Government of the People's Republic of Bangladesh

Department of Public Health Engineering (DPHE)

Union Wise Water Technology Mapping [Dhaka Circle]

DPHE PUBLICATION # 01
November 2008

Government of the People's Republic of Bangladesh
Department of Public Health Engineering (DPHE)

Union Wise Water Technology Mapping
[Dhaka Circle]

Union wise Water Technology Mapping
GOB - UNICEF Project Areas (Dhaka Circle)

Published by:
Project Director
Sanitation, Hygiene and Water Supply Project (GOB - UNICEF)
DPHE, Dhaka

DPHE Publication # 1
R & D Publication # 1

November 2008

ISBN: 984-300-002672-1

Layout & Design: DPHE R & D Division, Dhaka

Reproduced by: SW Multimedia Ltd.

Printed by: GOB-UNICEF Project

FOREWORD

Sanitation, Hygiene and Water Supply Project (GOB-UNICEF) has been approved with a broader objective of reducing mortality by providing safe water, sanitation facilities to the communities and improving their hygiene behavior. Water supply is an important aspect of the project which should be free from bacteriological and chemical contamination. Rural water supply in Bangladesh is primarily dependent on low cost tubewell technology using ground water. The tubewell water received priority for being safe particularly from bacteriological contamination point of view. But identification of arsenic in ground water particularly in shallow aquifer appeared as a threat on the ground water based water supply system. This project also emphasizes on arsenic issue as well as safe water option for the community.

Water source of Bangladesh is complex in nature considering water chemistry and geology. As for example, spreading pattern of arsenic is not uniform. In one upazila, some unions are severally arsenic contaminated and some are not. However, arsenic contamination also varies with depth of aquifer for a particular place. Apart from arsenic, ground water source has been facing the problem of excessive iron, salinity and water table depletion. On the other hand, protected but perennial surface water source is not available in many parts of the country. So, one technology may not be suitable for the larger areas because of different hydro-geological situation. In that case the water technology is required to be identified on priority basis up to specific boundary, such as union boundary.

Under these circumstances, GOB - UNICEF Project decided in its 18th PMU (Project Management Unit) meeting held on 5th February 2008, to have good documentation of the valuable outcomes/contribution of DPHE on different issues concerning the WSS sector as DPHE publication, so that, these get preserved for future use and reference.

Based on the PMU decision initiatives have been taken to prepare union wise technology mapping to support the community for preparing their Community Action Plan (CAP) and selecting the suitable water option for that area. Under these initiatives DPHE Ground Water Circle prepared union wise technology mapping based on the available hydro-geological data, National Policy for Arsenic Mitigation 2004 and Implementation Plan of Arsenic Mitigation in Bangladesh and consultation with concerned DPHE field offices.

This document contains the basic concept along with advantages and limitations of different water options. It also gives an outline of different steps to be followed to select the options.

This is just a beginning, there might be some information gaps for selecting the suitable option. Moreover, people's acceptability is an important issue to be taken into consideration during implementation.

I would like to express my gratitude to UNICEF for providing necessary support in preparing this document. I also gratefully acknowledge the contribution of Mr. S M Ihtishamul Huq, SE, Groundwater Circle, Mr. Sudhir Kumar Ghosh, EE, R & D Division and Mr. Shahidul Islam, Jr. Hydro geologist, R & D Division for preparing this documentation. I would also like to thank DPHE field-level officers for their valuable contribution in the experience sharing workshop.

We hope, in course of time, this document will be updated and upgraded with more information and field experiences and this initiative will be instrumental in preparing union wise technology mapping for the whole country.

(Amanullah-al- mahmood)
Project Director, DPHE
Sanitation, Hygiene and Water Supply Project
(GOB-UNICEF)

CONTENTS

1.0 Background:

Sanitation, Hygiene and Water Supply Project (GOB-UNICEF) has been approved having broader perspective of reducing mortality through providing safe water, sanitation facilities and improved hygiene behavior. Water supply is an important aspect of the project and supplied water should be free from bacteriological and chemical contamination as well.

Rural water supply in Bangladesh is predominantly based on ground water. But identification of arsenic in ground water particularly in shallow aquifer causes threat on ground water based water supply system. The project emphasizes on arsenic issue for providing safe water to the community. Arsenic has been identified in 271 upazilas of which 29% tubwell are found arsenic contaminated in terms of Bangladesh standard (50ppb). Spreading pattern of arsenic is sporadic, not uniform. In one upazila, some unions are severally arsenic contaminated and some are not like that. However, arsenic contamination also varies with depth of aquifer for a particular place.

The ground water of Bangladesh is extremely complex in terms of water chemistry and geology as well. On the other hand, protected but perennial surface water source is not available in many parts of the country. So, one technology may not be suitable for the larger areas because of different hydro-geological situation. In that case the water technology is required to be identified on priority basis up to specific boundary, such as union level.

According to project approach, water points will be installed through the process of community action plan (CAP). During preparation of CAP, the community should be provided with the understandable ideas about the water option so that they can rightly choose the option by themselves. In this regard Project Director, Sanitation, Hygiene and Water supply project vide his memo no 650 dated 19 February 2007 requested DPHE Ground Water Circle to provide assistance in preparation of union wise technological map for the GOB - UNICEF project areas.

In this context, initiatives have been taken by DPHE Ground Water Circle in consultation with SHEWAB project and WES section of UNICEF to prepare the technological map for the project areas.

2.0 Objective of Task:

- Identification of the union wise water supply technology based on hydro-geological situation of the particular areas.
- Preparation of the GIS mapping on union wise water options.
- Provide information to the water user group for preparation of CAP

3.0 Project Area:

The project areas of the GOB-UNICEF project have been classified as follows:

- 1st Batch: 635 union of 60 upazilas
- 2nd Batch: 439 union of 44 upazilas
- 3rd Batch: 600 paras of 16 upazilas

Detail list is shown in annex- A. Technology Mapping for the project upazilas has been planned to be done batch wise.

4.0 Adopted Procedure :

1. Union wise basic data regarding lowest water table, arsenic contamination, iron and salinity problem available in Ground Water Circle has been furnished in a table (Union wise technology 1993 as reference).

2. Based on basic information, a desk review has been made to primarily identify union-wise technology analyzing the hydro-geological situation of that particular area. In most cases particularly in the arsenic affected unions, two or more options were identified on priority basis. The forecasting of groundwater level in year of 2010 is considered as maximum water level in the area.

3. The primarily identified union wise technology list was provided to the DPHE SEs, EEs and SAEs to facilitate their participation in the workshop

4. DPHE Circle wise workshops were held with the participation of concerned Superintending Engineer, Executive Engineer, Assistant Engineer and Sub-Assistant Engineer. Representatives from Ground Water Circle, GOB-UNICEF project, personnel from WES section of UNICEF were present to facilitate the workshop.

5 The workshops discussed the experience and views of the field officer focusing on technology table prepared by DPHE Ground Water Circle and along with the policy guidelines particularly "National Policy for Arsenic Mitigation 2004 and Implementation Plan for Arsenic Mitigation in Bangladesh".

6. Incorporating the findings of Workshop, the technology table has been send to concerned SEs, EEs and SAEs.

7. Based on the feedback from the field, technology table has been finalized, on basis of that GIS map for union-wise technology has been prepared.

5.0 Issue of the Water Source:

The problems of water source have been discussed which are as follows:

i. Lowering of water table
ii. Arsenic contamination in ground water particularly in shallow aquifer
iii. Salinity in ground water
iv. Iron & Manganese in ground water
v. Non availability of suitable aquifer or rocky/hard layer
vi. Non-availability of protected and perennial surface water source round the year

6.0 Arsenic Mitigation Option:

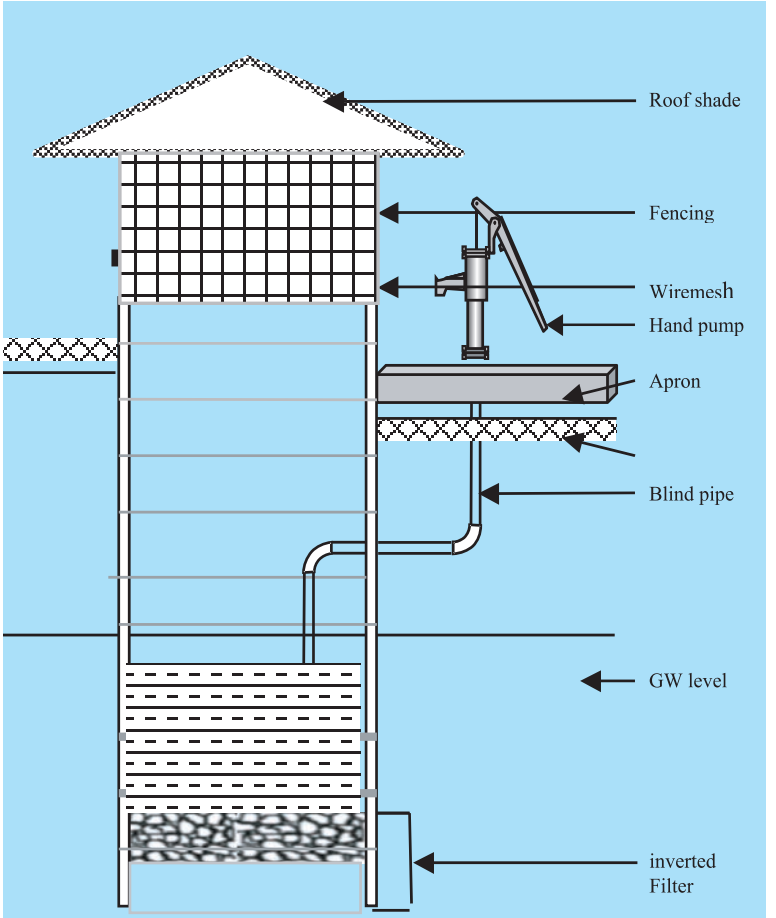
The project has given importance on arsenic mitigation approach as arsenic contamination emerges as a great concern for ground water based rural water supply system in Bangladesh. Different Arsenic mitigation options has been discussed following "National Policy for Arsenic Mitigation 2004 & Implementation Plan for Arsenic Mitigation in Bangladesh". The mitigations options are:

- Dug/Ring Well
- Pond Sand Filter
- Deep Tubewell
- Rain Water Harvesting as promotional option and
- Arsenic Removal Technology (ART)

6.1 Criteria for Arsenic Mitigation Option:

Regarding identification of the Arsenic Mitigation Option, the criteria including the potentialities and limitation of each option were discussed in contrast with hydro-geological situation for the particular area considering the guidelines mentioned in the "National Policy for Arsenic Mitigation 2004 & Implementation Plan for Arsenic Mitigation in Bangladesh". According to the said policy guidelines PSF and dug well will be tried first. If these technologies are found not feasible deep tubewell could be tried following the "Protocol for Sinking Deep Tubewells in Arsenic Contaminated Areas".

It was also advised that not only the technical aspect but O&M and user friendliness should be taken under consideration for selecting the options to make it sustainable. The main feature and basic criteria for each of the option are presented as follows:



Dug Well with Sanitary Protection

6.1.1 Dug Well:

Dug well is the oldest method of groundwater withdrawal for water supplies. The water of the dug well has been found to be free from dissolved arsenic and iron even in locations where tubewells particularly in shallow aquifer are contaminated.

Pre-requisite criteria

- There should be stable soil layer at the top (a clay layer is preferable)
- Presence of sandy layer within 9 to 12 m

Not Feasible

- Areas with the loose sandy soil
- Areas with more than 15m consolidated clay.
- Tidal zones of the costal belt
- Areas of stony hills
- Area of peaty soil should be avoided for DW as these cause an unpleasant taste and smell.

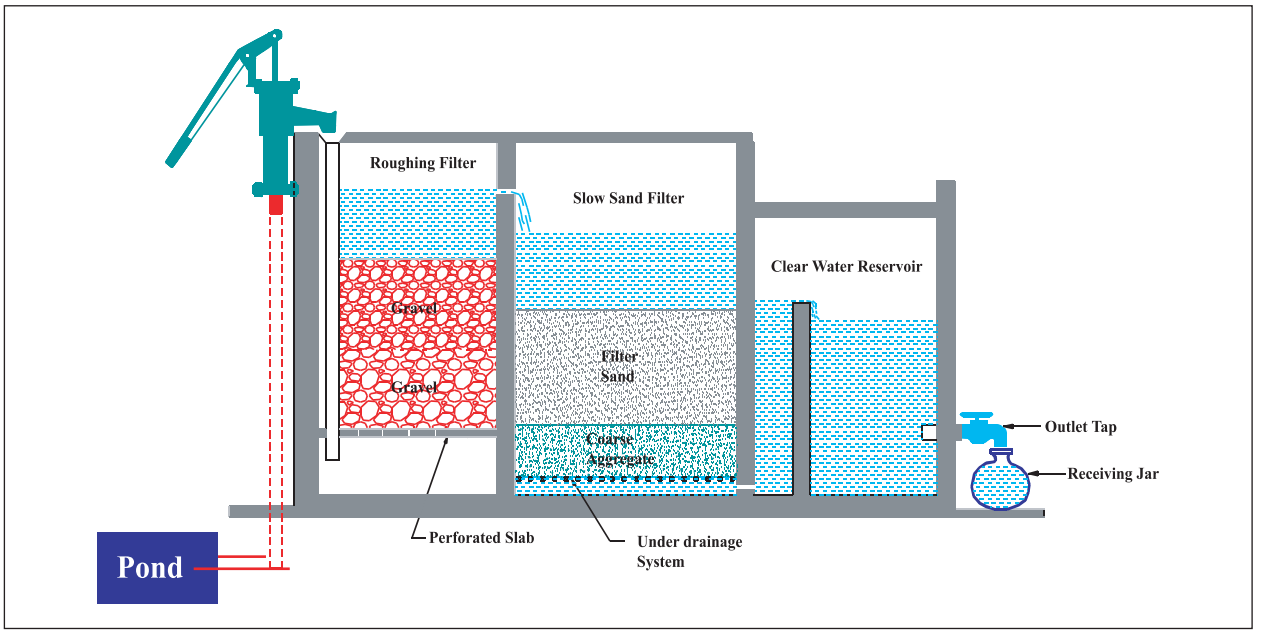
Design Requirements:

- Concrete rings of 1.0 to 1.2 m in diameter used as lining.
- Wells should be at least 1.0 to 1.5 m deeper than the lowest water table in the driest month.
- Dug well should be constructed in the dry season to ensure availability of water round the year.
- Test well is to be drilled prior to construction of ring well to make sure about the soil condition and water quality.
- The well lining should be extended at least 0.5m above the ground to form a 'head wall' around the outer rim of the well.
- A concrete apron, about 2 m in width, should be constructed on the ground surface extending all around the outer rim of the well.
- The intake of water from a dug well can alternatively be made using float.

Very Shrouded Shallow Tubewell (VSST) can be considered as option in the DW area at the same depth. The availability of water in saturated zone should be ensured in this case. The main feature of this technology is the shrouded with coarse sand around the filter area. This is a low cost technology. This technology is also used in the saline problem areas.

6.1.2 Pond Sand Filter:

Pond sand filter is a surface water treatment option which is primarily a slow sand filter unit. If the turbidity of water is high then, there is necessity to use horizontal roughing filter.



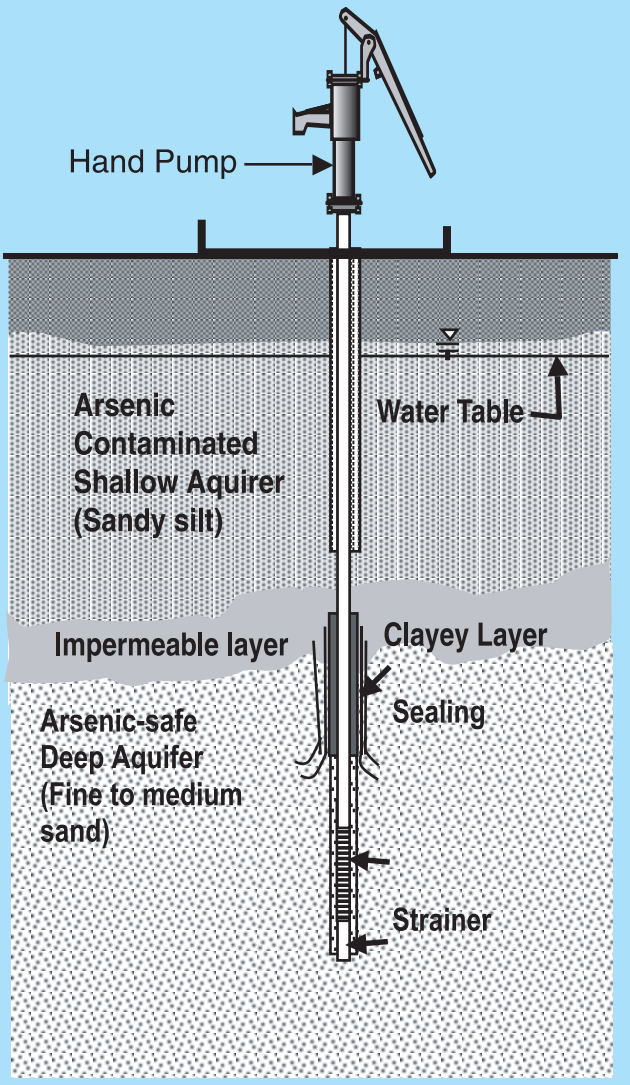
Raw water from pond is pumped up from a pond; the turbidity gets down through the roughing filter and then discharged into the filtration unit. The water is filtered and then collected in a clear water reservoir by an under drainage system. PSF is a good option for arsenic mitigation as well as for salinity prone areas

Design Criteria

- The horizontal roughing filter is divided into 3 parts: inlet tank, gravel zone and outlet tank. The gravel zone consists of 3 chambers loaded by different size of gravel (5-15 mm).

- The Sand Filter bed should be composed of 0.22 mm – 0.35 mm fine sand with a thickness of 60 to 120 cm. There is also a layer of coarse aggregate below the fine sand to support the sand against washing out through under drainage system. The uniformity coefficient should be from 2 to 3. The size of the gravel zone is 5-15 mm

- The filtration rate through SF is 0.2 – 0.3 m/hr and through roughing filters 1.5-2.0 m/hr.



Manually Operated Deep tubewell

6.1.3 Improved Deep Tubewell

The deep aquifers in Bangladesh have been found to be relatively free from arsenic contamination. The aquifers in Bangladesh are stratified and in some places the aquifers are separated by relatively impermeable strata. Deep tubewells installed in those protected deeper aquifers are producing arsenic safe water. Sealing in the impervious layer is done to prevent the leaching of arsenic through path way created during drilling of the well.

Pre-requisite criteria

- It can be installed where shallow aquifer is separated from deeper aquifer by substantially thick impervious layer.
- It can be installed in the coastal areas of Bangladesh having safe aquifer.

Design Requirements:

- The entire tube well should be installed straight and vertically deep bore hole is required therefore.
- The annular space of bore holes of the deep tube wells are required to be sealed at the level of impermeable strata.
- The entire tube well should be installed straight and vertical.

6.1.4. Rain Water Harvesting:

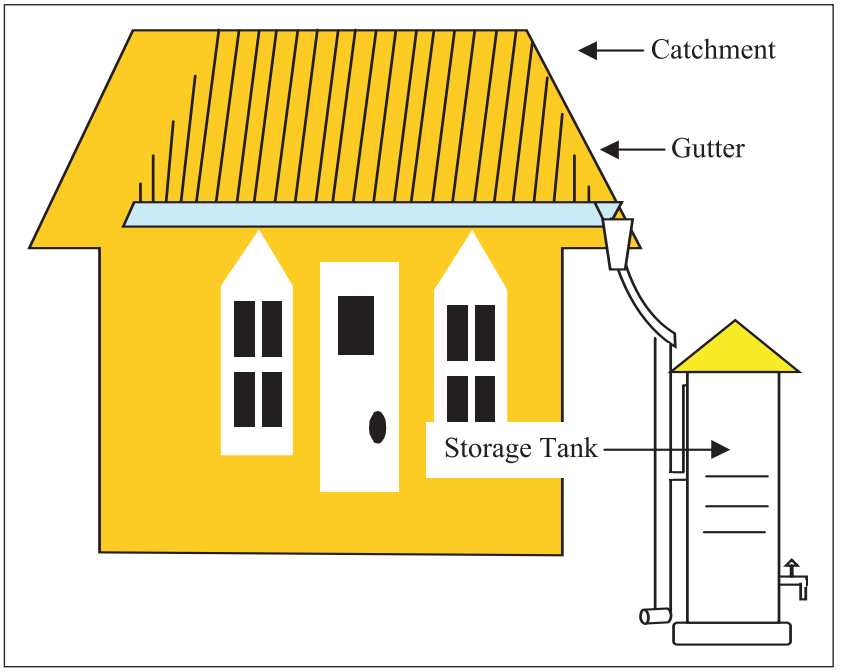
Rainwater harvesting is a technology to collect rainwater for its use in drinking purposes. About 203 cm rainfall occurs annually in Bangladesh. The rain water is safe if it maintained hygienically. The main limitation of this option is non-availability of rain water round the year. But it can be widely used as supplementary source. As per "National Policy for Arsenic Mitigation 2004 & Implementation Plan for Arsenic Mitigation in Bangladesh" the government's role is mainly to conduct promotional activities for RWH.

Pre-requisite criteria

- Feasible where average rainfall is 1600 mm per annum.
- There should have required catchment area for rain water harvesting

Design Criteria

- Rain water has 3 basic units. 1. The catchment area (like corrugated roof top) and 2. Supporting collection system (gutter and pipe collection pipe) and 3. Storage tank.
- Catchment zone can be a corrugated tin-shed, sloped flat roof top, polythene sheet etc.



- The tank can be a made of GI, ferro-cement, burned clay (motka), plastic etc.
- The collection pipe should have an exit way beyond the connection with storage tank to let the first flush flow away.
- The down pipe should have net to bar mosquitoes, flies from entering into the storage tank.
- There should be an end plug to stop flush discharge to enter water into the storage tank after flushing.
- The location should be so selected that it allows accessibility of people.

6.1.5 Arsenic Removal Technology (ART):

ARTs are the chemical options which remove arsenic mainly using media. Four options are provisionally certified by BCSIR of which three are house hold and one is community based. These can be selected as a last essorts particularly where deep tubewell and Dug well is not feasible. Filter media have to be changed after the media being clogged. The quality of raw water is specified for each technology.

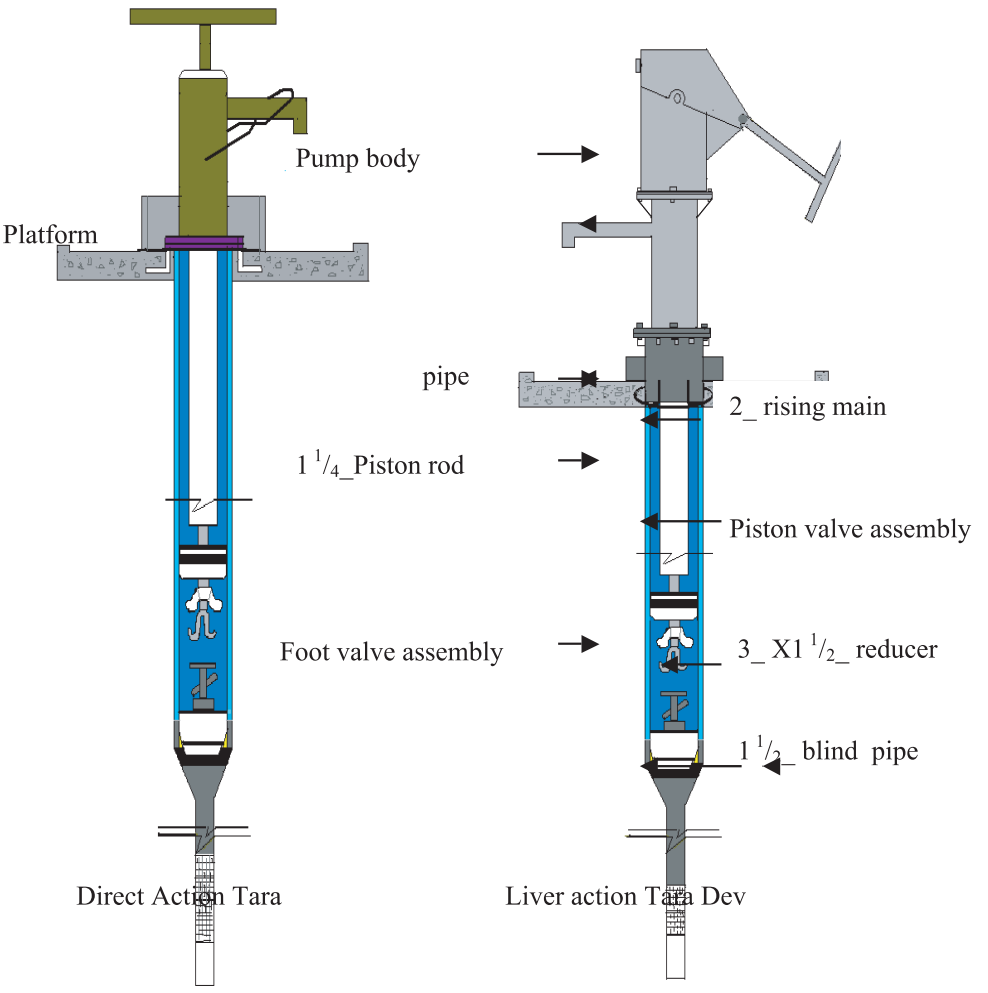
The main features of the ARTs are given below:

Name of ARts	Filter rate	Total Treatment
Sono (House hold)	16 lit/hr	8100 liter
Alkan (House hold)	120 lit/hr	8100 liter
Read-F (House hold)	60 lit/hr	40,000 liter
SIDKO (Community)	240 liter/hr	1,21,500 liter

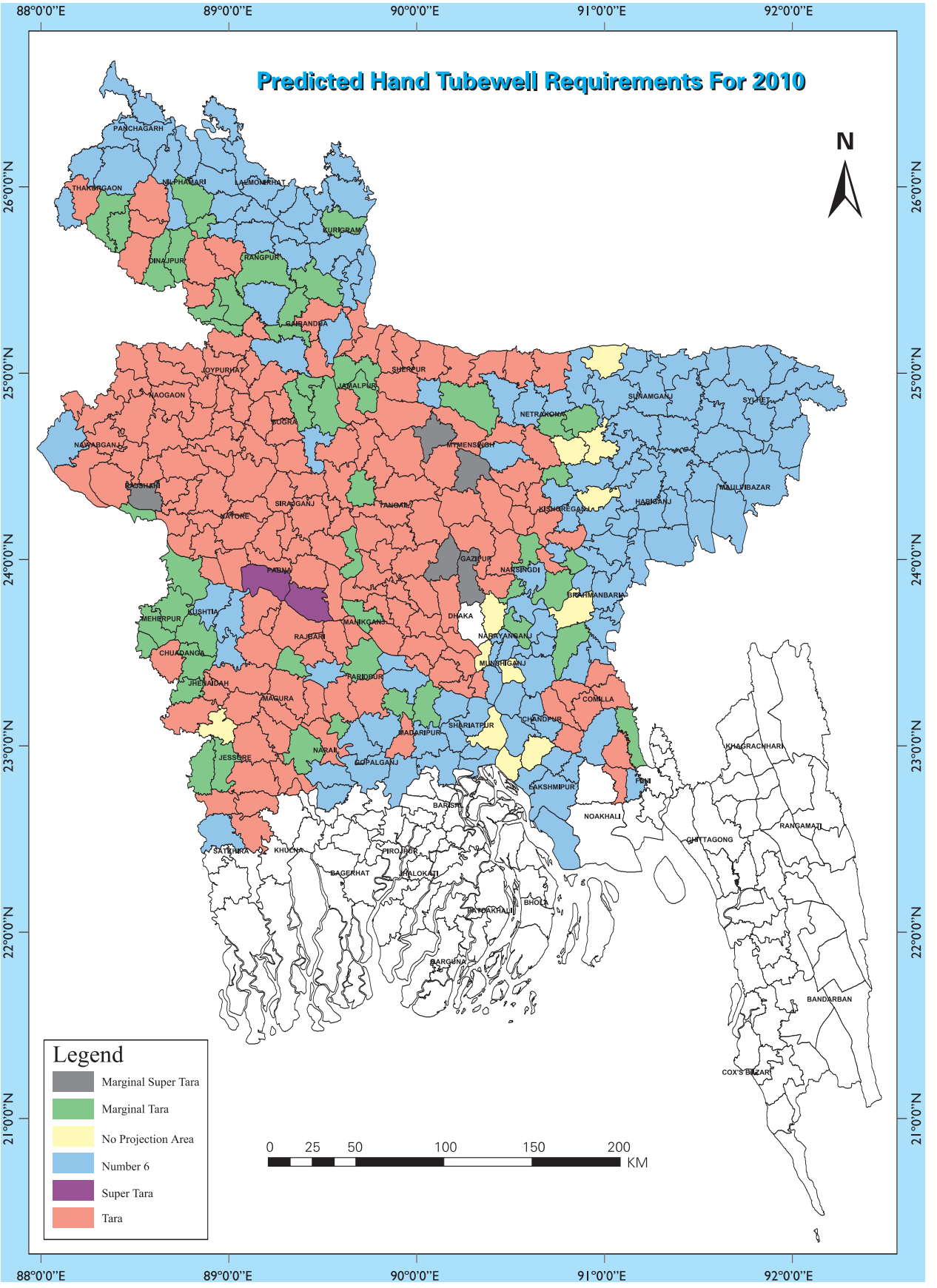



7.0 Low Water Table Technology:

Lowering of water table is big issue for the tubewell based rural water supply. In view of low cost, easy to O&M and availability in the market, suction mode number 6 pump is widely used as the tubewell technology. But its limitation is that it can not abstract water beyond the 26 ft depth of water table. In that case force mode pump has to be used. Earlier direct action pump was used. In some cases where the depth of water table is marginal, in that case Tara tube well may be given preference. Now Tara-dev head pump (lever action) is being used which can abstract water upto 80-90 ft depth of water table. The component of direct action & Tara dev pumps are shown as below:



In selecting the areas of low water table in the project upazilas, the study on forecasting groundwater level declination in Bangladesh conducted in early 1990 has been used and the delineated low water table map for 2010 is considered as the reference of maximum depth to water level. The pump technology is then selected for the union.

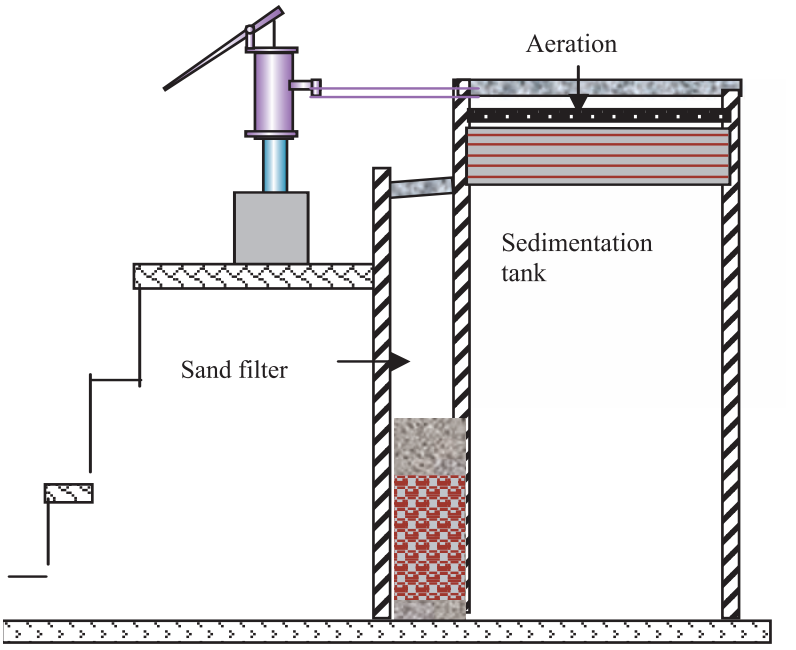

Predicted Hand Tubewell Requirements For 2010
N
88°0'0"E
89°0'0"E
90°0'0"E
91°0'0"E
92°0'0"E
26°0'0"N
25°0'0"N
24°0'0"N
23°0'0"N
22°0'0"N
21°0'0"N
PANCHAGARH
THAKURGAON
NILPHAMARI
LALMONIRHAT
KURIGRAM
DINAJPUR
RANGPUR
GAIBANDHA
JOYPURHAT
SHERPUR
JAMALPUR
NAOGAON
SUNAMGANJ
SYLHET
NETRAKONA
BOGRA
NAWABGANJ
MYMENSINGH
RAJSHAHI
MAULVIBAZAR
SIRAJGANJ
TANGAIL
HABIGANJ
KISHOREGANJ
NATORE
GAZIPUR
NARSINGDI
PABNA
BRAHMANBARIA
KUSHTIA
MEHERPUR
DHAKA
MANIKGANJ
NARAYANGANJ
RAJBARI
CHUADANGA
MUNSHIGANJ
FARIDPUR
JHENAIDAH
MAGURA
COMILLA
CHANDPUR
SHARIATPUR
MADARIPUR
KHAGRACHHARI
NARAIL
JESSORE
GOPALGANJ
LAKSHMIPUR
FENI
BARISAL
NOAKHALI
RANGAMATI
CHITTAGONG
SATKHIRA
KHULNA
PIROJPUR
BAGERHAT
JHALOKATI
BHOLA
PATUAKHALI
BARGUNA
BANDARBAN
COX'S BAZAR
Legend
Marginal Super Tara
Marginal Tara
No Projection Area
Number 6
Super Tara
Tara
0
25
50
100
150
200
KM

8.0 Salinity Problem:

Salinity problem is now not limited in the coastal belt rather salinity intrusion is now expanded in the various part of the country. Deep tubewell and PSF are the best feasible option in this area. It is to be mentioned that RWH is a suitable option as average rainfall is high in the coastal belt. The VSST is also an option in the coastal belt.

9.0 Iron Removal Technology:

Iron content exceeding 5mg/l will require treatment using Iron Removal Unit (IRU). It is to be mentioned that concentration of Iron varies with different aquifer. Iron in ground water may be present in different forms and its removal can be effected by simple methods such as aeration with or without sedimentation followed by filtration. iron from the water, thus making it acceptable for the users. Dissolved iron in water is converted in to insoluble ferric form in contact with air. This form will be removed by settling in the sedimentation tank and remaining by the filtration through sand filter. The sedimentation tank is required to reduce the load on sand filter in order to minimize the frequency of filter clogging.



10.0 Union Wise Technologies:

A set of technologies has been recommended for each union on priority basis based on the available hydro-geological information, the views of field personnel & policy guidelines. However, these technologies have to be implemented systematically ensuring the participation of communities. According to the project guidelines the water options will be selected following the community action plan ensuring the active participation of community. So proper knowledge about the option shall have to be provided to the community so that the option can meet the basic criteria of the water supply such as safe, adequate and reliable round the year. It is to be mentioned that if a technology is new for the particular area, utmost care should be taken for its implementation and replication. The experience regarding implementation of the technologies in the field will be helpful for upgrading the technological mapping and for proper application of the technologies.

11.0 Use of Union Wise Technology Mapping Document:

It has been proved from different studied that hand pump system of water options particularly Shallow and Deep hand pump tube wells are very much popular among the community. But the arsenic contamination in groundwater compelled the implementer of water supply to switch over to different alternative water supply options in the arsenic affected areas. The technology in a union has been recommended considering the Arsenic Policy 2004 and its Implementation Plan along with other particular information of the locality. In implementing water supply options the following steps should be followed:

a. In all cases arsenic and other required water quality parameters need to be tested before the system is bought to operation.

b. In the villages/unions where there is presence of arsenic but the average contamination level is less than 5%, the existing technology is recommended STW. In that case, before going for installation of STW, testing of arsenic of 5 to 10 tube wells within 500 meters of the site need to be tested. If any tubewell shows arsenic >0.01 mg/L, follow the alternative option.

c. Dug well and PSF should be investigated as the feasible option of alternative of STW. If sufficient documentation is available about its failure in the locality then Deep tubewell with modified design(following protocol) should be adopted.

d. In case of non-successful of non chemical based option (STW, DW, PSF and DTW) chemical based option for Arsenic Removal Unit should be used as the technology.

e. In all cases in problem areas promotional activities on RWH should be done.

Annex - A

Project Area of
Sanitation, Hygiene and Water Supply (GOB-UNICEF) Project

Implementation period: January/2006-December/2010

Sl. No	District/ Pourashava	Upazila (Nos. of union)	Total no. of UPs
First batch (January/2006-December/2008			
1	Narsingdi	Sadar, Raipura, Belaboo (14, 24, 8,)	46
2	Sherpur	Nalitabari, Sribordi, Nokla (12,10, 9)	31
3	Mymensingh	Dhabaura, Fulpur, Ishargonj, Nandail, Fulbaria, Muktagacha (7, 20,11,12,13,10)	73
4	Shariatpur	Gosairhat, Sadar, Dammudda (7,11,7)	25
5	Comilla	Lakhsam, Daudkandi, Chandina, Debidar, Homna, Muradnagar (22,15,13,12,9,22)	93
6	Brahmanbaria*	Nabinagar, Bancharampur, Akhaura, Ashugonj (20,13,5,7)	45
7	Nawabgonj	Sadar, Gomostapur, Shibgonj (14,8,15)	37
8	Pabna	Sadar, Bera, Sathia, Sujanagar, Chatmohar(10,9,10,8,11)	48
9	Panchagar	Sadar, Debigonj, Tatulia (10, 10, 7)	27
10	Rangpur*	Sadar, Badargonj, Taragonj, Gangachara (10,10,5,10)	35
11	Gaibandha*	Sadar, Palashbari, Gobindagonj, (13,9,17)	39
12	Sirajgonj*	Kazipur, Kamarkhand, Tarash, Raigonj, Chowhali (10,4,8,9,4)	35
13	Narail	Kalia, Lohagor (13,12)	25
14	Meherpur	Sadar, Gangni (5, 9)	14
15	Moulavibazar	Kamalgonj, Baralekha, Rajnagar (9,12,8)	29
16	Sunamgonj	Bishwambarpur, Dowarabazar, Dharmopasha, Tahirpur, Shalla(5,7,10,7,4)	33
			60 upazilas 635 unions
Second batch (January/2008-December/2010)			
17	Netrokana	Madan, Khaliajuri, Kendua, Mohangonj,Kalmakanda(8,5,13,7,8)	41
18	Kishorgonj	Itna, Mithamoni,Ashtagram, Nikli, Karimgonk, Hosenpur (10,7,8,7,10,6)	48
19	Faridpur	Sadar, Modhukhali, Nagarkanda, Sadarpur (11,9,17,9)	46
20	Rajbari	Sadar, Pangsha (14, 17)	31
21	Gopalgonj	Sadar, Muksudpur, Kasiani(21,17,14)	52
22	Chandpur	Sadar, Kachua, Hajigonj, Motlab(north) (14,12,11,13)	50
23	Kurigram	Charrajibpur, Roumari, Chilmari, Ulipur, Bhurungamari (3,5,6,13,10)	37
24	Joypurhat	Sadar, Kalai, Khetlal (9,5,5)	19
25	Thakurgaon	Ranishangkoil, Pirgonj, Haripur(8,10,6)	24
26	Magura	Shalikha, Mohammadpur (7, 8)	15
27	Kushtia	Sadar, Daulatpur, Mirpur (14,11, 12)	37
28	Habigonj	Nabigonj, Baniachong, Azmirigonj, Lakhai (13,15,5,6)	39
			44 upazilas 439 unions
Both 1st & 2nd batches (300 para centers in each batch)			
29	Rangamati*	Longadu, Barkal, Belaichari, Naniarchar, Kaptai, Jurachari, Betbunia	200 paras
30	Bandarban*	Sadar, Alikadam, Thanchi, Ruma	do
31	Khagrachari*	Mohalchari, Dighinala, Ramghar, Manikchari, Panchari	do
		Total upazilas =120	1074 unions & 600 para centers

N. B.* Development phase project districts:

District:

Narsingdi

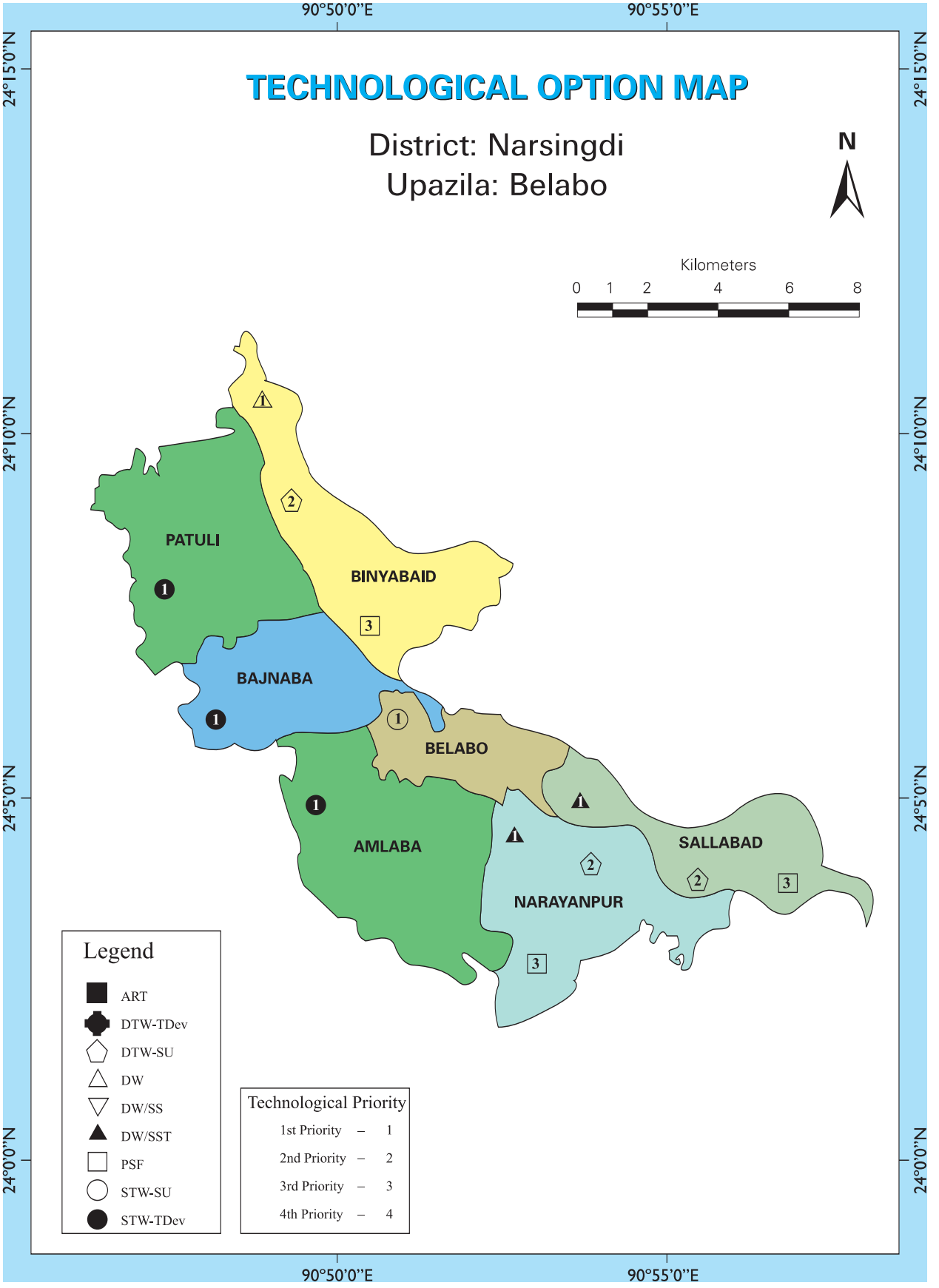
Upazila:

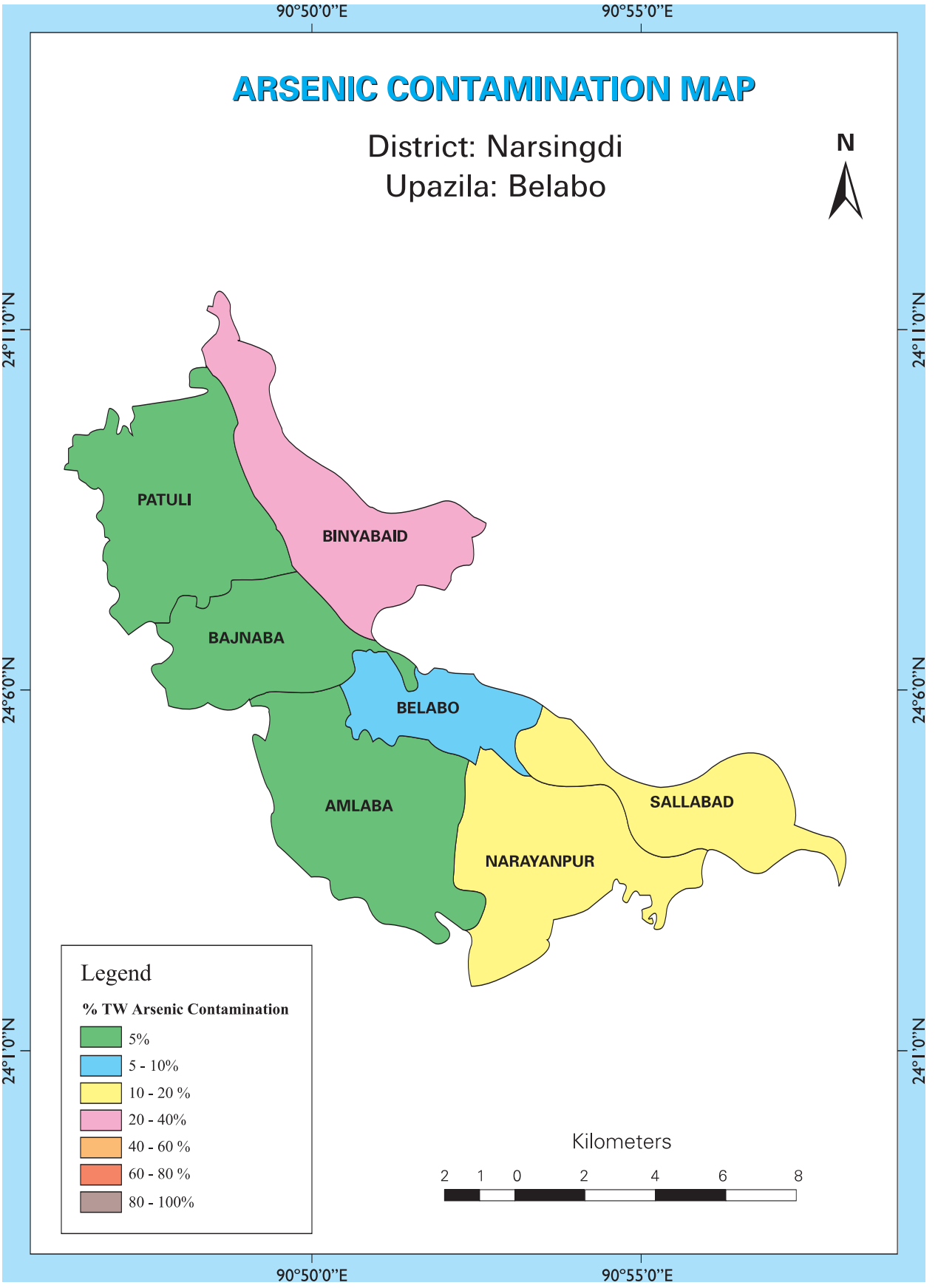
Belabo
Sadar
Roypur

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Narsingdi	Belabo	Amlabo	29	28	4.35	No	No	No	No	ST-T1	70	800	STW-TDev	-	-	-	
Narsingdi	Belabo	Baznabo	25	23	1.02	No	No	No	No	ST-T1	130	800	STW-TDev	-	-	-	
Narsingdi	Belabo	Belabo	21	21	7.83	No	No	No	No	ST-SU	70	850	STW-SU	-	-	-	
Narsingdi	Belabo	Binyabaid	23	20	30.36	No	No	No	No	ST-SU	130	850	DW	DTW-SU	PSF		Protected pond is not available
Narsingdi	Belabo	Char Ujilab	22	18	10.92	No	No	No	No	ST-SU	135	850	STW-SU	-	-		
Narsingdi	Belabo	Narayanpur	21	17	17.18	No	No	No	No	ST-SU	90	850	DW/VSST	DTW-SU	PSF	-	Protected pond is not available
Narsingdi	Belabo	Patuli	30	26	0.22	No	No	No	No	ST-T1	130	850	STW-Tdev	-	-	-	
Narsingdi	Belabo	Sallabad	20	18	19.81	No	No	No	No	ST-SU	70	850	DW/VSST	DTW-SU	PSF	-	Protected pond is not available

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Narsingdi
Upazila: Belabo
N
Kilometers
0 1 2 4 6 8
90°50'0"E
90°55'0"E
24°15'0"N
24°10'0"N
24°5'0"N
24°0'0"N
PATULI
BINYABAID
BAJNABA
BELABO
AMLABA
NARAYANPUR
SALLABAD
Legend
ART
DTW-TDev
DTW-SU
DW
DW/SS
DW/SST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4


ARSENIC CONTAMINATION MAP
District: Narsingdi
Upazila: Belabo
N
90°50'0"E
90°55'0"E
24°11'0"N
24°6'0"N
24°1'0"N
PATULI
BINYABAID
BAJNABA
BELABO
AMLABA
SALLABAD
NARAYANPUR
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8

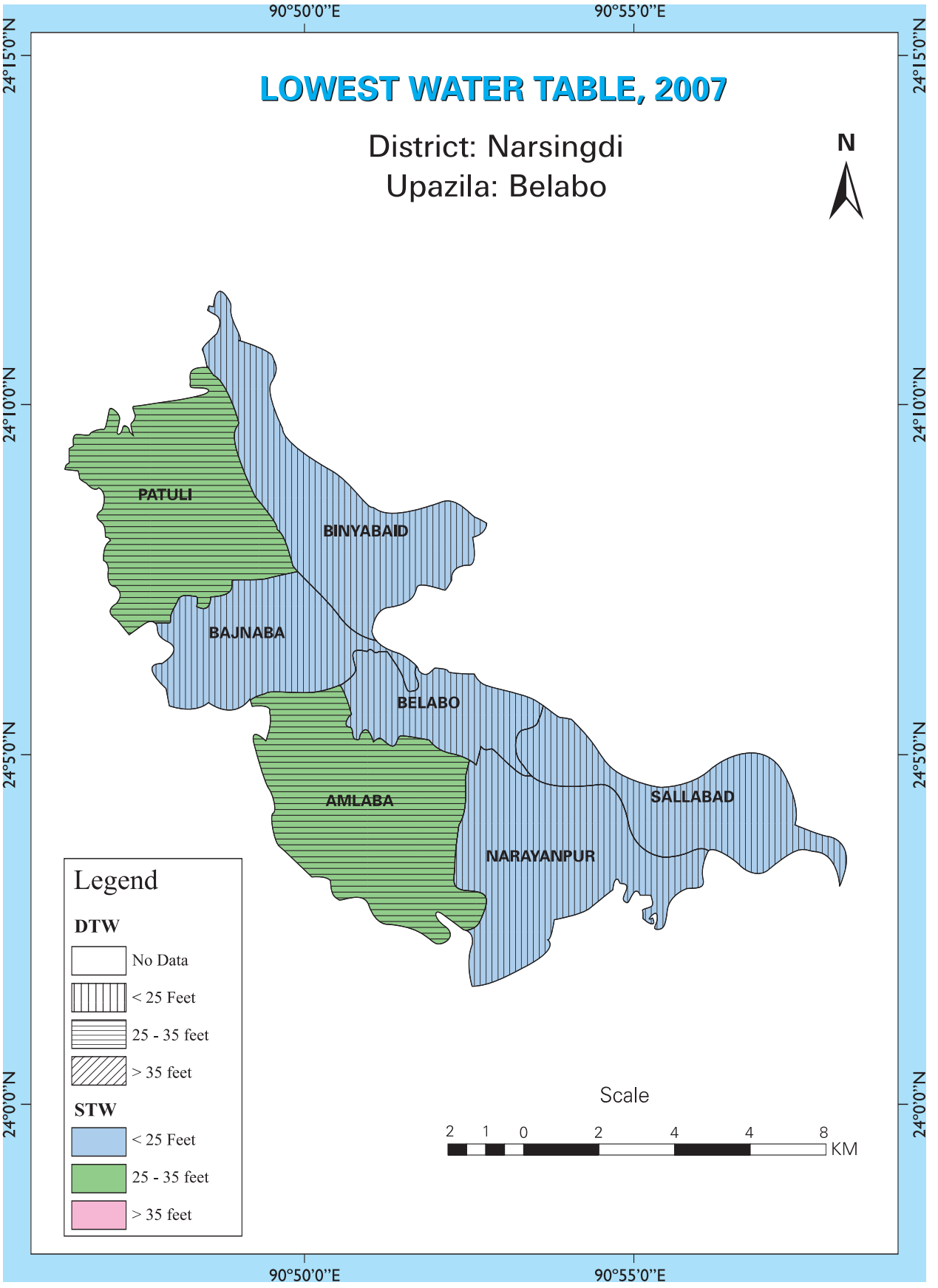
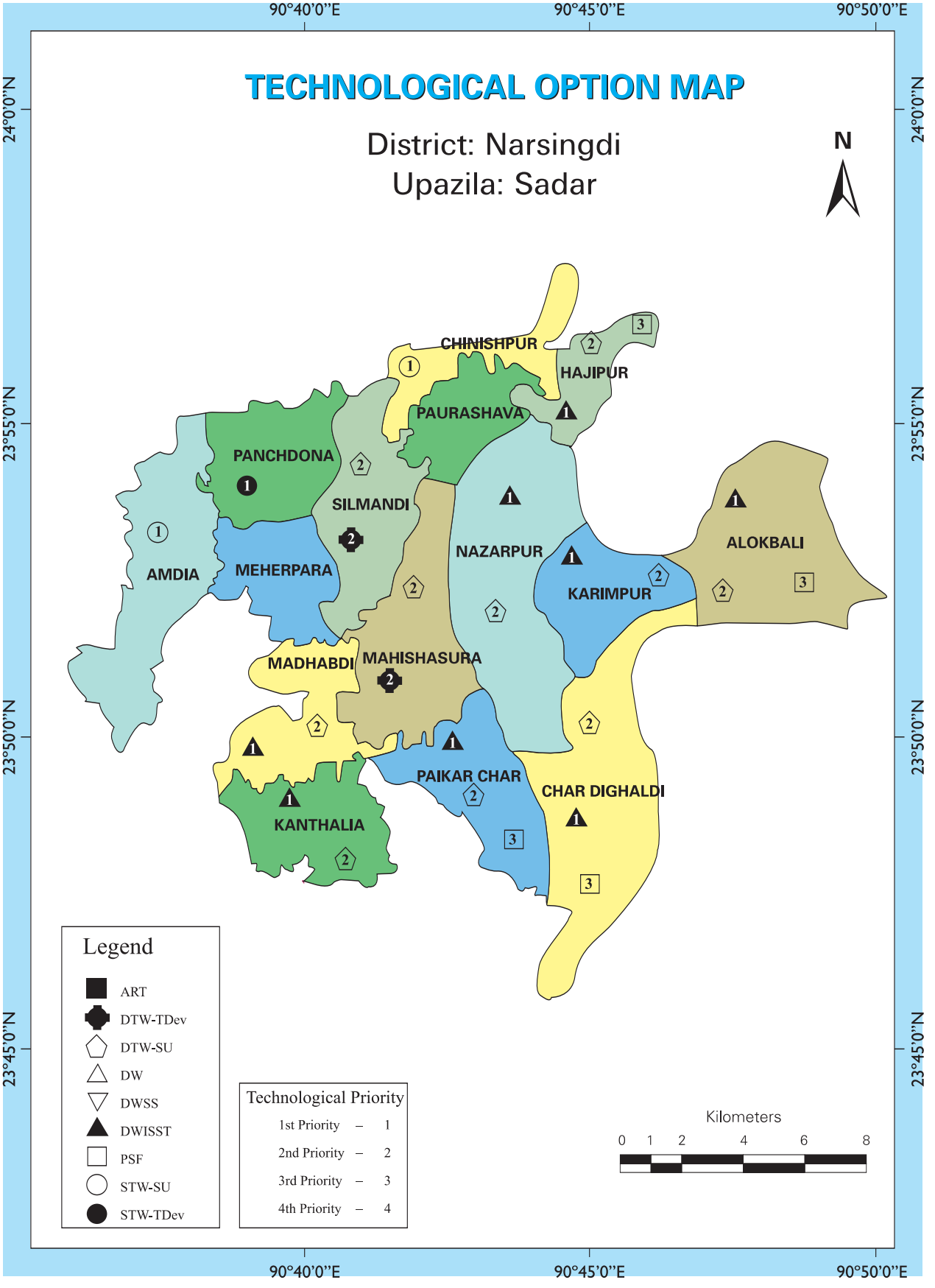
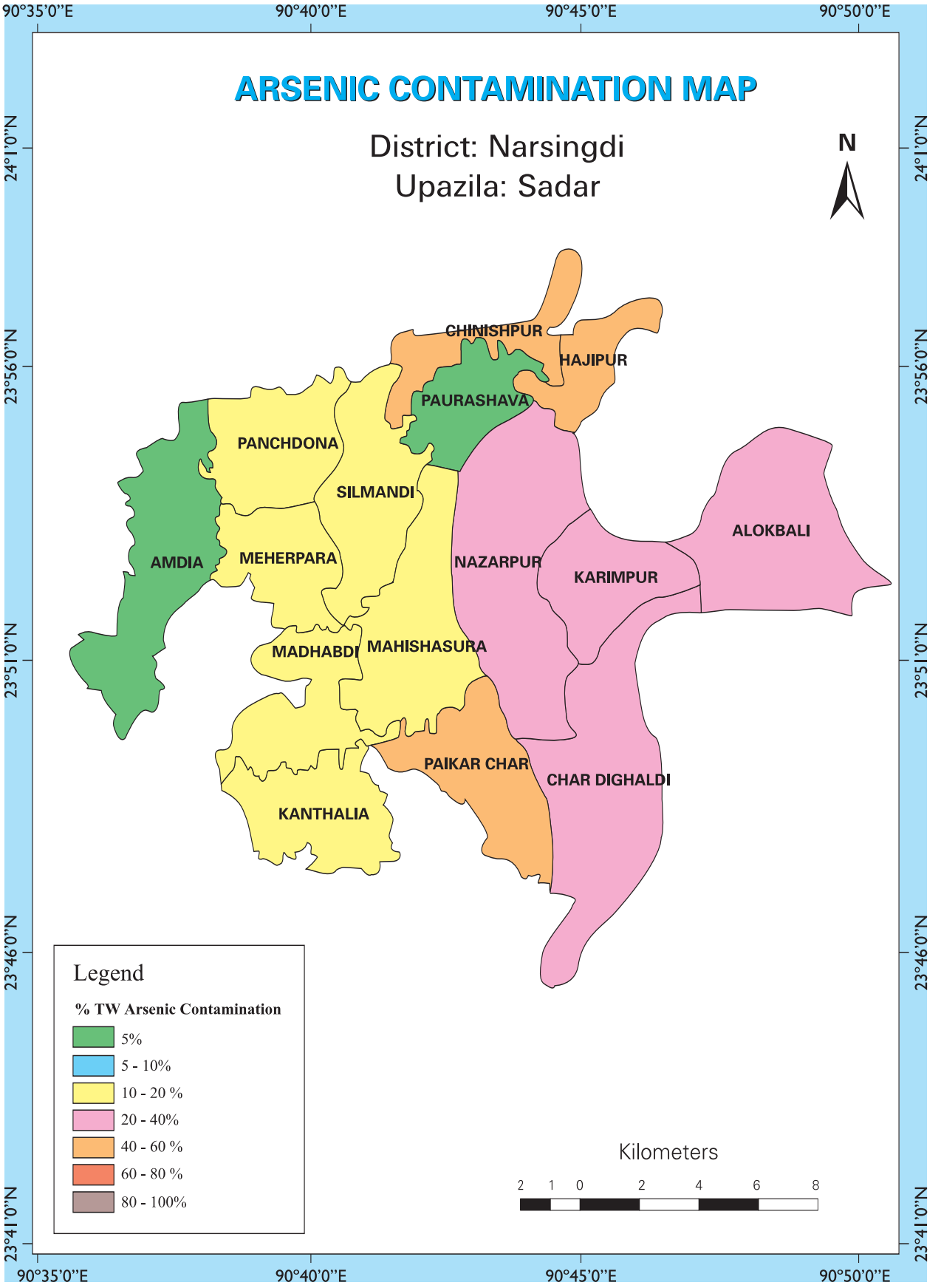

LOWEST WATER TABLE, 2007
District: Narsingdi
Upazila: Belabo
N
90°50'0"E
90°55'0"E
24°15'0"N
24°10'0"N
24°5'0"N
24°0'0"N
PATULI
BINYABAID
BAJNABA
BELABO
AMLABA
SALLABAD
NARAYANPUR
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 4 8
KM

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Narsingdi	Narsingdi sadar	Alokbali	20	20	39.69	No	No	No	No	ST-SU	80	780	DW/VSST	DTW-SU	PSF	-	Mostly protected pond is not available
Narsingdi	Narsingdi sadar	Amdia	22	21	0.55	No	No	No	No	ST-SU	90	850	STW-SU	-	-	-	
Narsingdi	Narsingdi sadar	Char Digholdi	21	20	34.57	No	No	No	No	ST-SU	90	750	DW/VSST	DTW-SU	PSF	-	Protected pond is not available
Narsingdi	Narsingdi sadar	Chinispur	24	25	8.7	No	No	No	No	ST-SU	90	800	STW-SU	-	-	-	
Narsingdi	Narsingdi sadar	Hazipur	18	18	40.98	No	No	No	No	ST-SU	90	820	DW/VSST	DTW-SU	PSF	-	Protected pond is not available
Narsingdi	Narsingdi sadar	Karimpur	17	16	37.56	No	No	No	No	ST-SU	90	780	DW/VSST	DTW-SU	PSF	-	
Narsingdi	Narsingdi sadar	Kathalia	18	18	16.45	No	No	No	No	ST-SU	80	750	DW/VSST	DTW-SU	PSF	-	
Narsingdi	Narsingdi sadar	Madabdi	19	20	13.26	No	No	No	No	ST-SU	100	800	DW/VSST	DTW-SU	PSF	-	
Narsingdi	Narsingdi sadar	Mahisasura	27	26	10.14	No	No	No	No	ST-SU	145	800	DW-Tdev	DTW-SU	PSF	-	
Narsingdi	Narsingdi sadar	Meherpara	27	27	12.87	No	No	No	No	ST-SU	160	850	DW-Tdev	DTW-Tdev	PSF	-	
Narsingdi	Narsingdi sadar	Nazrpur	17	18	31.33	No	No	No	No	ST-SU	95	780	DW/VSST	DTW-SU	PSF	-	
Narsingdi	Narsingdi sadar	Paikarchar	18	18	49.98	No	No	No	No	ST-SU	100	820	DW/VSST	DTW-SU	PSF	-	
Narsingdi	Narsingdi sadar	Panchdona	25	25	4.54	No	No	No	No	ST-SU	110	820	STW-Tdev	-	-	-	
Narsingdi	Narsingdi sadar	Shilmondi	24	25	18.84	No	No	No	No	ST-SU	140	850	DW-Tdev	DTW-SU	-	-	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Narsingdi
Upazila: Sadar
N
90°40'0"E
90°45'0"E
90°50'0"E
24°0'0"N
23°55'0"N
23°50'0"N
23°45'0"N
CHINISHPUR
HAJIPUR
PAURASHAVA
PANCHDONA
SILMANDI
AMDIA
MEHERPARA
NAZARPUR
ALOKBALI
KARIMPUR
MADHABDI
MAHISHASURA
PAIKAR CHAR
CHAR DIGHALDI
KANTHALIA
Legend
ART
DTW-TDev
DTW-SU
DW
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4
Kilometers
0 1 2 4 6 8


ARSENIC CONTAMINATION MAP
District: Narsingdi
Upazila: Sadar
N
90°35'0"E
90°40'0"E
90°45'0"E
90°50'0"E
24°1'0"N
23°56'0"N
23°51'0"N
23°46'0"N
23°41'0"N
CHINISHPUR
HAJIPUR
PAURASHAVA
PANCHDONA
SILMANDI
AMDIA
MEHERPARA
NAZARPUR
KARIMPUR
ALOKBALI
MADHABDI
MAHISHASURA
PAIKAR CHAR
CHAR DIGHALDI
KANTHALIA
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8

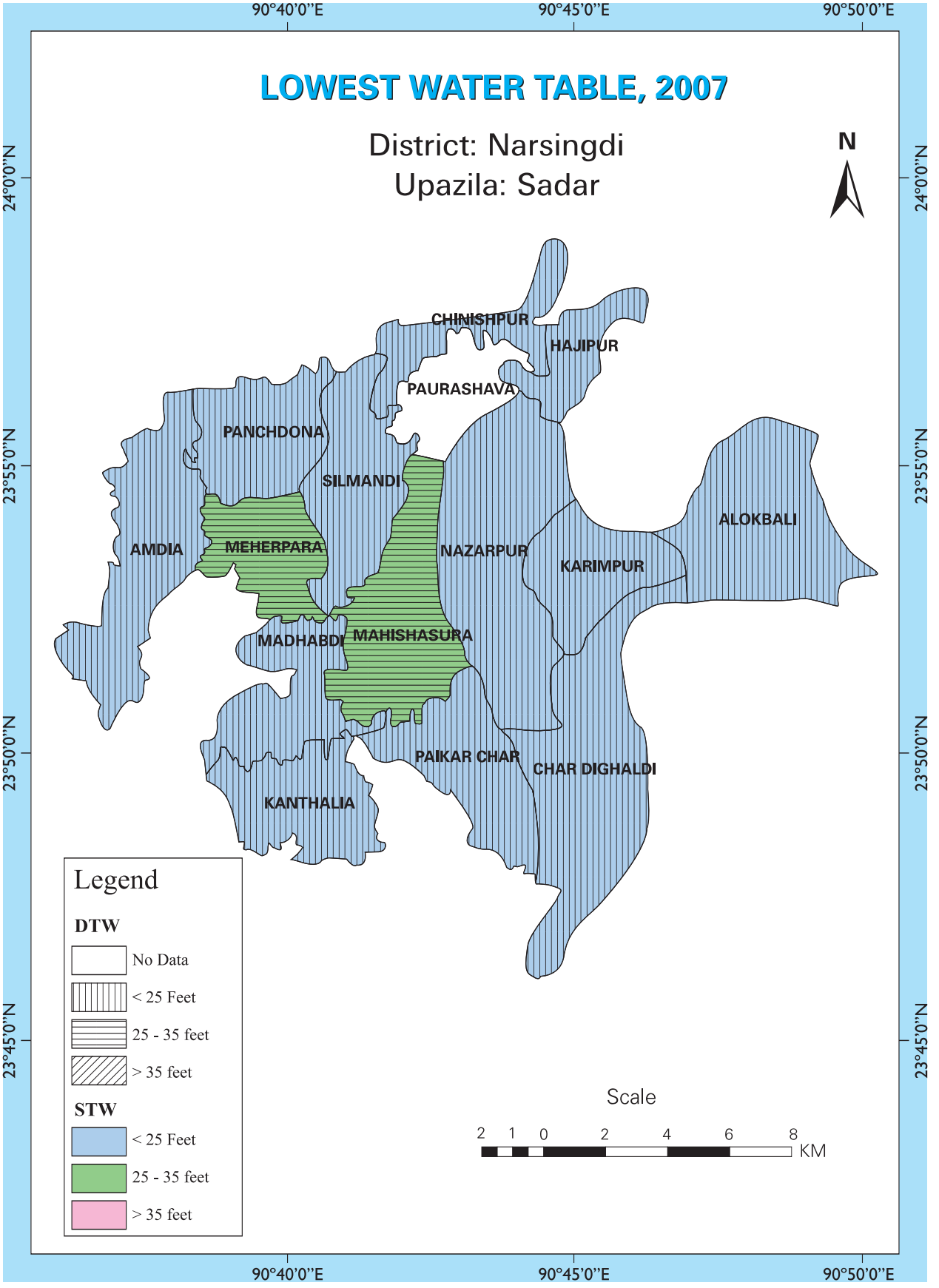
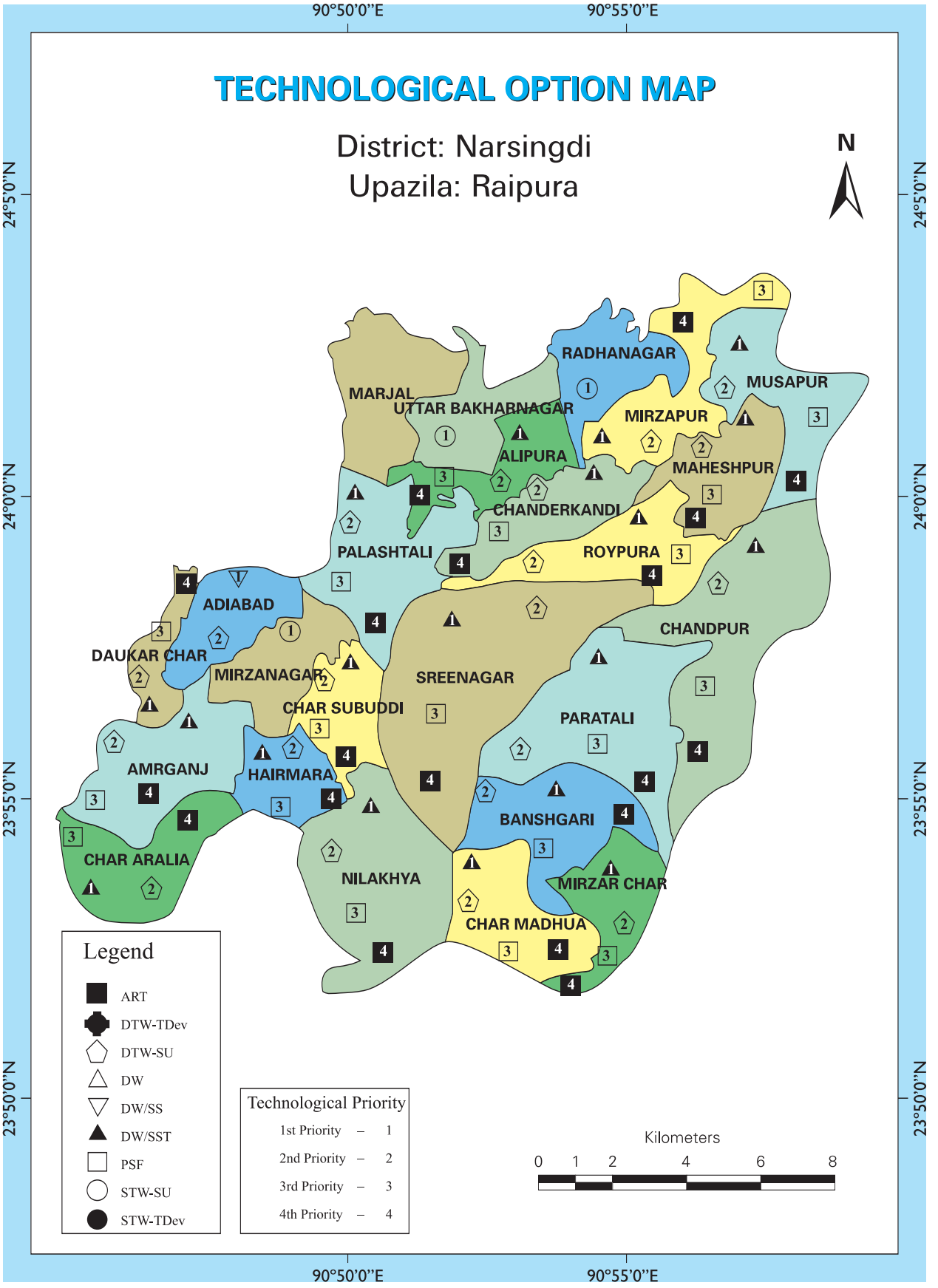
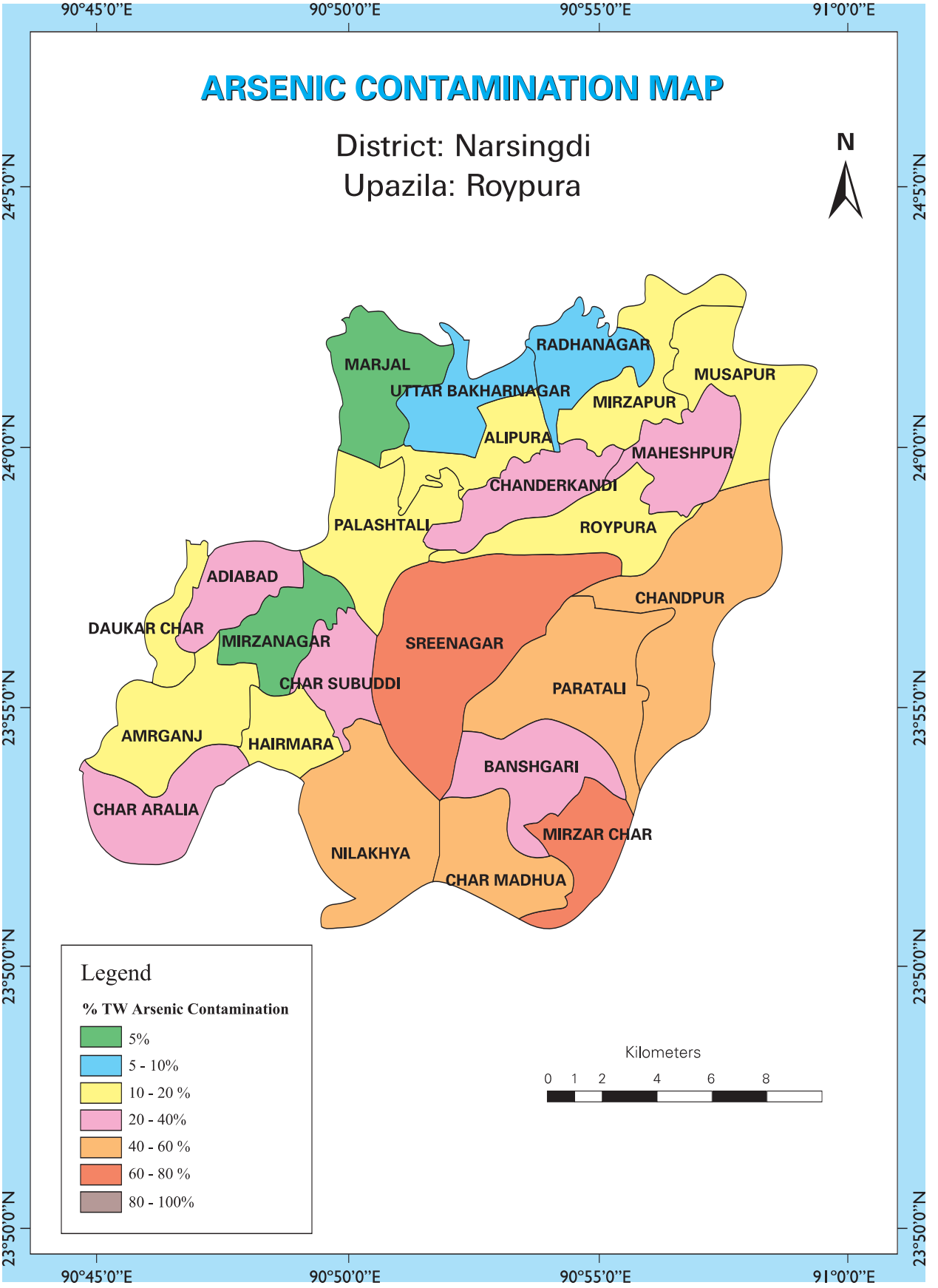

LOWEST WATER TABLE, 2007
District: Narsingdi
Upazila: Sadar
N
90°40'0"E
90°45'0"E
90°50'0"E
24°0'0"N
23°55'0"N
23°50'0"N
23°45'0"N
CHINISHPUR
HAJIPUR
PAURASHAVA
PANCHDONA
SILMANDI
AMDIA
MEHERPARA
NAZARPUR
KARIMPUR
ALOKBALI
MADHABDI
MAHISHASURA
PAIKAR CHAR
CHAR DIGHALDI
KANTHALIA
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 6 8
KM

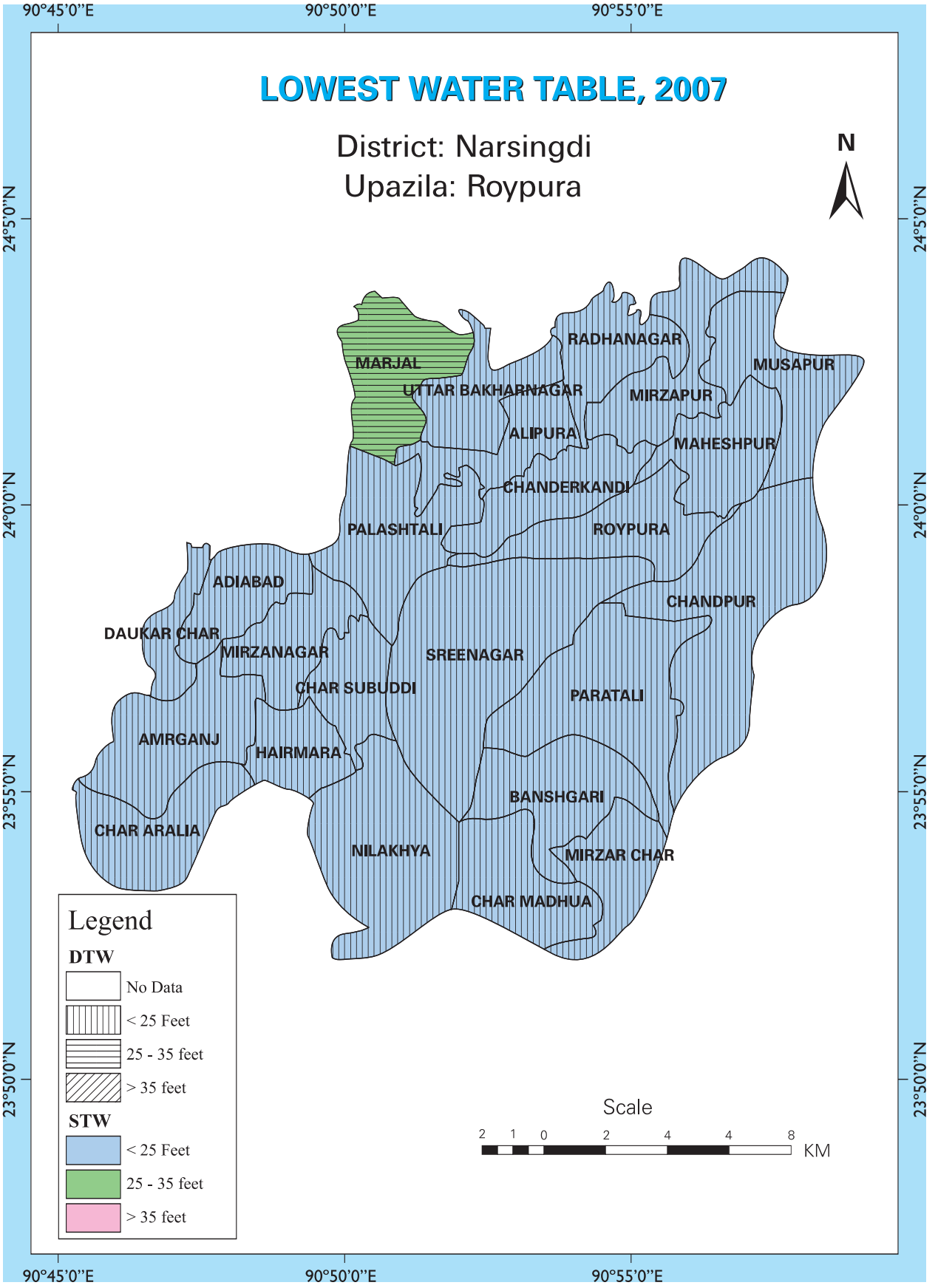
Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology													Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Narsingdi	Raipura	Adiabad	21	22	24	No	No	No	No	ST-SU	70	710	DW/VSST	DTW-SU	-	-	
Narsingdi	Raipura	Alipur	20	19	19.58	No	No	No	No	ST-SU	70	825	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Narsingdi	Raipura	Amirgonj	20	20	14.33	No	No	No	No	ST-SU	70	725	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Bakranagar (N)	20	-	9	No	No	No	No	ST-SU	80	-	STW-SU	-	-	-	
Narsingdi	Raipura	Bansgari	20	19	20.07	No	No	No	No	ST-SU	80	818	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Narsingdi	Raipura	Chanderkandi	20	19	30.89	No	No	No	No	ST-SU	80	800	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Chandpur	21	19	41.92	No	No	No	No	ST-SU	90	800	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Char Arlia	20	20	30.73	No	No	No	No	ST-SU	80	705	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Char Mothua	19	18	47.06	No	No	No	No	ST-SU	80	840	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Char Subordi	20	21	22.86	No	No	No	No	ST-SU	70	680	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Dekir Char	22	22	19.24	No	No	No	No	ST-SU	70	725	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Hairmara	21	20	15	No	No	No	No	ST-SU	80	790	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Mirzanagar	21	21	0.3	No	No	No	No	ST-SU	70	825	STW-SU	-	-	-	
Narsingdi	Raipura	Mirzapur	20	20	17	No	No	No	No	ST-SU	80	860	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Narsingdi	Raipura	Mirzar Chor	20	19	79	No	No	No	No	ST-SU	80	800	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Moheshpur	20	20	33.81	No	No	No	No	ST-SU	70	875	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Morzal	29	27	0.67	No	No	No	No	ST-T1	70	880	STW-Tdev	-	-	-	
Narsingdi	Raipura	Musapur	21	20	10.81	No	No	No	No	ST-SU	80	860	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Narsingdi	Raipura	Nilixma	20	19	48.25	No	No	No	No	ST-SU	70	760	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Palashtali	20	21	12.97	No	No	No	No	ST-SU	80	825	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Paratoli	20	20	40.61	No	No	No	No	ST-SU	60	700	DW/SST	DTW-SU	PSF	ART	
Narsingdi	Raipura	Radanagar	21	21	7.58	No	Yes	No	No	ST-SU	80	880	STW-SU	-	-	-	
Narsingdi	Raipura	Raipura	22	21	12.89	No	Yes	No	No	ST-SU	80	880	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Narsingdi	Raipura	Sreenagar	20	19	62.47	No	No	No	No	ST-SU	80	770	DW/SST	DTW-SU	PSF	ART	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Narsingdi
Upazila: Raipura
N
90°50'0"E
90°55'0"E
24°50'0"N
24°0'0"N
23°55'0"N
23°50'0"N
RADHANAGAR
MUSAPUR
MARJAL
UTTAR BAKHARNAGAR
MIRZAPUR
ALIPURA
MAHESHPUR
CHANDERKANDI
PALASHTALI
ROYPURA
ADIABAD
CHANDPUR
DAUKAR CHAR
MIRZANAGAR
SREENAGAR
CHAR SUBUDDI
PARATALI
AMRGANJ
HAIRMARA
BANSHGARI
CHAR ARALIA
NILAKHYA
MIRZAR CHAR
CHAR MADHUA
Legend
ART
DTW-TDev
DTW-SU
DW
DW/SS
DW/SST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4
Kilometers
0 1 2 4 6 8


ARSENIC CONTAMINATION MAP
District: Narsingdi
Upazila: Roypura
N
90°45'0"E
90°50'0"E
90°55'0"E
91°0'0"E
24°5'0"N
24°0'0"N
23°55'0"N
23°50'0"N
MARJAL
RADHANAGAR
UTTAR BAKHARNAGAR
MUSAPUR
MIRZAPUR
ALIPURA
MAHESHPUR
CHANDERKANDI
PALASHTALI
ROYPURA
ADIABAD
CHANDPUR
DAUKAR CHAR
MIRZANAGAR
SREENAGAR
CHAR SUBUDDI
PARATALI
AMRGANJ
HAIRMARA
BANSHGARI
CHAR ARALIA
MIRZAR CHAR
NILAKHYA
CHAR MADHUA
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
0 1 2 4 6 8


LOWEST WATER TABLE, 2007
District: Narsingdi
Upazila: Roypura
N
90°45'0"E
90°50'0"E
90°55'0"E
24°5'0"N
24°0'0"N
23°55'0"N
23°50'0"N
RADHANAGAR
MUSAPUR
MARJAL
UTTAR BAKHARNAGAR
MIRZAPUR
ALIPURA
MAHESHPUR
CHANDERKANDI
PALASHTALI
ROYPURA
ADIABAD
CHANDPUR
DAUKAR CHAR
MIRZANAGAR
SREENAGAR
CHAR SUBUDDI
PARATALI
AMRGANJ
HAIRMARA
BANSHGARI
CHAR ARALIA
NILAKHYA
MIRZAR CHAR
CHAR MADHUA
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 4 8
KM

District:

Sherpur

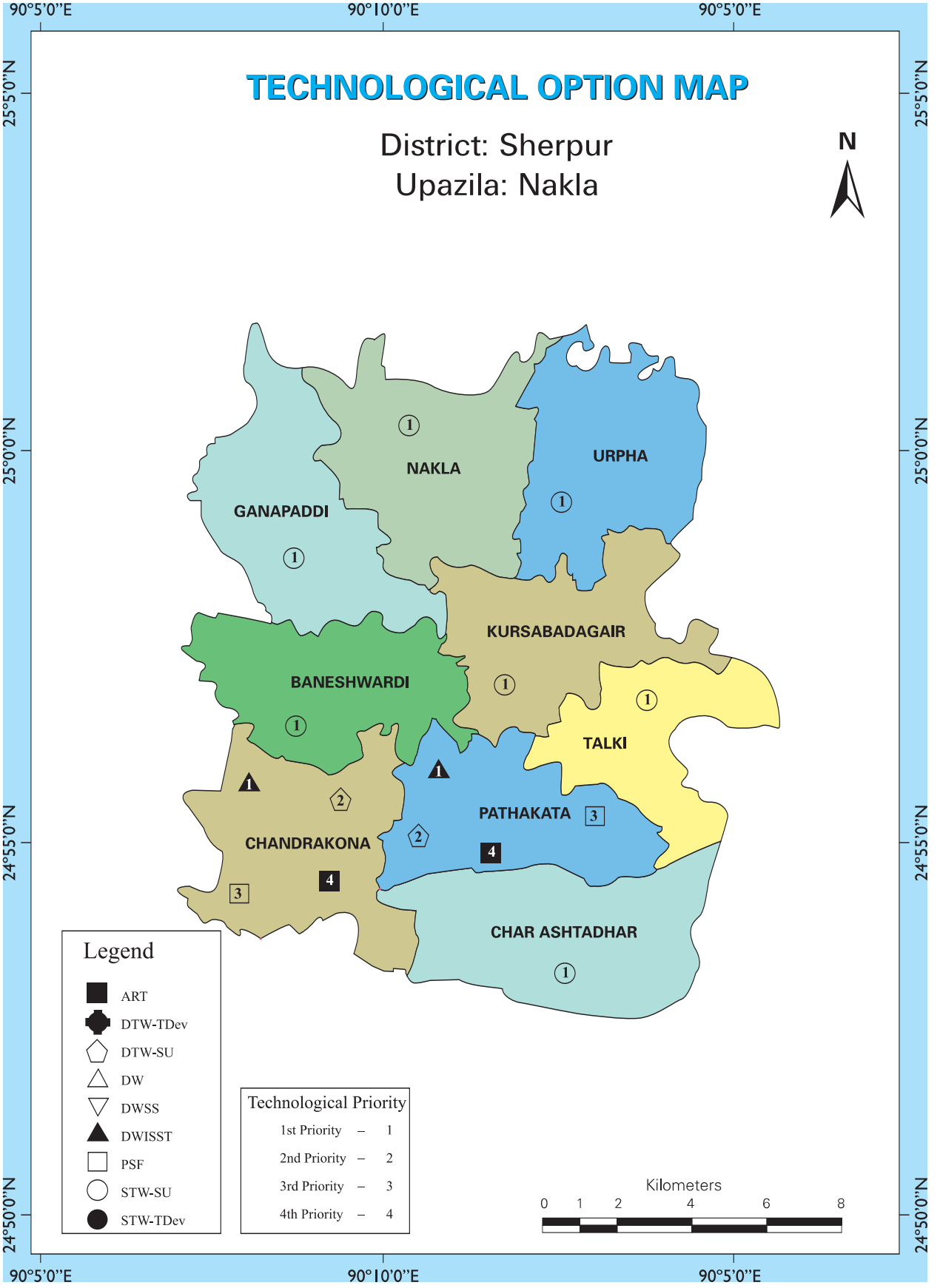
Upazila:

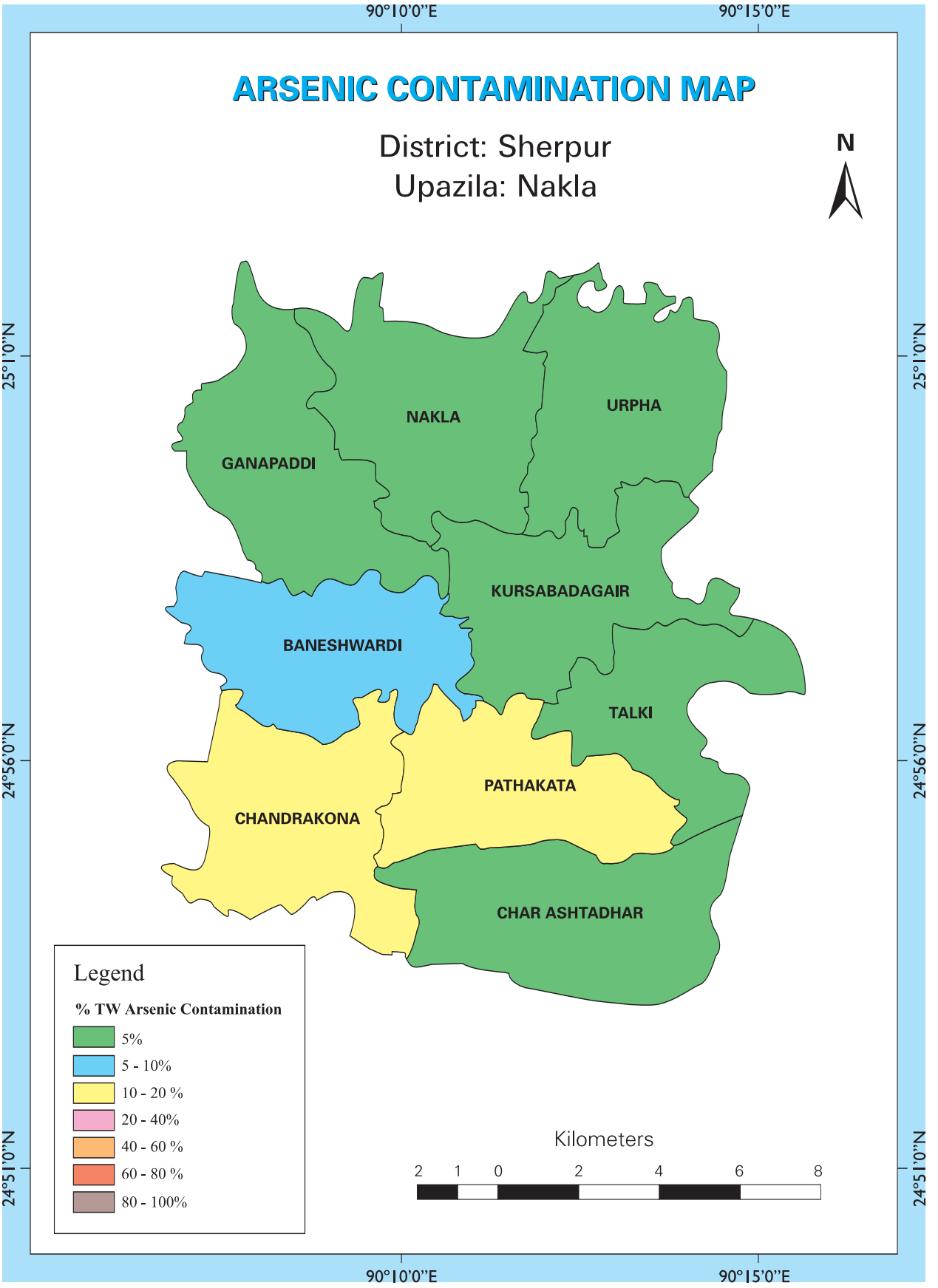
Nakla
Nalitabari
Sribardi

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Sherpur	Nakla	Baneshardi	16	17	7.8	No	No	No	No	ST-SU	75	?	STW-SU	-	-	-	
Sherpur	Nakla	Chandakona	17	17	16.02	No	No	No	No	ST-T1	75	?	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Sherpur	Nakla	Char Austadhar	17	17	2.19	No	No	No	No	ST-T1	75	?	STW-SU	-	-	-	
Sherpur	Nakla	Gonopoddi	17	17	4.9	No	No	No	No	ST-SU	75	?	STW-SU	-	-	-	
Sherpur	Nakla	Gourdhar	16	16	5.7	Yes	No	No	No			?	STW-SU	-	-	-	
Sherpur	Nakla	Nakla	17	17	2.03	No	No	No	No	ST-SU	75	?	STW-SU	-	-	-	
Sherpur	Nakla	Pathakata	17	17	14.23	No	No	No	No	ST-T1	75	?	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Sherpur	Nakla	Talki	16	17	3.89	Yes	No	No	No	ST-T1	75	?	STW-SU	-	-	-	
Sherpur	Nakla	Urfa	16	17	1.81	No	No	No	No	ST-T1	75	?	STW-SU	-	-	-	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Sherpur
Upazila: Nakla
N
90°5'0"E
90°10'0"E
90°5'0"E
25°5'0"N
25°0'0"N
24°55'0"N
24°50'0"N
NAKLA
URPHA
GANAPADDI
KURSABADAGAIR
BANESHWARDI
TALKI
PATHAKATA
CHANDRAKONA
CHAR ASHTADHAR
Legend
ART
DTW-TDev
DTW-SU
DW
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4
Kilometers
0 1 2 4 6 8


ARSENIC CONTAMINATION MAP
District: Sherpur
Upazila: Nakla
N
90°10'0"E
90°15'0"E
25°1'0"N
24°56'0"N
24°51'0"N
NAKLA
URPHA
GANAPADDI
KURSABADAGAIR
BANESHWARDI
TALKI
PATHAKATA
CHANDRAKONA
CHAR ASHTADHAR
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8

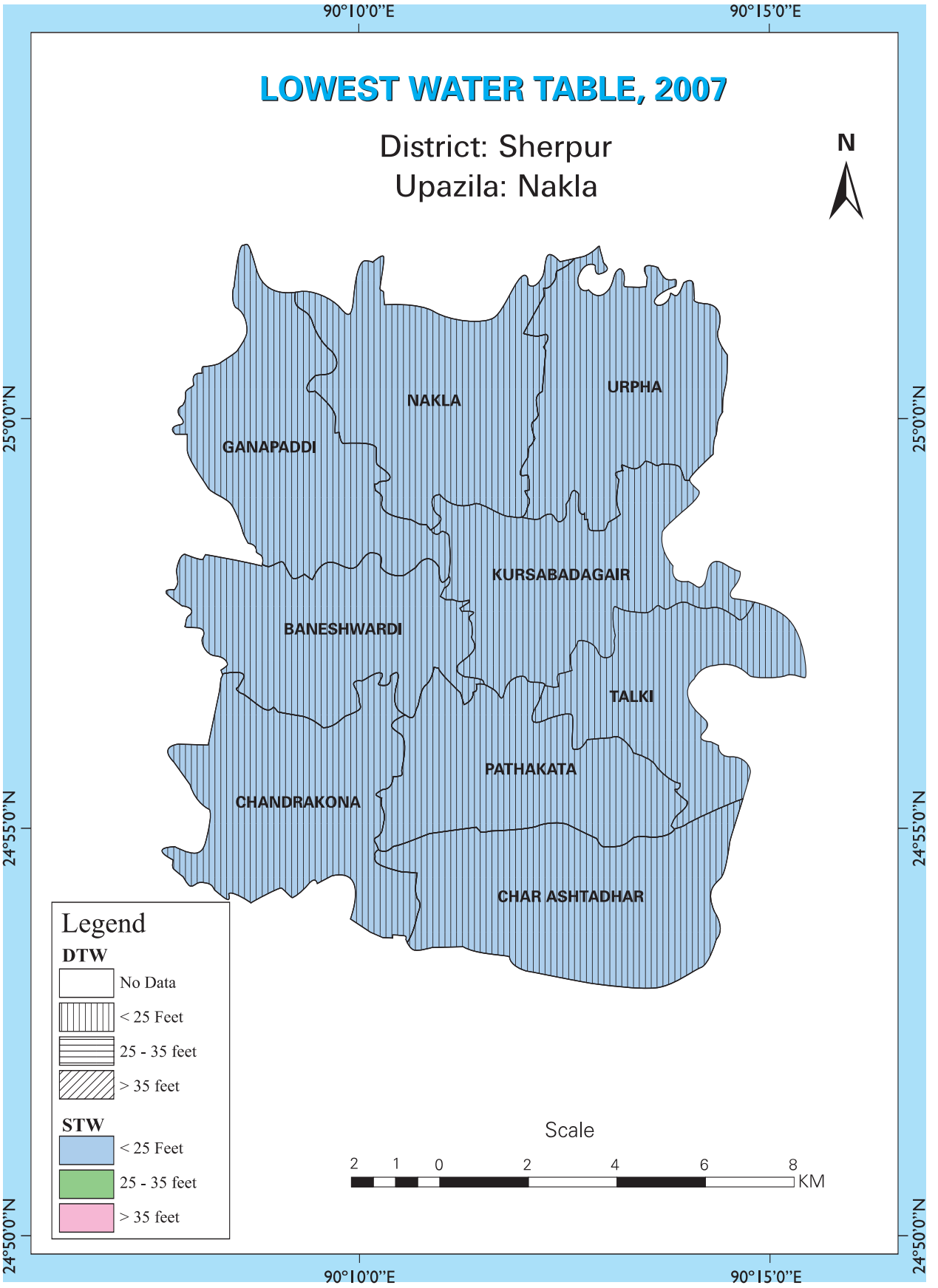
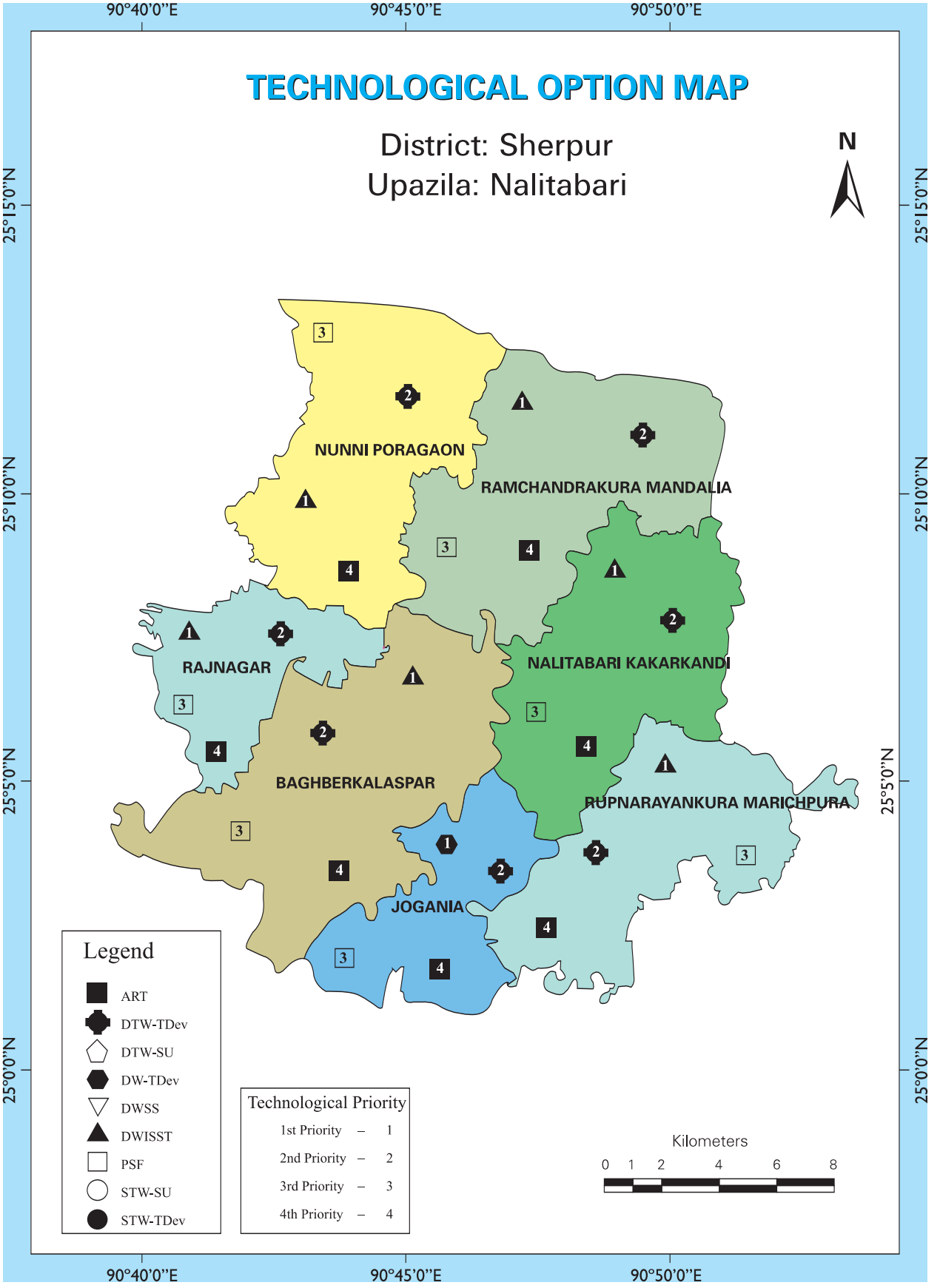
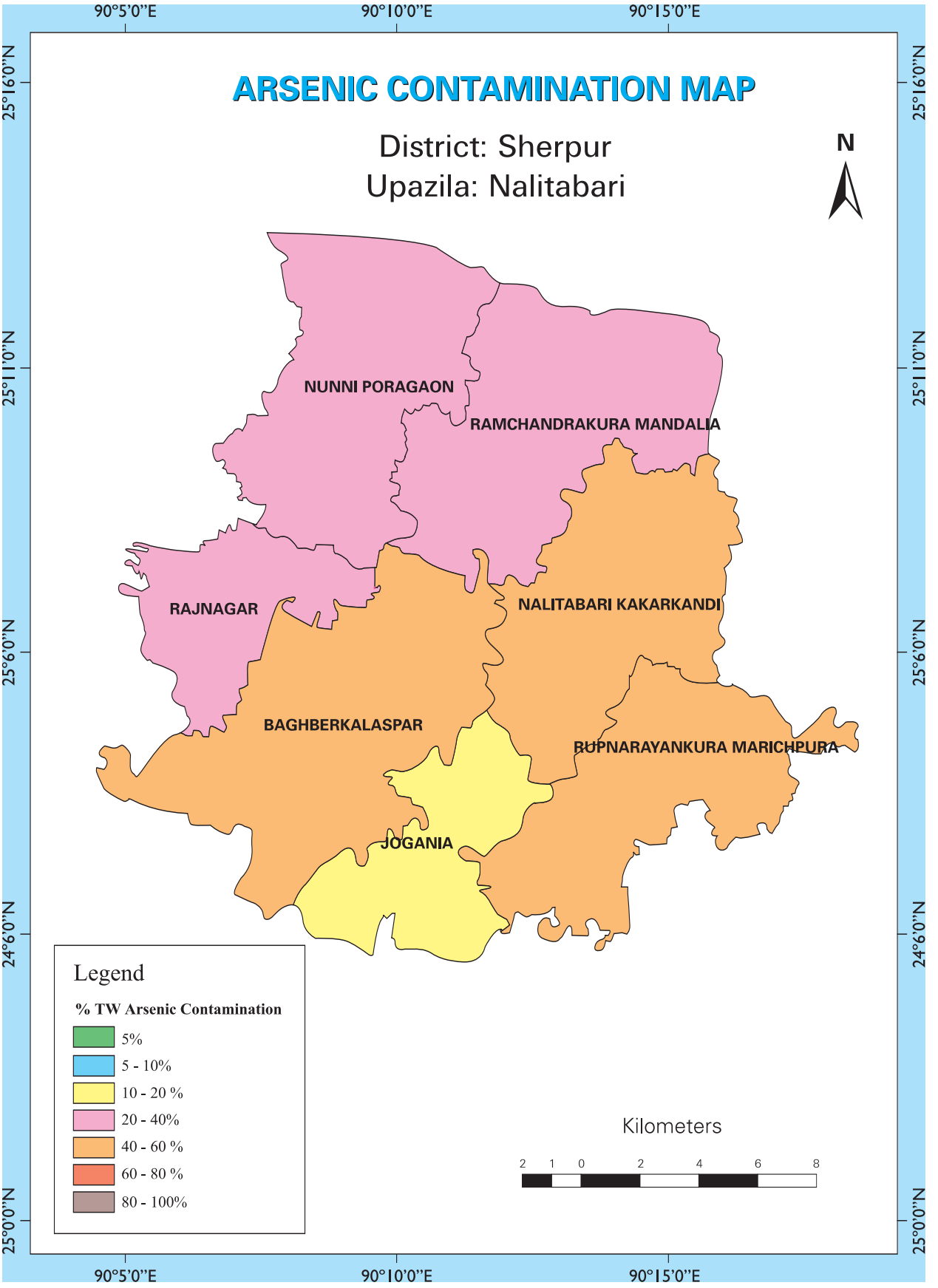

LOWEST WATER TABLE, 2007
District: Sherpur
Upazila: Nakla
N
90°10'0"E
90°15'0"E
25°0'0"N
24°55'0"N
24°50'0"N
NAKLA
URPHA
GANAPADDI
KURSABADAGAIR
BANESHWARDI
TALKI
PATHAKATA
CHANDRAKONA
CHAR ASHTADHAR
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 6 8
KM

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Sherpur	Nalitabari	Bagber	-	44	49.9	No				ST-T1	125	968	DW/SST	DTW-Tdev	PSF	ART	Protected pond is not available
Sherpur	Nalitabari	Nayabil	20	50	50.6	No				ST-T2	125	830	DW/SST	DTW-Tdev	PSF	ART	
Sherpur	Nalitabari	Jogania	26	35	15.1	No				ST-T1	125	942	DW-Tdev	DTW-Tdev	PSF	ART	
Sherpur	Nalitabari	Kakar Kandi	-	33	53.4	N/D				ST-T2	125	900	DW/SST	DTW-Tdev	PSF	ART	
Sherpur	Nalitabari	Kalamondi	43	-	N/D	No				ST-T1	125	-	STW-Tdev	-	-	-	
Sherpur	Nalitabari	Kolospar	22	35	9.3	No				ST-T1	125	820	STW-SU	-	-	-	
Sherpur	Nalitabari	Marich Puran	-	40	26.3	N/D				ST-T2	125	958	DW/SST	DTW-Tdev	PSF	ART	Protected pond is not available
Sherpur	Nalitabari	Mariom	34	-	N/D	No				ST-T1	125	-	?	?	?	?	
Sherpur	Nalitabari	Nalitabari	-	48	66.3	No				ST-T1	125	800	DW/SST	DTW-Tdev	PSF	ART	Protected pond is not available
Sherpur	Nalitabari	Nanni	22	45	45	No				ST-T2	125	889	DW/SST	DTW-Tdev	PSF	ART	
Sherpur	Nalitabari	Paragaon	20	55	28.7	No				ST-T2	125	968	DW/SST	DTW-Tdev	PSF	ART	
Sherpur	Nalitabari	Rajnagar	-	48	30.6	No				ST-T2	125	790	DW/SST	DTW-Tdev	PSF	ART	
Sherpur	Nalitabari	Ram Chandrakura	16	35	26.5	No				ST-T2	125	790	DW/SST	DTW-Tdev	PSF	ART	
Sherpur	Nalitabari	Rup Narayankura	-	52	56.4	No				ST-T1	125	899	DW/SST	DTW-Tdev	PSF	ART	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Sherpur
Upazila: Nalitabari
N
90°40'0"E
90°45'0"E
90°50'0"E
25°15'0"N
25°10'0"N
25°5'0"N
25°0'0"N
NUNNI PORAGAON
RAMCHANDRAKURA MANDALIA
RAJNAGAR
NALITABARI KAKARKANDI
BAGHBERKALASPAR
RUPNARAYANKURA MARICHPURA
JOGANIA
Legend
ART
DTW-TDev
DTW-SU
DW-TDev
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4
Kilometers
0 1 2 4 6 8


ARSENIC CONTAMINATION MAP
District: Sherpur
Upazila: Nalitabari
N
90°5'0"E
90°10'0"E
90°15'0"E
25°16'0"N
25°11'0"N
25°6'0"N
24°6'0"N
25°0'0"N
NUNNI PORAGAON
RAMCHANDRAKURA MANDALIA
RAJNAGAR
NALITABARI KAKARKANDI
BAGHBERKALASPAR
RUPNARAYANKURA MARICHPURA
JOGANIA
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8

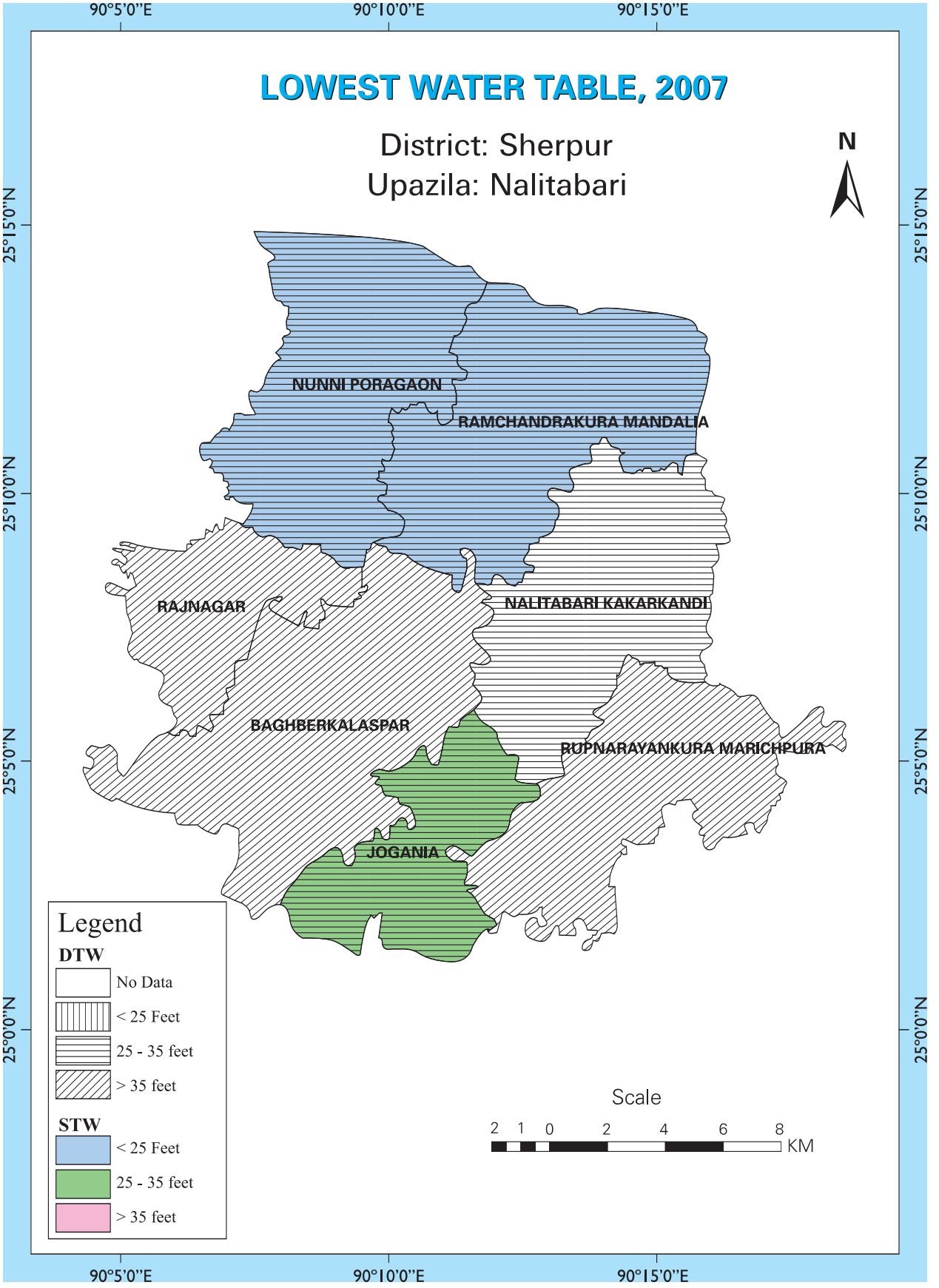
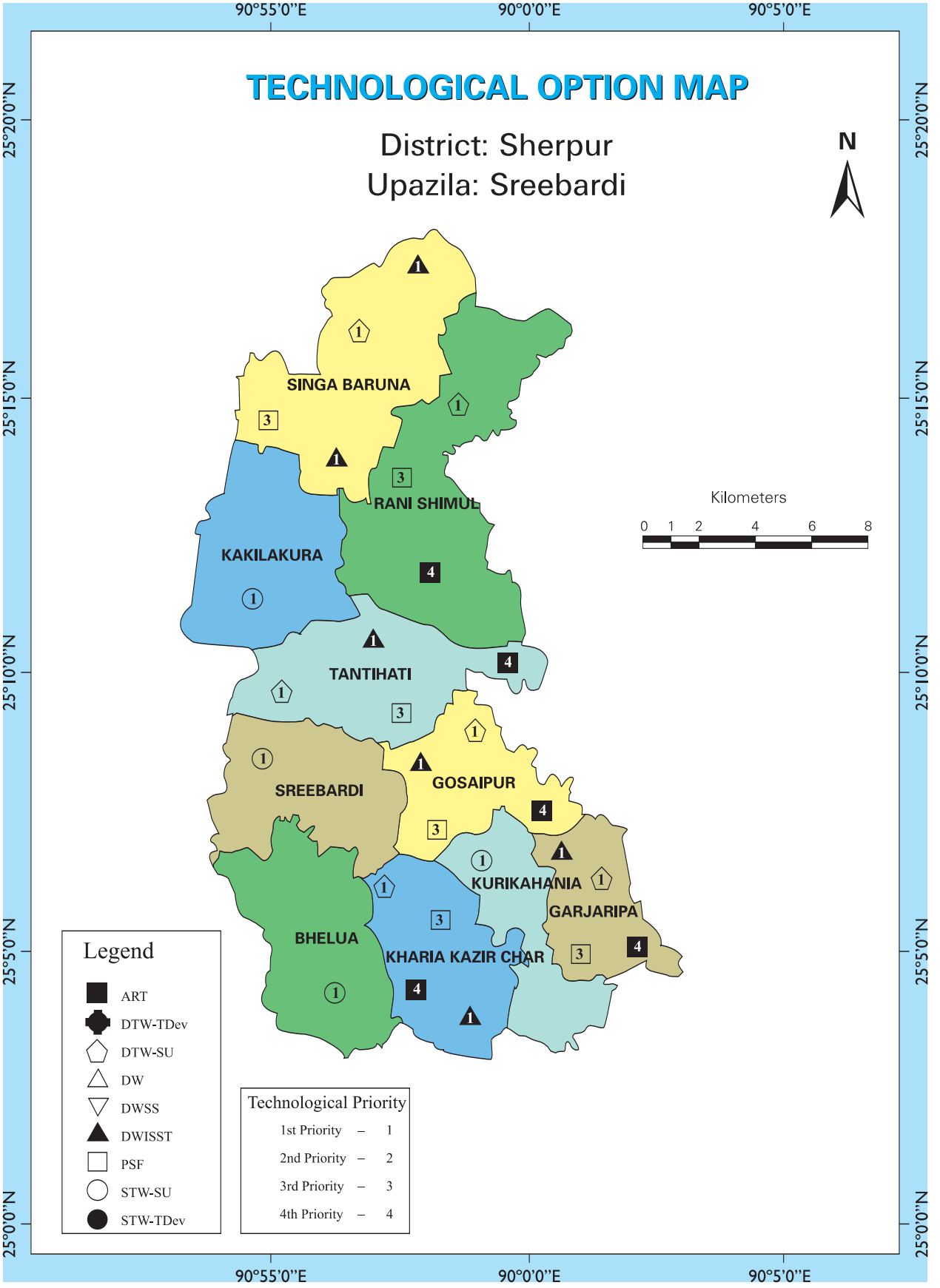
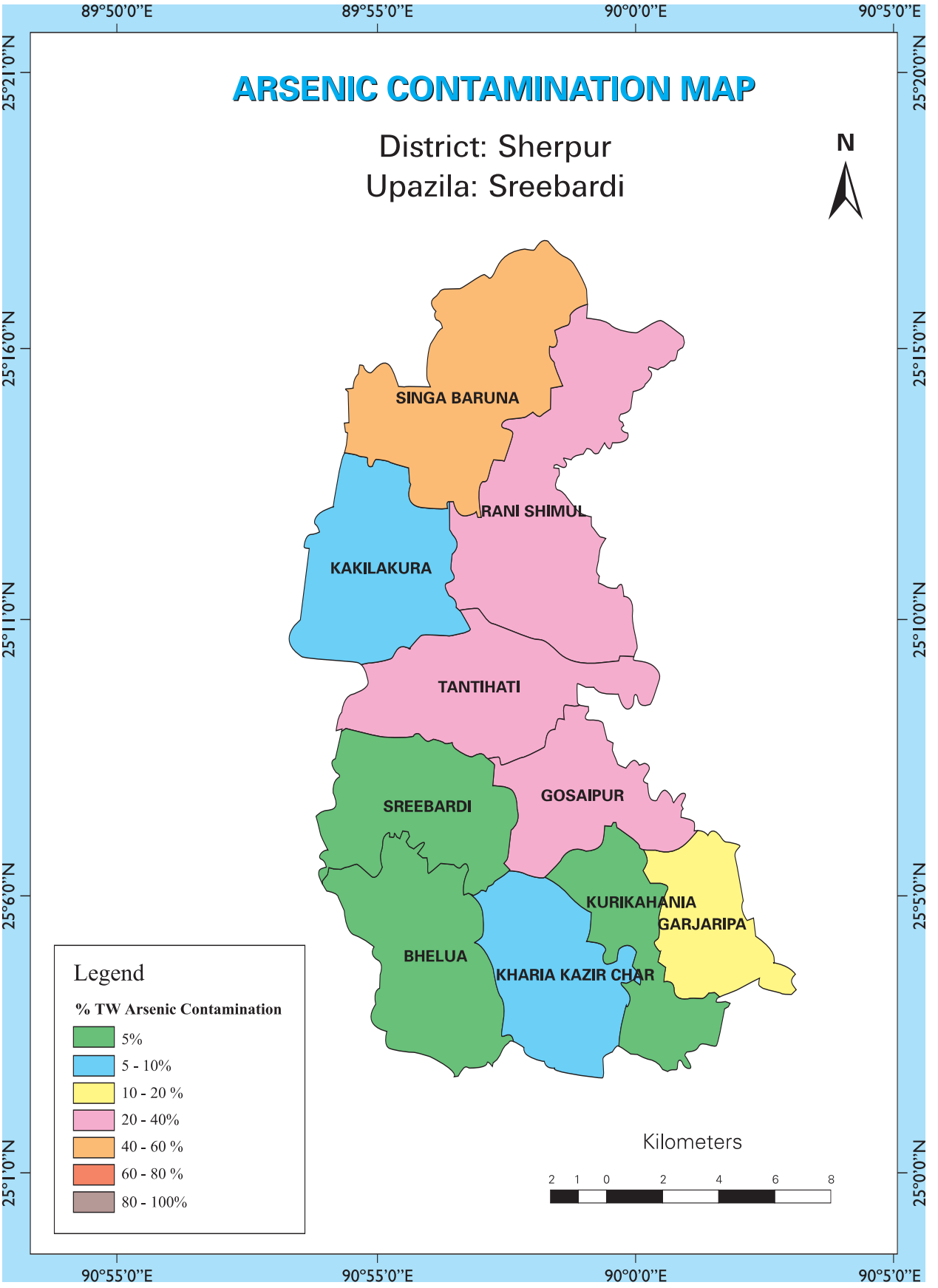

LOWEST WATER TABLE, 2007
District: Sherpur
Upazila: Nalitabari
N
90°5'0"E
90°10'0"E
90°15'0"E
25°15'0"N
25°10'0"N
25°5'0"N
25°0'0"N
NUNNI PORAGAON
RAMCHANDRAKURA MANDALIA
RAJNAGAR
NALITABARI KAKARKANDI
BAGHBERKALASPAR
RUPNARAYANKURA MARICHPURA
JOGANIA
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 6 8
KM

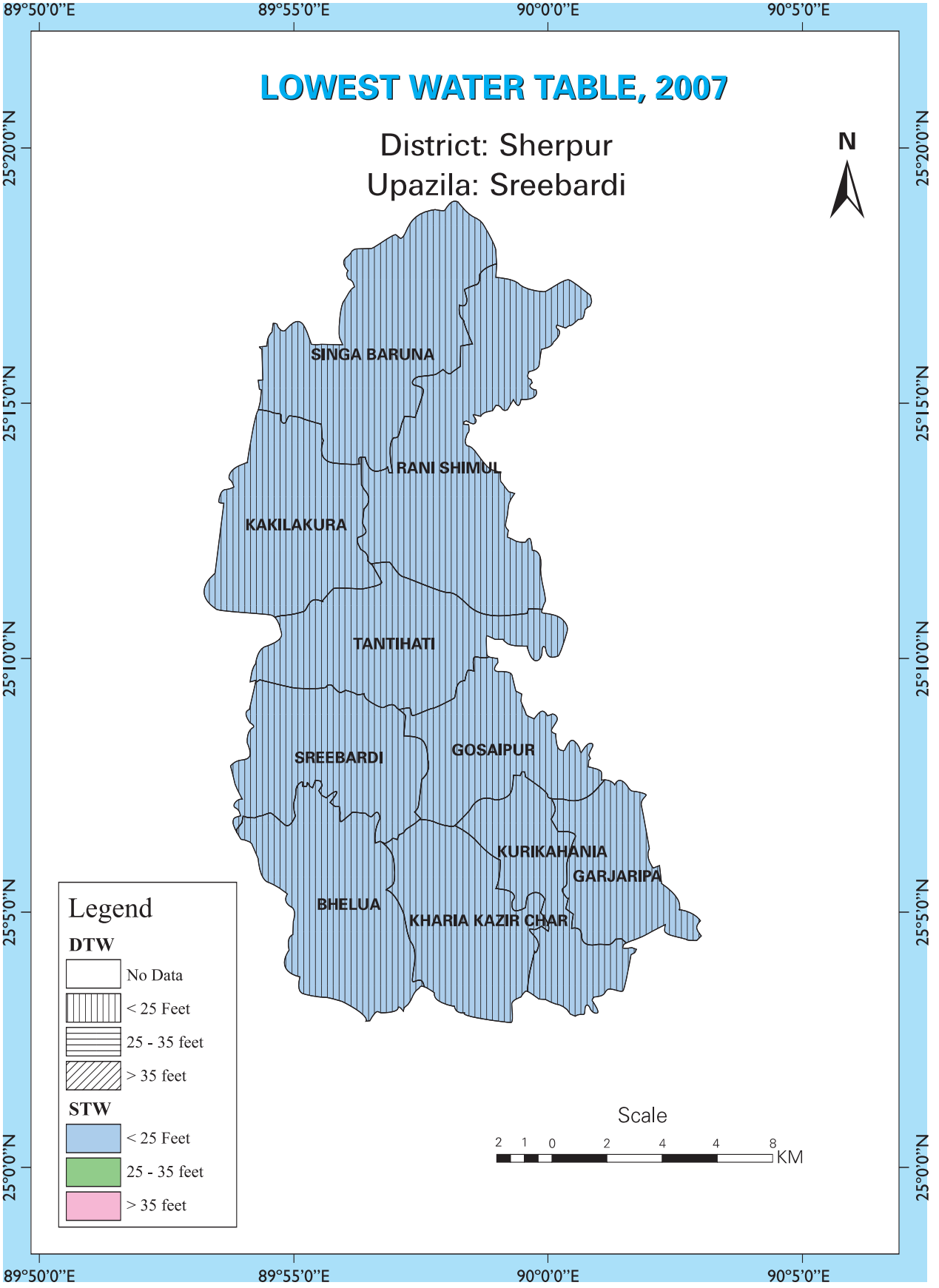
Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Sherpur	Sribardi	Garzarisha	13	13	19.17	No	No			ST-T1	75	961	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Sherpur	Sribardi	Goshaipur	15	15	20.19	No	No			ST-T1	75	922	DW/SST	DTW-SU	PSF	ART	
Sherpur	Sribardi	K,K,char	13	13	8.45	No	Yes			ST-SU	100	853	DW/SST	DTW-SU	PSF	ART	
Sherpur	Sribardi	Kakilakura	11	11	5.53	Yes	No			ST-T1	100	820	STW-SU	-	-	-	
Sherpur	Sribardi	Kurikahani	13	13	2.79	Yes	No			ST-SU	100	902	STW-SU	-	-	-	
Sherpur	Sribardi	Ranishimul	18	18	31.33	Yes	Yes			ST-T1	100	886	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Sherpur	Sribardi	Singabruna	11	11	43.91	No	No			ST-SU	75	860	DW/SST	DTW-SU	PSF	ART	
Sherpur	Sribardi	Sribardi	15	14	4.55	No	No			ST-SU	75	803	STW-SU	-	-	-	
Sherpur	Sribardi	Tatihati	11	11	29.57	Yes	No			ST-T1	75	869	DW/SST	DTW-SU	PSF	ART	Protected pond is not available
Sherpur	Sribardi	Velua	14	14	4.16	No				ST-SU	75	853	STW-SU	-	-	-	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Sherpur
Upazila: Sreebardi
N
90°55'0"E
90°0'0"E
90°5'0"E
25°20'0"N
25°15'0"N
25°10'0"N
25°5'0"N
25°0'0"N
SINGA BARUNA
RANI SHIMUL
KAKILAKURA
TANTIHATI
SREEBARDI
GOSAIPUR
KURIKAHANIA
GARJARIPA
BHELUA
KHARIA KAZIR CHAR
Kilometers
0 1 2 4 6 8
Legend
ART
DTW-TDev
DTW-SU
DW
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4


ARSENIC CONTAMINATION MAP
District: Sherpur
Upazila: Sreebardi
N
89°50'0"E
89°55'0"E
90°0'0"E
90°5'0"E
25°21'0"N
25°16'0"N
25°11'0"N
25°6'0"N
25°1'0"N
25°20'0"N
25°15'0"N
25°10'0"N
25°5'0"N
25°0'0"N
90°55'0"E
SINGA BARUNA
RANI SHIMUL
KAKILAKURA
TANTIHATI
SREEBARDI
GOSAIPUR
KURIKAHANIA
GARJARIPA
BHELUA
KHARIA KAZIR CHAR
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8


LOWEST WATER TABLE, 2007
District: Sherpur
Upazila: Sreebardi
N
89°50'0"E
89°55'0"E
90°0'0"E
90°5'0"E
25°20'0"N
25°15'0"N
25°10'0"N
25°5'0"N
25°0'0"N
SINGA BARUNA
RANI SHIMUL
KAKILAKURA
TANTIHATI
SREEBARDI
GOSAIPUR
KURIKAHANIA
GARJARIPA
BHELUA
KHARIA KAZIR CHAR
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 4 8
KM

District:

Mymensingh

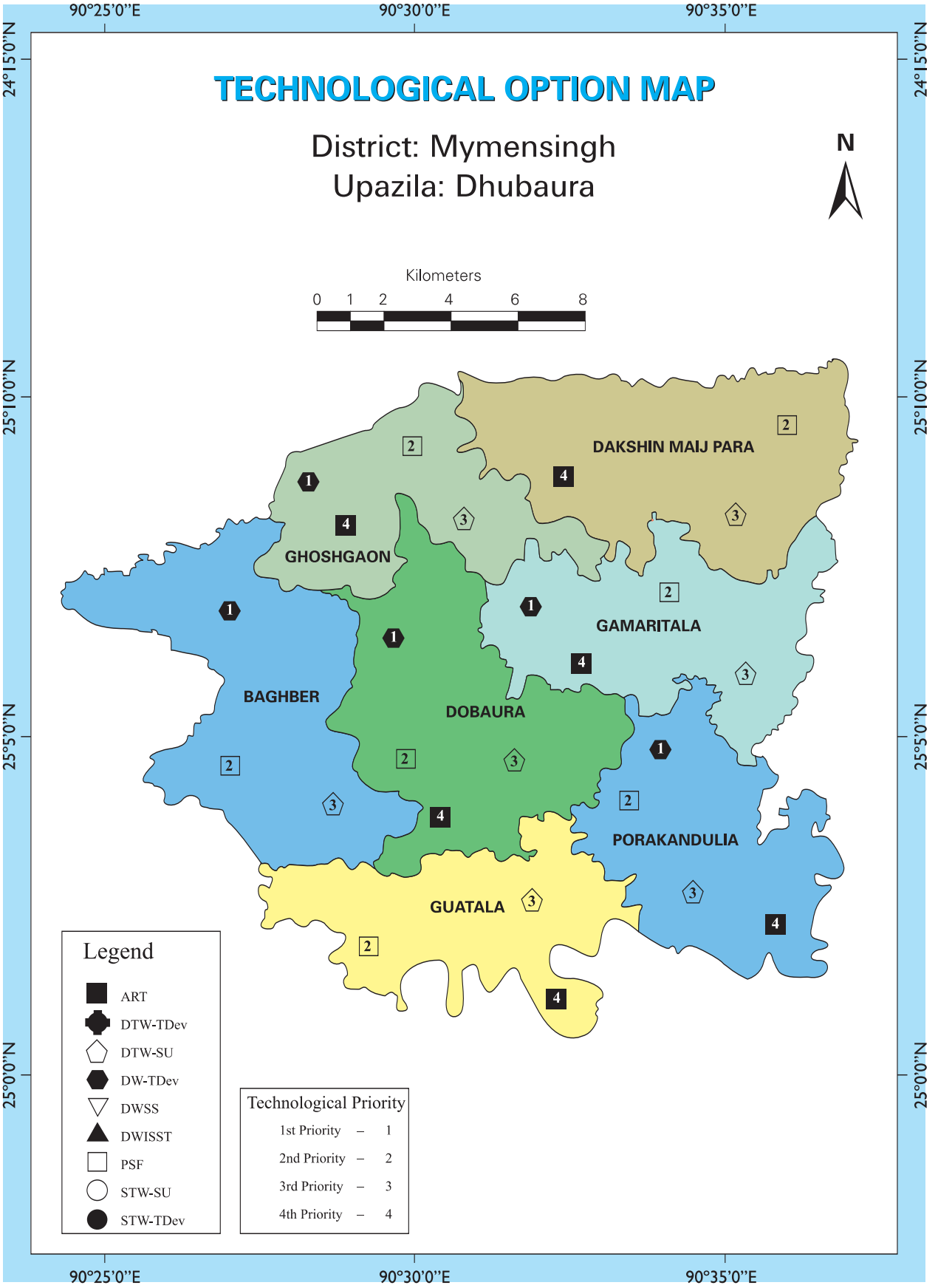
Upazila:

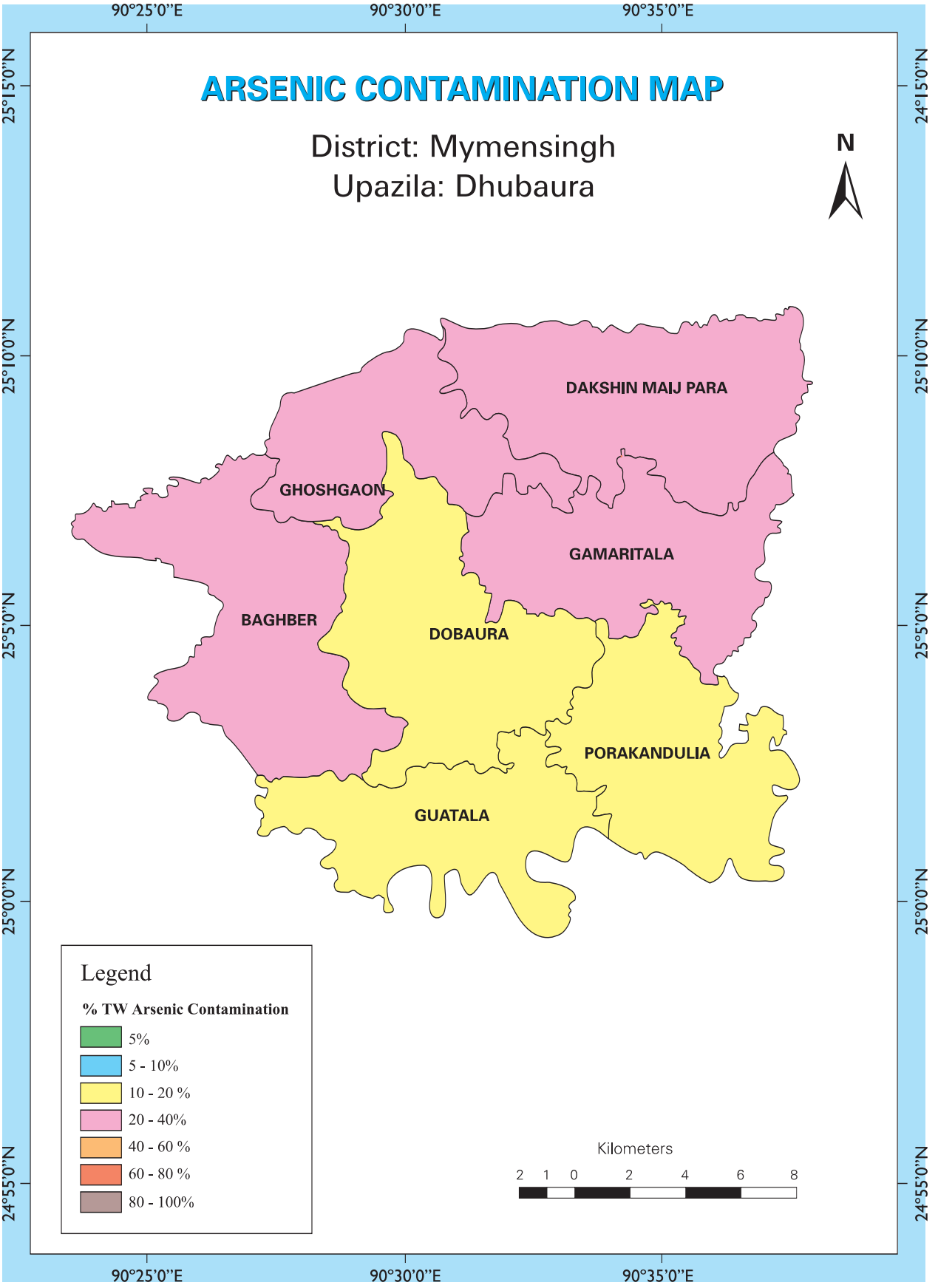
Dhubaura
Fulpur
Ishwargonj
Muktagacha
Fulbaria
Nandail

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Mymensingh	Dhubaura	Dakhin Maizpara	35	-	33.67	No	-	No	-	ST-T1	200	-	DW-Tdev	PSF	DTW-SU	ART	
Mymensingh	Dhubaura	Gamaritala	35	-	31.03	No	-	No	-	ST-T1	225	-	DW-Tdev	PSF	DTW-SU	ART	
Mymensingh	Dhubaura	Porakandulia	36	-	15.44	No	-	No	-	ST-T1	230	-	DW-Tdev	PSF	DTW-SU	ART	Hard rock layer prevailed
Mymensingh	Dhubaura	Dhubaura	36	-	17.54	No	-	No	-	ST-T1	250	-	DW-Tdev	PSF	DTW-SU	ART	
Mymensingh	Dhubaura	Goatala	34	-	14.76	No	-	No	-	ST-T1	225	-	DW-Tdev	PSF	DTW-SU	ART	
Mymensingh	Dhubaura	Baghber	38	-	35.53	No	-	No	-	ST-T1	N/D	-	DW-Tdev	PSF	DTW-SU	ART	
Mymensingh	Dhubaura	Ghoshgaon	33	-	30.13	No	-	No	-	ST-T1	225	-	DW-Tdev	PSF	DTW-SU	ART	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Mymensingh
Upazila: Dhubaura
N
Kilometers
0 1 2 4 6 8
90°25'0"E
90°30'0"E
90°35'0"E
24°15'0"N
25°10'0"N
25°5'0"N
25°0'0"N
DAKSHIN MAIJ PARA
GHOSHGAON
GAMARITALA
BAGHBER
DOBAURA
PORAKANDULIA
GUATALA
Legend
ART
DTW-TDev
DTW-SU
DW-TDev
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4


ARSENIC CONTAMINATION MAP
District: Mymensingh
Upazila: Dhubaura
N
90°25'0"E
90°30'0"E
90°35'0"E
25°15'0"N
25°10'0"N
25°5'0"N
25°0'0"N
24°55'0"N
DAKSHIN MAIJ PARA
GHOSHGAON
GAMARITALA
BAGHBER
DOBAURA
PORAKANDULIA
GUATALA
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8

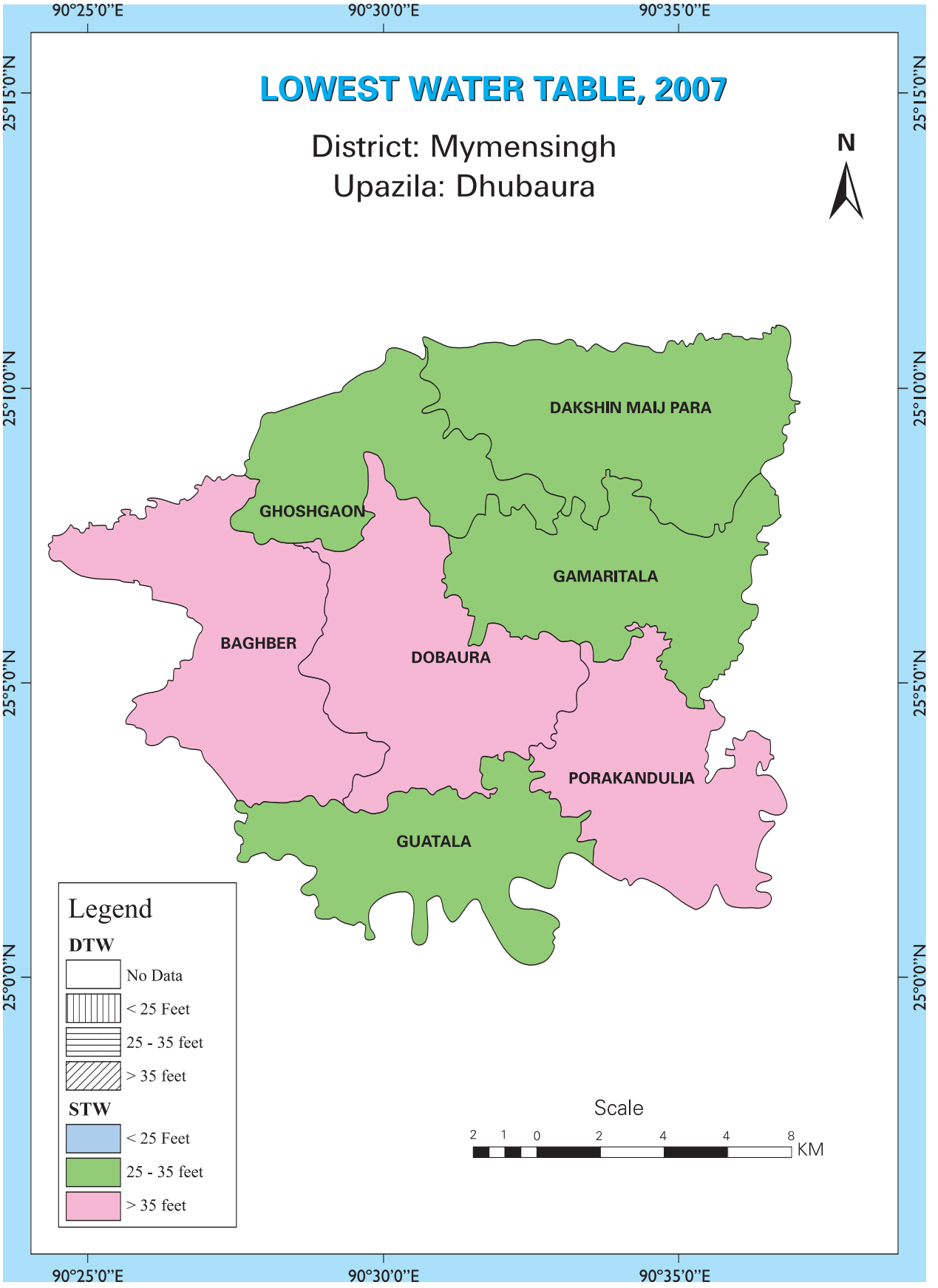
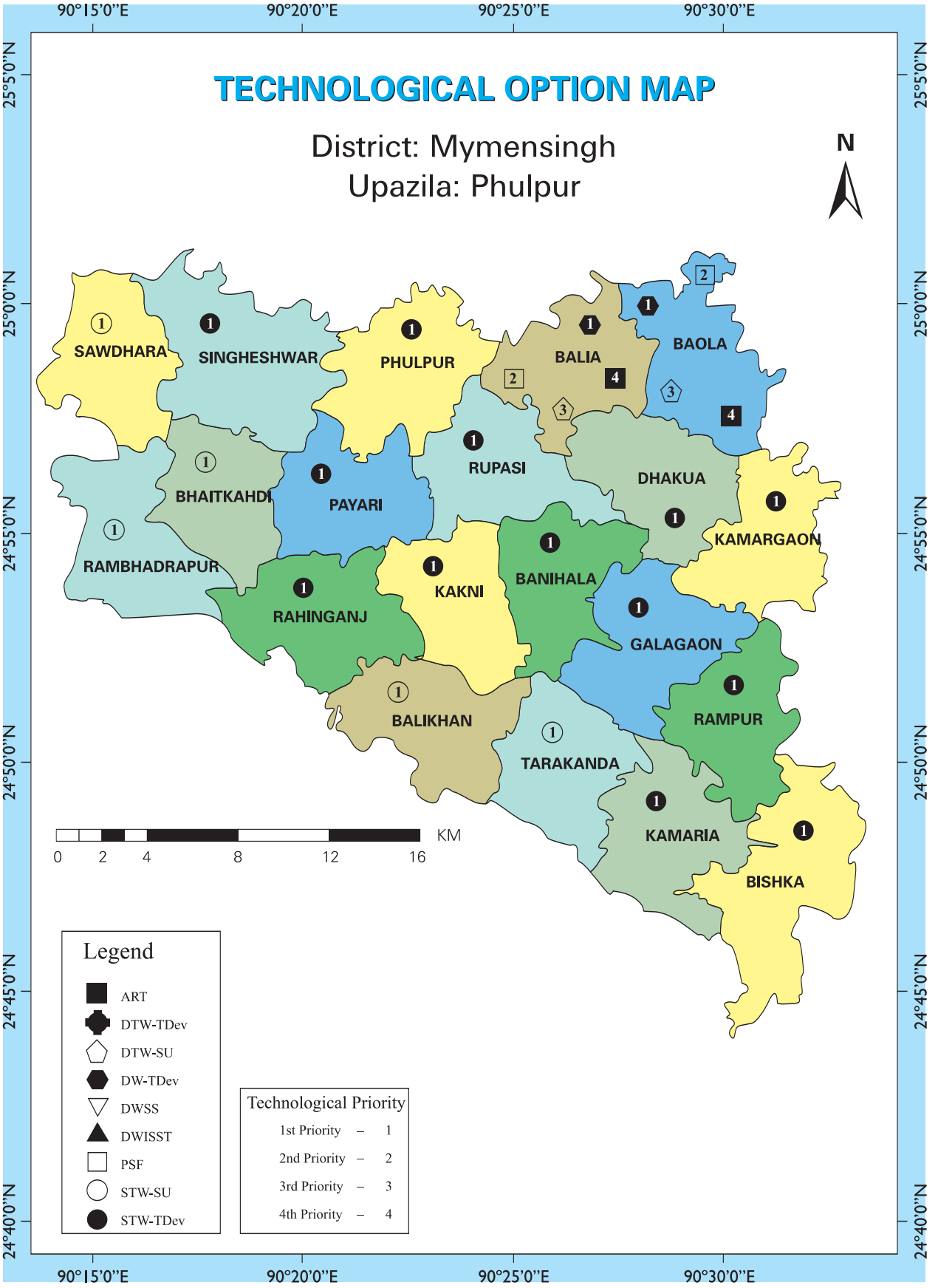
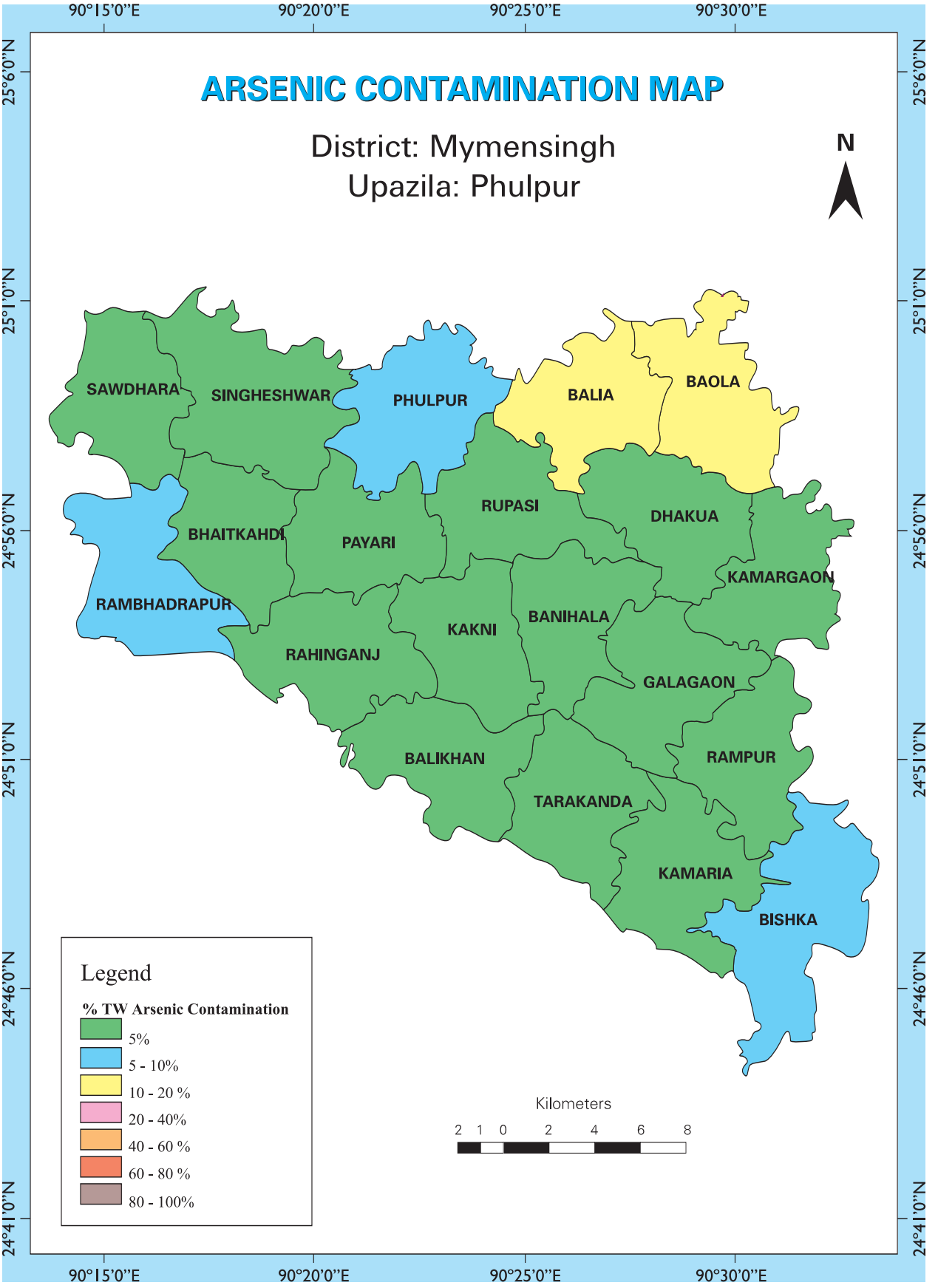

LOWEST WATER TABLE, 2007
District: Mymensingh
Upazila: Dhubaura
N
90°25'0"E
90°30'0"E
90°35'0"E
25°15'0"N
25°10'0"N
25°5'0"N
25°0'0"N
DAKSHIN MAIJ PARA
GHOSHGAON
GAMARITALA
BAGHBER
DOBAURA
PORAKANDULIA
GUATALA
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 4 8
KM

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Mymensingh	Fulpur	Balia	30	-	11.62	No	-	No	-	ST-T1	190	-	DW-Tdev	PSF	DTW-SU	ART	
Mymensingh	Fulpur	Balikha	20	-	0.82	No	-	No	-	ST-T1	185	-	STW-SU	-	-	-	
Mymensingh	Fulpur	Banihala	26	-	0.75	No	-	No	-	ST-T1	150	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Bahitkandi	21	-	2.83	No	-	No	-	ST-T1	160	-	STW-SU	-	-	-	
Mymensingh	Fulpur	Biska	28	-	5.2	No	-	No	-	ST-T1	185	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Bowla	30	-	11.75	No	-	No	-	ST-T1	200	-	DW-Tdev	PSF	DTW-SU	ART	
Mymensingh	Fulpur	Chandara	23	-		No	-	No	-	ST-T1	140	-	STW-SU	-	-	-	
Mymensingh	Fulpur	Dhakua	31	-	4.07	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Fulpur	35	-	5.02	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Galagaon	27	-	1.82	No	-	No	-	ST-T1	150	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Kakoni	26	-	2.15	No	-	No	-	ST-T1	155	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Kamargaon	30	-	3.78	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Kamaria	26	-	1.91	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Payaree	31	-	2.37	No	-	No	-	ST-T1	155	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Rahingonj	25	-	3.52	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Rampur	26	-	1.5	No	-	No	-	ST-T1	160	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Ramvadrapur	23	-	5.49	No	-	No	-	ST-T1	140	-	STW-SU	-	-	-	
Mymensingh	Fulpur	Ruposhi	30	-	1.79	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Singhershwar	28	-	3.01	No	-	No	-	ST-T1	180	-	STW-TDev	-	-	-	
Mymensingh	Fulpur	Tarakanda	23	-	1.83	No	-	No	-	ST-T1	185	-	STW-SU	-	-	-	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Mymensingh
Upazila: Phulpur
N
90°15'0"E
90°20'0"E
90°25'0"E
90°30'0"E
25°5'0"N
25°0'0"N
24°55'0"N
24°50'0"N
24°45'0"N
24°40'0"N
SAWDHARA
SINGHESHWAR
PHULPUR
BALIA
BAOLA
RUPASI
DHAKUA
BHAITKADHI
PAYARI
KAMARGAON
RAMBHADRAPUR
KAKNI
BANIHALA
RAHINGANJ
GALAGAON
BALIKHAN
RAMPUR
TARAKANDA
KAMARIA
BISHKA
0 2 4 8 12 16 KM
Legend
ART
DTW-TDev
DTW-SU
DW-TDev
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4


ARSENIC CONTAMINATION MAP
District: Mymensingh
Upazila: Phulpur
N
90°15'0"E
90°20'0"E
90°25'0"E
90°30'0"E
25°6'0"N
25°1'0"N
24°56'0"N
24°51'0"N
24°46'0"N
24°41'0"N
SAWDHARA
SINGHESHWAR
PHULPUR
BALIA
BAOLA
BHAITKAHDI
PAYARI
RUPASI
DHAKUA
KAMARGAON
RAMBHADRAPUR
KAKNI
BANIHALA
RAHINGANJ
GALAGAON
BALIKHAN
RAMPUR
TARAKANDA
KAMARIA
BISHKA
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8

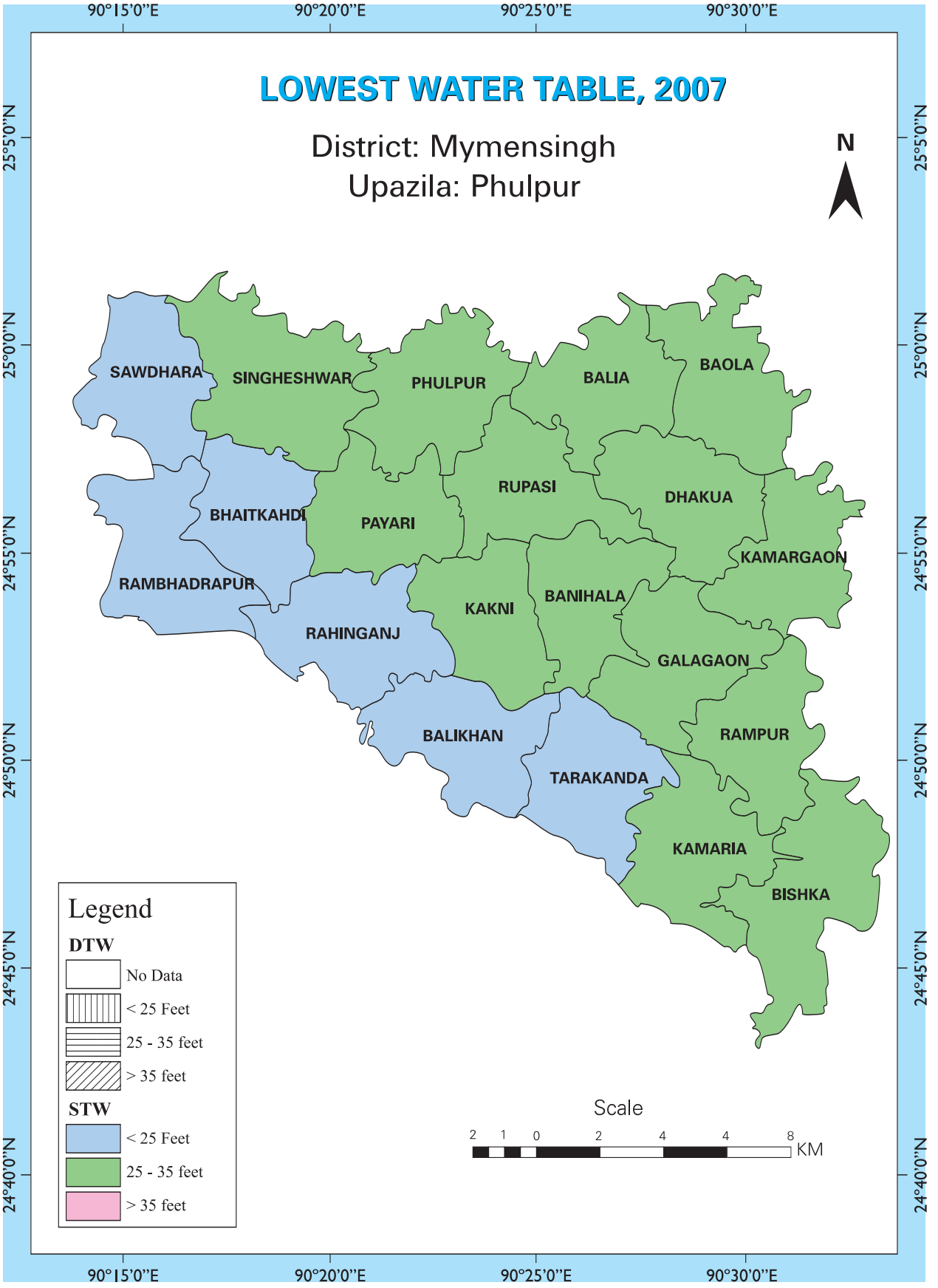
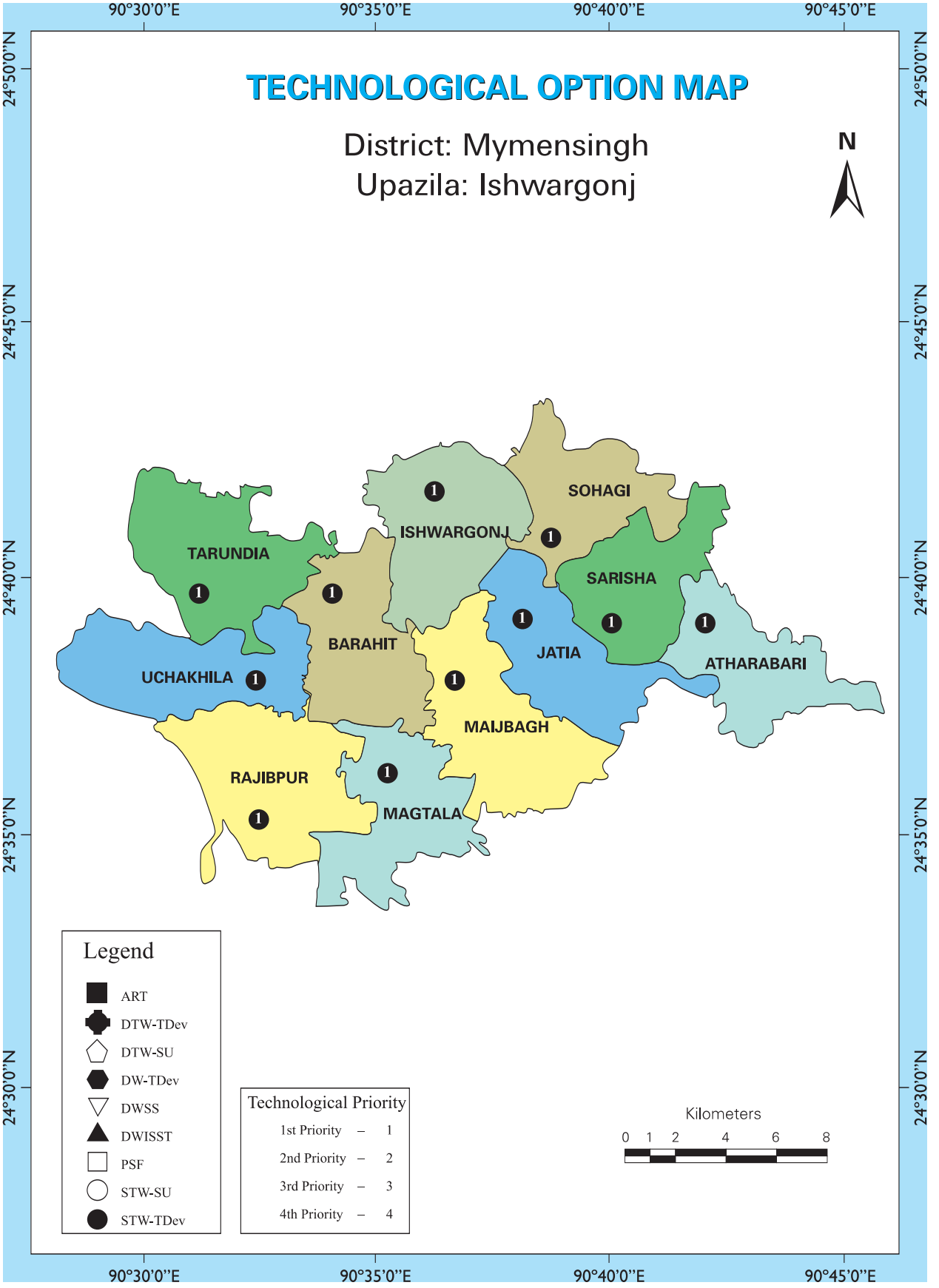
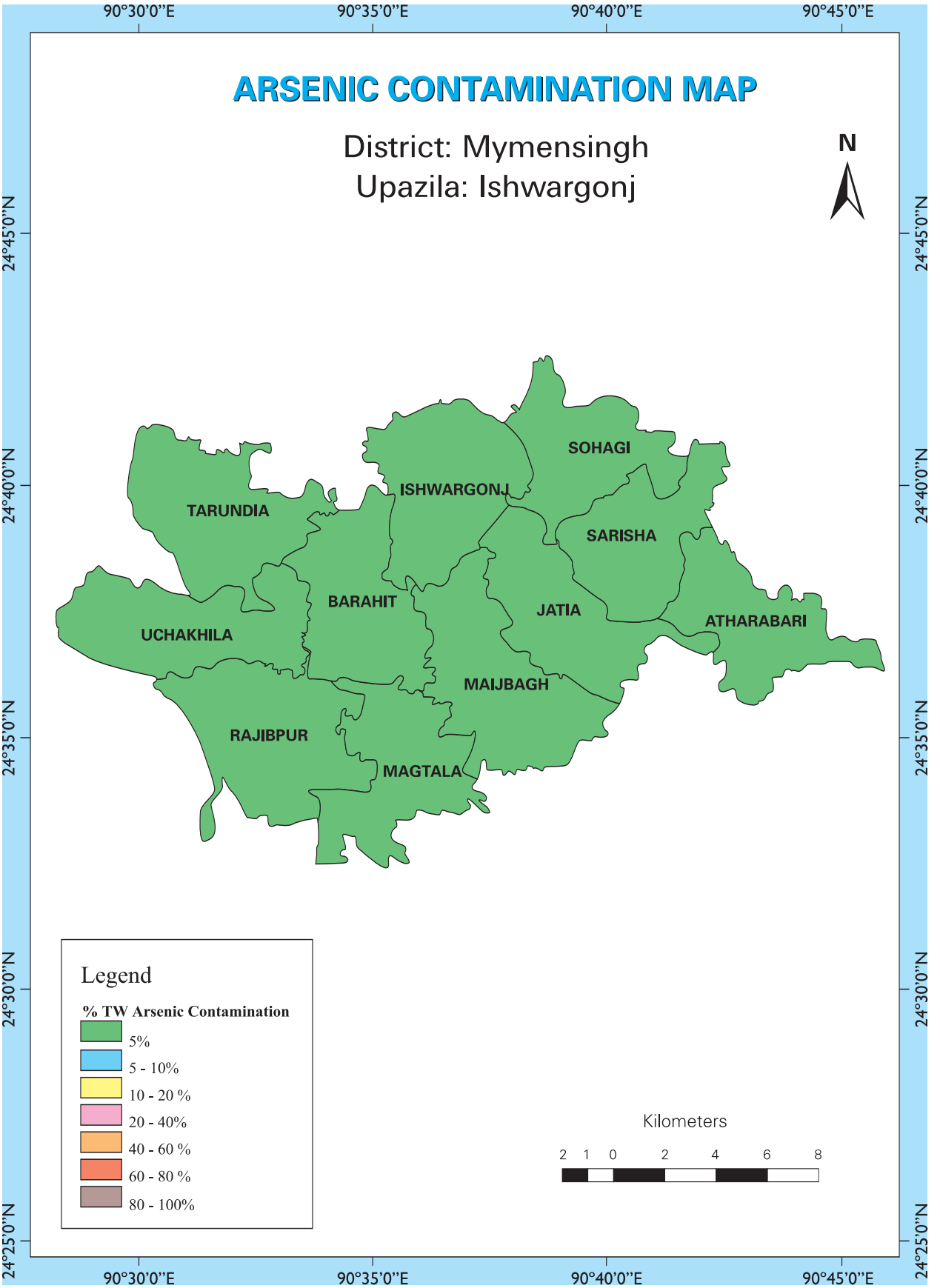

LOWEST WATER TABLE, 2007
District: Mymensingh
Upazila: Phulpur
N
90°15'0"E
90°20'0"E
90°25'0"E
90°30'0"E
25°5'0"N
25°0'0"N
24°55'0"N
24°50'0"N
24°45'0"N
24°40'0"N
SAWDHARA
SINGHESHWAR
PHULPUR
BALIA
BAOLA
BHAITKAHDI
PAYARI
RUPASI
DHAKUA
KAMARGAON
RAMBHADRAPUR
KAKNI
BANIHALA
RAHINGANJ
GALAGAON
BALIKHAN
RAMPUR
TARAKANDA
KAMARIA
BISHKA
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 4 8
KM

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Mymensingh	Ishwargonj	Atharobari	35	-	3.82	No	-	No	-	ST-T1	250	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Borohit	38	-	0.05	No	-	No	-	ST-T1	250	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Ishwargonj	32	-	0	No	-	No	-	ST-T1	185	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Jatia	40	-	0.45	No	-	No	-	ST-T1	250	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Maizbag	45	-	1.08	No	-	No	-	ST-T1	245	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Mogtula	45	-	0.16	No	-	No	-	ST-T1	235	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Rajibpur	50	-	2.68	No	-	No	-	ST-T1	200	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Sarisha	35	-	2.52	No	-	No	-	ST-T1	200	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Sohagi	31	-	3.18	No	-	No	-	ST-T1	175	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Tarundia	42	-	0.75	No	-	No	-	ST-T1	245	-	STW-TDev	-	-	-	
Mymensingh	Ishwargonj	Uchakhila	45	-	3.36	No	-	No	-	ST-T1	225	-	STW-TDev	-	-	-	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Mymensingh
Upazila: Ishwargonj
N
90°30'0"E
90°35'0"E
90°40'0"E
90°45'0"E
24°50'0"N
24°45'0"N
24°40'0"N
24°35'0"N
24°30'0"N
ISHWARGONJ
SOHAGI
TARUNDIA
SARISHA
BARAHIT
JATIA
ATHARABARI
UCHAKHILA
MAIJBAGH
RAJIBPUR
MAGTALA
Legend
ART
DTW-TDev
DTW-SU
DW-TDev
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4
Kilometers
0 1 2 4 6 8


ARSENIC CONTAMINATION MAP
District: Mymensingh
Upazila: Ishwargonj
N
90°30'0"E
90°35'0"E
90°40'0"E
90°45'0"E
24°45'0"N
24°40'0"N
24°35'0"N
24°30'0"N
24°25'0"N
SOHAGI
ISHWARGONJ
TARUNDIA
SARISHA
BARAHIT
JATIA
ATHARABARI
UCHAKHILA
MAIJBAGH
RAJIBPUR
MAGTALA
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8

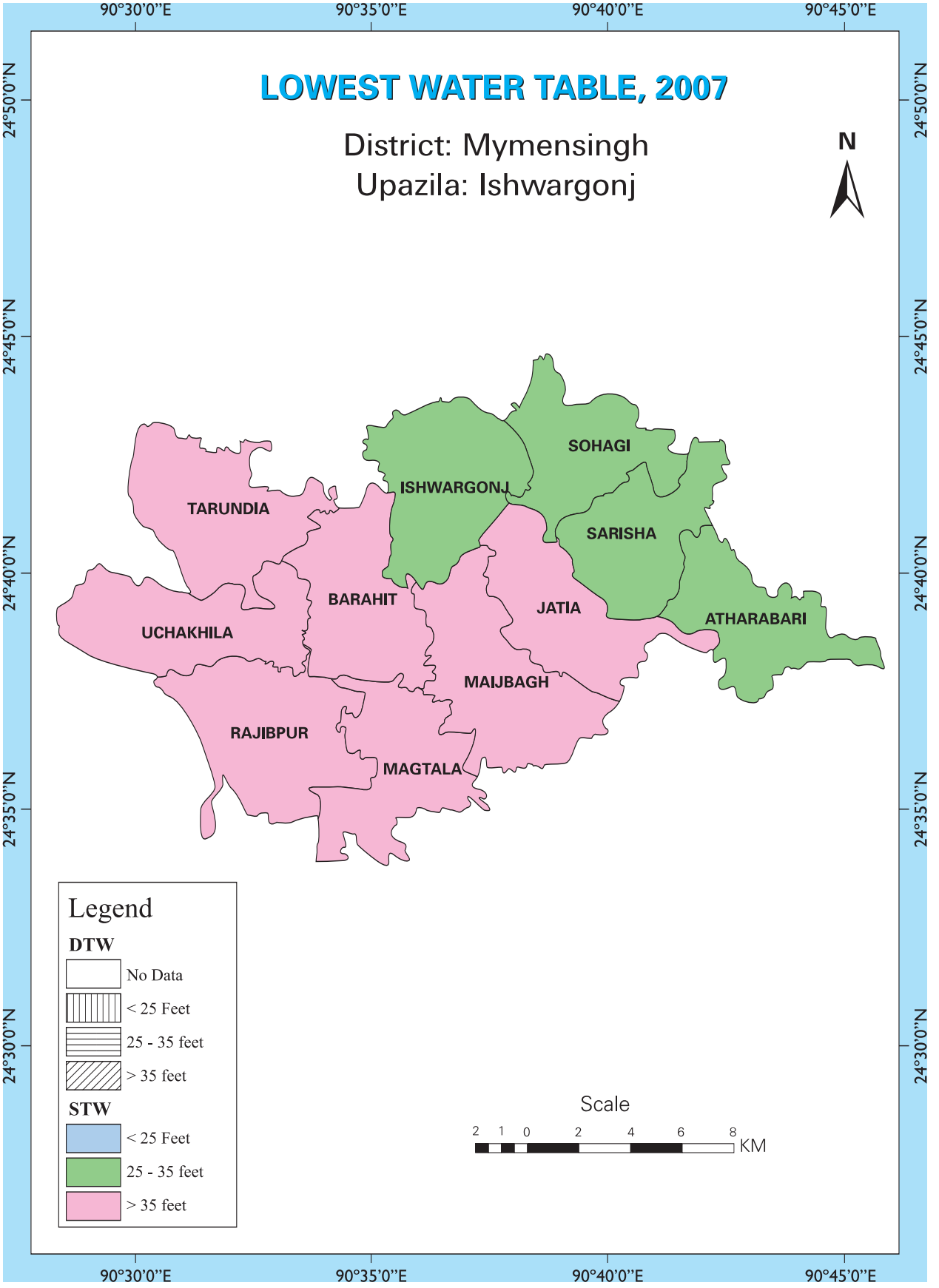
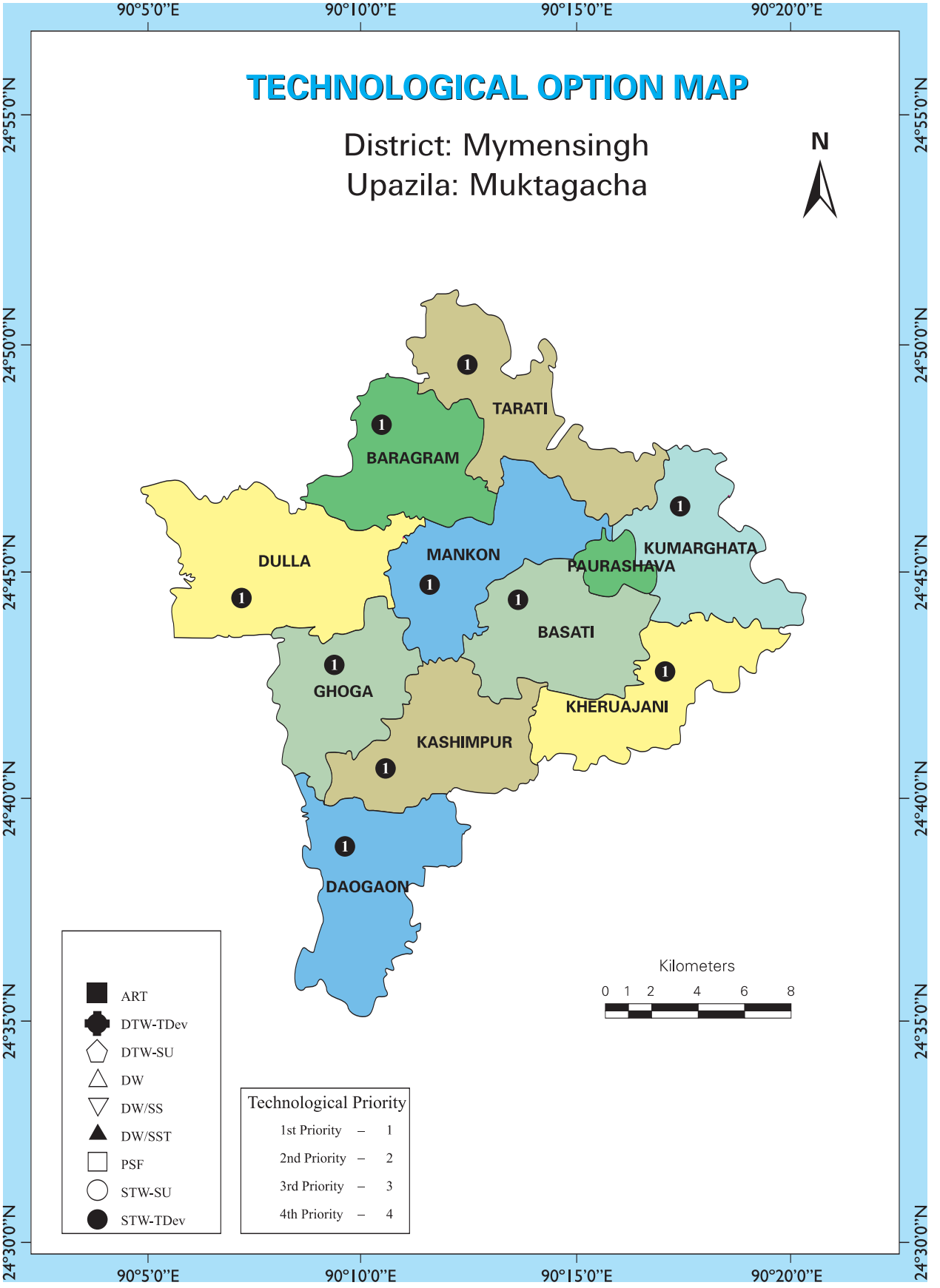
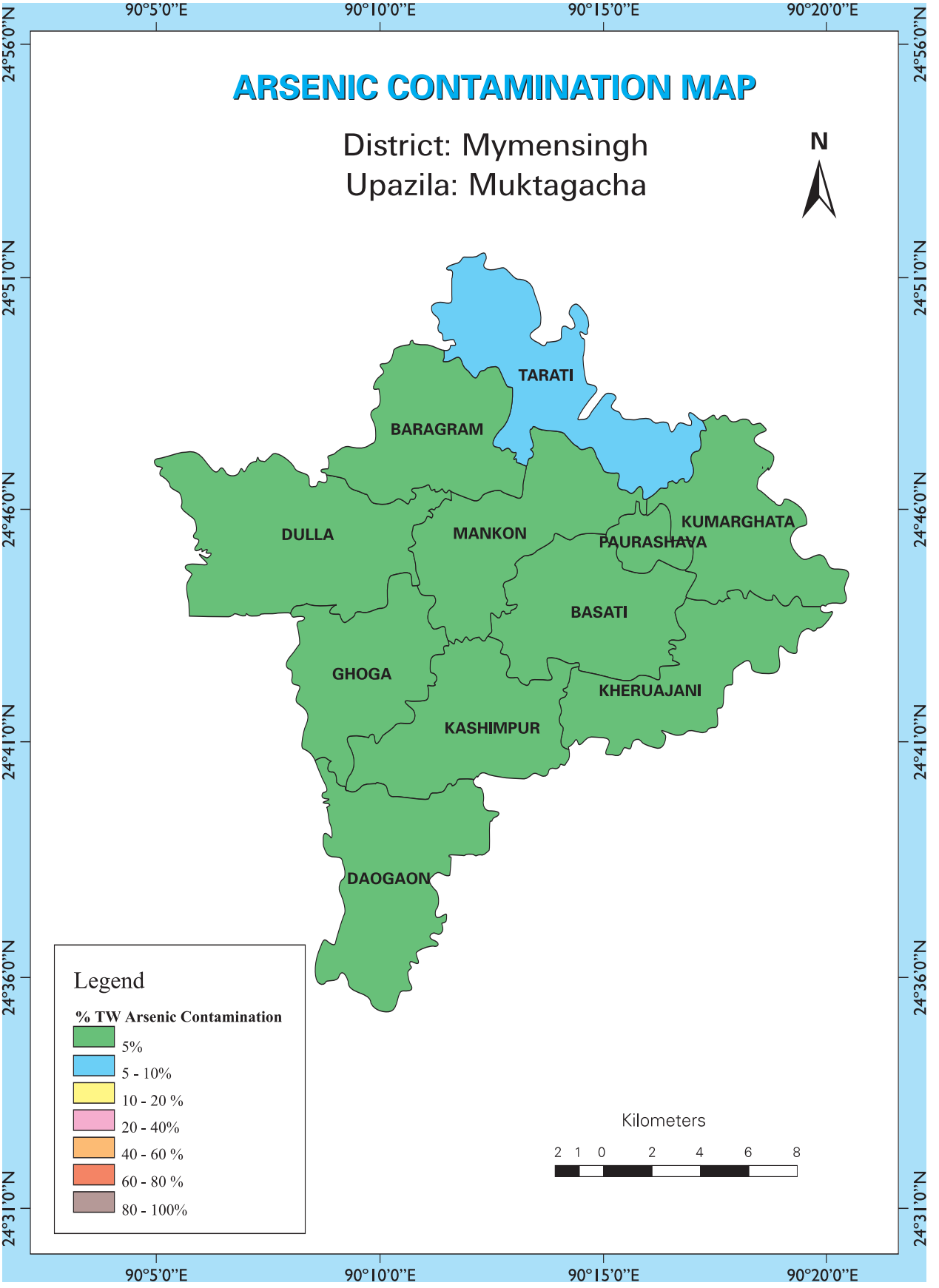

LOWEST WATER TABLE, 2007
District: Mymensingh
Upazila: Ishwargonj
N
90°30'0"E
90°35'0"E
90°40'0"E
90°45'0"E
24°50'0"N
24°45'0"N
24°40'0"N
24°35'0"N
24°30'0"N
SOHAGI
ISHWARGONJ
TARUNDIA
SARISHA
BARAHIT
JATIA
ATHARABARI
UCHAKHILA
MAIJBAGH
RAJIBPUR
MAGTALA
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 6 8
KM

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Mymensingh	Muktagacha	Bashati	49	49	0.67	No	No	No	No	ST-T1	180	?	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Borogram	47	-	1.28	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Daogaon	48	-	0.3	No	-	No	-	ST-T1	175	-	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Dullah	44	-	0.55	No	-	No	-	ST-T1	175	-	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Ghoga	46	48	3.09	No	No	No	No	ST-T1	160	?	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Kashimpur	47	-	1.52	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Kheruajani	49	-	1.36	No	-	No	-	ST-T1	180	-	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Kumargata	50	-	3.9	No	-	No	-	ST-T1	175	-	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Mankon	47	-	1.23	No	-	No	-	ST-T1	170	-	STW-TDev	-	-	-	
Mymensingh	Muktagacha	Tarati	47	50	5.31	No	No	No	No	ST-T1	170	?	STW-TDev	-	-	-	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Mymensingh
Upazila: Muktagacha
N
90°5'0"E
90°10'0"E
90°15'0"E
90°20'0"E
24°55'0"N
24°50'0"N
24°45'0"N
24°40'0"N
24°35'0"N
24°30'0"N
TARATI
BARAGRAM
DULLA
MANKON
KUMARGHATA
PAURASHAVA
BASATI
GHOGA
KHERUAJANI
KASHIMPUR
DAOGAON
ART
DTW-TDev
DTW-SU
DW
DW/SS
DW/SST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4
Kilometers
0 1 2 4 6 8


ARSENIC CONTAMINATION MAP
District: Mymensingh
Upazila: Muktagacha
N
90°5'0"E
90°10'0"E
90°15'0"E
90°20'0"E
24°56'0"N
24°51'0"N
24°46'0"N
24°41'0"N
24°36'0"N
24°31'0"N
TARATI
BARAGRAM
DULLA
MANKON
KUMARGHATA
PAURASHAVA
BASATI
GHOGA
KHERUAJANI
KASHIMPUR
DAOGAON
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8

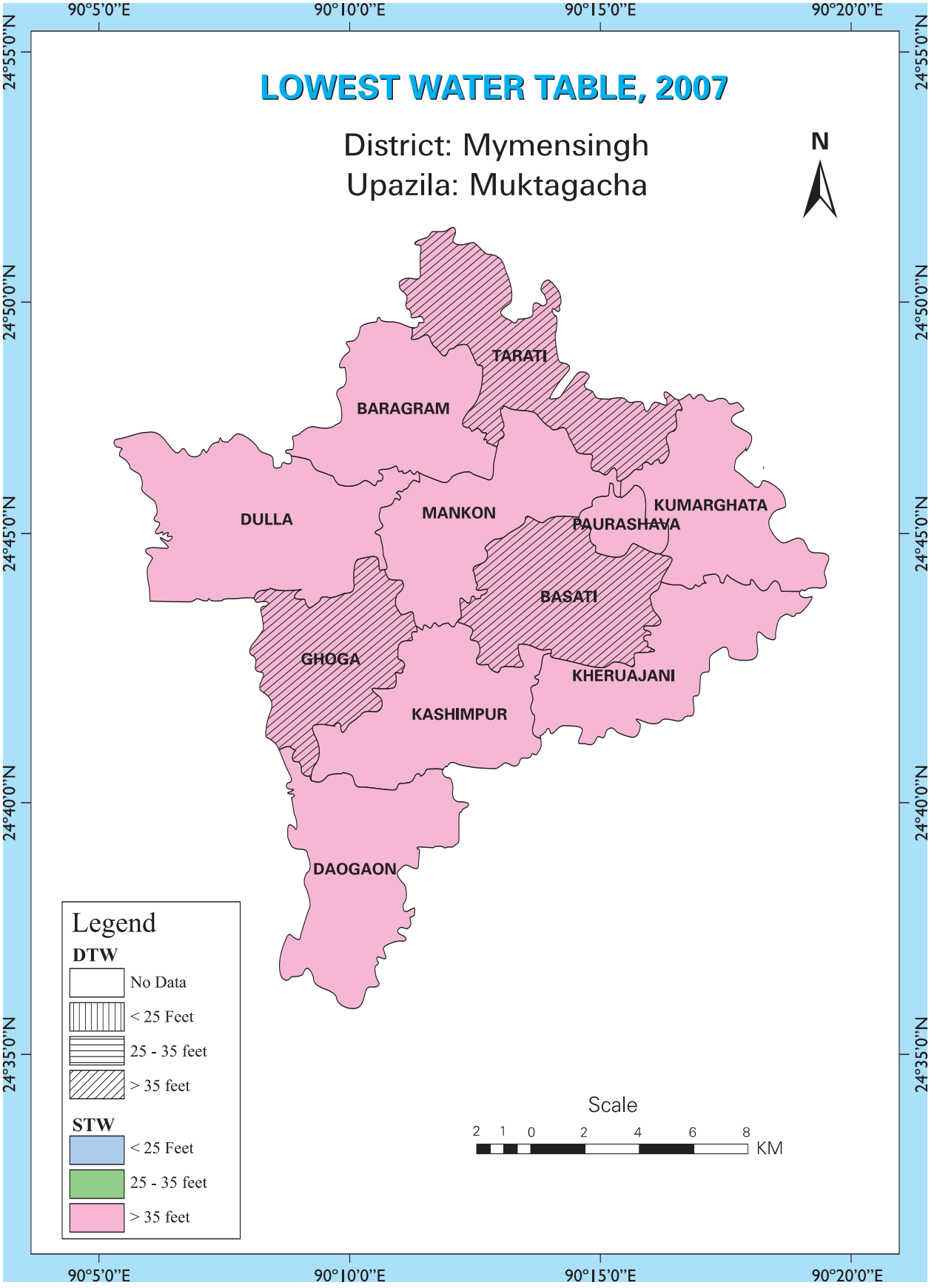
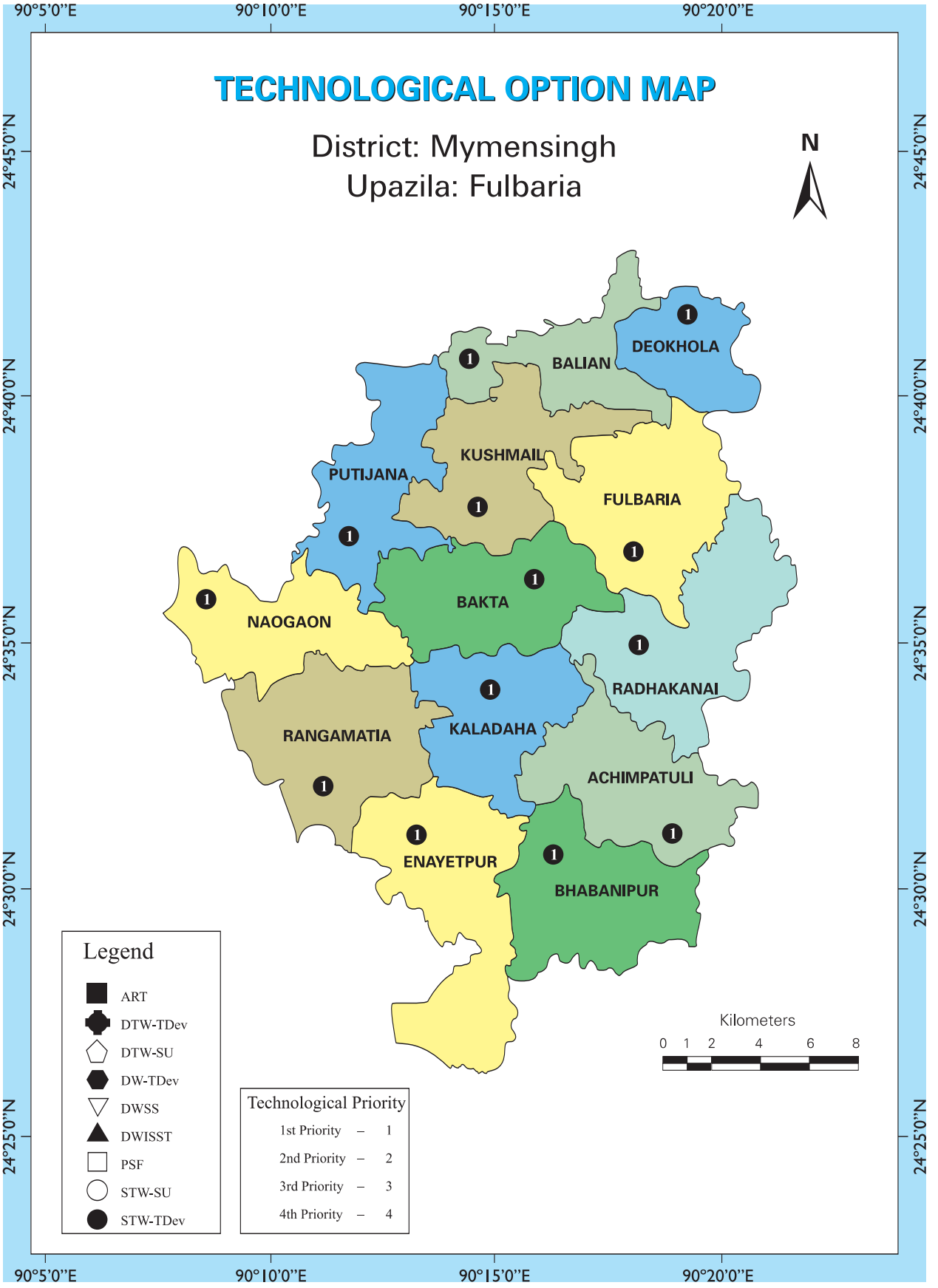

LOWEST WATER TABLE, 2007
District: Mymensingh
Upazila: Muktagacha
N
90°5'0"E
90°10'0"E
90°15'0"E
90°20'0"E
24°55'0"N
24°50'0"N
24°45'0"N
24°40'0"N
24°35'0"N
TARATI
BARAGRAM
DULLA
MANKON
KUMARGHATA
PAURASHAVA
BASATI
GHOGA
KHERUAJANI
KASHIMPUR
DAOGAON
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 6 8
KM

Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Mymensingh	Fulbaria	Adim	39	-	NIL	No	-	No	-	N/D	N/D	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Bakta	55	-	NIL	No	-	No	-	ST-T1	160	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Achimpatuli	54	-	NIL	No	-	No	-	ST-T1	200	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Balian	55	-	NIL	No	-	No	-	ST-T2	175	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Deokhola	53	-	NIL	No	-	No	-	ST-T1	175	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Enayetpur	52	-	NIL	No	-	No	-	ST-T1	160	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Fulbaria	55	-	NIL	No	-	No	-	ST-T1	160	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Kaladaha	51	-	NIL	No	-	No	-	ST-T1	150	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Kushmail	53	-	NIL	No	-	No	-	ST-T1	175	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Naogaon	52	-	NIL	No	-	No	-	ST-T1	150	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Putijana	56	-	NIL	No	-	No	-	ST-T1	160	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Radhakanai	56	-	NIL	No	-	No	-	ST-T1	175	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Rangamatia	53	-	NIL	No	-	No	-	ST-T1	175	-	STW-TDev	-	-	-	
Mymensingh	Fulbaria	Vabanipur	51	-	NIL	No	-	No	-	ST-T1	160	-	STW-TDev	-	-	-	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Mymensingh
Upazila: Fulbaria
N
90°5'0"E
90°10'0"E
90°15'0"E
90°20'0"E
24°45'0"N
24°40'0"N
24°35'0"N
24°30'0"N
24°25'0"N
DEOKHOLA
BALIAN
KUSHMAIL
PUTIJANA
FULBARIA
BAKTA
NAOGAON
RADHAKANAI
KALADAHA
RANGAMATIA
ACHIMPATULI
ENAYETPUR
BHABANIPUR
Legend
ART
DTW-TDev
DTW-SU
DW-TDev
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4
Kilometers
0 1 2 4 6 8

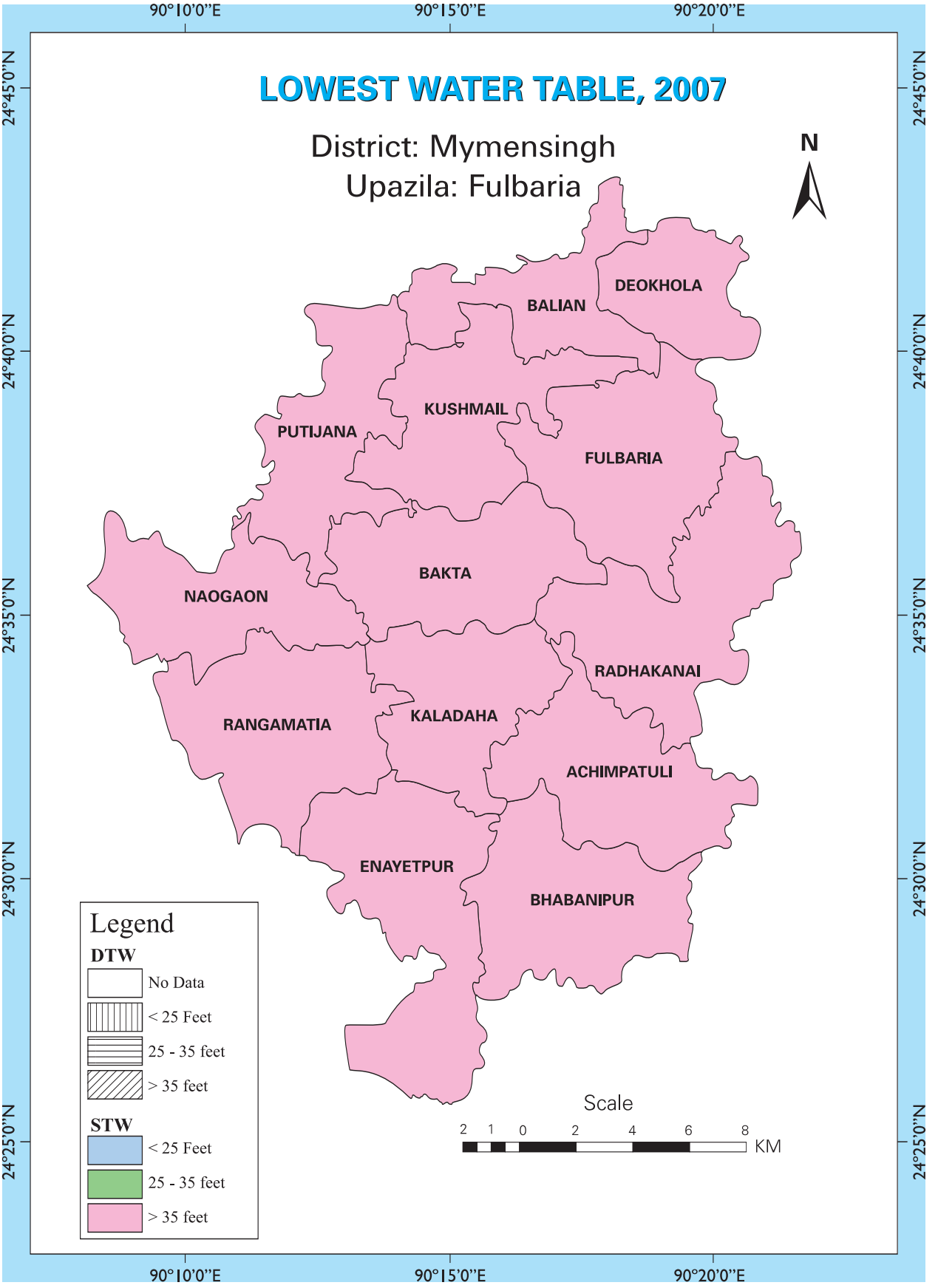
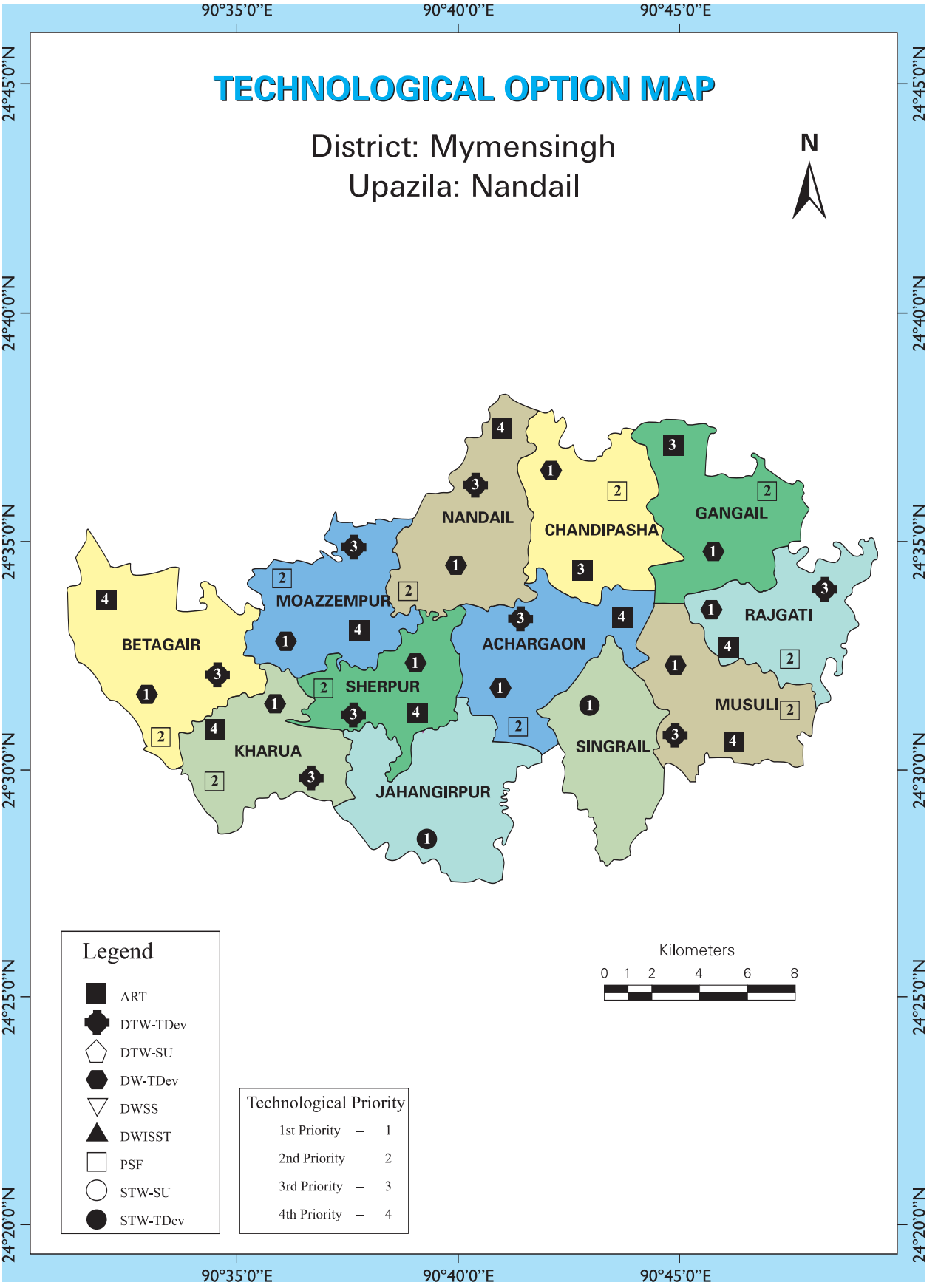
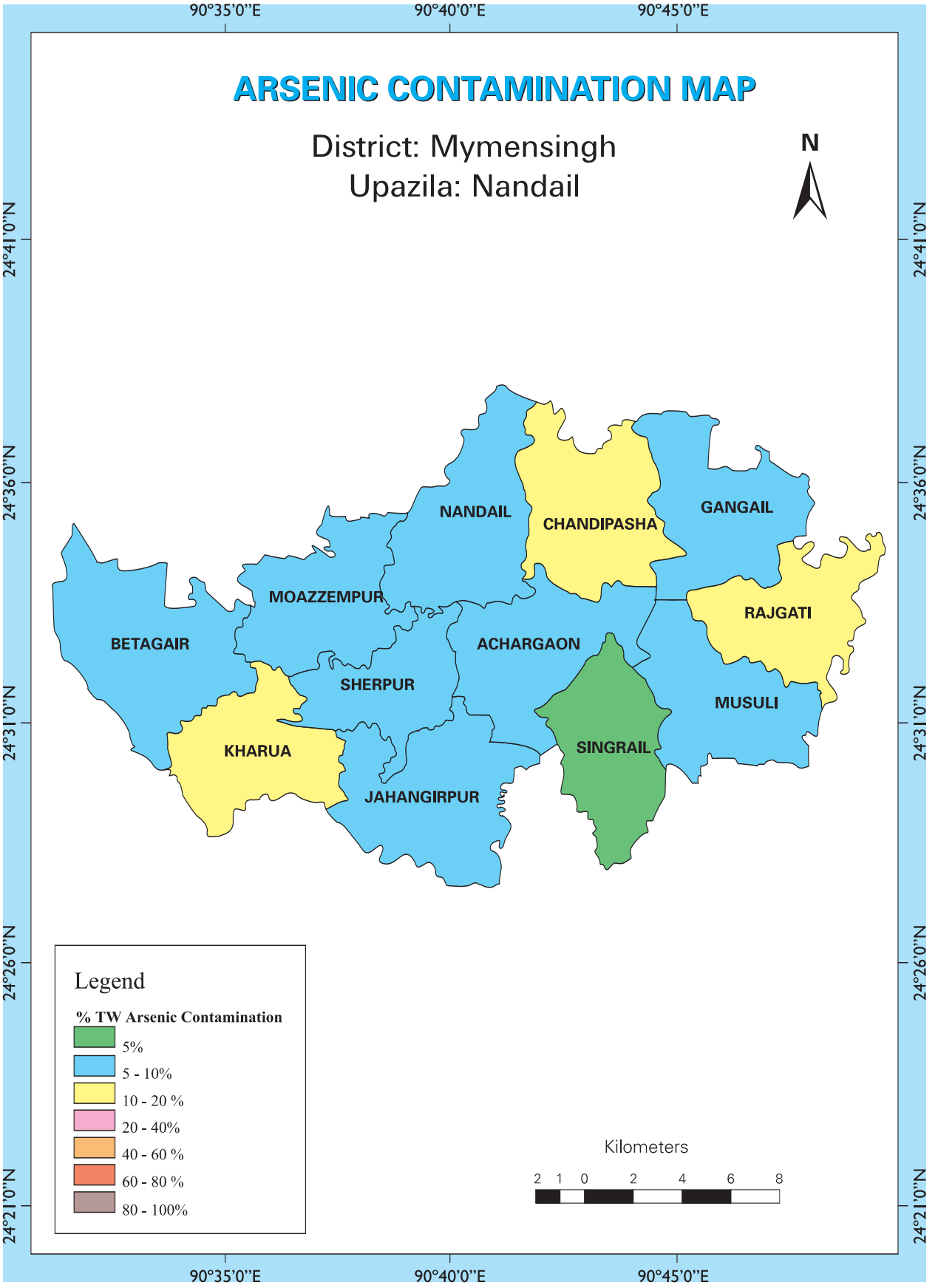

LOWEST WATER TABLE, 2007
District: Mymensingh
Upazila: Fulbaria
N
90°10'0"E
90°15'0"E
90°20'0"E
24°45'0"N
24°40'0"N
24°35'0"N
24°30'0"N
24°25'0"N
DEOKHOLA
BALIAN
KUSHMAIL
PUTIJANA
FULBARIA
BAKTA
NAOGAON
RADHAKANAI
RANGAMATIA
KALADAHA
ACHIMPATULI
ENAYETPUR
BHABANIPUR
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 6 8
KM

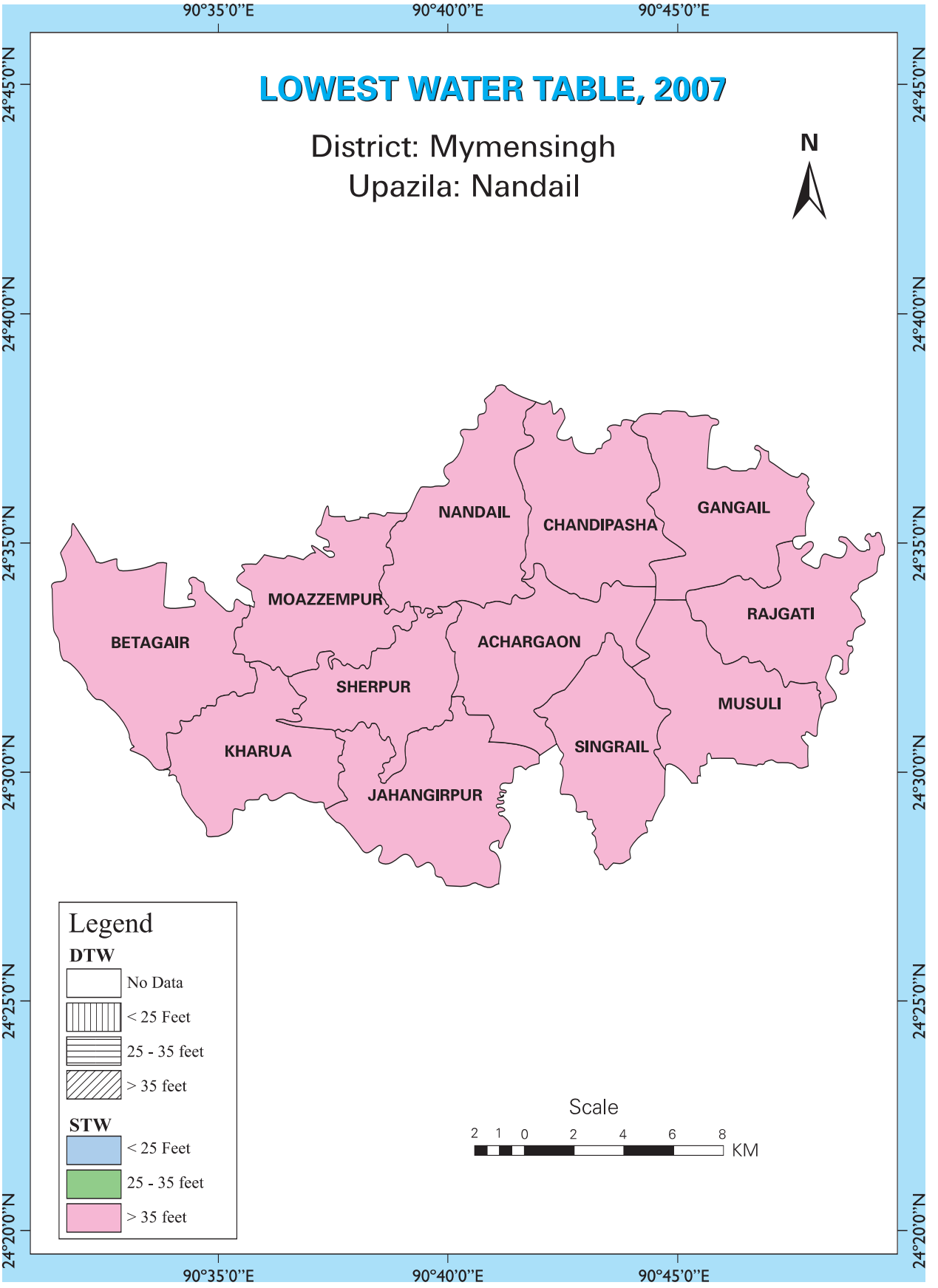
Table For Water Supply Technology Mapping on 'Water Supply Technology' under "GOB-UNICEF Project"

District Name	Upazila Name	Union Name	Water Supply Technology														Remark
			Lowest Water Table (LWT), 2007 in Feet		% TW As Contami-nation	Fe Problem (>5 ppm) Yes/No		Cl Problem (>600 ppm) Yes/No		Tech-nology option as per 1993	Average depth of Tube well in Feet		Recommended options on the priority basis: STW: Shallow Tubewell, No.6/T.Dev DTW: Deep Tubewell, No.6/T.Dev DW : Dug Well (Ring well) PSF: Pond Sand Filter ART: Arsenic Removal Technology				
			STW	DTW		STW	DTW	STW	DTW		STW	DTW	1	2	3	4	
Mymensingh	Nandail	Achargaon	61	-	7.94	No	-	No	-	ST-T1	230	-	DW-Tdev	PSF	DTW-TDev	ART	
Mymensingh	Nandail	Betager	58	-	6.74	No	-	No	-	ST-T1	200	-	DW-Tdev	PSF	DTW-TDev	ART	
Mymensingh	Nandail	Chandipasha	60	-	11.53	No	-	No	-	ST-T1	275	-	DW-Tdev	PSF	ART	-	
Mymensingh	Nandail	Ganggail	58	-	9.8	No	-	No	-	ST-T1	235	-	DW-Tdev	PSF	ART	-	
Mymensingh	Nandail	Jahangirpur	60	-	5.93	No	-	No	-	ST-T1	200	-	STW-TDev	-	-	-	
Mymensingh	Nandail	Kharua	60	-	14.89	No	-	No	-	ST-T1	210	-	DW-Tdev	PSF	DTW-TDev	ART	
Mymensingh	Nandail	Moazzempur	62	-	6.21	No	-	No	-	ST-T1	250	-	DW-Tdev	PSF	DTW-TDev	ART	
Mymensingh	Nandail	Musulli	55	-	6.54	No	-	No	-	ST-T1	225	-	DW-Tdev	PSF	DTW-TDev	ART	
Mymensingh	Nandail	Nandail	55	-	8.75	No	-	No	-	ST-T1	225	-	DW-Tdev	PSF	DTW-TDev	ART	
Mymensingh	Nandail	Pourashava	61	-	4.55	No	-	No	-			-	STW-TDev	-	-	-	
Mymensingh	Nandail	Rajgati	59	-	11.38	No	-	No	-	ST-T1	210	-	DW-Tdev	PSF	DTW-TDev	ART	
Mymensingh	Nandail	Sherpur	58	-	8.42	No	-	No	-	ST-T1	225	-	DW-Tdev	PSF	DTW-TDev	ART	
Mymensingh	Nandail	Singruil	60	-	4.75	No	-	No	-	ST-T1	225	-	STW-TDev	-	-	-	

STW: Shallow Tube Well, VSST: Very Shallow Shrouded Well, DTW: Deep Tube Well, RSF: River Sand Filter, SU: Suction Pump, T1: Tara Pump, T2: Super Tara Pump, T Dev: Tara Pump Dev, N/D: No Data


TECHNOLOGICAL OPTION MAP
District: Mymensingh
Upazila: Nandail
N
90°35'0"E
90°40'0"E
90°45'0"E
24°45'0"N
24°40'0"N
24°35'0"N
24°30'0"N
24°25'0"N
24°20'0"N
NANDAIL
CHANDIPASHA
GANGAIL
MOAZZEMPUR
RAJGATI
BETAGAIR
ACHARGAON
SHERPUR
MUSULI
KHARUA
SINGRAIL
JAHANGIRPUR
Legend
ART
DTW-TDev
DTW-SU
DW-TDev
DWSS
DWISST
PSF
STW-SU
STW-TDev
Technological Priority
1st Priority – 1
2nd Priority – 2
3rd Priority – 3
4th Priority – 4
Kilometers
0 1 2 4 6 8


ARSENIC CONTAMINATION MAP
District: Mymensingh
Upazila: Nandail
N
90°35'0"E
90°40'0"E
90°45'0"E
24°41'0"N
24°36'0"N
24°31'0"N
24°26'0"N
24°21'0"N
NANDAIL
CHANDIPASHA
GANGAIL
MOAZZEMPUR
RAJGATI
BETAGAIR
ACHARGAON
SHERPUR
MUSULI
KHARUA
SINGRAIL
JAHANGIRPUR
Legend
% TW Arsenic Contamination
5%
5 - 10%
10 - 20 %
20 - 40%
40 - 60 %
60 - 80 %
80 - 100%
Kilometers
2 1 0 2 4 6 8


LOWEST WATER TABLE, 2007
District: Mymensingh
Upazila: Nandail
N
90°35'0"E
90°40'0"E
90°45'0"E
24°45'0"N
24°40'0"N
24°35'0"N
24°30'0"N
24°25'0"N
24°20'0"N
NANDAIL
CHANDIPASHA
GANGAIL
MOAZZEMPUR
RAJGATI
BETAGAIR
ACHARGAON
SHERPUR
MUSULI
KHARUA
SINGRAIL
JAHANGIRPUR
Legend
DTW
No Data
< 25 Feet
25 - 35 feet
> 35 feet
STW
< 25 Feet
25 - 35 feet
> 35 feet
Scale
2 1 0 2 4 6 8
KM


UKaid
from the Department for
International Development


unicef