

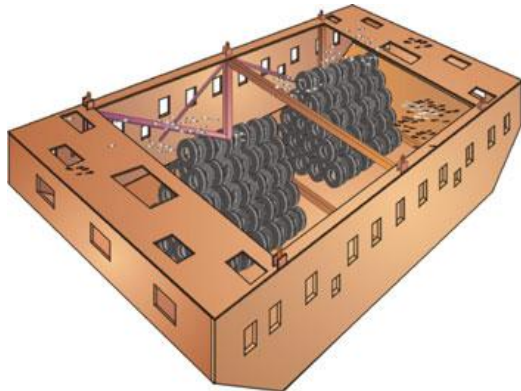


Kitchen Waste as Fish Food etc? (Thoughts in English)

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Main Ideas

1. Hong Kong's Waste Problem?
2. How much of the Kitchen waste is suitable to be turned to Fish Food?
3. Can Hong Kong produce Artificial Reefs?
4. Can that be turned into a Tourist area?
5. Can that be turned into a fishing industry?
6. Comments?



1a. Hong Kong's Waste Problem?

- Almost all are dumped to 3 Landfills.
- Food Waste amounts to over 3,000 tons daily.
 - Fewer pig farms – more waste.
 - Residents object strongly to Landfills.
- Kitchen Waste contains “Energy Content”
- Can Hong Kong lead the World in using such Energy???
- Japan [study report in June 2013](#)



1b. Hong Kong's Waste Problem

- The Common thoughts on using such “Energy Contents” include:
- Dump to Landfill
- Turn into fertilizer
- Incinerate
- Turn into animal feed or fish meal
- Turn into methane gas as energy fuel
- Treat and send to Artificial Reefs???



1c. Hong Kong's Waste Problem



Birds
Insects
Flies
Mosquitoes
Rats

Attracted to

Untreated,
Decaying
Kitchen
Waste!

2a. How much of the Kitchen waste is suitable to be turned to Fish Food?

- Kitchen Waste has varying components and is difficult to guarantee quality.
- Stable sources include expired food from supermarkets, bakery, bean curd factories, unsold vegetables and fruits from Markets.
- If such “energy contents” were treated:
 - Valuable portions sold as products
 - Remaining send to “artificial reefs”, will it help the fishing industry?

2b. How much of the Kitchen waste is suitable to be turned to Fish Food?

- Time to turn Waste to Fish Meal takes hours.
 - Refer to [South China Morning Post Article](#)
- Time to turn Waste to Fertilizers takes weeks.
 - Odor is a major problem with Kitchen Waste.
 - Associated with decaying Kitchen Waste are flies, mosquitoes, rats etc.
- Should look into the Japanese method using sealed containers with no odor. ([Bokashi](#))

2c. Turn Kitchen Waste to Fertilizer using the BOKASHI technique

- Sealed Container with no odor, rats, flies etc.
 - Produces concentrated fertilizer liquid and fertilizer/soil. Drain such liquid from container.
 - Need special commercial micro-organisms.
 - Container(s) can remain in shadowed place locally.
 - Container(s) can be transported centrally.
- Many Districts can handle problem partially or totally in Hong Kong?
- Pilot project funding???



2d. Turn Kitchen Waste into Fish Meal?

- Select at source
 - Bakery, Food factories, Vegetable Markets, etc
 - Hotels, Restaurant?
 - Expired Food?
 - Household Kitchen Waste?
- Processing mainly involves
 - Water removal?
 - Grinding, mixing, drying and turning into pellets?



3a. Can Hong Kong Produce and deploy Artificial Reefs?

- Grant to [Hong Kong Baptist University](#)
- Hong Kong [Artificial Reef Project](#)
 - Any follow-up studies or conclusions (last 2006)?
- Will the addition of Fish Meal enhance the result of such projects?
- Will the Fish Meal from Hong Kong Kitchen Waste be suitable?



3b. Can Hong Kong Produce and deploy Artificial Reefs?

- There should not be any more large scale construction work at Victoria Harbor.
 - The water quality is improving.
 - Can it be made a no-take zone?
 - Can more oxygen be introduced via fountains that also serve as tourist attractions?
 - Can suitable artificial Reefs and controlled fish feed increase the fish population?
- Will recreation fishing be possible?



3c. Artificial Reefs in Hong Kong



3d. Marine Cage



Sea fish rearing
in Marine Cages.

Initially, no regulation.
Now regulated.

Fishing on such
Floating Platforms
Allowed.

Extra Income?

[Hong Kong Government report in 1999](#)
[UN report in 2010](#)

4a. Can that be turned into a Tourist Attraction?

- Experience at [Catalina Island](#) in USA?
 - Glass Bottom Boats in artificial reef no-take zones
- Glass Bottom Boat in [Hong Kong](#).
 - Can that be expanded?
 - Can the price be lower?
 - Can other artificial reef sites in Hong Kong be turned to tourist attractions?
- Can there be no-take zones?



4b. Is Government action necessary?

- Some claimed “Small Government” is always better (more freedom and easier to get rich?)
 - Waste Disposal has to be planned/done centrally?
 - Overfishing already occurred, who can correct?
 - Land Supply is scarce, who can regulate?
- Money Supply must be Government activity?
 - How to link to Meaningful Economic Activities?
 - How to distribute such “Modern Wealth”?

5a. Can that be turned to benefiting fishing industry?

- Japan has [over 20,000 Artificial Reefs](#).



- Will **controlled** supply of **treated** Fish Meal from Kitchen Waste help?

5b. Can that be turned to benefiting fishing industry?

- USA [failed with a dumped tire project](#)

- Not secured to ocean floor.
- Banging against each other destroyed coral formation



- China is now paying attention to its fisheries and marine environment.
 - Can Hong Kong work with China on this?
- Can fish meal from Kitchen Waste enhance local fishing industry?

5c. Can that be turned to benefiting fishing industry?

- There was dispute over construction of an artificial reef in Gibraltar.
 - 70 concrete blocks with steel rods protruding
 - Protects area from overfishing
- Hong Kong also banned trawling in its waters
 - HK\$1.7 Billion Compensation to fishermen
 - Some fishing boats to act as Artificial Reefs?
- Can Hong Kong improve its Artificial Reefs?

Comments (1)

- Dump untreated kitchen waste into ocean will invite environmental disaster.
- Managed sending treated kitchen waste to artificial reefs may enhance fish production.
- Construction debris may be suitable material for artificial reefs?
- The sea area can be many times the size of Hong Kong and far from coast.
- Refer to the Tourist Island of Catalina in USA.

評論（1）

- 傾倒未經處理的廚餘到海洋，會做成嚴重環境污染。
- 有系統地送處理過的廚餘(魚糧)到人工魚礁，可提高魚產量。
- 建築廢料可能是合適的人工魚礁材料。
- 可用的海域可以比香港大，更可遠離海岸。
- 可參考美國 Catalina Island 的人工魚礁。

Comments (2)

- Another more ambitious plan is to create artificial Islands with Wastes of all types.
- Artificial Islands may be extension of actual small islands.
- Can Hong Kong develop the technology to lead the World?
- Does Hong Kong have the money and people with ideas and capability to do this project?
- (Hong Kong already have [artificial reefs](#).)
- (Can Opposition Parties Carry this project?)

評論（2）

- 另一個更大膽的計劃是建立廢物人工島。
- 人工島可能是實際小島嶼的擴建。
- 香港能否發展這類技術，引領世界？
- 香港是否有足夠的金錢，頭腦和能力做這個項目？
- (香港已有小規模的人工魚礁，可供參考。)
- (反對黨可擔起這個項目嗎？)

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