

"My River, My Community" Scheme

## Workshop and Guided field-trip to Ng Tung River Catchment

13 June 2019 (Workshop) & 15 June 2019 (Field trip)

# How to conduct fieldwork in Ng Tung River catchment

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### **Background Information: About Ng Tung River**



### **Background information: Ng Tung River**

High Hill 🤊

LambHi

Tsung Shan



#### Formerly known as:

- Fung Kai (鳳溪)
- River Indus

A few tributaries including:

- Kwan Tei River (軍地河)
- Tan Shan River (丹山河)
- Shek Sheung River (石上河)
- Ma Wat River (麻笏河)

Meandering & flood frequently during the wet season.



Dukes Hi

Ko Po Shan

Tai Leng Pe

Irrìga

Reservo

### **Background Information: About Ng Tung River**



The main stream passes northern Sheung Shui, and merges with two tributaries named **Shek Sheung River** (石上河) and **Sheung Yue River** (雙魚河) near **Fu Tei Au** (虎地坳). Finally, the main stream turns north and merges with **Shenzhen River** (深圳河).

#### **Ng Tung River : Field work sites**



## **About Ng Tung River Field Study**

Relevance to the DSE GEOGRAPHY curriculum

This field study is related to:

- \* Managing Rivers and Coastal Environments A continuing challenge; and
- Combating Famine Is technology a panacea for food shortage?
  Objectives
- \* To examine how **fluvial processes** vary along the **three courses** of the river;
- \* To study alteration of the natural environment by **river management** strategy; and
- \* To investigate how Ng Tung River **irrigate and help the farmland** of Hok Tau area.

## **Enquiry questions:**

- 1. How do fluvial processes of Ng Tung River shape the land?
- 2. How does channel management strategy influence and alter the river environment of the lower course?
- 3. How does Ng Tung River help the cultivation of Hok Tau area?

**Sub-questions:** 

- 1. What are **different sections** of a river? **Upper, middle & lower courses of a river**
- 2. What **landform features** are produced at different sections of a river?
- 3. How does **the energy of a river change** at different sections?



Characteristics of river channel & valleyVariables affecting the fluvial processes

- Stream gradient
- Valley sides
- Valley shapes
- Amount of channel water
- Channel shape and roughness
- Speed of water flow

Load

- Amount of energy
- Fluvial processes
  - Erosion
  - Transportation
  - Deposition
- River features found there





## Middle course



#### Meander, river cliff, slip off slope

# (1) How do fluvial processes shape the land? Lower course

#### **Cut-off**







(2) How does channel management strategy influence & alter the river environment of the lower course?

#### **Sub-questions:**

- 1. How has the river channel been modified?
- 2. How can modifications of the river channel help reduce flooding in the area?
- 3. How do modifications of the river channel benefit the residents?

# (2) How does channel management strategy influence & alter the river environment of the lower course?



# (2) How does channel management strategy influence & alter the river environment of the lower course?



#### Changes:

- Channel bed: rough  $\rightarrow$  smooth
- Channel bed: natural  $\rightarrow$  concrete lining
- Water holding capacity: small  $\rightarrow$  large
- Flow speed: slow  $\rightarrow$  fast
- Hydraulic efficiency: low  $\rightarrow$  high





# (3) How does Ng Tung River help the cultivation of Hok Tau area?

#### **Sub-questions:**

- 1. How does the water drain to the farmland?
- 2. Is there a sufficient supply of irrigation water?
- 3. Is the water quality of the river suitable for irrigation?

## (3) How does Ng Tung River help the cultivation of Hok Tau area?





編載有機盆栽蔬果

级色圈

現蘭花園

自新有機公到百里

雲花園(水耕

永霖花園

Water

point

sampling

白安田愛



## (3) How does Ng Tung R. help the cultivation of Hok Tau area?





## (3) How does Ng Tung R. help the cultivation of Hok Tau area?





## (3) How does Ng Tung R. help the cultivation of Hok Tau area?

- Cultivated fields
- Ng Tung River –
- Study and note:
  - Channel bed?
  - Channelisation works?
  - How does the river help the cultivation?



## (3) How does Ng Tung R. help the cultivation of Hok Tau area?

- Is the water quality of the river suitable for irrigation?
- Conduct a simple test on the water quality of the river.

Hong Kong Newts (香港瘰螈)

## (3) How does Ng Tung R. help the cultivation of Hok Tau area?

Selected farms in Hok Tau area



Rainbow Organic Strawberry Farm

彩虹有機農莊

> Produce Green Foundation 緣田園基金

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華香園(華叔主理)



http://www.producegreen.org.hk

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