE into the gentle river valley, joins major tributary near Lai Chi Wo village, enters Double Haven (印洲塘).
Lai Chi Wo River: The field sites

- Estuary
- Hakka Walled Village
- Fung Shui Woods
- Chu Mun Tin
- Weir
- Coastal Heritiera and Derris Fore
- Viewing Point
The enquiry question for the field study of Lai Chi Wo River is:

How does the drainage of Lai Chi Wo River help the sustainable development of the agriculture and the settlement in the area?
What is **sustainable agriculture**?

Sustainable agriculture can be defined in many ways, but, in short **sustainable agriculture** is:

- **economically viable**: If it is not profitable, it is not sustainable;
- **socially supportive**: The quality of life of farmers, farm families and farm communities is important; and
- **ecologically sound**: We must preserve the resource base that sustains us all.

And the three must be in harmony.

Source: Sustainable Agriculture Research and Education, [https://www.westernsare.org/About-Us/What-is-Sustainable-Agriculture](https://www.westernsare.org/About-Us/What-is-Sustainable-Agriculture)
Pre-requisite knowledge: Sustainable development

- economically viable
- ecologically sound
- socially supportive

sustainable agriculture
The enquiry question for the field study of Lai Chi Wo River is:

*How does the drainage of Lai Chi Wo River help the sustainable development of the agriculture and the settlement in the area?*
Farmers of sustainable agriculture seek to integrate three main objectives into their work:

The enquiry can be carried out with reference to the following aspects:

- economic (economic profitability);
- ecological (a healthy environment); and
- social (social and economic equity)

The enquiry question can be sub-divided into sub-questions.
a. What is the **farming landscape and land use pattern** of Lai Chi Wo in relation to the river?

b. What are the **farming constraints** in Lai Chi Wo?

c. How do the farmlands in Lai Chi Wo be **irrigated**?

d. How does the **Fung Shiu woodland** help the farming and settlement in Lai Chi Wo?

e. How does the river help the **ecological development** in the river mouth area?

f. How does the river help the **social development** of the area?
Enquiry framework:

Sustainable development

Economic (economic profitability)

Ecological (healthy environment)

Social (Social & economic equity)

Sustainable agriculture

Farming in LAI CHI WO

(a) Farming landscape & land use pattern

(b) Farming constraints

(c) Irrigation work

(d) Fung Shiu Woods

(e) River mouth ecology

(f) Social development

(d) Fung Shiu Woods
(a) Farming landscape & land use pattern
Fieldwork skills:
- Land use mapping
- Land use transect drawing
(b) Farming constraints

Physical constraints
- Water shortages
- Farmland quality
- Pest and wild animals

Socio-economic constraints
- Inadequate farm labour
- Marketing of farm produces

Fieldwork skills:
- Observation
- Interview farmers

Installation of electric device to prevent the attack of wild boar
(c) Irrigation work

Channel flow diverted to farmland
Direction of channel flow

See Figure 4C.2

Channel water diverted to fields through pipe

Lai Chi Wo Hakka Village
Cultivated fields at higher level irrigated by channel flow
Cultivated fields at lower level irrigated by channel flow

Reservoir / Pool
Weir
Field

Functions of the reservoir/pool:
Storing water for dry season

Direction of flow
(d) Fung Shiu Woods

Find out and study:

- **Location** of the Fung Shiu Woods in relation to the village, the river & topography of the area
- **Characteristics** of the Fung Shiu Woods;
- **Functions** of the Fung Shiu Woods
  - Natural barrier to the village
  - Mitigating the devastating impact of typhoon in summer
  - Keep away the chilly north wind in winter
  - Halt landslide

**Fieldwork skills:**
- Observation
- Map reading & map orientation
- Map & compass skill
The ecological interests of Lai Chi Wo

Mud-dominated sediments washed down from the river at the estuary & along the coast

AFCD records 8 species of true mangrove in HK. All the 8 species are found here!

Try to identify these species in the field with the help of the identification chart.

<table>
<thead>
<tr>
<th>True mangrove species recorded in Hong Kong</th>
<th>Kandelia (秋茄)</th>
<th>Many-petraled mangrove (木欖)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Milky mangrove (海漆)</td>
<td>Black mangrove (白骨壤)</td>
<td>River mangrove (桐花樹)</td>
</tr>
<tr>
<td>Leather Fern (鹵蕨)</td>
<td>Coastal heritiera (銀葉樹)</td>
<td>Lumnitzera (欖李)</td>
</tr>
</tbody>
</table>

Source:
https://www.afcd.gov.hk/english/conservation/con_wet/con_wet_man/con_wet_man_local/con_wet_man_local_true.html
(e) River mouth ecology

- Geog. study = Species identification? X
- Geog. study = Study of the environment
- Study how plants adapt to the environment
- Find out the environmental conditions of the estuary and coastal areas

Find out the favourable conditions for the development of mangrove habitat at Lai Chi Wo
Conduct an interview with the staff of “Rural Sustainability @ Lai Chi Wo” to explore:

(i) the incubation of socio-economic models
(ii) rural start-ups for rural revitalisation; and
(iii) how the river help the social development of Lai Chi Wo
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Q & A

Thank you