

# **Survey on public perspectives on water quality communication and participatory monitoring approaches in Jalisco, Mexico**

## **English translation of the questionnaire**

Fernando Amador-Castro <sup>a</sup>, Gabriela Lopez-Gonzalez <sup>b, c</sup>, Paula Novo <sup>d</sup>, Misael  
Sebastián Gradilla-Hernández <sup>a, \*</sup>

<sup>a</sup> Tecnológico de Monterrey, Escuela de Ingeniería y Ciencias, Av. General Ramon  
Corona No. 2514, 45201 Zapopan, Jal., Mexico

<sup>b</sup> water@leeds, School of Geography, University of Leeds, Leeds LS2 9JT, UK

<sup>c</sup> School of Geography, University of Leeds, Leeds LS2 9JT, UK

<sup>d</sup> Sustainability Research Institute, School of Earth and Environment, University of  
Leeds, Leeds LS2 9JT, UK

## Introduction to the survey

Good morning, we are conducting a survey on water quality among the inhabitants of the state of Jalisco. The objective of this survey is to evaluate citizens' knowledge of water quality, their opinions on water quality communication, and their interest in participating in citizen monitoring schemes. This survey lasts approximately 10 minutes and is anonymous, so your name will not be recorded at any time. Additionally, you can choose not to answer any question that you do not like or withdraw from the survey at any time.

A. What gender do you identify with?

- a) Woman
- b) Man
- c) Other
- d) I prefer not to mention

B. Within what range is your age?

- a) Less than 18 years → The survey is not conducted
- b) 18-29
- c) 30-39
- d) 40-49
- e) 50-59
- f) 60 years or older

C. Do you currently live in the state of Jalisco?

- a) Yes
- b) No → The survey is not conducted

D. Would you be interested in participating voluntarily and anonymously in this survey?

- a) Yes
- b) No → The survey is not conducted

- *The interviewer thanks the participant for their time.*

## Section 1: Public understanding of water quality

1. Do you live less than a kilometer or a 30-minute walk from a river, lake, or pond?
  - a) Yes → Go to question 2
  - b) No → Go to question 4
  - c) I am not sure → Go to question 4

2. What is the name of the river, lake, or pond?

Open answer

3. How would you rate the quality of the water of the river, lake, or pond that is near your house? Use a scale of one to five, where one is “very poor” and five is “excellent.”
  - a) 1 – very poor
  - b) 2 – poor
  - c) 3 – regular
  - d) 4 – good
  - e) 5 – excellent
  - f) I don't know
4. How do you identify that the water is of good quality?

Open answer

5. How would you rate the water quality of the state's rivers, lakes, and ponds? Use a scale of one to five, where one is “very poor” and five is “excellent.”
  - a) 1 – very poor → Go to question 6
  - b) 2 – poor → Go to question 6
  - c) 3 – regular → Go to question 6
  - d) 4 – good → Go to question 6
  - e) 5 – excellent → Go to question 8
  - f) I don't know → Go to question 6
6. What do you think should be done to improve the water quality in the rivers, lakes, and ponds of Jalisco? Select the three most relevant options.
  - a) Establish harsher regulations
  - b) Improve environmental inspection and surveillance capacity
  - c) Ensure compliance with current regulations
  - d) Restructure current environmental regulations to make them more effective
  - e) Promote environmental education
  - f) Promote public participation in caring for water quality
  - g) Improve water quality monitoring programs
  - h) Expand and optimize the infrastructure for wastewater treatment
  - i) Find solutions to restore our waterbodies
  - j) Improve urban planning
  - k) I don't know
  - l) Other (specify)

7. What do you consider to be the main problem in the state's rivers, lakes, and ponds?

Open answer

8. Who do you consider to be responsible for taking care of the rivers, lakes, and ponds of our state?

Open answer

## Section 2: Water quality communication

9. Have you ever received information about the water quality of the state's rivers, lakes, or ponds?
- a) Yes → Go to question 10
  - b) No → Go to question 11
10. When was the last time you received information about the water quality of the state?
- a) Less than a month ago
  - b) Approximately a month ago
  - c) From two to six months ago
  - d) From six months to one year ago
  - e) More than a year ago
  - f) I don't remember
11. Would you like to receive information about the water quality of the rivers, lakes, or ponds of our state?
- a) Yes → Go to question 12
  - b) No → Go to question 16
12. How often should you receive information about the water quality of the state's rivers, lakes, or ponds?
- a) More than once a month
  - b) Monthly
  - c) Twice a year
  - d) Annually
  - e) Only in case of emergencies
13. Which media do you prefer to be used to communicate the water quality in the state to you? Select the three most relevant to you.
- a) Dedicated webpage
  - b) Newspapers or magazines
  - c) Platforms or apps with interactive maps
  - d) Scientific publications
  - e) Social media
  - f) Technical or government reports
  - g) Radio
  - h) Television
  - i) Other (specify)
14. Have you searched on your own for water quality information about the state's rivers, lakes, or ponds?
- a) Yes → Go to question 15
  - b) No → Go to question 16

15. What sources or media do you currently use to look up water quality information on rivers, lakes, or ponds in the state? Select only those you use.
- a) Dedicated webpage
  - b) Newspapers or magazines
  - c) Platforms or apps with interactive maps
  - d) Scientific publications
  - e) Social media
  - f) Technical or government reports
  - g) Radio
  - h) Television
  - i) Other (specify)
16. Which government institution would you contact if you have any questions about the quality of the water in the rivers, lakes, or ponds of our state?
- a) National Water Commission (CONAGUA)
  - b) Ministry of Environment and Natural Resources (SEMARNAT)
  - c) Ministry of Environment and Territorial Development (SEMADET)
  - d) Federal Attorney for Environmental Protection (PROFEPA)
  - e) State Attorney for Environmental Protection (PROEPA)
  - f) Ministry of Comprehensive Water Management (SGIA)
  - g) Jalisco State Water Commission (CEA)
  - h) Intermunicipal System of Drinking Water and Sewage Services (SIAPA)
  - i) Other (specify)
  - j) I don't know / I have not been informed
17. Which government institution would you contact if you had any complaint about the quality of the water in the rivers, lakes, or ponds of our state?
- a) National Water Commission (CONAGUA)
  - b) Ministry of Environment and Natural Resources (SEMARNAT)
  - c) Ministry of Environment and Territorial Development (SEMADET)
  - d) Federal Attorney for Environmental Protection (PROFEPA)
  - e) State Attorney for Environmental Protection (PROEPA)
  - f) Ministry of Comprehensive Water Management (SGIA)
  - g) Jalisco State Water Commission (CEA)
  - h) Intermunicipal System of Drinking Water and Sewage Services (SIAPA)
  - i) Other (specify)
  - j) I don't know / I have not been informed
18. Do you know of any mechanism through which citizens can give feedback to the government on water quality issues?
- a) Yes
  - b) No

19. When was the last time you were aware of a public hearing or a similar exercise where water quality issues were discussed?
- a) Less than a month ago
  - b) Approximately a month ago
  - c) From two to six months ago
  - d) From six months to one year ago
  - e) More than a year ago
  - f) I have never heard about this type of exercise → Go to question 22
  - g) Does not remember → Go to question 22
20. When was the last time you participated in a public hearing or exercise where water quality issues were discussed?
- a) Less than a month ago
  - b) Approximately a month ago
  - c) From two to six months ago
  - d) From six months to one year ago
  - e) More than a year ago
  - f) I have never participated in this type of exercise → Go to question 22
  - g) Does not remember → Go to question 22
21. Mainly, what motivates you to participate in these public exercises?
- a) The opportunity to contribute new ideas or solutions to water problems
  - b) The opportunity to express needs or issues related to water
  - c) The possibility of contributing to the care of our rivers, lakes, or ponds
  - d) The possibility of requesting updated information about water quality
  - e) Knowing the government's actions to take care of the water
  - f) Other (specify)
22. Suppose you were informed in a timely manner. How interested would you be in participating in a public hearing or exercise related to water quality? Consider a scale of one to five, where one is "not interested" and five is "very interested."
- a) 1 – not interested → Go to question 23
  - b) 2 – little interested → Go to question 23
  - c) 3 – moderately interested → Go to question 23
  - d) 4 – interested → Go to question 24
  - e) 5 – very interested → Go to question 24
23. Mainly, what prevents you from participating in these public exercises?
- a) The topic is not of interest to you, or it does not motivate you
  - b) The lack of time availability
  - c) Difficulties in traveling to the place where the public exercise takes place
  - d) The economic cost of attending the public exercise, even when it is free
  - e) Feeling that you are not sufficiently informed to discuss the topic
  - f) Lack of confidence that your opinion will be considered in decision-making
  - g) The complexity with which the information is presented
  - h) The lack of clarity in the subject, objectives, and scope of the public exercise

- i) The lack of appropriate spaces to carry out these public exercises
- j) Other (specify)

24. Do you consider that water quality is being communicated clearly and effectively?

- a) Yes
- b) No

25. Mainly, what do you think should be done to improve water quality communication?

- a) Use a simple and more accessible language
- b) Make it easier to interpret water quality information
- c) Make information more visually attractive to the public
- d) Identify which communication media the public prefers
- e) Use various media to communicate water quality
- f) Improve the frequency with which water quality is communicated
- g) Clearly indicate to citizens who they should contact if they have questions
- h) Establish mechanisms to receive public feedback
- i) Promote public participation in caring for water quality
- j) Other (specify)

### Section 3: Interest in participatory water quality monitoring

26. Suppose you had the opportunity to participate in a citizen project where water quality is measured. How interested would you be in participating, considering a scale of one to five, where one is "not interested" and five is "very interested"?

- a) 1 – not interested → Go to question 27
- b) 2 – little interested → Go to question 27
- c) 3 – moderately interested → Go to question 27
- d) 4 – interested → Go to question 28
- e) 5 – very interested → Go to question 28

27. Mainly, what does not motivate you or prevent you from participating in these projects?

On any selection → Go to question 29

- a) Not interested in these programs or activities.
- b) Lacking sufficient time or experiencing conflicts with the activity's schedules.
- c) Difficulty getting to the place where the activities take place.
- d) Financial constraints.
- e) Difficulty getting the equipment, materials, or technology needed for the project.
- f) Feeling that you do not have the necessary experience or skills.
- g) Activities are too complex or time-consuming.
- h) Not sufficiently informed on the project.
- i) Difficulties associated with delivering the results.
- j) There are not enough people to do it with, or there is limited social interaction.
- k) Personal reasons (e.g., family responsibilities, health conditions, advanced age).
- l) The perception that projects are not well organized or designed.
- m) The perception that the project has no real impact or results will not be used.
- n) Lack of incentives.
- o) External factors such as weather or insecurity.
- p) Other (specify)

28. What is your main motivation for participating in these projects?

- a) Contribute to scientific knowledge or share my knowledge and skills.
- b) Learn something new or develop new skills.
- c) Meet people who share my interests.
- d) Do what my friends or family are already doing.
- e) Contribute to the environment or my community.
- f) Improve or protect our local water resources.
- g) Being able to give something back to our society or make a difference.
- h) Helps me solve or distract from my personal issues.
- i) Progress in my present or future career.
- j) Explore different career opportunities.
- k) Finding outdoor activities fun or appealing.
- l) Gain social recognition or feel proud of myself.
- m) Other (specify)

29. What features should the project have to attract more people to participate? Select the three most relevant features.

- a) Activities adapted to different participant interests.
- b) Convenient or flexible times for doing the activities.
- c) Support with getting to and from the activities.
- d) All the equipment, materials, and technology are provided to the participants.
- e) Adequate training is provided for participants.
- f) Activities are designed to be short and simple.
- g) Participants are informed in detail about the project.
- h) Straightforward process to submit the results.
- i) Personnel to promote citizen engagement, group membership, and collaboration.
- j) Includes activities that can be done from home.
- k) Project has been carefully designed, and it is well organized.
- l) Clear communication on how results will be used to generate impact.
- m) Participants can get incentives as recognition for their work.
- n) Other (specify)

## Section 4: Demographic characteristics

*- The interviewer mentions that the following questions will be used solely for statistical purposes.*

30. In which municipality of Jalisco do you currently reside?

Municipality name

*- Note: the interviewer verifies the name of the municipality and writes the code according to Table 1 in the annexes section.*

31. What is your occupation?

- a) Officials, directors, and bosses
- b) Professionals and technicians
- c) Auxiliary workers in administrative activities
- d) Merchants, sales employees, and sales agents
- e) Workers in personal and surveillance services
- f) Workers in agricultural, livestock, forestry, hunting, and fishing activities
- g) Artisanal workers, in construction, and other trades
- h) Industrial machinery operators, assemblers, drivers, and transport drivers
- i) Workers in elementary and support activities
- j) Unemployed
- k) Not economically active (students, retirees, home care)
- l) Other (specify)

32. What is the highest level of education you have completed?

- a) None
- b) Elementary
- c) Middle school
- d) High school
- e) Bachelor's or professional degree
- f) Postgraduate

33. Within what range is your household's monthly income, that is, the total income per month when you combine the income of all the members of your household?

- a) Less than 7,475 pesos
- b) Between 7,475 and 11,982 pesos
- c) Between 11,983 and 17,308 pesos
- d) Between 17,309 and 25,579 pesos
- e) Between 25,580 and 66,900 pesos
- f) More than 66,900 pesos

*-The interviewer ends the survey by thanking the survey participant for their time.*

## Annexes

**Table 1. Municipalities of the State of Jalisco**

| Code | Municipality                  | Code | Municipality                  | Code | Municipality                |
|------|-------------------------------|------|-------------------------------|------|-----------------------------|
| 001  | Acatic                        | 043  | La Huerta                     | 085  | Tamazula de Gordiano        |
| 002  | Acatlán de Juárez             | 044  | Ixtlahuacán de los Membrillos | 086  | Tapalpa                     |
| 003  | Ahualulco de Mercado          | 045  | Ixtlahuacán del Río           | 087  | Tecalitlán                  |
| 004  | Amacueca                      | 046  | Jalostotitlán                 | 088  | Tecolotlán                  |
| 005  | Amatitán                      | 047  | Jamay                         | 089  | Techaluta de Montenegro     |
| 006  | Ameca                         | 048  | Jesús María                   | 090  | Tenamaxtlán                 |
| 007  | San Juanito de Escobedo       | 049  | Jilotlán de los Dolores       | 091  | Teocaltiche                 |
| 008  | Arandas                       | 050  | Jocotepec                     | 092  | Teocuitatlán de Corona      |
| 009  | El Arenal                     | 051  | Juanacatlán                   | 093  | Tepatitlán de Morelos       |
| 010  | Atemajac de Brizuela          | 052  | Juchitlán                     | 094  | Tequila                     |
| 011  | Atengo                        | 053  | Lagos de Moreno               | 095  | Teuchitlán                  |
| 012  | Atenguillo                    | 054  | El Limón                      | 096  | Tizapán el Alto             |
| 013  | Atotonilco el Alto            | 055  | Magdalena                     | 097  | Tlajomulco de Zúñiga        |
| 014  | Atoyac                        | 056  | Santa María del Oro           | 098  | San Pedro Tlaquepaque       |
| 015  | Autlán de Navarro             | 057  | La Manzanilla de la Paz       | 099  | Tolimán                     |
| 016  | Ayotlán                       | 058  | Mascota                       | 100  | Tomatlán                    |
| 017  | Ayutla                        | 059  | Mazamitla                     | 101  | Tonalá                      |
| 018  | La Barca                      | 060  | Mexticacán                    | 102  | Tonaya                      |
| 019  | Bolaños                       | 061  | Mezquitic                     | 103  | Tonila                      |
| 020  | Cabo Corrientes               | 062  | Mixtlán                       | 104  | Totatiche                   |
| 021  | Casimiro Castillo             | 063  | Ocotlán                       | 105  | Tototlán                    |
| 022  | Cihuatlán                     | 064  | Ojuelos de Jalisco            | 106  | Tuxcacuesco                 |
| 023  | Zapotlán el Grande            | 065  | Pihuamo                       | 107  | Tuxcueca                    |
| 024  | Cocula                        | 066  | Poncitlán                     | 108  | Tuxpan                      |
| 025  | Colotlán                      | 067  | Puerto Vallarta               | 109  | Unión de San Antonio        |
| 026  | Concepción de Buenos Aires    | 068  | Villa Purificación            | 110  | Unión de Tula               |
| 027  | Cuautitlán de García Barragán | 069  | Quitupan                      | 111  | Valle de Guadalupe          |
| 028  | Cuautla                       | 070  | El Salto                      | 112  | Valle de Juárez             |
| 029  | Cuquío                        | 071  | San Cristóbal de la Barranca  | 113  | San Gabriel                 |
| 030  | Chapala                       | 072  | San Diego de Alejandría       | 114  | Villa Corona                |
| 031  | Chimaltitán                   | 073  | San Juan de los Lagos         | 115  | Villa Guerrero              |
| 032  | Chiquilistlán                 | 074  | San Julián                    | 116  | Villa Hidalgo               |
| 033  | Degollado                     | 075  | San Marcos                    | 117  | Cañadas de Obregón          |
| 034  | Ejutla                        | 076  | San Martín de Bolaños         | 118  | Yahualica de González Gallo |
| 035  | Encarnación de Díaz           | 077  | San Martín Hidalgo            | 119  | Zacoalco de Torres          |
| 036  | Etzatlán                      | 078  | San Miguel el Alto            | 120  | Zapopan                     |
| 037  | El Grullo                     | 079  | Gómez Farías                  | 121  | Zapotiltic                  |
| 038  | Guachinango                   | 080  | San Sebastián del Oeste       | 122  | Zapotitlán de Vadillo       |
| 039  | Guadalajara                   | 081  | Santa María de los Ángeles    | 123  | Zapotlán del Rey            |
| 040  | Hostotipaquillo               | 082  | Sayula                        | 124  | Zapotlanejo                 |
| 041  | Huejúcar                      | 083  | Tala                          | 125  | San Ignacio Cerro Gordo     |
| 042  | Huejuquilla el Alto           | 084  | Talpa de Allende              |      |                             |