

Article

Ecological Footprint and Water Footprint of Taipei

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Supplementary Materials: The Personal Carbon, Built-up Land Footprint and Water Footprint Questionnaire

Hello and thank you for answering this questionnaire, which is supported by the Ministry of Science and Technology's grant for "A Comparative Study of Urban-rural Resilience, Adaptation Strategies, Risk Perception and Place Attachment in Taipei and Yunlin" (program number: MOST 107-2410-H-170-001-MY2). It was designed primarily to calculate the ecological footprint associated with the daily activities of the residents of Taipei City. This questionnaire is for research purposes only. Your personal data will not be disclosed so please fill it out with complete peace of mind.

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- Carbon Footprint** (based on the Green Living Network's Carbon Footprint Calculator of Taiwan's EPA for calculating carbon emissions) (http://ecolife.epa.gov.tw/Cooler/check/Co2_Countup.aspx (accessed on 2016/12/1))

■ **Food** (According to the standards of the Ministry of Health, a piece of meat is about 30 g. A portion of ribs is about three servings (90 g) and a Pacific saury is around four servings (120 g).

- Did you eat meat yesterday? How much meat did you eat?
_____pieces, about _____grams

■ **Clothing**

- How many new clothes do you buy on average a month?
About _____pieces

■ **Accommodation**

- How many people live with you? _____ persons
- What is your electricity consumption per month? (The mean household electricity consumption in the Spring is about 240 kWh. Respondents are asked to calculate their electricity bill from the Taiwan Power Company.)
☐ None ☐ Less than 50 kWh ☐ Less than 100 kWh ☐ Less than 300 kWh ☐ More than 300 kWh
- What was your water consumption for last month? (Please answer this question with reference to your Taipei Water Company bill.)
☐ None ☐ Less than 5,000 L ☐ Less than 10,000 L ☐ Less than 20,000 L ☐ More than 20,000 L
- How much natural gas did you use last month (total natural gas/number of residents)? (Please answer this question with reference to your bill from the gas company.)
☐ None ☐ Less than 5000 L ☐ Less than 10,000 L ☐ Less than 20,000 L ☐ More than 20,000 L
- How much barrel gas did you used last month? (On average, a household uses about 16 or 20 kg of barrel gas in 60 days)
Household barrel gas _____ kg. How many days for the use of barrel gas? _____ days
- What is the floor area of the building in which you live.

■ Transportation

(9). What are your main means of transportation?

☐ Walking ☐ Bike ☐ Mass Transit–Buses (Select the first three answers, please jump to Section 2: Water footprints)

☐ Private Car ☐ Minivans/Recreational Vehicles ☐ Motorcycle

(10). How much exhaust does the aforementioned vehicle produce?

____ CC (The interviewee may provide the exact answer here if known.)

☐ Less than 100 CC ☐ Less than 150 CC ☐ Less than 250 CC ☐ Less than 550 CC ☐ More than 550 CC ☐ Less than 1200 CC ☐ Less than 1600 CC ☐ Less than 2000 CC ☐ Less than 2500 CC ☐ More than 3000 CC

(11). What is the average monthly distance traveled by the aforementioned vehicle?

☐ 0 km ☐ Less than 50 km ☐ Less than 100 km ☐ Less than 150 km ☐ More than 150 km

2. Water footprint (based on questions from Taiwan's Environmental Quality Culture and Education Foundation's guidelines, "How Large is Your Water Footprint?") (<http://www.eqpf.org/WaterCalculator.aspx> (accessed on 2016/12/1))

■ Food

The primary purpose of this question is to elicit how you eat each week. If you remember in detail your diet last week, please let us know. Otherwise, please respond by providing average weekly amounts of food consumed. Alternatively, provide how much of each type of food you eat daily and the interviewee will multiply by seven to obtain weekly results.

(1). Your food intake:

- What amount of cereal do you consume per week? (For example: rice, cereal, noodles, bread, etc. A bowl of rice is about 200 g)
☐ None ☐ About _____ grams
- What amount of starchy root species (e.g., melons, taro, pumpkins, etc.) do you consume per week?
☐ None ☐ About _____ grams
- What amount of fruit do you consume per week?
☐ None ☐ About _____ grams
- What amount of vegetables do you consume per week? (A half bowl of cooked vegetables is about 100 g, and a half bowl of lettuce is about 50 g.)
☐ None ☐ About _____ grams
- How much dairy produce do you consume per week?
☐ None ☐ About _____ grams
- What amount of pork do you consume per week?
☐ None ☐ About _____ grams
- What amount of beef do you consume per week?
☐ None ☐ About _____ grams
- What amount of chicken do you consume per week?
☐ None ☐ About _____ grams
- What amount of lamb do you consume per week?
☐ None ☐ About _____ grams
- What amount of seafood do you consume per week?
☐ None ☐ About _____ grams
- What amount of eggs and their products do you consume per week? (An egg is about 65 g.)
☐ None ☐ About _____ grams
- What amount of soy products do you consume per week?
☐ None ☐ About _____ grams

(2). Your beverage intake: (Please note that the following questions are concerned with "Daily

Intake".)

- What amount of water do you consume per day? (A bottle of water from the market is about 600 mL.)
 - ☐ None ☐ Less than 1000 mL ☐ Less than 1500 mL ☐ Less than 2000 mL ☐ More than 2000 mL
 - What amount of coffee do you consume per day? (A small cup of coffee from a convenience store is about 240 mL; a medium cup is about 360 mL, and a large cup is about 480 mL.)
 - ☐ None ☐ Less than 200 mL ☐ Less than 500 mL ☐ Less than 800 mL ☐ More than 800 mL
 - What amount of juice do you consume per day? (A bottle of juice from the market is about 600 mL. A box of juice is about 350 mL-480 mL.)
 - ☐ None ☐ Less than 500 mL ☐ Less than 800 mL ☐ Less than 1000 mL ☐ More than 1000 mL
 - What amount of tea do you consume per day? (A bottled of tea is about 600 mL; a box of tea is about 350 mL-480 mL.)
 - ☐ None ☐ Less than 500 mL ☐ Less than 800 mL ☐ Less than 1000 mL ☐ More than 1000 mL
- (3). On how many days per week do you cook at home?
- ☐ None ☐ Less than 1 day ☐ Less than 3 days ☐ Less than 5 days ☐ More than 5 days
- (4). How do you wash your dishes?
- ☐ By hand with soaking ☐ By hand with rinsing ☐ Using a dishwasher
- **Clothing**
- (5). How many times a week do you wash your laundry?
- ☐ None (please skip to question 7) ☐ Less than once ☐ Less than 3 times ☐ Less than 5 times ☐ More than 5 times
- (6). How many kilograms of laundry do you wash at a time?
- ☐ Less than 0.5 kg ☐ Less than 1 kg ☐ Less than 2 kg ☐ More than 2 kg
- (7). What type of washing machine do you have?
- ☐ Purchased before 1998 ☐ Water-saving vortex washing machine ☐ Water-saving drum washing machine
- (8). How many times did you do laundry by hand last week?
- ☐ None (please skip to question 10) ☐ Once ☐ Less than 3 times ☐ Less than 5 times ☐ At least 5 times
- (9). How many kg of laundry was each wash?
- ☐ Less than 0.5 kg ☐ Less than 1 kg ☐ Less than 2 kg ☐ more than 2 kg
- **Accommodation**
- (10). What type of water taps do you have?
- ☐ Purchased before 1998 ☐ General with added water-saving gaskets ☐ Water-saving faucets
- (11). How many of your taps at home leak?
- ☐ None ☐ One ☐ Fewer than 3 ☐ Fewer than 5 ☐ 5 or more
- (12). How many showers do you take per day?
- ☐ None ☐ One ☐ Fewer than 3 ☐ Fewer than 5 ☐ 5 or more
- (13). How many minutes do you spend in the shower?
- ☐ Less than 5 min ☐ Less than 10 min ☐ Less than 15 min ☐ More than 15 min
- (14). What type of lotus head do you have? (If you have no shower device, please write "no shower".)
- ☐ Purchased before 1998 ☐ Water-saving lotus head
- (15). How many baths do you take every week?
- ☐ None (please skip to question 17) ☐ 1 ☐ Fewer than 3 ☐ Fewer than 5 ☐ At least 5
- (16). How do you bath?
- ☐ Bubble, half tub of water ☐ Bubble, whole tub of water
- (17). How many times do you flush the toilet each day?

☐None ☐Once ☐Less than 3 times ☐Less than 5 times ☐At least 5 times

(18). Toilet type?

☐Purchased before 1998, general type ☐Purchased before 1998, general type with water-saving device ☐One-segment water-saving toilet ☐Two-segment water-saving toilet

■ Transportation

(19). How many times have you washed your car this month?

☐None ☐Once ☐Fewer than 3 times ☐Fewer than 5 times ☐At least 5 times ☐I have no car

(20). How do you wash your car (Specify if you never wash a car)?

☐Self-service car wash ☐Commercial car wash ☐I have no car

(21). How many times have you washed your motorcycle this month?

☐None ☐Once ☐I have no motorcycle

Basic Data

1. Name: 2. Phone:

3. E-mail: 4. Address:

5. Sex: ☐Male ☐Female

6. Occupation: ☐Agricultural ☐Laborer ☐Business ☐Services ☐Other_____

7. Age: ☐Up to 20 years old ☐21-30 years old ☐31-40 years old ☐41-50 years old ☐More than 51 years old

8. Place of residence:

9. Education:

☐Illiterate ☐Primary or Secondary School ☐High School ☐Tertiary education ☐Graduate school

10. Personal annual income (personal GDP): If your income is not a major source of income for your household, calculate the average disposable income of the members of your household (total income/number of residents in your home)

☐Less than NT\$ 250,000 ☐NT\$ 250,000-349,999 ☐NT\$ 350,000-499,999 ☐NT\$ 500,000-700,000

☐More than NT\$700,000

11. Number of persons in your household: ☐1 ☐2 ☐3 ☐4 ☐5 ☐6 ☐__persons