**Tool 2.A3 – Water, sanitation & energy assessment questionnaires**

**Part 1 – Water system & water supply**

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| **Existing water -related study and report** | | Does any study exist related to water consumption, quality or uses at the school?   * Yes / No   If yes, indicate date \_\_\_\_\_\_\_\_\_\_  Is a report available? Yes / No  Total consumption \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| **Water consumption** | | Is there a data record of the quantity of water supplied to the school? Yes / No  If yes, indicate the amount in m3 per week or month:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  If data is not available in volume, is other information available? (water bills, others) \_\_\_\_\_\_  If no data record is available at the school level [[1]](#footnote-1), neither from the water meter or water bills, try to estimate the amount of water consume per day/week:   1. Identify the main source of consumption (Bathroom: toilet flushes, taps, showers; Kitchen: dishwasher, food preparation, cleaning; Others: laundry, outdoor areas, cleaning etc.) 2. Estimate the consumption per functional unit (water per flush, per minute showering, per washing machine etc.) by doing measurements or based on literature/internet data. 3. Estimate the number of utilization per day/week and multiply it by the functional unit to find the water amount consumed 4. Report every assumption and calculation in an excel file.   Do the quantity consumed fluctuates significantly during a week (+/- 10%) [[2]](#footnote-2)? Yes / No  Is there any known water losses/ leakages? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Is there any water consumption that could be reduced[[3]](#footnote-3)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| **Water supply** | | What are the main sources of water?   * Piped water * Protected well * Rainwater * Unprotected well * Packaged bottled water * Tanker truck or cart * Surface water * No water source * Other: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | How many sources is there? \_\_\_\_\_\_\_\_\_\_\_\_  Does the water source vary depending on the water uses (e.g. rainwater used for gardening, drinking water bought in bottles, etc.)? Yes / No  If yes, specify:  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| **Water accessibility** | | Is drinking water always accessible or is there any water shortage? Yes / No  If not always accessible explain why \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Is water for other uses (toilets, garden, kitchen etc,) always accessible? Yes / No  If not, explain why \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| **Water treatment** | | Does the water receive any treatment on-site (= in the school area)? Yes / No (specify where if different treatment points)  If yes, explain: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Have you notice any waterborne disease within the school community? Yes / No  Does the water quality meet WHO guideline values for presence of residual chlorine[[4]](#footnote-4), E.Coli[[5]](#footnote-5), Arsenic[[6]](#footnote-6), lead[[7]](#footnote-7)?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| **Water storage** | | Is there a water storage system? Yes / No  If yes, specify the storage volume: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Is there any leakage? Yes / No  Is there any maintenance done to the water storage system? Precise frequency  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |
| **Reduce, Reuse, Recycle practices within the school** | | | | | |
| **Reduce practices** | Which efforts are done to reduce water consumption at the school?  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* | | | | Where do you see potential to reduce water consumption at the school?  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* |
| **Reuse/recycle practices** | Is rainwater collected at the school? Yes / No  If yes, which amount is collected (per month/year)? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  What is the collected rainwater used for? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |
| Where do you see potential to substitute water consumption by rainwater?  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* | | Could some water be reused/recycled before being disposed of?  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* | | |
| **School water management program** | Is / were there existing programs related to water management? Yes / No  If yes, comment the objective, the success and issues. Provide a report if available  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | | |

**Part 2 - Sanitation system**

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| **Existing sanitation- related study** | Does any study exist related to sanitation in the school?   * Yes / No   If yes, indicate date \_\_\_\_\_\_\_\_\_\_  Is a report available? Yes / No | Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Sanitation system** | What type of toilets/latrines are used at the school?   * Pour Flush Toilet * Cistern Flush Toilet * Dry toilets * Urine-Diverting Dry Toilet (UDDT) * Urinal * Urine-Diverting Flush Toilet (UDFT) * None (open defecation) * Other:\_\_\_\_\_\_\_\_\_\_\_ | What is the collection and storage/treatment used?   * Connected to a sewer * Single pits * Double pits * Septic tanks * Anaerobic filters * Other:\_\_\_\_\_\_\_\_\_\_\_\_ |
| How is faecal sludge and/or wastewater transported from storage to treatment or discharge site?   * Sewer * Manually emptied * Motorized emptying * Other:\_\_\_\_\_\_\_\_\_\_\_   Please indicate frequency of collection / emptying: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | If there is a treatment done onsite, what kind of treatment is it?   * + None   + Settler   + Planted drying beds   + Other:\_\_\_\_\_\_\_\_\_\_\_\_ |
| **Wastewater treatment** | How is the wastewater collected and treated? (sewer system at the school connected or not with outside, septic tanks, open drainage system, discharge in natural water body with or without treatment)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Is greywater (wastewater from showers, sinks, washing machines, etc.) and blackwater (from toilets) mixed?  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| **Toilets and usage** | How many toilets are there at the school?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  How many toilets are currently usable?\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  In which state are these toilets? (clean, more or less clean, dirty, smelly, etc.) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Are there any issues with the current sanitation system? (problem of overflow during rainy season, not enough toilets for the entire school community, bad smell, …)  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |

**Part 3 - Energy supply (Electricity and Heat)**

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| **Existing energy (electricity and heat) related study and reports** | | Does any study exist related to energy consumption or uses in the school?   * Yes / No   If yes, indicate date \_\_\_\_\_\_\_\_\_\_  Is a report available? Yes / No | Comments: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | |
| **Energy consumption** | | Is there a data record of the energy (electricity + other fuel) consumed at the school? Yes / No  If yes, indicate the amount in kWh or MJ per week or month and if possible where it is consumed  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  If data is not available in energy units, is other information available? (bills, others) \_\_\_\_\_\_  If no data record is available at the school level [[8]](#footnote-8), neither from the electricity meter or bills, try to estimate the amount of electricity/heat consumed per day/week:   1. Identify the main source of consumption 2. Estimate the consumption per functional unit by doing measurements or based on literature/internet data. 3. Estimate the number of utilization per day/week and multiply it by the functional unit to find the electricity amount consumed 4. Report every assumption and calculation in an excel file.   Does the energy source vary depending on the energy uses? Yes / No  If yes, specify the type and amounts consumed (e.g. gas for kitchen, electricity for classroom etc.): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Is energy (electricity and cooking fuel) always accessible or is there any energy shortage? Yes / No  If not always accessible explain why \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  Do the energy consumption fluctuates significantly during a week (+/- 10%) [[9]](#footnote-9)? Yes / No  Is there any energy consumption that could be reduced? \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| **Electricity supply** | | What are the sources of electricity of the school?   * Electrical grid * Solar panel * Generator * Other:\_\_\_\_\_\_\_\_\_\_\_ | If the school is connected to the electrical grid, search for information on the primary energy used for electricity production in the country/region. | |
| \_\_\_% Natural gas  \_\_\_% Coal/petrol  \_\_\_% Nuclear  \_\_\_% Hydraulic | \_\_\_% Wind  \_\_\_% Solar  \_\_\_% Geothermic  \_\_\_% Other |
| **Electricity availability** | | Is electricity always available or is there any electricity shortage/ recurring power cut? Yes / No  If not always available explain why \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| **Cooking fuel** | | What are the sources of cooking fuel used at the school?   * LPG * Charcoal * Wood * Electricity * Other:\_\_\_\_\_\_\_\_\_\_\_ | | |
| **Energy storage** | | Is there an energy storage system in place? Yes / No  If yes, explain (battery, gas bottles, etc): \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | |
| **Reduce, Reuse, Recycle practices within the school** | | | | |
| **Reduce practices** | Which efforts are done to reduce energy consumption at the school?  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* | | Where do you see potential to reduce energy consumption at the school?  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* | |
| **Substitution practices** | Where do you see potential to substitute current energy consumption with a renewable energy source? (e.g. solar paner, biogas, etc)  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*  *\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_* | |  | |
| **School energy supply and management program** | Is / were there existing programs related to energy supply and management? Yes / No  If yes, comment the objective, the success and issues. Provide a report if available  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_  \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ | | | |

1. Regardless if the data is available at the school, an estimation of the water consumption may be useful to cross check the data and raise awareness on water consumption [↑](#footnote-ref-1)
2. If a water meter is available, check it daily and see if significant variation are observed [↑](#footnote-ref-2)
3. A school campus walk-through may be useful to report some specificities [↑](#footnote-ref-3)
4. WHO guidelines for free chlorine residual in drinking water at point of delivery states a minimum of 0.2 mg/L and a maximum of 1.0 mg/L [↑](#footnote-ref-4)
5. WHO guidelines recommend a standard of no detectable E.coli (or thermotolerant coliform) bacteria in any 100-mL sample of drinking water [↑](#footnote-ref-5)
6. WHO guidelines on water quality recommend a standard of maximum Arsenic level of 0.01mg/L [↑](#footnote-ref-6)
7. WHO guidelines on water quality recommend a standard of maximum Lead level of 0.01mg/L [↑](#footnote-ref-7)
8. Regardless if the data is available at the school, an estimation of the energy consumption may be useful to cross check the data [↑](#footnote-ref-8)
9. If a energy meter is available, check it daily and see if significant variation are observed [↑](#footnote-ref-9)