Community Drinking Water Safety & Security Plan (DWSSP)

Participant's Guide



Community Details	
Village Name	
Area Council / Island	
Location (co-ordinates)	
No of Households	
Village Population	
Village Contact Person	
Community Facilitators Name	
Technical Facilitators Name	
Organization Facilitating	
Revision No:	Date:

Introduction / Content

The purpose of this report is to:

- Describe the water supply system and sanitation system in use in the community, based on technical assessment of the existing infrastructure,
- Provide an analysis of water availability and safety in the community, based on sanitary surveys and evaluation of water use in the community related to the capacities of existing infrastructure to meet the needs,
- Provide guidance to the community to improve the availability and safety of drinking water in the community.

It contains the following six sections, which correspond to the six steps of the DWSSP process.



- Section 1 DWSSP Team
- Section 2 Description of the Current Water Supply and Waste System
- Section 3 Risk Assessment of the Current Supply
- Section 4 Improvement Plan for the Community
- Section 5 Operation, Monitoring and Maintenance
- Section 6 Committee Actions
- Appendices:

Appendix 1 – Results of Water Quality Testing

Appendix 2 – Results of Sanitary Surveys for drinking water and toilets

Section 1A – D	Section 1A – DWSSP Team						
Name	Gender (M/F)	Current Role in Water Committee / Community	Skills Available / Interest in the Water Supply	Contact Details (Address/Phone/E-mail)			

Section 1B - W	Section 1B - Water Committee							
Name	Gender (M/F)	Water Committee Role	Skills Available / Interest in the Water Supply	Contact Details (Address/Phone/E-mail)				

Section 2A – Description of Current Supply

Description of Existing Water Supply (This should be a written description of the system)

Please describe every water source, storage and distribution system used by the community including photos and a description of the general condition of the system. Use pictures and diagrams where possible. All components of the system should include GPS coordinates.

System Component	Location (Latitude, Longitude, Elevation)	Description	Photo/Diagram	Condition
Spring/Stream source				

Tap stands		

Break Pressure Tanks			

Solar Panels		

Hand pump/Borehole			
Source			

Hand dug well		
	<u> </u>	

Rainwater Harvesting		
Structure		

Desalination Unit			

Section 2A – Description of Current Supply
Community System Map Key (Detail symbols used on the map)
Water Supply
Please draw your map symbols for your water supply here
Waste System
Please draw your map symbols for your waste system here

Section 2B – Description of Current Supply								
Community System Map/Flow Diagram (Image of system)								
Please draw a map/flow diagram of the current water and waste system If map is attached separately, please tick here □								
in map is attached separately, piease tick here.								

Section 2C – Description of Current Supply											
Existing Water Supply (Performance information)											
River/Spring ¹ (refer Appendix: Flow rate)		Rainwater Cap (refer Appendix captur	Rainwater	Groundwater¹ (refer Appendix: Flow rate) □		Desalination ¹ (refer Appendix: Flow rate)		Water Storage □		Water Distribution □	
Measured Flow _{GF} (litres per day)		No of Buildings Collecting	Average Roof Area (m²)	Measured Flow (GW) (litres per day)		Measured Flow (DS) (litres per day)		Total Storage Capacity (litres) (TS)		Number of Distribution Points	
		Rainwater available (litres per year)									
Total storage of River/Spring		Total storage of Rainwater Capture		Total storage of Groundwater		Total storage of Desalination		% full:			
CE (MPN/2		CBT (MPN/100) ml)	CBT (MPN/100 ml)		CBT (MPN/100 ml)		CBT (MPN/100 ml)		CBT (MPN/100 ml)	
N/A											
Uses of the river/spring source system if applicable Drinking □ Food Preparation□ Hand Washing □ Bathing □ Toilets□ Other (Please explain)□											
	<i>Uses</i> Drin	of the rainwater h king □ Food	<i>arvesting sy</i> Preparation	stem if applic □ Hand Wa		athing □ 1	oilets □				
	Othe	er (Please explain)	<u> </u>								

	Uses of the groundwater system if applicable									
	Drinking □ Food	Preparation□ Hand W	ashing \square Bathin	g□ To	oilets □					
	Other (Please explain) I									
	Treatment Methods									
	Filtration ☐ Chlorine ☐ UV Light ☐ None ☐ Other (Please explain)									
	Health Data: Number of cases of diarrhoea for under 5-year olds in the last year:									
	Comments (including any other information from the village health worker on fecal-oral related illness):									
	Existing Waste Sy	stem (Amount of s	anitation)							
	Number of Sanitation and Waste Management Items in the Community									
D	ry Toilets	We	t Toilets		Rubbish Pits					

¹If the system is solar powered multiply the hourly flow rate by 3.5 hrs to estimate the daily volume provided

Alternative Water Supply (Performance information) – if community is short of water
River/Spring (refer Appendix: Flow rate)
Measured Flow _{GF} (litres per day)
CBT (MPN/100 ml)
, , , , , , , , , , , , , , , , , , ,

Alternative Water System – if community is short of water									
System Component Latitude Longitude Elevation									
Spring/Stream source									
Proposed Storage Site									

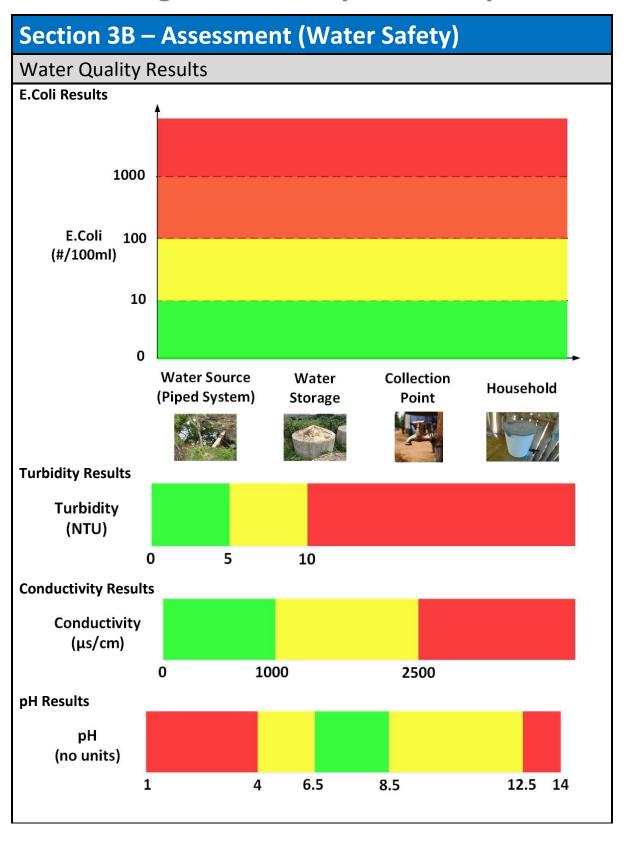
Section 3A –Assessment (Water Access/Availability)										
Water Availability										
Number of People in	Number of beds in	No. of students in	Estimated Daily Water Supply Usage (litres per day)	Estimated Rainwater Usage by Population per year (litres per year)						
Community 3A	health clinic 3B1	boarding school 3B2	[3C = (3A +(3B+3B2)) * 100 litres/day] 3C	[3D = (3A+ 3B) *20 l/day *365] 3D						
Water Quantity - Piped Supply System (GF) or Groundwater Source (GW)										
Water Quantity – Distribution Points Are flow rates more than 6 litres/min at the tap stand/s? Yes □ No □ Do multiple taps work at the same time? Yes □ No □ If NO, look to improve the system design to increase distribution flow (Please tick) □ REMEMBER: Doing this can change pressures and flows in the system. It is important to get some technical assistance when planning to change flows in the distribution system.										
Water Access (Only Upgrade if enough water is supplied by the system)										
Water Access Do more than 5 households share 1 distribution point? Yes □ No □ Are any distribution points more than 200m away (2-3mins walk)? Yes □ No □ If YES to either question, then you need extra distribution points (Please Tick) □ REMEMBER: Doing this can change pressures and flows in the system. It is important to get some technical assistance when planning to increase the distribution system.										

Drought Risk	Drought Risk and Preparedness									
Risk Factors	Yes	No	Mitigation Measures	Yes	No	Risk (delete/cross out item below which is not relevant)	Improvements (delete/cross out item below which is not relevant)			
Significant dry periods >3months Variation in source water level/s Significant leaks in system Other (Please list)			High storage capacity Multiple water sources Water resource management (WRM) undertaken e.g. locking tanks, turning off water over night, turning on water for only a few hours every day Household water treatment and strorage Other (Please list)			High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Increase storage Develop additional source Implement WRM Household water treatment and strorage Other (Please list)			

Flood Risk an	nd Pr	Flood Risk and Preparedness									
Risk Factors	Yes	No	Mitigation Measures	Yes	No	Risk (delete/cross out item below which is not relevant)	Improvements (delete/cross out item below which is not relevant)				
Significant periods of heavy rain causing			High storage capacity			High (Action Needed Now)	Fix/optimise system				
unusable dirty river, spring or well water			Multiple water sources			Medium (Upgrades	Repair broken covers				
Damage to			Good spring or			Needed) Low (No Action	Bury pipelines				
intake, pipes, tanks			well-head protection			Required)	Relocate tanks at risk of landslide				
Other (Please list)			Water resource management (WRM) undertaken				Household water treatment and strorage				
			Household water treatment and strorage				Other (Please list)				
			Other (Please list)								

Volcano							
Risk Factors	Yes	No	Mitigation Measures	Yes	No	Risk (delete/cross out item below which is not relevant)	Improvements (delete/cross out item below which is not relevant)
Ash fall			High storage capacity			High (Action Needed Now)	Cover Water Sources
Acid rain			Multiple water sources			Medium (Upgrades Needed)	Tie Down storage tanks and rainwater collection roofs and gutters
Earthquake			Good spring or well-head protection			Low (No Action Required)	Strengthen road/river pipe crossing
			Tie down storage tanks				Construct housing around valves
			Stabilise slope				Reinforce pipe stands
			above source				Install first flush
			First flush system				Other (Please list)
			Removable spout				
			Isolation valves				
			Other (Please list)				

Cyclone Risk and Preparedness									
Risk Factors	Yes	No	Mitigation Measures	Yes	No	Risk (delete/cross out item below which is not relevant)	Improvements (delete/cross out item below which is not relevant)		
High winds			High storage capacity			High (Action Needed Now)	Cover Water Sources		
Damage to intake, pipes, tanks			Multiple water sources			Medium (Upgrades Needed)	Tie Down storage tanks and rainwater collection roofs and gutters		
Other (Please list)			Good spring or well-head protection			(No Action Required)	Strengthen road/river pipe crossing		
			Water resource management				Construct housing around valves		
			(WRM) undertaken				Reinforce pipe stands		
			Other (Please list)				Other (Please list)		



Section 3B – Assessment (Water Safety) Yes □ No □ Do you use a Surface Water Source? (Please Tick) Water Source - Surface Water Source Risk *Improvements Required* **Contamination Current Control** (delete/cross out item Yes No Hazard Yes (delete/cross out item below below which is not Source Measures which is not relevant) relevant) **Human houses Build Fence** Fencing around source upstream Install screen Intake screen present High Farm animals Install Filter (Action Needed Now) nearby/upstream Gravel or Sand Filter Move Source Crop farming Medium Bacteria Household Treatment nearby/upstream (Upgrades Needed) Move Toilet in Water Toilet within 30m Low Other (Please list) **Household Treatment** (No Action Required) Other (Please list) Other (Please list) Install Filter Use of pesticides Hiah Gravel or Sand Filter **Move Source** in area (Action Needed Now) Other (Please list) Chemical Waste water Medium Stop use of pesticides in s in discharge (Upgrades Needed) area in area Water Low Algae present at Stop farming in area (No Action Required) source Other (Please list)

	Other (Please list)			
Bad Colour	Soil Erosion at source Other (Please list)	Gravel or Sand Filter Storage and settlement tanks Other (Please list)	High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Install Filter Install Storage Other (Please list)
Bad Flow or Pressure	High pressure in taps Significant leaks in pipes Low pressure in taps Other (Please list)	Minimum Head Device Break Pressure Tank Other (Please list)	High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Install Head Device Install Break Pressure Tank Install Storage Supplement with new water source Other (Please list)

Water So	urce – Spring S	ourc	e	Do you us	Do you use a Spring Source? (Please Tick) Yes □ No□				
Hazard	Contamination Source	Yes	No	Current Control Measures	Yes	No	Risk (delete/cross out item below which is not relevant)	Improvements Required (delete/cross out item below which is not relevant)	
Bacteria in Water	Animals can access source Spring box/cover is dirty Silt/soil/dirt near source Surface water can flow Into spring water Toilet within 30m Other (Please list)			Spring box and cover Fencing around source Air vent (Clean) Diversion ditch Household Treatment Other (Please list)			High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Build Fence Build spring box Install/Clean cover, vent Dig diversion ditch Move Toilet Household Treatment Other (Please list)	
Chemicals in Water	Use of pesticides in area Waste water discharge in area			Gravel or Sand Filter Other (Please list)			High (Action Needed Now) Medium (Upgrades Needed)	Install Filter Move Source Stop use of pesticides in area	

	Algae present at source Other (Please list)			Low (No Action Required)	Stop farming in area Other (Please list)
Bad Colour	Silt/soil/dirt near source Other (Please list)	Gravel or Sand Filter Storage and settlement tanks Other (Please list)		High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Install Filter Install Storage Other (Please list)

Water So	urce – Rainwate	oture	2	Do you use a Rainwater Capture? (Please Tick) Yes ☐ No ☐					
Hazard	Contamination Source	Yes	No	Current Control N	Леasures	Yes	No	Risk (delete/cross out item below which is not relevant)	Improvements Required (delete/cross out item below which is not relevant)
Bacteria in Water	Roof is dirty Gutters are dirty Open access to tank Tank is cracked Tap is leaking Water collection area is dirty / standing water Pollution (e.g. trees, Excreta etc) near system Collection bucket dirty Other (Please list)			Tank cover in place Tank inlet has mesh/sic First flush filter Household Treatment Other (Please list)	eve			High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	N° Clean roof/gutters Install covers on tank Install inlet mesh/sieve Install first flush filter Repair cracks Repair/replace tap Add drainage/clean collection area Remove pollution Household Treatment Other (Please list)

(No Action Required)

Water So	Water Source – Groundwater					dwate	Yes□ No □	
Hazard	Contamination Source	Yes	No	Current Control Measures	Yes	No	Risk (delete/cross out item below which is not relevant)	Improvements Required (delete/cross out item below which is not relevant)
Bacteria in Water	Toilet within 10m of well Toilets above well height Other pollution within 10m of well e.g. rubbish Standing water within 2m of well Broken drainage channel Surface water can enter From broken wall Cracks in concrete wall Collection bucket dirty			Fence around well Well is sealed to 3m depth Drainage channel installed Household Treatment Other (Please list)			High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Move toilets Build fence around well Repair/Install concrete Line well to 3m depth Repair well wall Clean well area Remove pollution Household Treatment Other (Please list)

	Other (Please list)				
Chemicals in Water	Salty water Use of pesticides in area Waste water discharge in area Other (Please list)	Water treatment system Other (Please list)		High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Install Treatment Move Source No farming in area No use of pesticides in area Other (Please list)

Water Sto	Water Storage – Storage Reservoir						Do you use Water Storage? (Please Tick) Yes □ No □			
Hazard	Contamination Source	Yes	No	Current Control Mo	easures	Yes	No	Risk (delete/cross out item below which is not relevant)	Improvements Required (delete/cross out item below which is not relevant)	
Bacteria in Water	Open access to tank Vents/screens are dirty Tank is cracked Pipes are leaking			Tank cover in place Tank inlet has mesh/sieve Tank has air vent Household Treatment Other (Please list)				High (Action Needed Now) Medium (Upgrades Needed) Low	Install covers on tank Install inlet mesh/sieve Install air vent Repair cracks	

	Other (Please list)		(No Action Required)	Repair/replace pipes Clean tank Household Treatment Other (Please list)
Chemicals in Water	Pipes are corroded Other (Please list)	Treatment Filter Other (Please list)	High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Replace corroded pipe Install Filter Other (Please list)
Bad Flow or Pressure	High pressure in pipes Low pressure in pipes Significant leaks in pipes Other (Please list)	Overflow pipe (clean) Float valve Other (Please list)	High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Install overflow pipe Install float valve Other (Please list)

Water Dis	Water Distribution – Stand Pipes						Do you use Stand Pipes? (Please Tick) Yes □ No □				
Hazard	Contamination Source	Yes	No	Current Control Mo	easures \	Yes	No	Risk (delete/cross out items below which is not relevant)	Improvements Required (delete/cross out items below which is not relevant)		
Bacteria in Water	Leaks in surrounding pipes nimals access to area Standing water in collection area Rubbish/pollution near tap stand Tap stand is cracked Taps are leaking Other (Please list)			ence around stand pipe Drainage area/channel Household Treatment Other (Please list)				High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	N° Build fence/s Install drainage Repair/replace pipe/s Repair/replace pipe stand/s Repair/replace tap/s Clean collection area/s Household Treatment Other (Please list)		

Chemicals in Water	Pipes are corroded Other (Please list)		Plastic piping Other (Please list)		High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	N° Replace corroded pipe/s Other (Please list)
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Water Co	Water Consumers – Households				Was this assessed during the visit ? (Please Tick) Yes □ No □				
Hazard	Contamination Source	Yes	No	Current Contro Measures	ol	Yes	No	Risk (delete/cross out items below which is not relevant)	Improvements Required (delete/cross out items below which is not relevant)
Bacteria in Water	Non covered storage Containers are dirty Household Rainwater Dirty buckets for collection Other (Please list)			HH Chlorine tablets UV treatment oil water Sealed storage conta Filter water Other (Please list)	iners			High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Obtain sealed storage containers Clean/disinfect storage Containers & buckets Begin boiling water Household treatment Other (Please list)
Chemicals in Water	House pipes/storage is corroded Other (Please list)			Treatment to remove chemicals Other (Please list)	2			High (Action Needed Now) Medium (Upgrades Needed) Low (No Action Required)	Replace corroded pipe Install Treatment Other (Please list)

Section 3C – Assessment (Sanitation System) Toilet Sanitary Survey Result (See Appendix No. 2) How many toilets need replacing? How many toilets need upgrading? Replace/Install New Toilets Are replacing or installing new toilets? (Please tick) Yes No □ Toilet Options (Please indicate the type and amount of toilets required taking into consideration the amount of water available and the accessibility for maintenance of septic systems) **VIP Toilet** Pour Flush Toilet **Button Flush Toilet** Number Required **Number Required** Number Required Has soil permeability test Has soil permeability test been performed? been performed? Yes \square No □ Yes \square No \square **Upgrade Existing Toilets** Do existing toilets require upgrading? (Please tick) Yes □ No □ What toilet type/s do you want to upgrade? (Please tick all relevant ones) VIP Toilet □ Pour Flush Toilet ☐ Button Flush Toilet ☐ VIP Toilet – Number requiring upgrade: Number requiring repairs to structure Number requiring a vent with fly wire Number requiring upgrade of slab / riser Number that would require lining of pit Pour Flush Toilet - Number requiring upgrade..... Number requiring repairs to structure Number requiring vents Number with drainpipes requiring a vent Number with drainpipes requiring inspection access Number requiring a new septic tank Number requiring a drainage trench Button Flush Toilet – Number requiring upgrade..... Number requiring repairs to structure Number requiring vents Number with drainpipes requiring a vent Number with drainpipes requiring inspection access Number requiring a new septic tank Number requiring a drainage trench

Section 4 – Improvement Plan Water Security – Availability and Access Responsibility (specify people Improvement Required Materials Costing Timeframe responsible)

Water Source – Surface Water Source						
Improvement Required	Materials	Costing	Responsibility	Timeframe		

Water Source – Spring Source				
Improvement Required	Materials	Costing	Responsibility	Timeframe

Water Source – Rainwater captu	ater Source – Rainwater capture (Community RWCs)					
Improvement Required	Materials	Costing	Responsibility	Timeframe		

/ater Source – Rainwater capture (private RWCs)					
Materials	Costing	Responsibility	Timeframe		

ater Source – Groundwater (open-dug well/borehole)						
Materials	Costing	Responsibility	Timeframe			

Water Source – Desalination						
Improvement Required	Materials	Costing	Responsibility	Timeframe		

Water storage – Storage reservo	ir			
Improvement Required	Materials	Costing	Responsibility	Timeframe

Vater Distribution – Standpipes				
Improvement Required	Materials	Costing	Responsibility	Timeframe

ater Consumers – Households					
Improvement Required	Materials	Costing	Responsibility	Timeframe	

Sanitation				
Improvement Required	Materials*	Costing*	Responsibility	Timeframe

^{*} Standard material list and costs are available by contact a representative from the Environmental Health team, Ministry of Health.

Section 5 -	- Operatio	n, Monito	oring and	l Mainter	nance
Operation Sch	nedule (e.g. l	ock some ta	anks at star	t of dry seas	son)
System Component (Tick if present)	Activity?	How Often?	Who?	Tools needed?	Allowance of person responsible?
5A Primary Water Source □					
Туре					
5B Secondary Water Source □					
Туре					
5C Water Storage □					
Туре					
5D Water Treatment □					
Туре					
5E Water Distribution □					
5F Primary Toilet Type □					
5G Secondary Toilet Type □					

Section 5 – Operation, Monitoring and Maintenance Monitoring Schedule (e.g. include measuring flow rate every month) Allowance of System Tools How Activity? Who? Component person Often? needed? (Tick if present) responsible? **5A** Primary Water Source □ Type..... **5B** Secondary Water Source □ Type..... **5C** Water Storage □ Type..... **5D** Water Treatment Type..... **5E** Water Distribution \square Type..... **5F** Primary Toilet Type Type..... **5G** Secondary Toilet Type □ Type.....

Section 5 – Operation, Monitoring and Maintenance Maintenance Schedule - Actions when something is broken. Allowance System Tools Activity? How Often? Component Who? of person needed? responsible? (Tick if present) **5A** Primary Water Source □ Type..... **5B** Secondary Water Source □ Type..... **5C** Water Storage □ Type..... **5D** Water Treatment Type..... **5E** Water Distribution \square Type..... **5F** Primary Toilet Type Type..... **5G** Secondary Toilet Type □ Type.....

DWSSP Team	Actions	
ning – What do yo	ou need to teach t	he community?
How Often?	Who?	What is needed?
	ning – What do yo	DWSSP Team Actions Ining – What do you need to teach to the second seco

Section 6B – Water Committee Actions Community Training – What do you need to teach the community? How Often? Who? What is needed? Activity Community Training – What external training does the community need **Community Development Training** Plumbers training Other training

Emergency – Wh	nat will you do in a	an emergency?	
Activity	How Often?	Who?	What is needed?

Appendix 1

Water Quality Results

System Part	Position and Time	Temp (°C)	рН	TDS (mg/L)	Conductivity (μs/cm)	Turbidity (NTU)	Salinity (ppt)	Res Chlorine [if used] (mg/L)	E.Coli (#/100ml)	Total Coli (#/100ml)

Appendix 2A

Water Supply Survey Results

Survey Questions	Type of Supply		System Component Number										Total Number			
Questions		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
12																
13																
14																
15																
16																
17																
18																
1	otal Score															

Appendix 2B

Sanitary Survey Results – Toilets

Survey Questions	Type of Toilet	System Component Number										Total Number										
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	
1																						
2																						
3																						
4																						
5																						
6																						
7																						
8																						
9																						
10																						
11																						
12																						
13																						
14																						
15																						
16																						
17																						
18																						
Total Score																						

Training Evaluation Form for *participants* in DWSSP Training

Date:		
Title and location of training: _	 	
Trainer:	 	

Instructions: Please indicate your level of agreement with the statements listed below:

Qu	estion	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1.	The objectives of the training were clearly defined.					
2.	Participation and interaction were encouraged.					
3.	The topics covered were relevant to me.					
4.	The content was organized and easy to follow.					
5.	The materials distributed were helpful.					
6.	This training will be useful experience in my work.					
7.	The trainer was knowledgeable about the training topics.					
8.	The trainer was well prepared.					
9.	The training objectives were met.					

Question	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
10. The time allotted for the training was sufficient.					
11. The meeting room and facilities were adequate and comfortable.					

	10. The time allotted for the training was sufficient.					
	11. The meeting room and facilities were adequate and comfortable.					
-	12. What did you like most about t	his training?				
	13. What aspects of this training co	ould be impro	ved?			
-	14. Would you like to have refresh	er DWSSP tra	inings in the f	future?		
-	15. Please share other comments a	and or expand	d on previous	responses he	ere	
_	THANK YOU FOR YOUR FEEDBACK					