Survey Questionnaire on Socioeconomic and community awareness of Wastewater treatment using nature-based solutions

This survey is made to you to undertake as part of a research project for the partial fulfilment of the research on Assessment of the efficiency of urban wastewater treatment by a nature-based solution. I would like to know about Wastewater quality, Socioeconomic and Community awareness of existing treatment plants and the efficiency of urban wastewater treatment by green roof in Ho Chi Minh city/ constructed floated wetlands in Can Tho city. The survey will take approximately 30 minutes and details of respondents and interviews will be processed privately and securely. Please answer the questions honestly and as truthfully as you can.

Thank you so much for your enthusiastic participation and filling out this survey!

A. General information

DATE: …. /…../2022  No:……………

District: _______________  Ward: _______________  Block: _______________  Unit: _______________

Street: ______________________________

B. Household details

1. Is there the head of the household? ………………………………………………………………

2. Members of the Household

<table>
<thead>
<tr>
<th>No</th>
<th>Pseudonym names</th>
<th>Education</th>
<th>Age</th>
<th>Male/Female</th>
<th>Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
C. Water Source and Supply

3. What is the source of your water supply? Please tick the appropriate answer.

- Ponds □
- Wells □
- Lakes □
- Rivers □
- Piped water supply □
- Private water supply □
- self-Pump/Motor (tank) □
- Other (specify)……………………

4. What do you use piped water for? Please tick indicated responses.

- Washing □
- Bathing □
- Drinking □
- Watering garden □

- General cleaning and household purposes □
- Other (specify)………………□…
5. If you use piped water, what is your family’s average water usage each month?

M^3: .................../ Month  OR  Litres: .................../ Month

D. Wastewater Management

6. Is a drainage system available in your area?

   Yes ☐  No ☐  
   (if Yes cont. to Q10)

7. What kind of drainage system is it?

   Temporary drainage ☐  Cement and bricks drainage ☐  Open ☐
   Underground ☐  Covered with steel ☐  Other (specify)……………… ☐

8. In your opinion, who maintains the drainage system?

   Municipal Committee ☐  Self-maintained ☐  Community ☐  Others(specify)……… ☐

9. Frequency of flooding

   1  2  3  4  5
   Never  Sometimes  Normal  Regular  Very often

You can tell me why if there's flooding: ........................................................................................................

10. After the construction of the cement embankments in this area is still flooded?

   1  2  3  4  5
   Unaware  More flooding  Still as flooded as before  Less flooding than before  No more flooding

11. So far, has any plants/works treated water sources in canals?

   1  2  3  4  5
   Not paying attention  Without  Yes, but very little  Many  There's a lot

If so, what is the water treatment system in the channel: .................................................................
12. If any, the quality/effectiveness of the wastewater treatment system

1 2 3 4 5
Very less Less Acceptable Good Very good

E. Quality of water environment

Please circle the selected answer

13. How do you feel about the water quality of Tham Tuong/Black canal today?

1 2 3 4 5
Very less Less Acceptable Good Very good

If it's bad or very bad, please give me a reason: .................................................................
........................................................................................................................................
........................................................................................................................................

14. Would you like to indicate the level of satisfaction with the surrounding water quality?

1 2 3 4 5
Very less Less Acceptable Good Very good

15. Trends in water quality changes before and after construction of the nature-based solution?

1 2 3 4 5
Very less Less Acceptable Good Very good

16. How do you feel about the water source of Tham Tuong/Black canals?

On color:

1 2 3 4 5
Black Gray/brown Yellow Opaque white Blue

About the smell:

1 2 3 4 5
Very less Less Acceptable Good Very good
17. Assess the extent of the impact of pollution of surface water resource in the canals (smell, color, dirty blackwater)

*Mark X in the selected answer*

<table>
<thead>
<tr>
<th>Influence</th>
<th>No influential</th>
<th>Little influential</th>
<th>Influence</th>
<th>Quite influential</th>
<th>Very influential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Life/Daily activity</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Health</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Business/trading</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Aesthetics</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**F. Social issues**

18. According to you, the difficulties/obstacles in treating polluted water in canals here?

<table>
<thead>
<tr>
<th>Difficulty/Obstacle</th>
<th>No</th>
<th>Little</th>
<th>Average</th>
<th>Many</th>
<th>There's a lot</th>
</tr>
</thead>
<tbody>
<tr>
<td>Not personal land (Most households rent land for business)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low awareness of the people in this area</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Low awareness of people walking/past by on the road/along the canals</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Management/sanctioning measures are not strict</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of polluted water treatment works</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lack of public trash cans</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>The collection company's garbage collection frequency is low</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

19. What solutions to propose to improve water quality in canals?

<table>
<thead>
<tr>
<th>Proposal</th>
<th>Unreasonable</th>
<th>less reasonable</th>
<th>Average</th>
<th>Reasonable</th>
<th>Very reasonable</th>
</tr>
</thead>
<tbody>
<tr>
<td>The propaganda work to raise the awareness of environmental protection of the people here</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Construction of appropriate/effective wastewater treatment works</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Take measures to manage/sanction discharge acts</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do not dump waste into the canal</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Enhance cooperation between local authorities and people in environmental protection

Other

<table>
<thead>
<tr>
<th>20. Community participation in environmental protection</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dispose of garbage in the right place (do not throw garbage into canals, canals and along the banks of canals)</td>
</tr>
<tr>
<td>Participating in waste collection on embankments/canals</td>
</tr>
<tr>
<td>Mobilize and contribute fees to the youth union to volunteer to carry out environmental protection work</td>
</tr>
<tr>
<td>Remind others not to dump waste/wastewater into the environment</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>21. Social benefit of constructing the nature-based works</th>
</tr>
</thead>
<tbody>
<tr>
<td>Creating a peaceful, friendly and joyful surrounding</td>
</tr>
<tr>
<td>Improving public space for the community</td>
</tr>
<tr>
<td>Beautifying the cityscape</td>
</tr>
<tr>
<td>Improving living conditions for the local people</td>
</tr>
<tr>
<td>Fulfilling of the Sustainable Development Goals (SDG)</td>
</tr>
<tr>
<td>Other</td>
</tr>
</tbody>
</table>

G. Economic

22. Assess the convenience in business/trade activities after the construction of the nature-based works.

<table>
<thead>
<tr>
<th>1 unfavorable</th>
<th>2 Less advantageous</th>
<th>3 Normal</th>
<th>4 Advantageous</th>
<th>5 Very advantageous</th>
</tr>
</thead>
</table>

23. The impact of the water environment on economic activities.

<table>
<thead>
<tr>
<th>1 Very less</th>
<th>2 Less</th>
<th>3 Acceptable</th>
<th>4 Good</th>
<th>5 Very good</th>
</tr>
</thead>
</table>

If less or very less, state the reason:

........................................................................................................
24. How much your income increase after the construction of the nature-based works?

<table>
<thead>
<tr>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
</tr>
</thead>
<tbody>
<tr>
<td>0-20%</td>
<td>20%-40%</td>
<td>40%-60%</td>
<td>60%-80%</td>
<td>More than 80%</td>
</tr>
</tbody>
</table>

G. Health

25. To what extent do you agree with the following statement? Water pollution is the main cause which affects local people's health?

- Strongly disagree
- Disagree
- Neither disagree nor agree
- Agree
- Strongly agree

☐ Has anyone in your household suffered from any of these diseases during the last three months? (If yes, please select the diseases listed below)

- Diarrhea
- Dysentery
- Dengue
- Typhoid
- Ringworm
- Scabies
- Cholera
- Malaria
- Cough
- Asthma
- Skin disease
- Other (specify)

26. How much is the average medical expense of your household per year in Million Vietnamese dong (mil VND)? Please tick on the appropriate cost.

- 0 – 1mil
- 1-3mil
- 3 – 5mil
- 5 – 7mil
- > 7mil

H. Willingness to pay (WTP) for better sanitation and Wastewater management

27. Have you paid a wastewater services environmental fee monthly?

- Yes
- No

28. How much does your household currently pay in VND...... per month as tariff for sanitation and wastewater management?

29. If you would receive proper sanitation within the locality with its proper wastewater treatment. Given that you are required to pay for this service per year.
How much would you be willing to pay in VND?

☐ 2,500,000 VND/year/household (base) (under 5 m³ of wastewater/day)
☐ 3,000,000 VND/year/household (base) (5-10 m³ of wastewater/day)
☐ 4,000,000 VND/year/household (base) (10-20 m³ wastewater/day)
☐ Other........................................................................................................

30. What is your satisfaction with the existing wastewater treatment service?

Very satisfied ☐ Satisfied ☐ Neither satisfied nor dissatisfied ☐
Dissatisfied ☐ Very dissatisfied ☐

Thank you very much for your Time and your Valuable contributions!

Interviewer ..............................................

.........................................................

Interviewee ............................................