JC-WISE: An Innovative Approach to Education for Water Sustainability in Hong Kong

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Faculty of Social Sciences
The University of Hong Kong
香港大學社會科學學院

JC-WISE
Water Initiative on Sustainability and Engagement
賽馬會惜水・識河計劃

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香港賽馬會慈善信託基金
The Hong Kong Jockey Club Charities Trust
同心同步同進 RIDING HIGH TOGETHER

Jockey **C**lub **W**ater **I**nitiative on **S**ustainability and **E**ngagement (JC-WISE) 賽馬會 惜水·識河計劃

- A 3-year project (2016-19) funded by the Hong Kong Jockey Club Charities Trust, hosted by the Faculty of Social Sciences, HKU
- The first large-scale public education project ever in HK focusing on water resources
- Evidence-based, innovative, cross-sectoral collaboration

Jockey **C**lub **W**ater **I**nitiative on **S**ustainability and **E**ngagement (JC-WISE)

Aim at raising public awareness of the importance of achieving water sustainability for HK by:

- Enhancing the understanding of the multiple values of water through **re-connecting** the public with rivers
- Recognising the impacts of consumption behaviour on the world's freshwater resources through Water Footprint concept

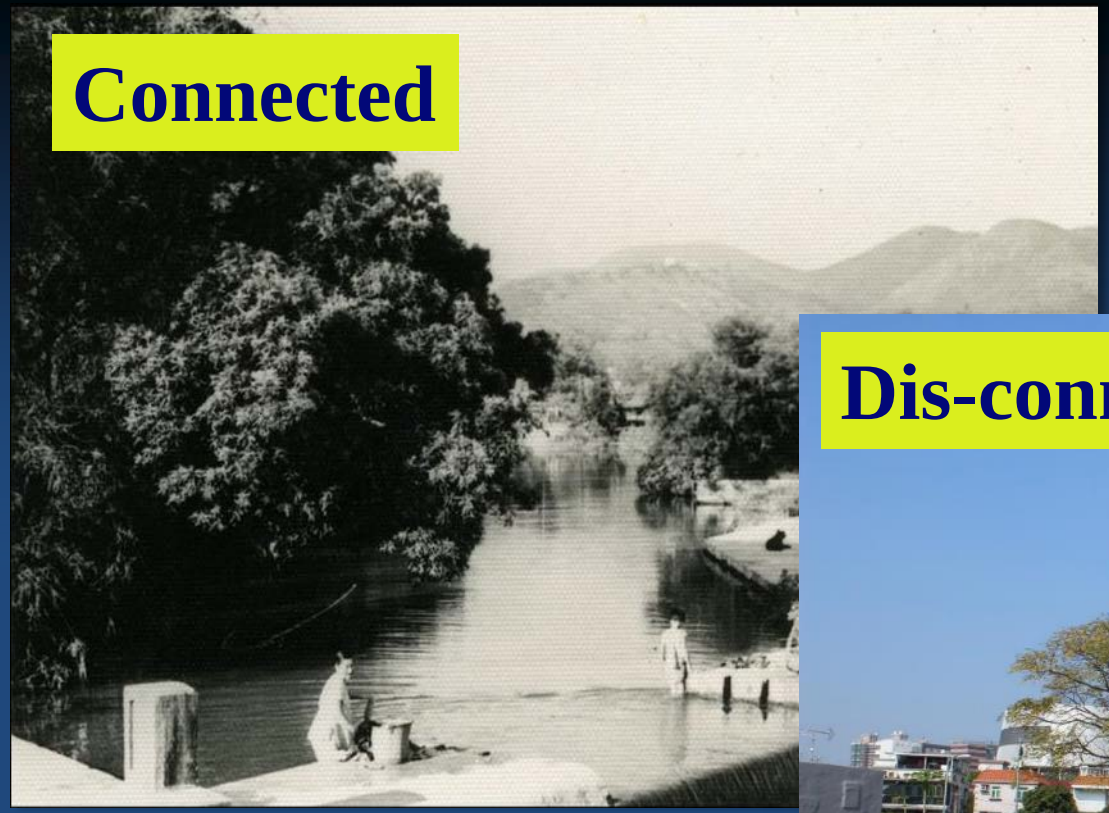
Two thematic focuses of JC-WISE

A holistic approach to understanding freshwater resources:

Real Water
through rivers

Virtual Water
through Water Footprint

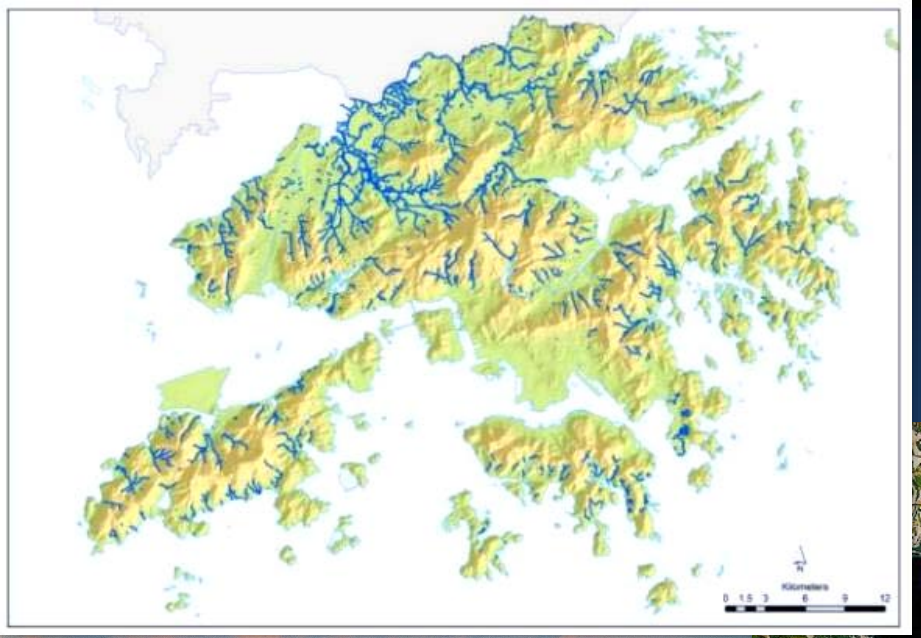
re-connect

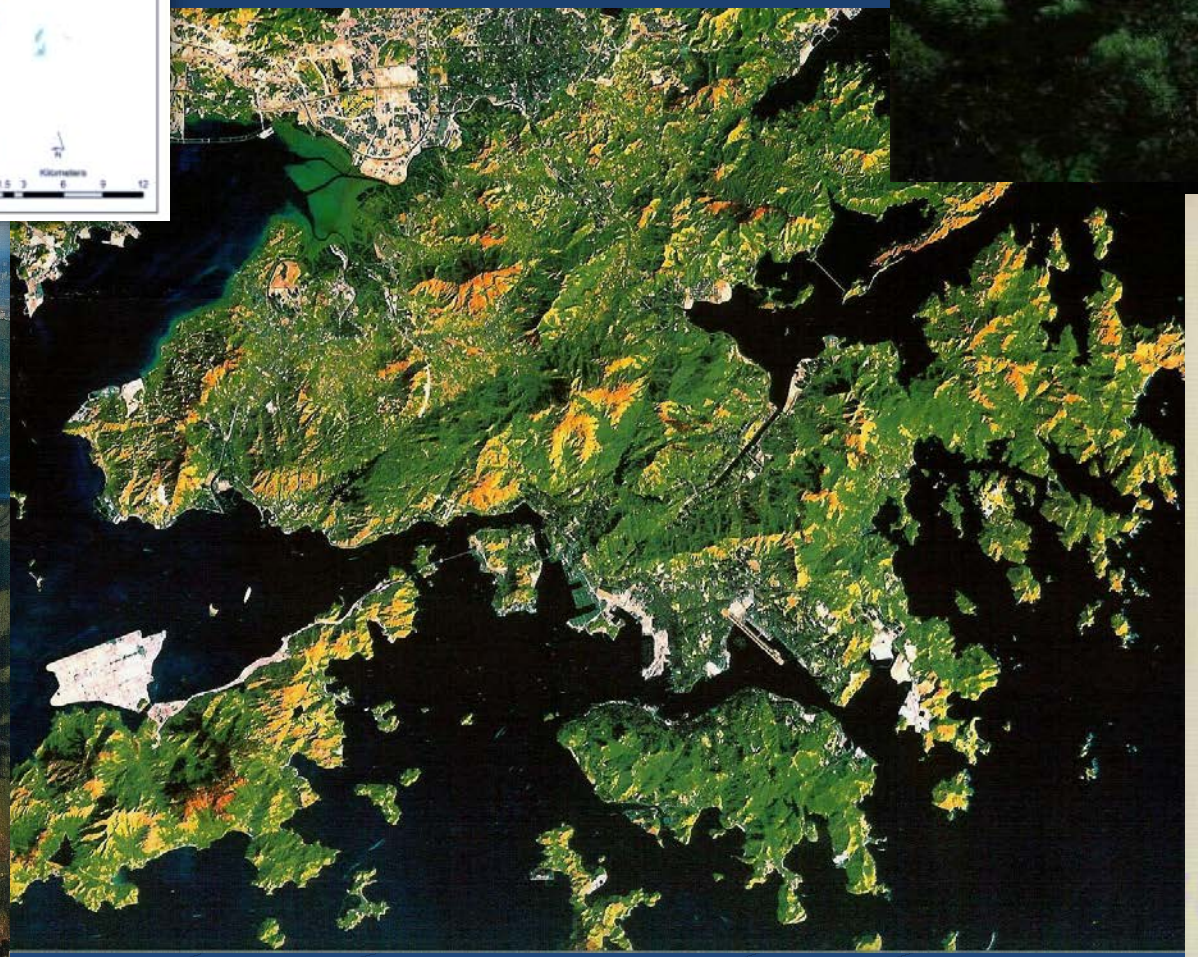

Connected

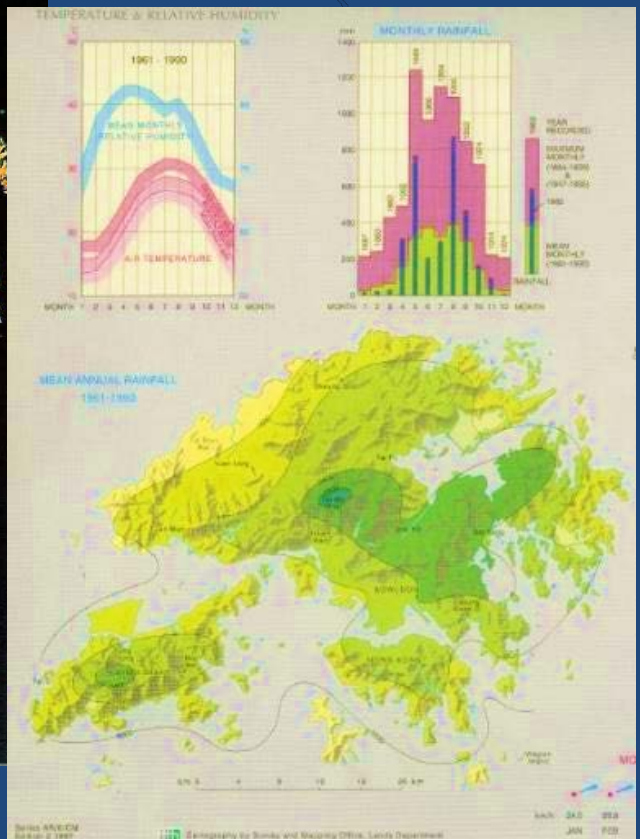

Dis-connected


Re-connect

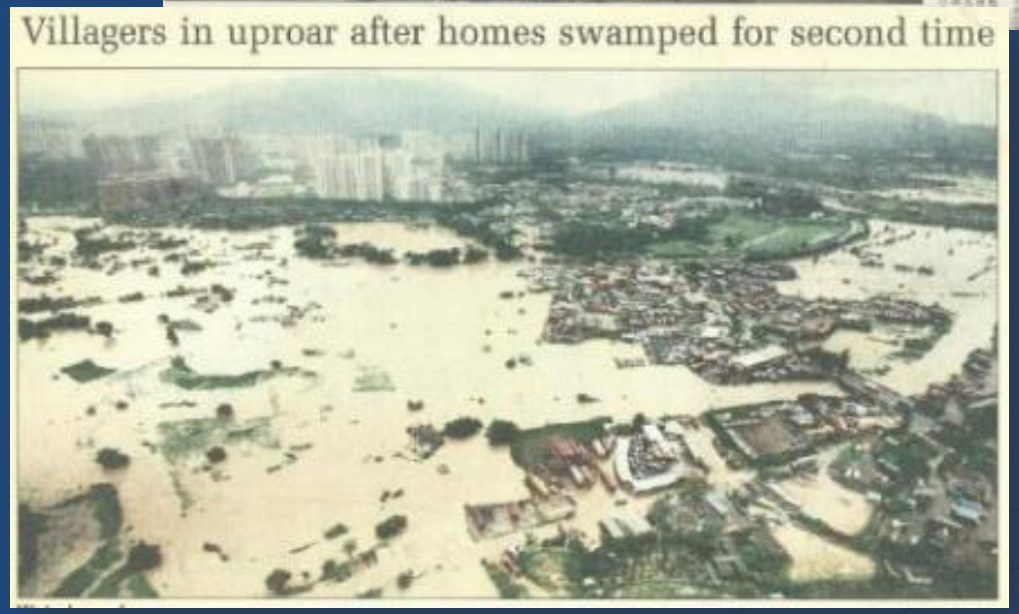
rivers in HK






TEMPERATURE & RELATIVE HUMIDITY
1961 - 1990
MONTHLY RAINFALL
MEAN ANNUAL RAINFALL

flooding before 2000



Disconnected?

What have we done to our rivers due to needs for drainage and flood prevention?

- Straightened
- Level
- Deepened
- over-widened
- lined with foreign materials
- diverted
- altered in a manner to decrease their natural function and stability

梧桐河

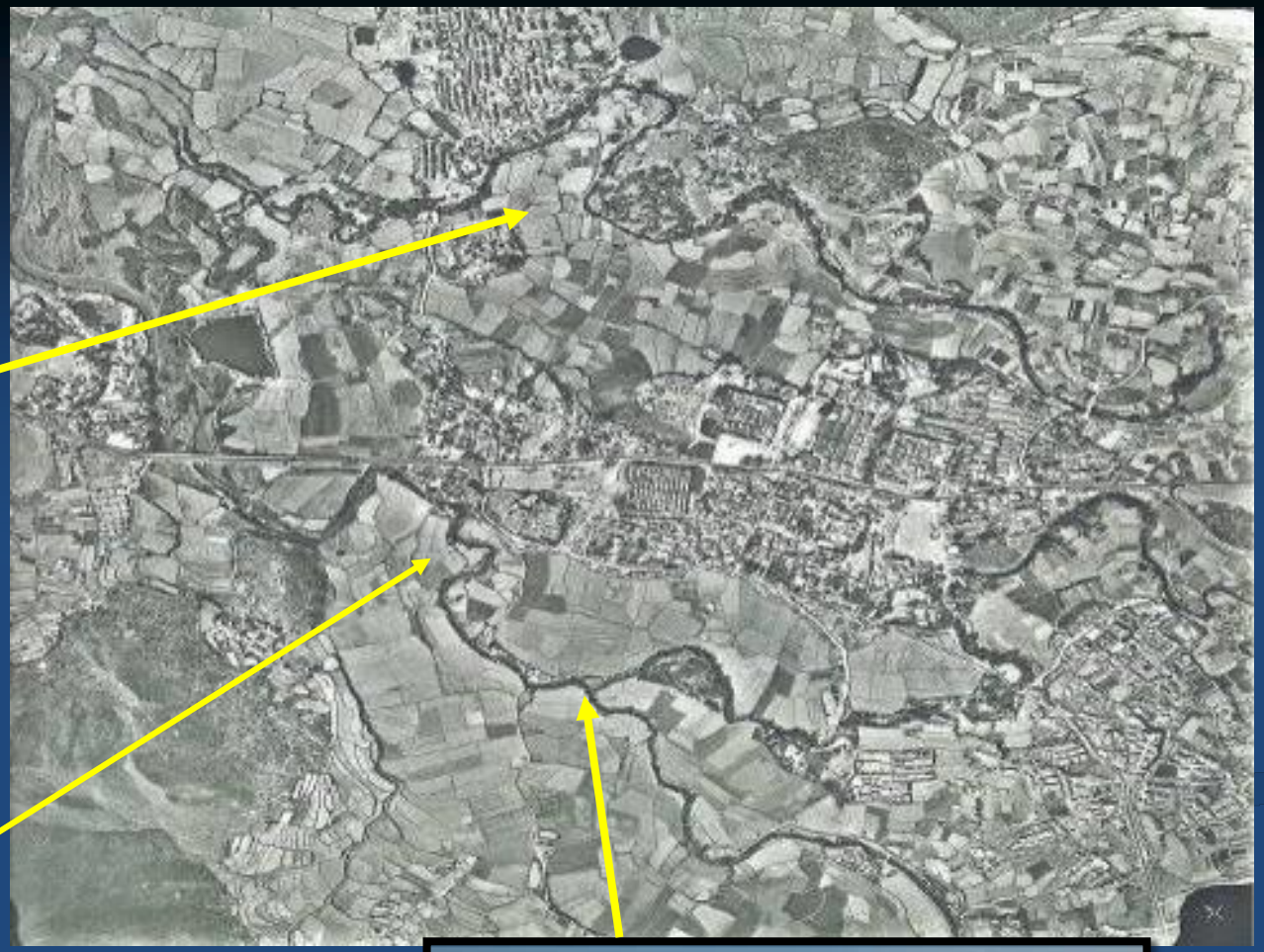
=> ‘唔同’河

1993

present

Kam Tin River

1963 vs present



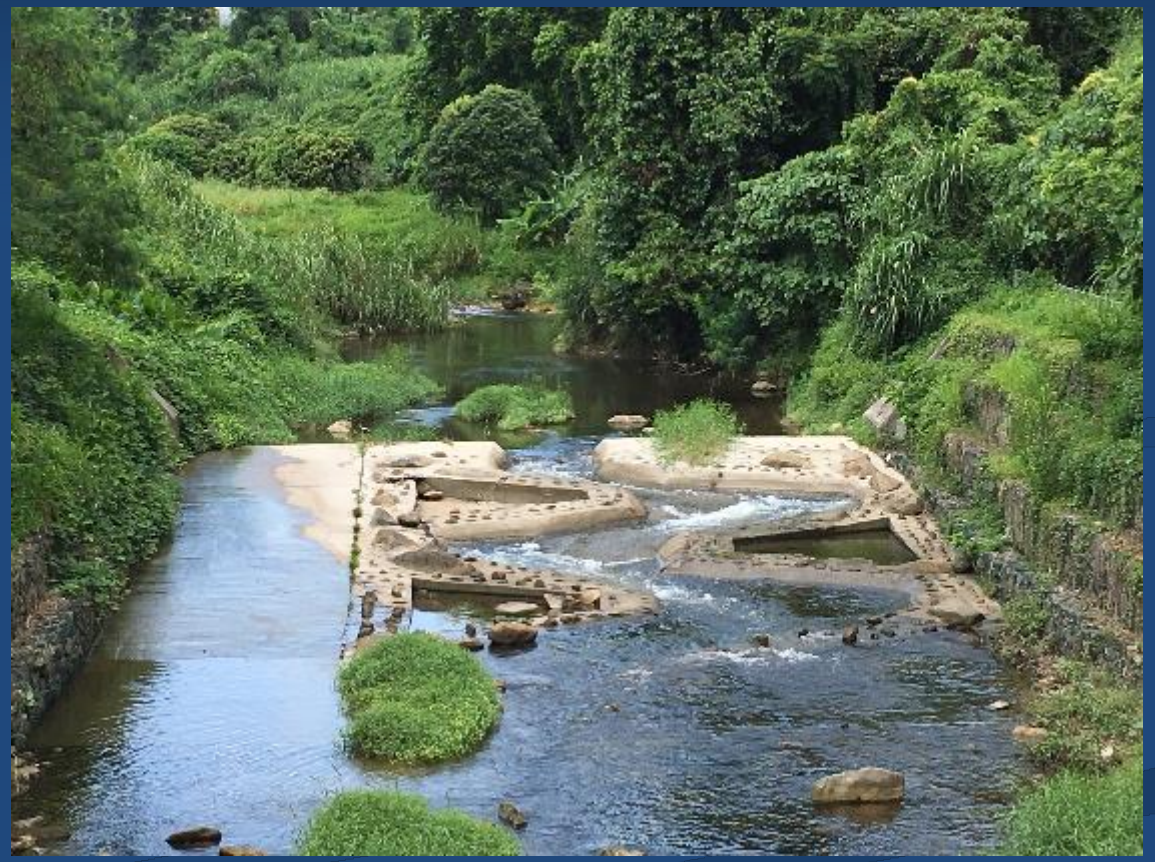
eco-restoration at Lam Tsuen River

early 1990s

present

late 1990s

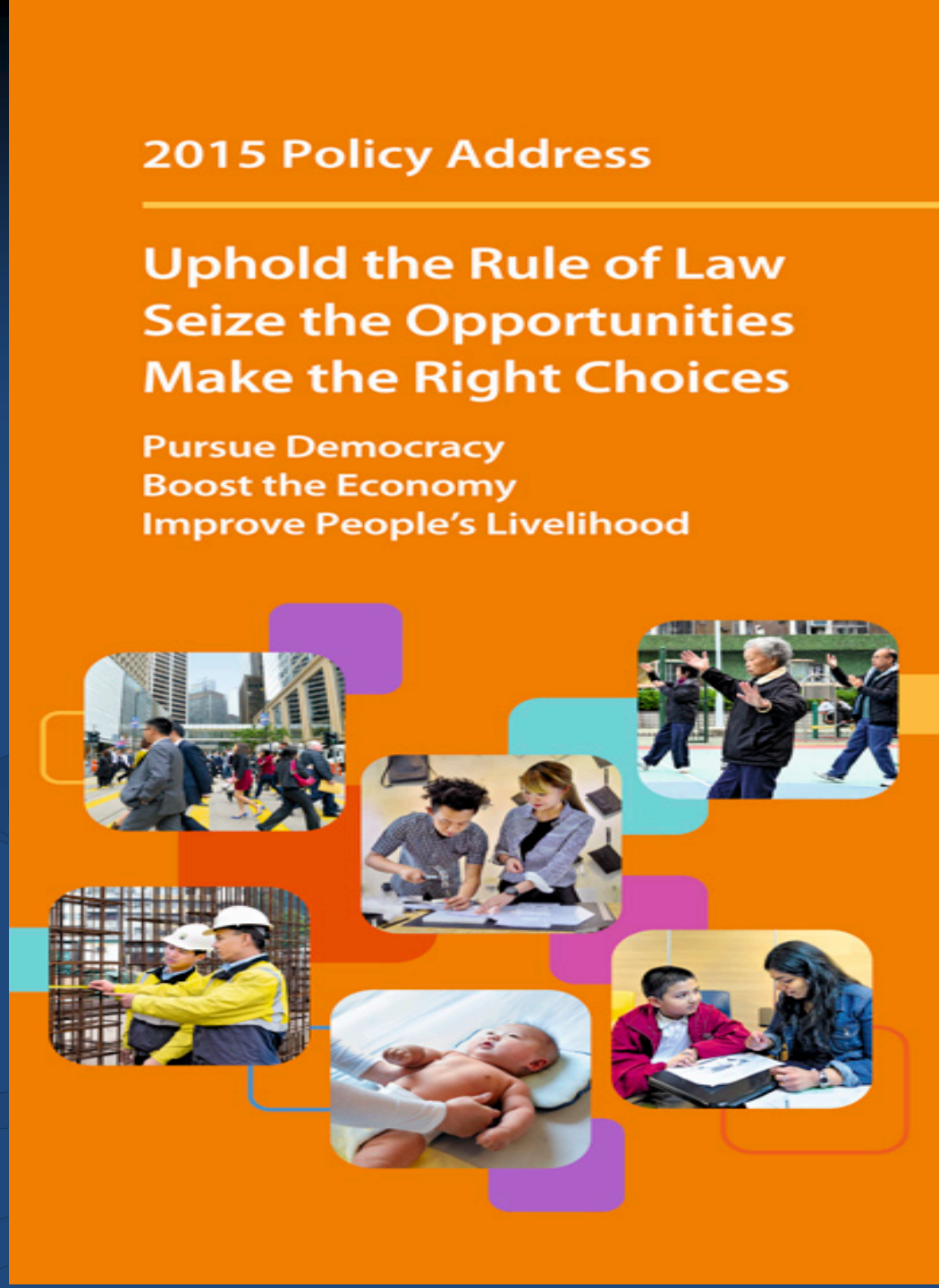
Eco-design channel – fish ladders



Policy Address 2015

Water-friendly Culture and Activities

181. We will adopt the concept of revitalising water bodies in large-scale drainage improvement works and planning drainage networks for NDAs so as to build a better environment for the public. In the completed widening works of Ho Chung River in Sai Kung, ecological features were also included to beautify the river and enhance river biodiversity.



But very few people are aware of it!

re-connecting

food -> water

waste food = waste water

3,600 tons of food waste ended up in landfills in HK everyday

Translating to a wastage of 7.4 billion litres of virtual water, according to the composition of food waste

Much higher than the daily average direct water consumption of the whole of HK

While importing foods, we are consuming water resources in other parts of the world

More than 90% of Hong Kong's food supply is imported, such as beef

難以配襯 不再喜歡 忘記買下

四成人丟棄未穿過新衣

【明報專訊】「舊衣回收」不再只是回收舊衣！一些嶄新、連掛有價錢牌的全新衣服，也因為主人「變心」或者「忘記了」而遭丟棄。環保組織地球之友本月初訪問了逾600名市民，調查發現，所有受訪者每年平均購買30件衣服；其中44%受訪者更承認曾丟棄未穿過的衣服，當中以女性佔大多數。未曾穿過便丟棄的原因至少有5個，一半受訪者說是「難以配襯」其他衣服和「不再喜歡」。地球之友助理總幹事劉祉韓認為，市民購買衣物時，應該深思熟慮，不要被潮流及廣告牽着鼻子走，以免造成浪費。 30.3.05

女性佔八成

地球之友於本月初進行綠色消費調查，在銅鑼灣及旺角兩個消費熱點，成功訪問了618名15歲或以上的男女。調查顯示，受訪男性每年平均買24件衣服，女性則為38件，而購買衣服最多的一位受訪女士，每月平均購買新衣超過20件。而其中44%即271名受訪者，表示曾丟棄未穿過的衣服，當中女性佔近八成，這批曾經丟棄未穿過衣服的受訪者之中，表示因「難以配襯」其他衣物及「不再喜歡」而丟棄的各佔26%及24%；14%則表示「忘記買下這件衫」。

03年回收200萬件新衣

地球之友助理總幹事劉祉韓表示，過往舊衣回收多年，「在回收的舊衣中，平均有三至10%

【衝動消費】

港人胡亂網購變浪費 年丟580萬件衣物

「雙十一」購物節將至，多個內地網購平台大推優惠吸客。綠色和平調查發現，近八成受訪港人曾網購從未或使用少於兩次的物品，當中最常見為衣物，四分之一被丟棄衣物只穿過不足兩次。團體推算，全港每年因網購浪費而被丟棄的衣物至少逾五百八十萬件，足以鋪滿一百五十三個香港大球場。

8.11.2017

■李逸燊呼籲市民審慎購物，區分想要和需要。

綠色和平上月二十至二十九日訪問逾千名曾在過去半年「淘寶」的港人，發現受訪者每年平均花近六千三百元網購，平均每年購買約十八件衣物，當中八成三來自淘寶網，但平均每四件就有一件穿着少於兩次便被丟棄，而四成網購的衣物平均穿着次數少於五次。

調查顯示，四成受訪者認為網購優惠日容易令人衝動購物並造成浪費，七成八會因浪費而產生負面情緒。五成六則認為淘寶網貨品比其他網購平台差劣，但仍有五成半會因價錢便宜，繼續在淘寶網網購。

環團籲分清想要與需要

綠色和平項目主任李逸燊推算，全港每年網購衣物達逾二千三百萬件，若每件衣物要使用一至兩個包裝膠袋，估計港人每年單是網購衣物已消耗二千三百萬至四千六百萬個膠袋，對環境造成嚴重污染。他建議政府需完善回收及源頭減廢政策，並呼籲市民審慎購物，區分想要和需要，嘗試多穿着舊衣物，延長舊物使用期。

平均年購38件 男購24件

棄230萬件新衫

■「地球之友」回收的舊衣中，很多都是一次未着的新衫，連「吊牌」都沒有摘下。 黃偉強攝

明星講幾句

章小惠
我不浪費，每月大約買兩件衫，合眼緣便會買，不合着便當二手賣，或送給家人和朋友。

李克勤
不穿着的衫，平價的會送給親友，在演唱會着的貴價衫，就會當二手衫賣。

俗語有云「愛美是女人的天性」，地球之友日前在旺角及銅鑼灣進行問卷調查，成功訪問了超過六百名十五歲以上的市民，當中更有四成四被訪者，即二百七十一人，曾將全新的衣服棄之丟棄，主因「不再鍾意」、「搵唔到衫」，甚至是「唔記得買咗件衫」及「着唔切」，新在意費一族中，超過四分三均為女性。

To re-connect people with local rivers, we need to re-affirming the value of our rivers

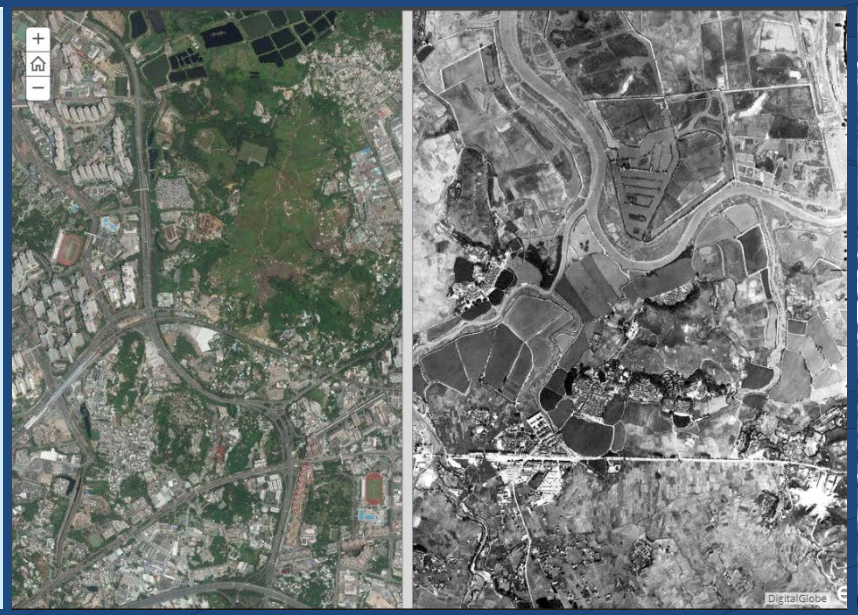
our rivers have multiple functions

Rivers@HK database

- First, open-access, Geographical Information System (GIS)-based, online database focusing on knowledge of river systems and local catchments
- Highlighting 7 major river catchments with specific themes

Rivers@HK database

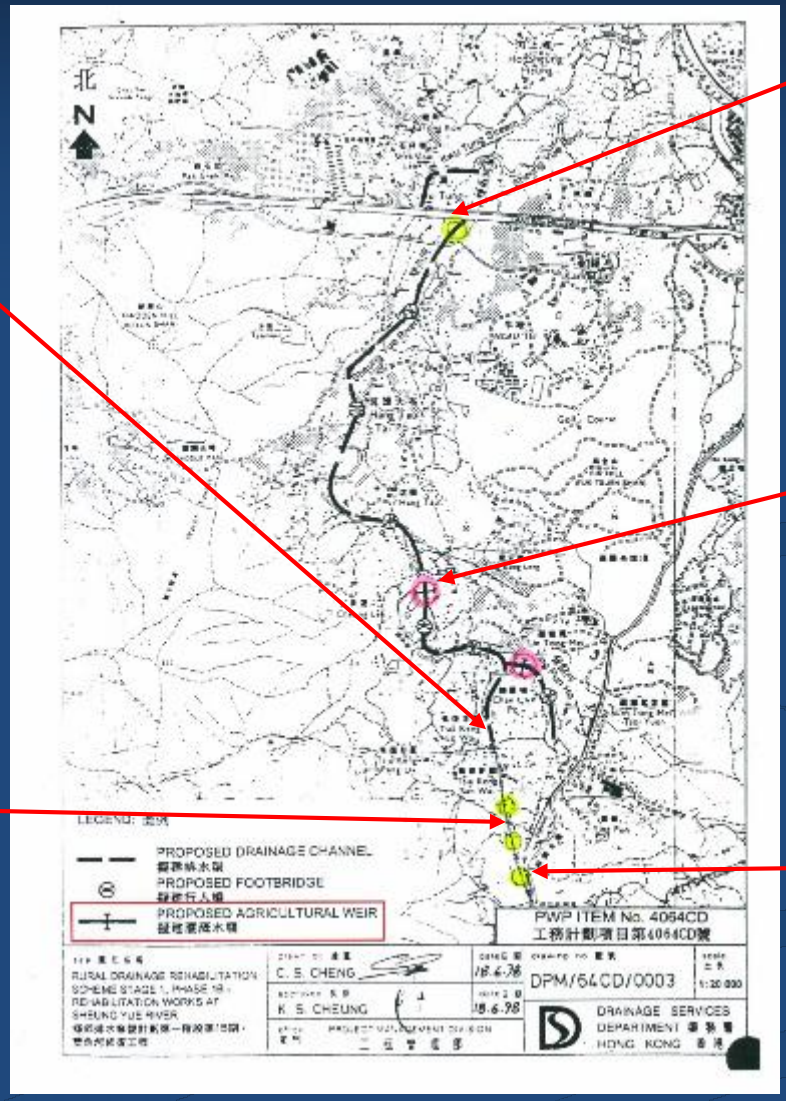
- Various dimensions of major river catchments in HK, including historical, geo-physical, ecological and cultural
  e.g. river water quality, comparison of aerial photos
- Drone videos – First attempt in HK to record rivers from the upper course to the estuary



Irrigation system at Sheung Yue River - agricultural weirs

Ying Pun

Tak Shek Wu (2) partly deflated



Kwu Tung

Cheung Lek, deflated

Tak Shek Wu (1),

Rivers@HK database

- Serve as a bedrock of scientific information for teaching and conducting research
  → Selected by Education Bureau as References for the Updated S4-S6 Geography Curriculum (2007)

- Introduce a novel "catchment" approach to enrich existing study of river management issues
  → Recognition of the multiple values of water, as exemplified by the various functions provided by rivers

Rivers@HK database

- Database attracted ~45,000 online visits in 24 months
- Videos on rivers attracted >170,000 views

Comments from database users:

- "Excellent teaching materials!"
- "Comprehensive, highly recommend to my students!"

“My River, My Community 河處是吾家” Scheme

- A professionally designed training programme to equip secondary school teachers and NGO staff with up-to-date and in-depth knowledge of the river catchments and their management issues, through workshops and guided tours

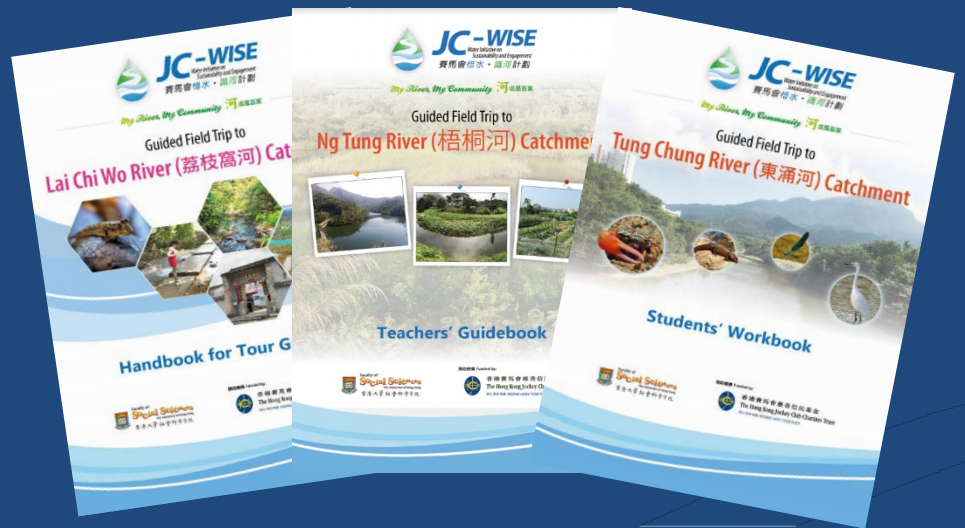
"My River, My Community 河處是吾家" Scheme

- A combination of workshops and guided tours

  → To build capacity of teachers and NGOs on topics of rivers and water management issues

  → Trainers will then be capable to take students and the general public on guided field trips

- Bilingual teachers' guidebooks, students' workbooks, and handbooks for tour guides
- Beneficiary: 249 trainers, 1530 students and public members
- Highly positive responses from participants



“My River, My Community河處是吾家” Scheme

Learning effectiveness (pre-training → post-training)

- Knowledge of multiple functions of river:

  6.2 → 8.5 (out of 10) (score increased by 2.3)

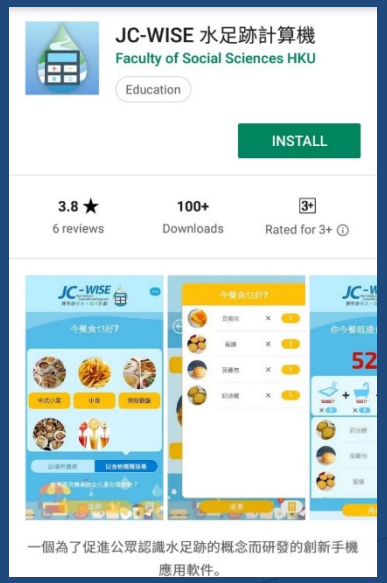
- Understanding of river management issues :

  5.9 → 8.5 (out of 10) (score increased by 2.6)

Water Footprint Calculator

- An original, scientific, educational tool to introduce the concept of Water Footprint, the first such innovative and evidence-based campaign in HK
- A user-friendly tool to visualize virtual water content embedded in food, thereby revealing the impacts of daily consumption behaviour on world's freshwater resources
- Water Footprint data of food items adapted from the Water Footprint Network (Mekonnen & Hoekstra, 2011 & 2012)

Mobile app available for download in App Store



Water Footprint Calculator

- Localization – take into account HK people's eating habits and origins of food ingredients
- Phase I released in May 2017: >90 local dishes
- Upgraded in March 2018: Databank of nearly 200 ingredients

Water Footprint Calculator

To serve as supplementary teaching material for such subjects as Liberal Studies and Geography

- Form the foundation for formulating and implementing other fun-filled, educational activities

  e.g. School talks, workshops, low-WF cooking competition

- Reached >250,000 people since its launch

“Water Wise Campus” Campaign

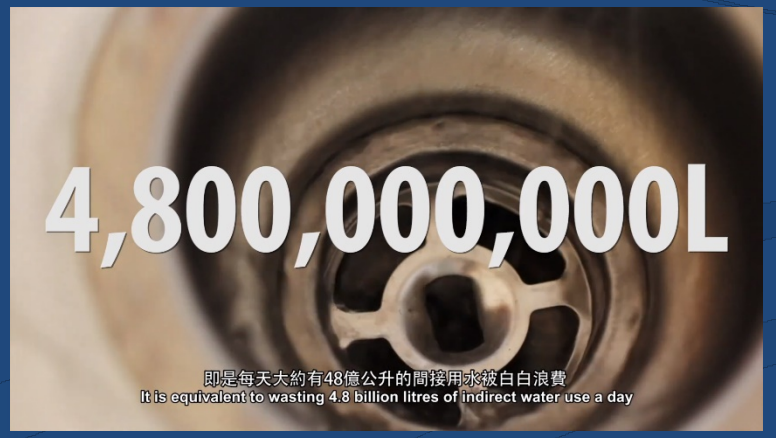
- To create a culture of sustainability, a campus-wide campaign was launched in 2019 at HKU to arouse attention to, through Water Footprint concept, the connection between food waste reduction and water conservation

“Be Water Wise, Waste No Food”

- To make use of the synergy between Water Footprint concept and food reduction campaign

  → To encourage conscious consumption and behavioural changes in daily life

=



“Water Wise Campus” Campaign

- Partners: 10 catering outlets on campus
- Beneficiaries: the whole HKU communities, students & staff members, visitors

Major components of JC-WISE

GIS-based database on rivers in HK

“My River, My Community 河處是吾家” Scheme

Water Footprint Calculator

“Water Wise Campus” campaign

==> fostering education for water sustainability in HK

connecting with the public …


你食咗幾多水?
How Much "Water" Have You Eaten?
惜水...
JC-WISE
你食咗幾多水?
How Much "Water" Have You Eaten?
axa.com.hk
Canal Road West
堅拿道西
車費 Fare
成人 Adult
小童 Child
長者 Senior citizen

Water Fun Fest 2018

11,9001 participants



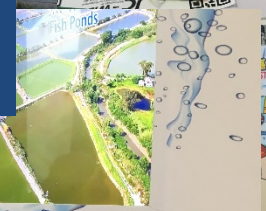


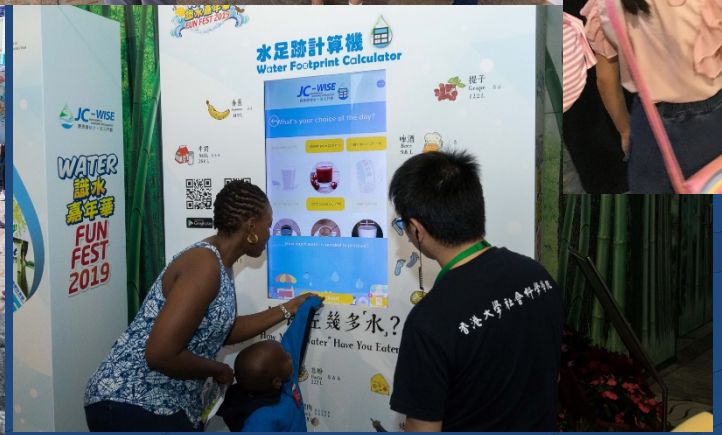


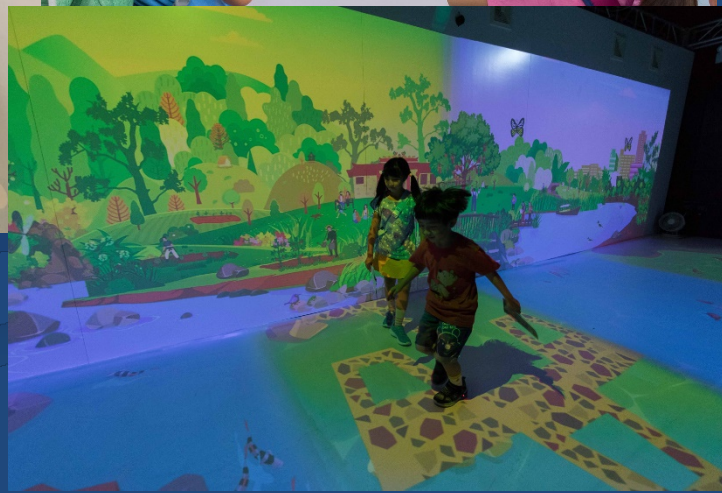


Water Fun Fest 2019

130,000 participants







Insights from JC-WISE Phase I

- Interactive experiential learning to reconnect participants with the city's water physically and emotionally
  - Re-examine the significance and multiple values of rivers as well as water, which are often overlooked in HK
  - Hands-on experiences deepened students' learning more than conventional classroom teaching

Insights from JC-WISE Phase I

- A more complete picture to examine global water issues, considering both real water and virtual water
  - To offer an innovative and holistic approach to achieving water sustainability goals

Future Development

Evidence-based: Intellectual exchanges and advancement in educating students and the public about the importance of water sustainability

Community-centred: Active engagement activities to enhance commitment

Use of cutting-edge social technology: Information dissemination and “citizen science” initiative

Collaboration with NGOs and professional groups

Phase II

Blue-Green School Partnership Programme

- Aim to broaden and deepen engagement with students, teachers, and parents at local schools, through active knowledge creation and citizen science initiatives
- 1st-tiered engagement:
    - "Adopt a River"
    - "Water Wise School"

- 2nd-tiered engagement:
    - Engagement activities such as School Water Day, creative artwork, river tour design competition

Blue-Green School Partnership Programme: Adopt a River

- Capacity building: To train up students and teachers with the skills to conduct research through citizen scientists approach
- Generating social change: To instil in our next generation a sense of ownership of, and a notion of stewardship for conserving freshwater resources

Expected outcomes

- To foster changes in
  - i) *knowledge* of rivers in Hong Kong
  - ii) appreciation of multiple values of freshwater (*attitudes*)
  - iii) commitment towards river protection (*behaviour*)

A societal level paradigmatic shift

- From a weak form of water conservation ethics

  → towards *embracing water conservation and sustainability*

Thank You