PGD in WASH

Assignment Four

February 2020

Student: Jeni Flavell

Student ID: unknown

Water Safety and Distribution

1. List and briefly describe the measures by which the success or otherwise of a public–private partnership providing water supply services can be assessed.

Assessing the success or otherwise of a public-private partnership requires significant high-quality data and information. As in Marin (2009) large data sets were used to compare public or private outcomes verses public-private partnership (PPP) outcomes. Various models exist to assess success and performance against benchmarks.

The following parameters are discussed in the course material (which appears to be sourced from the online learning platform *Open, Learn, Create* course Urban Water Supply), cited as coming from Athena Infonomics (2012):

- Accessibility: proportion of the population with access to water supply
- Affordability: Is the cost of water affordable
- Cost recovery: Is the cost of water being recovered by investors or stakeholders?
- Minimisation of non-revenue water: minimisation of water lost or not paid for
- Water quality: Adherence to national standards
- Operational efficiency: 24/7 supply?

The cited publication (Athena Infonomics 2012) provides the following performance indicators within it's report (p. 13) as service level benchmarks in assessing performance of urban local bodies:

1. Coverage of water supply connections;
2. Per capita supply of water;
3. Continuity of water supply;

4. Quality of water supplied;

5. Efficiency in redressal of customer complaints;

6. Extent of metering of water connections;

7. Extent of non-revenue water;

8. Cost-recovery in water supply services; and

9. Efficiency in collection of water supply related charges.

The report was based on findings from research in India and notes that there have been a few successful models of PPPs in India and a number of unsuccessful ones;

> *'The lack of sufficient understanding regarding people's affordability and willingness to pay coupled by the general perception that it is the government's responsibility to provide public amenities like water supply and waste management free of cost has made the service less amenable for private sector participation (Athena Infonomics 2012, P. 24).*

The report concluded that PPPs are not appropriate for every situation and should not be implemented indiscriminately, in many cases in may be more appropriate to undertake public works (p. 33).

A more recent article on measures which can assess success or otherwise of PPPs by Ameyaw and Chan (2016) describes a set of critical success factors (CSFs) that ensure a successful project implementation and provide a predictive tool to aid in evaluating the likelihood of a successful PPP water supply project. Five key CSFGs were found to have a positive impact on a successful implementation: commitment of partners; strength of consortium; asset quality and social support; political environment; and a national PPP unit.

2. Give six possible causes of water emergencies, three due to natural causes and three due to humans.

Natural causes of water emergencies:

1. Droughts - extended period of low precipitation

2. Floods - extreme precipitation event

3. Earthquakes - disruption of water networks

Human causes of water emergencies:

1. Accidents caused by human error - unintentional miscalculation or error

2. Deliberate poisoning of the water supply - terrorist event

3. Neglect - unintentional mismanagement of water sources, contaminants or equipment

b. What are the options for safe water supply during a water emergency

Treatment options in a water emergency include:

- Distribution of safe water via tankers or containers

- Provide water consumers with treatment options such as boiling, solar disinfection, and chlorination; and/or materials to use as filtration devices such as cloth filtration, sand filtration and ceramic filtration.

- In a displaced persons situation, attempt to locate the population where there is preferably adequate groundwater as this requires less treatment; or surface water which will require a higher degree of treatment.

- Emergency simple water treatment tanks and complex systems.

3. You are about to set off to conduct a sanitary inspection of an abstraction point at a river.

(a) What would you take with you?

PPE such as hat, sunscreen, glasses, gloves; consider personal safety and need for translator; water; survey and water sampling supplies, notebooks, writing materials, map.

(b) Explain four things you will be looking for during your inspection.

1. Possible surrounding environmental contaminants such as farm animals, farming chemicals, household wastes, rubbish/litter etc.
2. Physical integrity of any abstraction point structures such as fences, dams, screens, filters etc.
3. Water flow and appearance- is there sufficient or uncontrolled flow; does the water look polluted or contaminated?
4. Environmental hazards that could affect abstraction point - chance of mudslide, wash-outs, flooding etc.

4. Explain briefly why a Water Safety Plan is necessary

Water safety plans (WSPs) are the most effective means of consistently ensuring the safety and acceptability of a drinking water supply (WHO, 2020, para. 1). A WSP undertakes risk assessments of the water supply from the water source to the consumer, mapping potential risks and managing potential threats to safe water supply.

WSPs can vary depending on the environment, scale and complexity of the system. The example below is taken from a WHO rural water safety plan template:

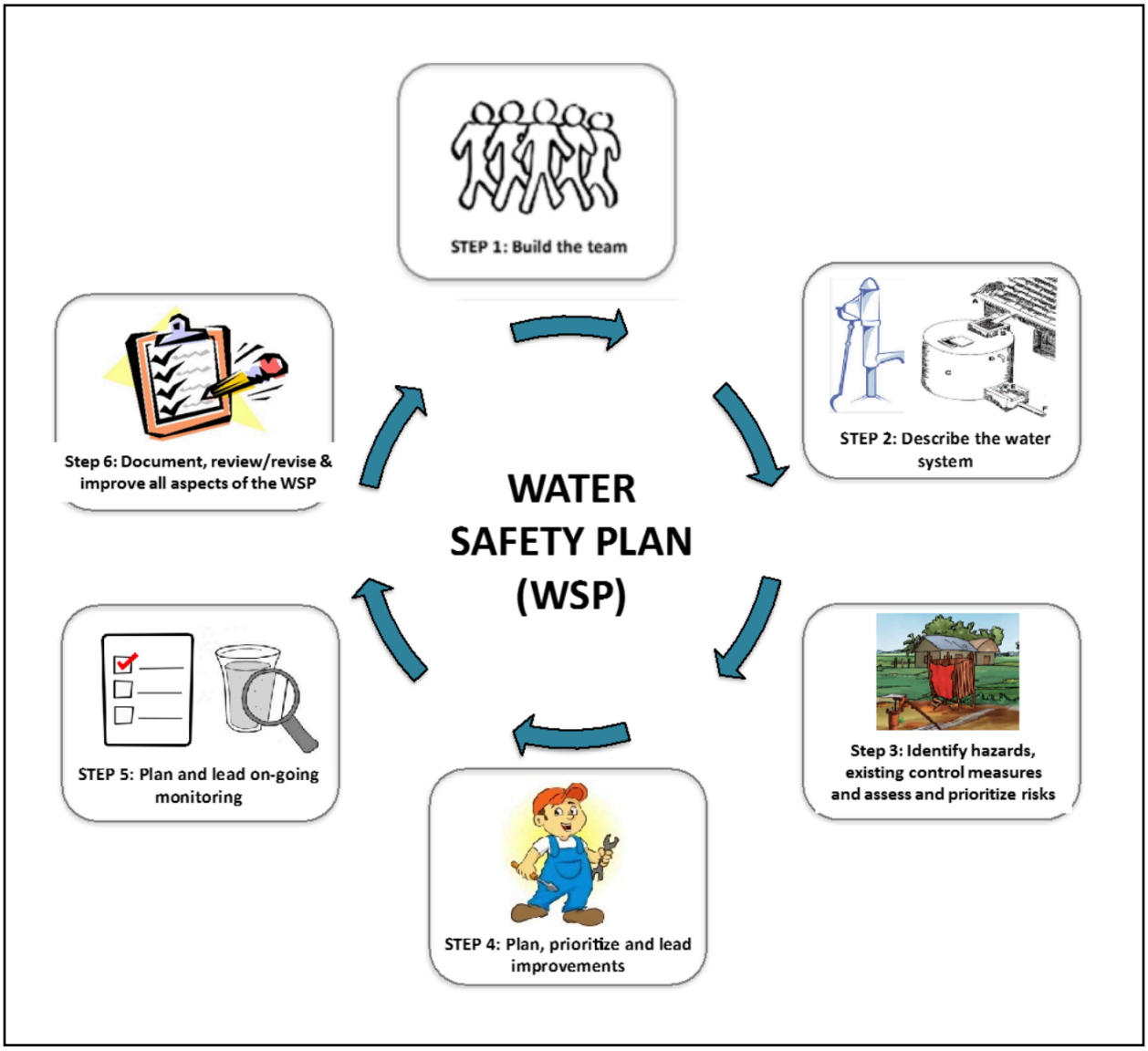

Image: WHO rural water safety plan template. Sourced from: https://www.who.int/globalchange/resources/wash-toolkit/rural-wsp-template.pdf?ua=1

5. Distinguish between the two types of maintenance at a water utility and give reasons why one of them is Better

The two types of maintenance are preventative maintenance and breakdown maintenance. Preventative maintenance is better as it ensures a continuation of safe water supply and is generally cheaper than breakdown repairs.

References

Ameyaw, E. & Chan, A.P. (2016). Critical success factors for public-private partnership in water supply projects'. *Facilities, 34*(3/4), 124-160. https://doi.org/10.1108/F-04-2014-0034

Athena Infonomics (2012). *Public private partnerships in urban water supply: Potential and strategies.* Chennai, Athena Infonomics. Retrieved Feb 13, 2020 from http://tinyurl.com/jz5y5g5

Marin, P. (2009). *Public-private partnerships for urban water utilities: A review of experiences in developing countries.* Trends and policy options; no. 8. World Bank. Retrieved Feb 13, 2020 from https://openknowledge.worldbank.org/handle/10986/2703

World Health Organization (WHO). (2020). *Water sanitation hygiene - water safety planning.* Retrieved Feb 14, 2020 from https://www.who.int/water_sanitation_health/water-quality/safety-planning/en/