



Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

Surface Water Source and Abstraction



Negative Impact/s:

Bacterial Contamination 



Chemical Contamination 

Aesthetic (Taste/Colour which prevents consumption) 




Lack of Water Availability 

| Event / Cause | Risk Factor/s | Current Control Measure/s | Risk | Improvement/s |
|---|---|--|---|--|
| Bacteria enters water supply | Toilets upstream/within 30m <input type="checkbox"/> Human houses upstream <input type="checkbox"/> Animal access to source <input type="checkbox"/> Farming activities nearby <input type="checkbox"/> Source inlet area is dirty/polluted <input type="checkbox"/> Bathing/Laundry performed at source <input type="checkbox"/> Other (Please list) | Fencing around source <input type="checkbox"/> Appropriate screening and filter on source infrastructure <input type="checkbox"/> Household water treatment and storage (HWTS) <input type="checkbox"/> Other (Please list) | High <input type="checkbox"/> (Action Needed Now) Medium <input type="checkbox"/> (Upgrades Needed) Low <input type="checkbox"/> (No Action Required) | Move toilet/s <input type="checkbox"/> Move source inlet <input type="checkbox"/> Install screen and filtration <input type="checkbox"/> Clean source area <input type="checkbox"/> Build fence around source <input type="checkbox"/> Prevent human activities at source <input type="checkbox"/> Other (Please list) |
|  | | | | |
| Chemicals enter water supply | Use of pesticides in area <input type="checkbox"/> Waste water discharge in area <input type="checkbox"/> Algae present at source <input type="checkbox"/> Mining in area <input type="checkbox"/> Naturally occurring high levels <input type="checkbox"/> Other (Please list) | Appropriate water treatment <input type="checkbox"/> Waste water discharges are managed <input type="checkbox"/> Other (Please list) | High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> | Move source <input type="checkbox"/> Remove chemical source/s <input type="checkbox"/> Install treatment <input type="checkbox"/> Other (Please list) |
|  | | | | |




Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|---|---|--|--|--|
| <p>Dirt/Debris in water supply</p> <p>Landslide</p> <p>Subsidence</p> <hr/>  | <p>Soil erosion at source <input type="checkbox"/></p> <p>Intake located at bottom of slope or gully <input type="checkbox"/></p> <p>Unconsolidated soil on surrounding slopes <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Surface run-off into source <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Filter at source outlet <input type="checkbox"/></p> <p>Storage/settlement tanks <input type="checkbox"/></p> <p>Terraces for soil on gradient <input type="checkbox"/></p> <p>Vegetation on gradient <input type="checkbox"/></p> <p>Runoff diverted <input type="checkbox"/></p> <p>Gully rehabilitation <input type="checkbox"/></p> <p>Protective structure around inlet/ concrete abstraction structure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Install filter <input type="checkbox"/></p> <p>Install storage/settlement <input type="checkbox"/></p> <p>Upgrade abstraction to concrete structure <input type="checkbox"/></p> <p>Build protective structure <input type="checkbox"/></p> <p>Manage soil on slopes <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Uncontrolled supply</p> <p>Drought</p> <hr/>  | <p>Variation in source water level/s <input type="checkbox"/></p> <p>Leaks in abstraction structure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Minimum head device (Dam) <input type="checkbox"/></p> <p>Overflow installed <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Install dam <input type="checkbox"/></p> <p>Install overflow <input type="checkbox"/></p> <p>Repair structure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|---|---|--|--|--|
| <p>Flooding of intake area (fresh water)</p> <p>Damage from flooding</p> <p></p> | <p>Located in flood area <input type="checkbox"/></p> <p>Located at bottom of slope or inside river bend <input type="checkbox"/></p> <p>Low permeability soil in surrounding area <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Surrounding vegetation <input type="checkbox"/></p> <p>Concrete structure <input type="checkbox"/></p> <p>Overflow/Drainage <input type="checkbox"/></p> <p>Runoff water diverted <input type="checkbox"/></p> <p>Inlet located at side of river <input type="checkbox"/></p> <p>HWTS prepared <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Upgrade structure (concrete) <input type="checkbox"/></p> <p>Install overflow/drainage <input type="checkbox"/></p> <p>Dig diversion trench/es <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Storm damage to intake structure</p> <p></p> | <p>Exposed location <input type="checkbox"/></p> <p>Debris loose in area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Protection from forest/ other structure <input type="checkbox"/></p> <p>Concrete structure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Upgrade structure (concrete) <input type="checkbox"/></p> <p>Install protective structure/s <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Tsunami/ King Tide</p> <p></p> | <p>Located near shoreline <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete structure <input type="checkbox"/></p> <p>Mangrove protection <input type="checkbox"/></p> <p>Coral reef protection <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Upgrade structure (concrete) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|---|--|--|--|---|
| <p>Earthquake</p> | <p>Located in earthquake area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Suitable Materials (e.g. Ferro cement) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Upgrade structure <input type="checkbox"/></p> <p>Move source <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>(Circle below as appropriate)</p> <p></p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |
| <p>(Circle below as appropriate)</p> <p></p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |
| <p>(Circle below as appropriate)</p> <p></p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |


Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

Spring Water Source


Negative Impact/s:

Bacterial Contamination 






Chemical Contamination 

Aesthetic (Taste/Colour which prevents consumption) 

Lack of Water Availability 

| Event / Cause | Risk Factor/s | Current Control Measure/s | Risk | Improvement/s |
|---|---|--|--|--|
| Bacteria enters water supply | Toilets upstream/within 30m <input type="checkbox"/> | Clean and well-maintained spring box and cover <input type="checkbox"/> Fencing around source <input type="checkbox"/> Overflow to drainage area outside fencing <input type="checkbox"/> Diversion ditch <input type="checkbox"/> Appropriate screen and filter on source outlet <input type="checkbox"/> <i>Other (Please list)</i> | <i>High</i> <input type="checkbox"/> (Action Needed Now) <i>Medium</i> <input type="checkbox"/> (Upgrades Needed) <i>Low</i> <input type="checkbox"/> (No Action Required) | Move toilet/s <input type="checkbox"/> |
| | Animals access to source <input type="checkbox"/> | | | Build fence <input type="checkbox"/> |
| | Farming activities nearby <input type="checkbox"/> | | | Build spring box (inclusive of cover, meshed air vent and overflow) <input type="checkbox"/> |
| | Surface water can flow into source <input type="checkbox"/> | | | Clean spring box and cover <input type="checkbox"/> |
| | Silt/soil/dirt near source <input type="checkbox"/> | | | Dig diversion ditch <input type="checkbox"/> |
| | IF SPRING IS COVERED: Spring box (including cover, air vent and overflow) is dirty <input type="checkbox"/> | | | Install screen and filter on outlet pipe <input type="checkbox"/> |
| | Silt/soil/dirt inside source <input type="checkbox"/> <i>Other (Please list)</i> | | | <i>Other (Please list)</i> |
|  | | | | |












Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|---|---|--|--|---|
| <p>Chemicals enter water supply</p> <hr/> <p style="text-align: center;"></p> | <p>Use of pesticides in area <input type="checkbox"/></p> <p>Waste water discharge in area <input type="checkbox"/></p> <p>Algae present at source <input type="checkbox"/></p> <p>Mining in area <input type="checkbox"/></p> <p>Naturally occurring high levels <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Appropriate water treatment <input type="checkbox"/></p> <p>Waste water discharges are managed <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Remove chemical source/s <input type="checkbox"/></p> <p>Install treatment <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Dirt/Debris in water supply</p> <p>Landslides</p> <p>Subsidence</p> <hr/> <p>   </p> | <p>Soil erosion at source <input type="checkbox"/></p> <p>Intake located at bottom of slope or gully <input type="checkbox"/></p> <p>Unconsolidated soil on surrounding slopes <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Surface run-off into source <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Spring Box covering source <input type="checkbox"/></p> <p>Filter at source outlet <input type="checkbox"/></p> <p>Storage/settlement tanks <input type="checkbox"/></p> <p>Terraces for soil on gradient <input type="checkbox"/></p> <p>Vegetation on gradient <input type="checkbox"/></p> <p>Runoff diverted <input type="checkbox"/></p> <p>Gully rehabilitation <input type="checkbox"/></p> <p>Spring box flush valve <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Install filter <input type="checkbox"/></p> <p>Install storage/settlement <input type="checkbox"/></p> <p>Build spring box <input type="checkbox"/></p> <p>Build protective structure around spring box <input type="checkbox"/></p> <p>Manage soil on slopes <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|--|--|--|--|---|
| <p>Uncontrolled supply</p> <p>Drought</p> | <p>Variation in source water level/s <input type="checkbox"/></p> <p>Leaks in spring box structure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Minimum head device in spring box structure <input type="checkbox"/></p> <p>Overflow installed in spring box <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Install min head device <input type="checkbox"/></p> <p>Install overflow <input type="checkbox"/></p> <p>Repair spring box <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Flooding of intake area (fresh water)</p> <p>Damage from flooding</p> | <p>Located in flood area <input type="checkbox"/></p> <p>Located at bottom of slope/near river bank <input type="checkbox"/></p> <p>Low permeability soil in surrounding area <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Surrounding vegetation <input type="checkbox"/></p> <p>Spring box (concrete and with strong foundation structure) <input type="checkbox"/></p> <p>Overflow/Drainage <input type="checkbox"/></p> <p>Runoff water diverted <input type="checkbox"/></p> <p>Sealed cover <input type="checkbox"/></p> <p>HWTS prepared <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Build/adapt spring box <input type="checkbox"/></p> <p>Install overflow/drainage <input type="checkbox"/></p> <p>Dig diversion trench/es <input type="checkbox"/></p> <p>Install sealed cover <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Storm damage to spring structure</p> | <p>Exposed location <input type="checkbox"/></p> <p>Debris loose/overhanging <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Protection from forest/ other structure <input type="checkbox"/></p> <p>Concrete spring box <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Upgrade spring box <input type="checkbox"/></p> <p>Install protective structure/s <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S


| | | | | |
|--|--|---|--|--|
| <p>Tsunami/ King Tide</p> <p> </p> | <p>Located near shoreline <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Spring box <input type="checkbox"/></p> <p>Sealed cover <input type="checkbox"/></p> <p>Mangrove protection <input type="checkbox"/></p> <p>Coral reef protection <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Upgrade spring box <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Earthquake</p> <p></p> | <p>Located in earthquake area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Suitable Materials (e.g. Ferro cement) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Upgrade spring box <input type="checkbox"/></p> <p>Move source <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p><i>(Circle below as appropriate)</i></p> <p>   </p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |
| <p><i>(Circle below as appropriate)</i></p> <p>   </p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |


Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

Rainwater Collection and Storage

Negative Impact/s:

Bacterial Contamination 

Chemical Contamination 






Aesthetic (Taste/Colour which prevents consumption) 

Lack of Water Availability 





| Event / Cause | Risk Factor/s | Current Control Measure/s | Risk | Improvement/s |
|------------------------------|---|--|--|--|
| Bacteria enters water supply | Roof is dirty <input type="checkbox"/> | | | N ^o |
| | Gutters are dirty <input type="checkbox"/> | | | Clean roof/gutters <input type="checkbox"/> |
| | Tank is dirty <input type="checkbox"/> | Tank cover in place <input type="checkbox"/> | | Clean tank <input type="checkbox"/> |
| | Open access to tank <input type="checkbox"/> | Tank inlet has mesh/sieve <input type="checkbox"/> | High <input type="checkbox"/> | Install covers on tank <input type="checkbox"/> |
| | Tank is cracked <input type="checkbox"/> | First flush filter <input type="checkbox"/> | (Action Needed Now) | Install inlet mesh/sieve <input type="checkbox"/> |
| | Tap is leaking <input type="checkbox"/> | All openings have screens <input type="checkbox"/> | Medium <input type="checkbox"/> | Install first flush filter <input type="checkbox"/> |
| | Animals can access water collection area <input type="checkbox"/> | Collection area is fenced <input type="checkbox"/> | (Upgrades Needed) | Repair cracks <input type="checkbox"/> |
| | Dirt/Debris enters water supply | Water collection area is dirty/standing water <input type="checkbox"/> | Overflow pipe leads to drainage point outside collection area <input type="checkbox"/> | Repair/replace tap <input type="checkbox"/> |
| | Pollution (e.g. trees, Excreta etc.) near system <input type="checkbox"/> | <i>Other (Please list)</i> | Low <input type="checkbox"/> | Add drainage/clean collection area <input type="checkbox"/> |
| | Collection bucket dirty <input type="checkbox"/> | | (No Action Required) | Remove pollution from collection area <input type="checkbox"/> |
| | <i>Other (Please list)</i> | | Build fence around collection area <input type="checkbox"/> | |
| | | | <i>Other (Please list)</i> | |










Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|---|--|--|--|---|
| <p>Chemicals enter water supply</p> <p style="text-align: center;"></p> | <p>Roof is corroded/rust <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Appropriate water treatment <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Install Filter <input type="checkbox"/></p> <p>Repair/replace/paint roof <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Loss of rainwater capture</p> <p>Drought</p> <p style="text-align: center;"></p> | <p>Dry periods > 3 months <input type="checkbox"/></p> <p>Holes in roof <input type="checkbox"/></p> <p>Damaged guttering <input type="checkbox"/></p> <p>Damaged piping from gutter to collection tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Inclined roofing in good condition <input type="checkbox"/></p> <p>Guttering covers the length of the roof on all available sides <input type="checkbox"/></p> <p>Guttering is closed at both ends <input type="checkbox"/></p> <p>Corrosion resistant roofing and gutter materials (e.g. PVC) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Replace/repair roof <input type="checkbox"/></p> <p>Replace/repair gutters <input type="checkbox"/></p> <p>Replace/repair downpipe <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Flooding of collection tank (Fresh Water)</p> <p style="text-align: center;">  </p> | <p>Located in flood area <input type="checkbox"/></p> <p>Located at bottom of slope/near river bank <input type="checkbox"/></p> <p>Low permeability soil in surrounding area <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Open access to tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Surrounding vegetation <input type="checkbox"/></p> <p>Sealed tank <input type="checkbox"/></p> <p>Overflow/Drainage <input type="checkbox"/></p> <p>Runoff water diverted <input type="checkbox"/></p> <p>Concrete foundation <input type="checkbox"/></p> <p>Raised above flood level <input type="checkbox"/></p> <p>Tank is anchored to foundation <input type="checkbox"/></p> <p>HWTS prepared <input type="checkbox"/></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tank <input type="checkbox"/></p> <p>Build/raise foundation <input type="checkbox"/></p> <p>Install overflow/drainage <input type="checkbox"/></p> <p>Dig diversion trench/es <input type="checkbox"/></p> <p>Anchor structure <input type="checkbox"/></p> <p>Seal tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|--------------------------|--|--|--|--|
| | | <i>Other (Please list)</i> | | |
| Storm Damage | Exposed location <input type="checkbox"/> Debris loose/overhanging <input type="checkbox"/> <i>Other (Please list)</i> | Protection from forest/ other structure <input type="checkbox"/> Concrete foundation <input type="checkbox"/> Tank anchored <input type="checkbox"/> Gutters secured/removable <input type="checkbox"/> Roofing secured <input type="checkbox"/> <i>Other (Please list)</i> | High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> | Build/adapt foundation <input type="checkbox"/> Anchor tank <input type="checkbox"/> Secure gutters <input type="checkbox"/> Secure roofing <input type="checkbox"/> <i>Other (Please list)</i> |
| |  | | | |
| Landslide/ Subsidence | Tank located at bottom of slope or gully <input type="checkbox"/> Unconsolidated soil on surrounding slopes <input type="checkbox"/> Deforestation in area <input type="checkbox"/> Tree roots growing near tank foundations <input type="checkbox"/> <i>Other (Please list)</i> | Concrete foundation <input type="checkbox"/> Tank anchored <input type="checkbox"/> Terraces for soil on gradient <input type="checkbox"/> Vegetation on gradient <input type="checkbox"/> Gully rehabilitation <input type="checkbox"/> Sealed tank <input type="checkbox"/> <i>Other (Please list)</i> | High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> | Move tank <input type="checkbox"/> Build/adapt foundation <input type="checkbox"/> Build protective structure around tank <input type="checkbox"/> Manage soil on slopes <input type="checkbox"/> <i>Other (Please list)</i> |
| |    | | | |

Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|---|--|---|--|--|
| <p>Tsunami/ King Tide</p> <hr/>   | <p>Located near shoreline <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete foundation <input type="checkbox"/></p> <p>Sealed tank <input type="checkbox"/></p> <p>Mangrove protection <input type="checkbox"/></p> <p>Coral reef protection <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tank <input type="checkbox"/></p> <p>Build/adapt foundation <input type="checkbox"/></p> <p>Seal tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Earthquake</p> <hr/>  | <p>Located in earthquake area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete foundation <input type="checkbox"/></p> <p>Tank is anchored <input type="checkbox"/></p> <p>Suitable Materials (e.g. Ferro cement) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Build/adapt foundation <input type="checkbox"/></p> <p>Anchor tank <input type="checkbox"/></p> <p>Move tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p><i>(Circle below as appropriate)</i></p>     | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |


Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

Groundwater Abstraction

Negative Impact/s:

Bacterial Contamination 

Chemical Contamination 









Aesthetic (Taste/Colour which prevents consumption) 

Lack of Water Availability 






| Event / Cause | Risk Factor/s | Current Control Measure/s | Risk | Improvement/s |
|---------------------------------|---|--|--|--|
| Bacteria enters water supply | Toilet within 10m of well <input type="checkbox"/> | Fence around well <input type="checkbox"/> | High <input type="checkbox"/> (Action Needed Now) | Move toilets <input type="checkbox"/> |
| | Toilets above well height <input type="checkbox"/> | Well is sealed to 3m depth with lining extended above ground <input type="checkbox"/> | | Build fence around well <input type="checkbox"/> |
| | Other pollution source/s within 10m of well e.g. rubbish <input type="checkbox"/> | Drainage channel installed and delivered to area outside of fencing <input type="checkbox"/> | | Repair/Install concrete <input type="checkbox"/> |
| | Standing water within 2m of well <input type="checkbox"/> | Well head/apron is concrete and clean <input type="checkbox"/> | | Line well to 3m depth <input type="checkbox"/> |
| Dirt/Debris enters water supply | Broken drainage channel <input type="checkbox"/> | Sanitary seal between well shaft and apron <input type="checkbox"/> | Medium <input type="checkbox"/> (Upgrades Needed) | Repair/upgrade well apron <input type="checkbox"/> |
| | Surface water can enter well <input type="checkbox"/> | Open well is covered <input type="checkbox"/> | | Clean well area <input type="checkbox"/> |
| | Cracks in concrete wall <input type="checkbox"/> | Other (Please list) | | Remove pollution <input type="checkbox"/> |
| | Collection bucket dirty <input type="checkbox"/> | | | Cover well <input type="checkbox"/> |
| | Other (Please list) | | Low <input type="checkbox"/> (No Action Required) | Other (Please list) |
| | | | | |










Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|--|--|---|--|---|
| <p>Chemicals enter water supply</p> <p style="text-align: center;"></p> | <p>Use of pesticides in area <input type="checkbox"/></p> <p>Waste water discharge in area <input type="checkbox"/></p> <p>Mining in area <input type="checkbox"/></p> <p>Naturally occurring high levels <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Appropriate water treatment <input type="checkbox"/></p> <p>Waste water discharges are managed <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Remove chemical source/s <input type="checkbox"/></p> <p>Install treatment <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Low level of supply/ Drought</p> <p style="text-align: center;">  </p> | <p>Dry periods > 3 months <input type="checkbox"/></p> <p>Low yield well <input type="checkbox"/></p> <p>Sealed lining does not allow water ingress <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Correct well lining <input type="checkbox"/></p> <p>Suitable lifting mechanism <input type="checkbox"/></p> <p>Water levels monitored <input type="checkbox"/></p> <p>Adequate depth <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Replace/repair lining <input type="checkbox"/></p> <p>Start water level monitoring <input type="checkbox"/></p> <p>Extend well depth <input type="checkbox"/></p> <p>Improve lifting mechanism <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Flooding (Fresh Water)</p> <p style="text-align: center;">   </p> | <p>Located in flood area <input type="checkbox"/></p> <p>Located at bottom of slope/near river bank <input type="checkbox"/></p> <p>Low permeability soil in surrounding area <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Open access to well <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Surrounding vegetation <input type="checkbox"/></p> <p>Sanitary seals on well <input type="checkbox"/></p> <p>Watertight well casing <input type="checkbox"/></p> <p>Adequate drainage <input type="checkbox"/></p> <p>Runoff water diverted <input type="checkbox"/></p> <p>Wellhead raised/ on mound <input type="checkbox"/></p> <p>HWTS prepared</p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Cover open well <input type="checkbox"/></p> <p>Protect/Seal wellhead <input type="checkbox"/></p> <p>Install drainage <input type="checkbox"/></p> <p>Dig diversion trench <input type="checkbox"/></p> <p>Raise height wellhead <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|--|---|---|--|---|
| <p>Storm Damage</p>    | <p>Exposed location <input type="checkbox"/></p> <p>Debris loose/overhanging <input type="checkbox"/></p> <p>Open access to well <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Protection from forest/ other structure <input type="checkbox"/></p> <p>Concrete wellhead structure <input type="checkbox"/></p> <p>Secured cover <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Build/adapt wellhead <input type="checkbox"/></p> <p>Secure cover <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Landslide/ Subsidence</p>    | <p>Tank located at bottom of slope or gully <input type="checkbox"/></p> <p>Unconsolidated soil on surrounding slopes <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Tree roots growing near well foundations <input type="checkbox"/></p> <p>Open access to well <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete wellhead structure <input type="checkbox"/></p> <p>Sealed wellhead <input type="checkbox"/></p> <p>Terraces for soil on gradient <input type="checkbox"/></p> <p>Vegetation on gradient <input type="checkbox"/></p> <p>Gully rehabilitation <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Build/adapt foundation <input type="checkbox"/></p> <p>Build protective structure around tank <input type="checkbox"/></p> <p>Manage soil on slopes <input type="checkbox"/></p> <p>Cover/seal well <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – WATER SOURCE/S

| | | | | |
|--|---|--|--|--|
| <p>Tsunami/ King Tide/ Saline intrusion</p> <p style="text-align: right;"> </p> | <p>Located near shoreline <input type="checkbox"/></p> <p>On unmanaged aquifer <input type="checkbox"/></p> <p>Open access to well <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete wellhead <input type="checkbox"/></p> <p>Sealed wellhead <input type="checkbox"/></p> <p>Mangrove protection <input type="checkbox"/></p> <p>Coral reef protection <input type="checkbox"/></p> <p>Deepened well >30m <input type="checkbox"/></p> <p>Managed aquifer recharge <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move source <input type="checkbox"/></p> <p>Build/adapt wellhead <input type="checkbox"/></p> <p>Cover/seal well <input type="checkbox"/></p> <p>Deepen well <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Earthquake</p> <p style="text-align: right;"></p> | <p>Located in earthquake area <input type="checkbox"/></p> <p>Open access to well <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete wellhead <input type="checkbox"/></p> <p>Covered well <input type="checkbox"/></p> <p>Suitable Materials (e.g. Ferro cement) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Build/adapt wellhead <input type="checkbox"/></p> <p>Cover well <input type="checkbox"/></p> <p>Move source <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p><i>(Circle below as appropriate)</i></p> <p>   </p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |


Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION

PIPING






Negative Impact/s:

Bacterial Contamination 



Chemical Contamination 

Aesthetic (Taste/Colour which prevents consumption) 






Lack of Water Availability 

| Event / Cause | Risk Factor/s | Current Control Measure/s | Risk | Improvement/s |
|---|--|---|---------------------------------|--|
| Piping is broken / leak develops | Pollution near piping <input type="checkbox"/> | Pressure rated plastic piping <input type="checkbox"/> | | Replace/repair piping <input type="checkbox"/> |
| | Old pipe/corroded <input type="checkbox"/> | Piping buried in trench <input type="checkbox"/> | | Bury exposed piping <input type="checkbox"/> |
| | Piping is exposed <input type="checkbox"/> | Isolation joints in intervals <input type="checkbox"/> | High <input type="checkbox"/> | Install isolation points <input type="checkbox"/> |
| | More than 50m head loss without breaking pressure <input type="checkbox"/> | Break pressure points <input type="checkbox"/> | Medium <input type="checkbox"/> | Install break pressure points <input type="checkbox"/> |
| Bacteria into supply | Other (Please list) <input type="checkbox"/> | Other (Please list) | Low <input type="checkbox"/> | Other (Please list) |
| Chemicals into supply | | | | |
|     | | | | |
| Piping becomes blocked | Water source is unscreened <input type="checkbox"/> | Water source/ pipe inlet is screened or meshed <input type="checkbox"/> | | Install screens/mesh <input type="checkbox"/> |
| | Piping lengths >1km <input type="checkbox"/> | Air release valves on piping lengths >1km <input type="checkbox"/> | High <input type="checkbox"/> | Install air release valves <input type="checkbox"/> |
| | Piping goes through multiple gradients <input type="checkbox"/> | Break pressure points <input type="checkbox"/> | Medium <input type="checkbox"/> | Install break pressure points <input type="checkbox"/> |
| | Other (Please list) <input type="checkbox"/> | Other (Please list) | Low <input type="checkbox"/> | Other (Please list) |
|  | | | | |



Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION

| | | | | |
|---|--|--|--|---|
| <p>Flooding (Fresh Water)</p>  | <p>Located in flood area <input type="checkbox"/></p> <p>Located at bottom of slope/near river bank <input type="checkbox"/></p> <p>Low permeability soil in surrounding area <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Surrounding vegetation along pipe track <input type="checkbox"/></p> <p>Piping is buried/anchored <input type="checkbox"/></p> <p>Pressure rated plastic piping in good condition <input type="checkbox"/></p> <p>Runoff water diverted from pipe track <input type="checkbox"/></p> <p>Piping is raised above flood level <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move/raise piping <input type="checkbox"/></p> <p>Bury/anchor piping <input type="checkbox"/></p> <p>Upgrade pipe material <input type="checkbox"/></p> <p>Install runoff drainage <input type="checkbox"/></p> <p>Dig diversion trench <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Storm Damage</p>  | <p>Exposed location <input type="checkbox"/></p> <p>Debris loose/overhanging <input type="checkbox"/></p> <p>Pipe is hanging loosely or openly exposed <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Protection from forest/ other structure <input type="checkbox"/></p> <p>Piping is buried/anchored <input type="checkbox"/></p> <p>Pressure rated piping in good condition <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move piping <input type="checkbox"/></p> <p>Build protective structure <input type="checkbox"/></p> <p>Bury/Anchor piping <input type="checkbox"/></p> <p>Upgrade pipe material <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION

| | | | | |
|---|--|---|--|---|
| <p>Landslide/ Subsidence</p> <p>  </p> | <p>Pipe located at bottom of slope or gully <input type="checkbox"/></p> <p>Unconsolidated soil on surrounding slopes <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Piping is exposed <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Protection from forest/ other structure <input type="checkbox"/></p> <p>Piping is buried/anchored <input type="checkbox"/></p> <p>Pressure rated piping in good condition <input type="checkbox"/></p> <p>Terraces for soil on gradient <input type="checkbox"/></p> <p>Vegetation on gradient <input type="checkbox"/></p> <p>Gully rehabilitation <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move piping <input type="checkbox"/></p> <p>Build protective structure over pipe <input type="checkbox"/></p> <p>Bury/Anchor piping <input type="checkbox"/></p> <p>Upgrade pipe material <input type="checkbox"/></p> <p>Manage soil on slopes <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Tsunami/ King Tide/ Saline Intrusion</p> <p> </p> | <p>Located near shoreline <input type="checkbox"/></p> <p>Piping is exposed <input type="checkbox"/></p> <p>Leak/s in pipe <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Piping is buried/anchored <input type="checkbox"/></p> <p>Pressure rated piping in good condition <input type="checkbox"/></p> <p>Mangrove protection <input type="checkbox"/></p> <p>Coral reef protection <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move piping <input type="checkbox"/></p> <p>Bury/Anchor piping <input type="checkbox"/></p> <p>Upgrade pipe material <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION


| | | | | |
|---|--|---|--|--|
| <p>Earthquake</p> | <p>Located in earthquake area <input type="checkbox"/></p> <p>Piping is exposed <input type="checkbox"/></p> <p>Old/corroded/non flexible pipe material <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Piping is buried/anchored <input type="checkbox"/></p> <p>Pressure rated piping in good condition <input type="checkbox"/></p> <p>Suitable Materials (e.g. Flexible plastic piping PVC) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move piping <input type="checkbox"/></p> <p>Bury/Anchor piping <input type="checkbox"/></p> <p>Upgrade pipe material <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>(Circle below as appropriate)</p> <p></p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |
| <p>(Circle below as appropriate)</p> <p></p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |


Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION

Water Storage Tank/Reservoir

Negative Impact/s:

Bacterial Contamination 

Chemical Contamination 








Aesthetic (Taste/Colour which prevents consumption) 

Lack of Water Availability 




| Event / Cause | Risk Factor/s | Current Control Measure/s | Risk | Improvement/s |
|---|---|---|--|---|
| Bacteria enters water supply | Open access to tank <input type="checkbox"/> | Fencing around tank <input type="checkbox"/> | High <input type="checkbox"/> (Action Needed Now) | Build Fence <input type="checkbox"/> |
| | Vents/screens are dirty <input type="checkbox"/> | Tank cover in place <input type="checkbox"/> | | Install covers on tank <input type="checkbox"/> |
| | Tank is cracked <input type="checkbox"/> | Tank inlet has mesh/sieve <input type="checkbox"/> | | Install inlet mesh/sieve <input type="checkbox"/> |
| Dirt/Debris enters water supply | Pipes are leaking <input type="checkbox"/> | Tank has air vent (meshed) <input type="checkbox"/> | Medium <input type="checkbox"/> (Upgrades Needed) | Install air vent <input type="checkbox"/> |
| | Dirty inside tank <input type="checkbox"/> | Overflow pipe (clean) leading to drainage area outside fence <input type="checkbox"/> | | Repair cracks <input type="checkbox"/> |
| | Standing water around tank <input type="checkbox"/> | Float valve controlling flow <input type="checkbox"/> | | Repair/replace pipes <input type="checkbox"/> |
| Uncontrolled flow (Low level / High pressure) | Leaks in surrounding pipes <input type="checkbox"/> | <i>Other (Please list)</i> | Low <input type="checkbox"/> (No Action Required) | Clean tank <input type="checkbox"/> |
| | <i>Other (Please list)</i> | | | Install overflow pipe <input type="checkbox"/> |
| | | | | Install float valve <input type="checkbox"/> |
| | | | | <i>Other (Please list)</i> |



Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION

| | | | | |
|--|---|--|--|---|
| <p>Flooding (Fresh water)</p> <p>   </p> | <p>Located in flood area <input type="checkbox"/></p> <p>Located at bottom of slope/near river bank <input type="checkbox"/></p> <p>Low permeability soil in surrounding area <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Surface water access to tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Surrounding vegetation <input type="checkbox"/></p> <p>Sealed tank <input type="checkbox"/></p> <p>Overflow/Drainage <input type="checkbox"/></p> <p>Runoff water diverted <input type="checkbox"/></p> <p>Concrete foundation <input type="checkbox"/></p> <p>Raised above flood level <input type="checkbox"/></p> <p>Tank is anchored to foundation <input type="checkbox"/></p> <p>HWTS prepared <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tank <input type="checkbox"/></p> <p>Build/raise foundation <input type="checkbox"/></p> <p>Install overflow/drainage <input type="checkbox"/></p> <p>Dig diversion trench/es <input type="checkbox"/></p> <p>Anchor structure <input type="checkbox"/></p> <p>Seal tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Storm damage</p> <p>  </p> | <p>Exposed location <input type="checkbox"/></p> <p>Debris loose/overhanging <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Protection from forest/ other structure <input type="checkbox"/></p> <p>Concrete foundation <input type="checkbox"/></p> <p>Tank anchored <input type="checkbox"/></p> <p>Piping is secured to tank <input type="checkbox"/></p> <p>Covers are secured <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tank to protected area <input type="checkbox"/></p> <p>Build/adapt foundation <input type="checkbox"/></p> <p>Anchor tank <input type="checkbox"/></p> <p>Secure piping <input type="checkbox"/></p> <p>Secure covers <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION

| | | | | |
|--|---|---|--|---|
| <p>Landslide/ Subsidence</p>  | <p>Tank located at bottom of slope or gully <input type="checkbox"/></p> <p>Unconsolidated soil on surrounding slopes <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Tree roots growing near tank foundations <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete foundation <input type="checkbox"/></p> <p>Tank anchored <input type="checkbox"/></p> <p>Terraces for soil on gradient <input type="checkbox"/></p> <p>Vegetation on gradient <input type="checkbox"/></p> <p>Gully rehabilitation <input type="checkbox"/></p> <p>Sealed tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tank <input type="checkbox"/></p> <p>Build/adapt foundation <input type="checkbox"/></p> <p>Build protective structure around tank <input type="checkbox"/></p> <p>Manage soil on slopes <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Tsunami/ Tidal Surge/ Saline Intrusion</p>  | <p>Located near shoreline <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete foundation <input type="checkbox"/></p> <p>Sealed tank <input type="checkbox"/></p> <p>Tank anchored <input type="checkbox"/></p> <p>Mangrove protection <input type="checkbox"/></p> <p>Coral reef protection <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tank <input type="checkbox"/></p> <p>Build/adapt foundation <input type="checkbox"/></p> <p>Seal tank <input type="checkbox"/></p> <p>Anchor tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Earthquake</p>  | <p>Located in earthquake area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete foundation <input type="checkbox"/></p> <p>Tank is anchored <input type="checkbox"/></p> <p>Suitable Materials (e.g. Ferro cement) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Build/adapt foundation <input type="checkbox"/></p> <p>Anchor tank <input type="checkbox"/></p> <p>Move tank <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |


Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION

Distribution Points/Standpipes

Negative Impact/s:

Bacterial Contamination 

Chemical Contamination 

Aesthetic (Taste/Colour which prevents consumption) 

Lack of Water Availability 







| Event / Cause | Risk Factor/s | Appropriate Control Measure/s | Risk | Improvement/s | | |
|------------------------------|---|--|--|---|--|--|
| Bacteria enters water supply | Leaks in surrounding pipes <input type="checkbox"/> | Fence around stand pipe <input type="checkbox"/> Drainage channel to area located outside of the fence <input type="checkbox"/> Clean concrete apron and tapstand <input type="checkbox"/> <i>Other (Please list)</i> | High <input type="checkbox"/> (Action Needed Now) Medium <input type="checkbox"/> (Upgrades Needed) Low <input type="checkbox"/> (No Action Required) | Build fence/s <input type="checkbox"/> Install drainage <input type="checkbox"/> Repair/replace pipe/s <input type="checkbox"/> Repair/replace apron and/or tapstand/s <input type="checkbox"/> Repair/replace tap/s <input type="checkbox"/> Clean collection area/s <input type="checkbox"/> <i>Other (Please list)</i> | | |
| | Animals access to area <input type="checkbox"/> | | | | Standing water in collection area <input type="checkbox"/> | Rubbish/pollution near tapstand <input type="checkbox"/> |
| Chemicals enter water supply | Pipes are corroded <input type="checkbox"/> <i>Other (Please list)</i> | Plastic piping <input type="checkbox"/> <i>Other (Please list)</i> | High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> | Replace corroded pipe/s <input type="checkbox"/> <i>Other (Please list)</i> | | |

Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION








| | | | | |
|--|--|---|--|---|
| <p>Uncontrolled flow (Low level / High pressure)</p> | <p>More than 100m head loss without breaking pressure <input type="checkbox"/></p> <p>Low delivery head <10m <input type="checkbox"/></p> <p>Significant leaks in pipes <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Optimised pipe size for head (calculated) <input type="checkbox"/></p> <p>Pressure rated piping in good condition <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Replace piping <input type="checkbox"/></p> <p>Repair piping <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Flooding (Fresh Water)</p> | <p>Located in flood area <input type="checkbox"/></p> <p>Located at bottom of slope/near river bank <input type="checkbox"/></p> <p>Low permeability soil in surrounding area <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Surrounding vegetation <input type="checkbox"/></p> <p>Sealed piping on tapstand <input type="checkbox"/></p> <p>Adequate drainage <input type="checkbox"/></p> <p>Runoff water diverted <input type="checkbox"/></p> <p>Tapstand raised/ on mound <input type="checkbox"/></p> <p>HWTS prepared</p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tapstand <input type="checkbox"/></p> <p>Protect/Seal tapstand <input type="checkbox"/></p> <p>Install drainage around tapstand <input type="checkbox"/></p> <p>Dig diversion trench <input type="checkbox"/></p> <p>Raise height tapstand <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |



Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION

| | | | | |
|--|---|---|--|---|
| <p>Storm Damage</p>    | <p>Exposed location <input type="checkbox"/></p> <p>Debris loose/overhanging <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Protection from forest/ other structure <input type="checkbox"/></p> <p>Concrete tapstand and apron <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Build/adapt tapstand <input type="checkbox"/></p> <p>Build protective structure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Landslide/ Subsidence</p>    | <p>Tapstand located at bottom of slope or gully <input type="checkbox"/></p> <p>Unconsolidated soil on surrounding slopes <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Tree roots growing near tapstand foundations <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete tapstand structure <input type="checkbox"/></p> <p>Sealed piping on tapstand <input type="checkbox"/></p> <p>Terraces for soil on gradient <input type="checkbox"/></p> <p>Vegetation on gradient <input type="checkbox"/></p> <p>Gully rehabilitation <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tapstand <input type="checkbox"/></p> <p>Build/adapt tapstand <input type="checkbox"/></p> <p>Build protective structure around tapstand <input type="checkbox"/></p> <p>Manage soil on slopes <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – PIPED DISTRIBUTION


| | | | | |
|--|--|---|--|---|
| <p>Tsunami/ King Tide</p> <p> </p> | <p>Located near shoreline <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete tapstand <input type="checkbox"/></p> <p>Sealed piping on tapstand <input type="checkbox"/></p> <p>Mangrove protection <input type="checkbox"/></p> <p>Coral reef protection <input type="checkbox"/></p> <p>Raised tapstand <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move tapstand <input type="checkbox"/></p> <p>Build/adapt tapstand <input type="checkbox"/></p> <p>Raise tapstand <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Earthquake</p> <p></p> | <p>Located in earthquake area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete tapstand <input type="checkbox"/></p> <p>Suitable Materials (e.g. Ferro cement) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Build/adapt tapstand <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p><i>(Circle below as appropriate)</i></p> <p>   </p> | | | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | |


Checklist for Risk Assessment “Drinking Water Safety Planning” – USER/HOUSEHOLD

User/Household




Negative Impact/s:

Bacterial Contamination 

Chemical Contamination 

Aesthetic (Taste/Colour which prevents consumption) 

Lack of Water Availability 

| Event / Cause | Risk Factor/s | Appropriate Control Measure/s | Risk | Improvement/s |
|---|---|--|---|--|
| <p>Bacteria enters water supply</p> <p>Dirt/Debris enters water supply</p> <p> </p> | <p>Non covered storage <input type="checkbox"/></p> <p>Containers are dirty <input type="checkbox"/></p> <p>Dirty buckets for collection <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Sealed storage containers <input type="checkbox"/></p> <p>HWTS available <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p>(Action Needed Now)</p> <p><i>Medium</i> <input type="checkbox"/></p> <p>(Upgrades Needed)</p> <p><i>Low</i> <input type="checkbox"/></p> <p>(No Action Required)</p> | <p>Obtain sealed storage containers <input type="checkbox"/></p> <p>Clean/disinfect storage Containers & buckets <input type="checkbox"/></p> <p>Begin HWTS <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Low level of supply</p> <p></p> | <p>Variability in water supply <input type="checkbox"/></p> <p>Main water system regularly unavailable <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Adequate storage volume at household <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Increase storage quantity <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – SANITATION

Sanitation

Negative Impact/s:

Direct Human Contact



Human exposure via environment



People DON'T use the toilet





Vector borne contact



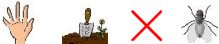
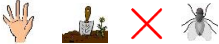
| Event / Cause | Risk Factor/s | Appropriate Control Measure/s | Risk | Improvement/s |
|--|--|--|---|--|
| Human contact with faeces | Broken/dirty riser or pan <input type="checkbox"/> Wooden floor <input type="checkbox"/> Other (Please list) | Concrete/solid floor <input type="checkbox"/> Clean riser and pan <input type="checkbox"/> Handwashing station <input type="checkbox"/> Other (Please list) | High <input type="checkbox"/> (Action Needed Now) Medium <input type="checkbox"/> (Upgrades Needed) Low <input type="checkbox"/> (No Action Required) | Clean/replace riser or pan <input type="checkbox"/> Clean floor <input type="checkbox"/> Replace floor surface <input type="checkbox"/> Install handwashing station <input type="checkbox"/> Other (Please list) |
| Surrounding environment is contaminated by faeces/sludge/waste water | Shallow pits depth <input type="checkbox"/> Broken septic tank <input type="checkbox"/> High groundwater table <input type="checkbox"/> Other (Please list) | Collection pit is adequately lined <input type="checkbox"/> Collection pit has adequate depth <input type="checkbox"/> Collection pit has access cover <input type="checkbox"/> Septic tank has drainage trench/treatment <input type="checkbox"/> Other (Please list) | High <input type="checkbox"/> Medium <input type="checkbox"/> Low <input type="checkbox"/> | Rebuild toilet <input type="checkbox"/> Line new toilet pit <input type="checkbox"/> Install access cover <input type="checkbox"/> Install septic tank drainage <input type="checkbox"/> Other (Please list) |



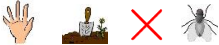
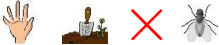
Checklist for Risk Assessment “Drinking Water Safety Planning” – SANITATION

| | | | | |
|---|--|---|---|---|
| <p>People don't use sanitation facilities</p>  | <p>Toilet smells <input type="checkbox"/></p> <p>Toilet is hot <input type="checkbox"/></p> <p>Toilet has lots of flies <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Adequate air ventilation <input type="checkbox"/></p> <p>Superstructure provides privacy and security <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>High <input type="checkbox"/></p> <p>(Action Needed Now)</p> <p>Medium <input type="checkbox"/></p> <p>(Upgrades Needed)</p> <p>Low <input type="checkbox"/></p> <p>(No Action Required)</p> | <p>Install adequate ventilation to cool and minimise flies <input type="checkbox"/></p> <p>Improve superstructure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Flooding (Pits and other waste storage is flooded)</p>  | <p>Located in flood area <input type="checkbox"/></p> <p>Located at bottom of slope/near river bank <input type="checkbox"/></p> <p>Low permeability soil in surrounding area <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Surrounding vegetation <input type="checkbox"/></p> <p>Sealed piping on toilet <input type="checkbox"/></p> <p>Adequate drainage <input type="checkbox"/></p> <p>Runoff water diverted <input type="checkbox"/></p> <p>Toilet raised/ on mound <input type="checkbox"/></p> <p>HWTS prepared</p> <p><i>Other (Please list)</i></p> | <p>High <input type="checkbox"/></p> <p>Medium <input type="checkbox"/></p> <p>Low <input type="checkbox"/></p> | <p>Move toilet <input type="checkbox"/></p> <p>Protect/Seal toilet <input type="checkbox"/></p> <p>Install drainage around toilet <input type="checkbox"/></p> <p>Dig diversion trench <input type="checkbox"/></p> <p>Raise height toilet <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – SANITATION

| | | | | |
|---|---|--|---|---|
| <p>Storm Damage (Toilet no longer functioning)</p>  | <p>Exposed location <input type="checkbox"/></p> <p>Debris loose/overhanging <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Protection from forest/ other structure <input type="checkbox"/></p> <p>Concrete/steel structure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p>(Action Needed Now)</p> <p><i>Medium</i> <input type="checkbox"/></p> <p>(Upgrades Needed)</p> <p><i>Low</i> <input type="checkbox"/></p> <p>(No Action Required)</p> | <p>Move toilet <input type="checkbox"/></p> <p>Build reinforced structure <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Landslide/ Subsidence (Toilet no longer functioning)</p>  | <p>Toilet located at bottom of slope or gully <input type="checkbox"/></p> <p>Unconsolidated soil on surrounding slopes <input type="checkbox"/></p> <p>Deforestation in area <input type="checkbox"/></p> <p>Tree roots growing near toilet foundations <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete structure <input type="checkbox"/></p> <p>Sealed piping on toilet <input type="checkbox"/></p> <p>Terraces for soil on gradient <input type="checkbox"/></p> <p>Vegetation on gradient <input type="checkbox"/></p> <p>Gully rehabilitation <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Move toilet <input type="checkbox"/></p> <p>Build/adapt toilet <input type="checkbox"/></p> <p>Improve protective structure around toilet <input type="checkbox"/></p> <p>Manage soil on slopes <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |

Checklist for Risk Assessment “Drinking Water Safety Planning” – SANITATION

| | | | | |
|---|--|--|---|---|
| <p>Tsunami/ King Tide</p>  | <p>Located near shoreline <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete structure <input type="checkbox"/></p> <p>Sealed piping on toilet <input type="checkbox"/></p> <p>Mangrove protection <input type="checkbox"/></p> <p>Coral reef protection <input type="checkbox"/></p> <p>Raised toilet <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p>(Action Needed Now)</p> <p><i>Medium</i> <input type="checkbox"/></p> <p>(Upgrades Needed)</p> <p><i>Low</i> <input type="checkbox"/></p> <p>(No Action Required)</p> | <p>Move toilet <input type="checkbox"/></p> <p>Build/adapt toilet <input type="checkbox"/></p> <p>Raise toilet <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |
| <p>Earthquake</p>  | <p>Located in earthquake area <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p>Concrete structure <input type="checkbox"/></p> <p>Suitable Materials (e.g. Ferrocement) <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> | <p><i>High</i> <input type="checkbox"/></p> <p><i>Medium</i> <input type="checkbox"/></p> <p><i>Low</i> <input type="checkbox"/></p> | <p>Build/adapt toilet <input type="checkbox"/></p> <p><i>Other (Please list)</i></p> |