










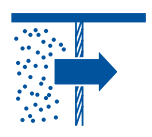




Water source options – a comparison

■ = most preferable ■ = preferable ■ = least preferable

	Water source	Capital cost	Running cost	Yield	Bacteriological water quality	Situation in which technology is most applicable
	Spring protection	Low or medium if piped to community	Low	High	Good if spring catchment is adequately protected	Reliable spring flow required throughout the year
	Sand dams	Low – local labour and materials used	Low	Medium/High – depending on method used to abstract water. Water can be abstracted from the sand and gravel upstream of the sand dam via a well or tubewell	Good if area upstream of dam is protected	Can be constructed across seasonal river beds on impermeable bedrock
	Sub surface dams	Low – local labour and materials used	Low	Medium/High – depending on method used to abstract water. Water can be abstracted from the sand, gravel or soil upstream of the sub-surface dam via a well or tubewell	Good if area upstream of dam is protected	Can be constructed in sediments across seasonal river beds on impermeable bedrock
	Infiltration galleries	Low – a basic infiltration gallery can be constructed using local labour and materials	Low	Medium/High – depending on method used to abstract water	Good if filtration medium is well maintained	Should be constructed next to lake or river
	Rainwater harvesting	Low – low cost materials can be used to build storage tanks and catchment surfaces	Low	Medium – dependent on size of collection surface and frequency of rainfall	Good if collection surfaces are kept clean and storage containers are well maintained	In areas where there are one or two wet seasons per year
	Hand-dug well capped with a rope pump	Low	Medium – spare parts required for pump	Medium	Good if rope and pump mechanisms are sealed and protected from dust. Area around well must be protected	Where the water table is not lower than six metres – although certain rope pumps can lift water from depths of up to 40 metres
	Hand-dug well capped with a hand pump	Medium	Medium – spare parts required for pump	Medium	Good if area around well is protected	Where the water table is not lower than six metres
	Tube well or borehole capped with a hand pump	Medium – well drilling equipment needed. Borehole must be lined	Medium – hand pumps need spare parts	Medium	Good if area around borehole/tubewell is protected	Where a deep aquifer must be accessed
	Gravity supply	High – pipelines and storage/flow balance tanks required	Low	High	Good if protected spring used as source	Stream or spring at higher elevation – communities served via tap stands close to the home
	Borehole capped with electrical/diesel/solar pump	High – pump and storage expensive	High – fuel or power required to run pump. Fragile solar cells need to be replaced if damaged	High	Good if source is protected	In a small town with a large enough population to pay for running costs
	Direct river/lake abstraction with treatment	High – intake must be designed and constructed	High – treatment and pumping often required. Power required for operation	High	Good following treatment	Where large urban population must be served
	Reverse osmosis	High – sophisticated plant and membranes required	High – power required for operation. Replacement membranes required	High	Good	Where large urban population must be served
	Household filters	High – certain filters can be expensive to purchase/produce	Filters can be fragile. Replacement filters can be expensive or difficult to source	Low	Good as long as regular maintenance is assured	In situations where inorganic contaminants are present in groundwater sources or protected sources are not available
	SODIS (solar disinfection)	Low – although clear bottles can be difficult to source in remote areas.	Low	Low	Good	In areas where there is adequate sunlight – water needs to be filtered to remove particulate matter that may harbour pathogens before SODIS can be carried out effectively. SODIS is not appropriate for use with turbid water