

資料8 収集資料リスト

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番号	カテゴリ	資料の名称	発行年	地域	言語	形態	版数	ページ数	資料の別	部数	収集先名称又は発行機関	寄贈・購入の別	備考
1	レポート	PETUNJUK PERENCANAAN TEKNIS AIR BERSIH	1994		インドネシア語	姉妹誌止め	A4	9	北	1	CIPTA KARYA DEPARTEMEN PEKERJAAN UMUM	購入	
2	レポート	RURAL WATER SUPPLY PROJECT IN NUSA TENGGARA	1995	Nusatenggara	インドネシア語	製本	A3+A4	73	南	1	DEPARTEMEN PEKERJAAN UMUM	購入	
3	レポート	WATER SUPPLY AND SANITATION SECTOR PROJECT FOR EASTERN INDONESIA REGION	1996	INDONESIA	英語	リンク製本	A3+A4	163	南	1	PT.DACREA	購入	
4	レポート	DESIGN CRITERIA AND STANDARD DRAWINGS	1999	Lombok	英語	製本	A3+A4	28	南	1	JICA (インドネシア)	購入	
5	レポート	SURVEY RESULT	1999	Lombok	英語	製本	A3+A4	102	南	1	JICA (インドネシア)	購入	
6	レポート	DESIGN REPORT	1999	Lombok	英語	製本	A3+A4	168	南	1	JICA (インドネシア)	購入	
7	レポート	Penyusunan hasil ... REPELITA VI Puehonsi Ivusa Lenggara Barat	1998 1999	SUMUDERA INDONESIA	インドネシア語	リンク製本	A3	98	南	1	DINAS PEKERJAAN UMUM	購入	
8	レポート	PETA PRASARANA INDONESIA	1998	INDONESIA	インドネシア語	リンク製本	A3	33	南	1	DEPARTEMEN PEKERJAAN UMUM	購入	
9	レポート	PEKERJAAN PEMBORAN SUMUR PRODUKSI 10 LOKASI/1.100 METER DIPULAU LOMBOK NUSA TENGGARA BARAT	1995 1996	Nusa Tenggara Barat	インドネシア語	製本	A4	90	南	1	CV. KUALA DELI	購入	
10	レポート	DAFTAR INVENTARISASI SUMUR BOR BAGIAN PROYEK PAT LOMBOK	1981 -1996	Lombok	インドネシア語	製本	A4	36	南	1		購入	
11	レポート	DECREE OF THE MINISTRY OF SETTLEMENTS AND REGIONAL DEVELOPMENT	1999	INDONESIA	英語	製本	A4	49	南	1		購入	居住・地域開発省組織図
12	レポート	DAERAH YANG DAPAT DIKEMBANGKAN AIR TANAHNYA BERDASARKAN HASIL PENYELIDIKAN HYDROGEOLOGI, GEOLOGI DAN GEOFISIKA		SUMBAWA	インドネシア語	製本	A4	9	南	1	BAGIAN PROYEK PAT SUMBAWA	購入	
13	レポート	INDONESIA SSIMP		INDONESIA	英語	パンフレット	A4	18	南	1	日本工営	購入	
14	レポート	Sumbawa Water Resources Development Study Review Study Final Report	1995	INDONESIA	英語	製本	A4	55	南	1	日本工営	購入	
15	レポート	Sumbawa Water Resources Development Study Draft Final Report	1995	INDONESIA	英語	製本	A4	53	南	1	日本工営	購入	
16	レポート	SURVEY RESULT Project Finding Survey for Small-Scale Water Supply System in Rural Areas in Timor Tengah Utara and Timor Tengah Selatan Regency	2000	INDONESIA	インドネシア語	製本	A4	75	南	1	PT.Ratu Utama Patnia Teknik Consulting Engineers	購入	
17	レポート	EASTERN ISLANDS IKK WATER SUPPLY DESIGN PROJECT	1988	INDONESIA	英語	袋	A4	303	北	1	SCOTT&FURPHY ENGINEERS	寄贈	
18	レポート	EASTERN INDONESIA IKK WATER SUPPLY PROGRAM	1989 -1990	TANGGA,CE NGGU,MARIA	英語	袋	A4	160	北	1	SCOTT&FURPHY ENGINEERS	寄贈	
19	レポート	PENYUSUNAN HASIL PEMBANGUNAN SARANA PENYEDIAAN AIR BERSIH DAN PENYEHATAN LINGKUNGAN PERMUKIMAN (PAB-PLP)PERDESAAN REPELITA VI	1989 -1990	INDONESIA		グラフ止め	A4	93	北	1	DINAS PEKERJAAN UMUM SUB DINAS CIPTA KARYA	購入	
20	レポート	EVALUASI SISTEM JARINGAN DISTRIBUSI EKSISTING PDAM MENANG MATARAM KABUPATEN LOMBOK		Lombok Barat	インドネシア語	リンク製本	A3+A4	177	南	1	PDAM MENANG MATARAM	購入	
21	レポート	AIR BERSIH	1998	INDONESIA	インドネシア語	製本	A4	170	北	1	DEPARTMEN PEKERJAAN UMUM	購入	
22	レポート	AIR BERSIH DAN PENYEHATAN LINGKUNGAN PERMUKIMAN PERDESAAN	1999	INDONESIA	インドネシア語	製本	A4	125	北	1	DEPARTMEN PEKERJAAN UMUM	購入	
23	資料	RESUME DESA-DESA YANG SUDAH SIAP DED SEKTOR AIR BERSIH DI PROPINSI NUSA TENGGARA TIMUR	1993	Nusatenggara Timur	インドネシア語	姉妹誌止め	A4	4	北	1	Rural Development Easter Region	寄贈	
24	資料	REKAPITULASI JUMLAH SUMUR PROYEK PENGEMBANGAN AIR TANAH DI INDONESIA NUSA		Nusatenggara Barat	英語 インドネシア語	姉妹誌止め	A4	4	北	1	Rural Development Easter Region	寄贈	
25	資料	SUMBAWA WRD REVIEW STUDY ; SSIMP		SUMBAWA	英語	姉妹誌止め	A4	4	北	1	Rural Development Easter Region	寄贈	
26	資料	PROJECTION OF WATER DEMAND BY SECTOR		INDONESIA	英語	姉妹誌止め	A4	13	北	1	Rural Development Easter Region	寄贈	
27	資料	TANJUNG SISTEM (Water Supply)		TANJUNG	インドネシア語	バラ	A3	1	北	1	PDAM	購入	
28	資料	SISTIM PERPIPAAN KODYA MATARAM	1999 2000		インドネシア語	バラ	A3	1	北	1	PDAM	購入	
29	資料	INDONESIAN GERMAN GOVERNMENT CO-OPERATION		Lombok Barat	インドネシア語	バラ	A3	1	北	1		購入	
30	資料	SAMUDERA INDONESIA		INDONESIA	インドネシア語	バラ		1	北	1		購入	
31	資料	ADMINISTRASI (KABUPATEN BIMA)	1992	SUMBAWA	インドネシア語	バラ		1	北	1	PDAM	寄贈	
32	資料	KABUPATEN DOMPU (Water Supply)	2000	DOMPU SUMBAWA	インドネシア語	姉妹誌止め	A3	23	北	1	PDAM	寄贈	
33	資料	対象村落選定のための質問表 (案)	2000	DOMPU SUMBAWA	インドネシア語	バラ		1	北	1	PDAM	寄贈	PDAMの独自ヒアリング
34	資料	PERUSAHAAN DAERAH AIR MINUM KABUPATEN DOMPU	2000	DOMPU SUMBAWA	インドネシア語	バラ	A4	1	北	1	PDAM	寄贈	PDAM Dompuのマップリスト
35	資料	SISTIM PENYEDIAAN AIR BERSIH JARINGAN TRANSMISI DISTRIBUSI KOTA ADMINISTRATIP RABA-		BIMA SUMBAWA	インドネシア語	バラ	A3	1	北	1	PEMERINTAH KABUPATEN	購入	水道施設資料
36	資料	GAMBARAN DAN PROGRAM KERJA	2000	BIMA SUMBAWA	インドネシア語	姉妹誌止め	A4	10	北	1	PDAM	購入	
37	資料	Rencana Pengembangan PDAM Lombok Timur Wilayah Tengah-IKK SUKAMUL	2000	Lombok Timur	インドネシア語	姉妹誌止め	A4	4	北	1	PDAM	購入	
38	資料	DATA PEGAWAI PDAM MENANG MATARAM BERDASARKAN : KEPANGKATAN, PENDIDIKAN DAN	2000		インドネシア語	姉妹誌止め	A4	5	北	1	PDAM	購入	PDAM 従業員略歴
39	資料	USULAN PROGRAM SISTIM PENYEDIAAN AIR BERSIH DAM PELA PARADO	1999	BIMA SUMBAWA	インドネシア語	姉妹誌止め	A3+A4	13	北	1	PDAM	購入	
40	資料	LAPORAN BULANAN (TEHNIK)	1999		インドネシア語	姉妹誌止め	A4	12	北	1	PDAM	購入	PDAM 月報
41	資料	PEMERINTAH KABUPATEN DOMPU PROPOSAL KEGIATAN	2000		インドネシア語	姉妹誌止め	A4	30	北	1	DOMPU	購入	

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42	資料	PETA Administrash ketinggian, Kemiringan tanah kedolman ebektib tanah tekstur tanah kaurasan Liondung dan Budidaya. Fasilitas listrik				折り詰め	A4	7	北	2	PPDT	購入	
43	資料	PETA Geologi, Hidrogeologi, Potensi Airtanah ect		SUMBAWA		折り詰め	A4	51	北	1	DEPARTEMEN PEKERJAAN UMUM	購入	
44	資料	ARIC 情報 第57号		INDONESIA	日本語	折り詰め	A4	7	北	1	農業農村整備情報総合センター	購入	
45	資料	ARIC 情報 第58号		INDONESIA	日本語	折り詰め	A4	6	北	1	農業農村整備情報総合センター	購入	
46	資料	INDONESIA - WATER SECTOR ADJUSTMENT LOAN	1999	INDONESIA	英語 日本語	折り詰め	A4	84	北	1	世銀	寄贈	
47	資料	PETA PELAYANAN AIR BERSH, DETAIC ENGINEERING DESIAN SYSTEM, KOTA PRAYA		Lombok Selatan		バラ	A4	5	北	1	BAPPENAS	寄贈	
48	資料	TECHNICAL DATA: Existing PDAM Pihe System Lombok Integrated Urban Infrastructure Development puoyeit BAB TIGA ~ PSDU PUKTA DAN KAWASAN		Lombok Timur	英語 日本語	折り詰め	A4	40	北	1	PDAM	購入	
49	資料	TECHNICAL DATA: Existing PDAM Pihe System Lombok Integrated Urban Infrastructure Development puoyeit BAB TIGA ~ PSDU PUKTA DAN KAWASAN		INDONESIA	日本語	折り詰め	A4	10	北	1		購入	
50	資料	EVALUASI PROGRAM P2 PENYAKIT PROVINSI NUSA TENGGARA BARAT	1999-2000	Nusatenggara	日本語	折り詰め	A4	3	北	1	DINAS KESEHATAN	購入	
51	資料	PERATURAN MENTERI KESEHATAN REPUBLIK INDONESIA	1990	INDONESIA	日本語	折り詰め	A4	6	北	1	SYARAT-SYARAT DAN PENGAWASAN KUALITAS	購入	
52	資料	HASIL KEGIATAN PENGAMBILAN SAMPEL PROYEK GIZPADA SUMBER MATA AIR DAN RESERVOIR	2000	Lombok		折り詰め	A4	4	北	1	Dr. Reny Bunjamin, MPH	購入	
53	資料	DESA-DESA TERPILIH DALAM PERENCANAAN WILAYAH DI PROPINSI NUSA TENGGARA BARAT		Nusatenggara		折り詰め	A4	8	北	1	PROYEK PENINGKATAN PRASARANA PERMUKIMAN NTB	購入	
54	資料	The Study on Rural Water Supply Project in Nusa Tenggara Barat and Nusa Tenggara Timur, Indonesia	2000		英語	折り詰め	A4	5	北	1		寄贈	
55	資料	JAWABAN PERTANYAAN(QUESIONER)DALAM RANGKA ~ SUBDIN CIPTA KARYA DINAS PU	2000		日本語	折り詰め	A4	8	北	1		寄贈	
56	地図	PDAM MENANG MATARAM				Sheet		1	判種	1	PERENCANAAN PDAM MENANG MATARAM	購入	
57	地図	PETA LOKASI EMBUNG DAN BENDUNGAN(BARU) PROYEK PKSA LOMBOK		Lombok		折り詰め	A3	3	北	1		購入	
58	地図	PETA DESA KURANJI	2000			バラ	A4	1	北	1		寄贈	
59	地図	PATA DESA BOAJUR	2000			バラ	A4	1	北	1		寄贈	
60	地図	PATA DESA BAGIK POLAK	2000			バラ	A4	1	北	1		寄贈	
61	地図	PETA DESA SEMBUUNG	2000			バラ	A4	1	北	1		寄贈	
62	地図	PETA DESA PERESAK	2000			バラ	A4	1	北	1		寄贈	
63	地図	PATA DESA DUMAN	2000			バラ	A4	1	北	1		寄贈	
64	地図	DESA RANGGAGATA	2000			バラ		1	北	1		寄贈	
65	地図	PATA WILAYAH DESA SETANGGOR	2000			バラ		1	北	1		寄贈	
66	地図	DESA BAGIC PAPAN	2000			バラ		1	北	1		寄贈	
67	地図	PETA DESA LABULIA	2000			バラ	A4	1	北	1		寄贈	
68	地図	DESA JELAMTIK	2000			バラ		1	北	1		寄贈	
69	地図	PETA DESA PAGUTAN	2000			バラ	A3	1	北	1		寄贈	
70	地図	PETA DESA BATU NAMPAR	2000			バラ	A4	1	北	1		寄贈	
71	地図	PETA DESA TETEBATU	2000			バラ	A4	1	北	1		寄贈	
72	地図	PETA DESA SELAPARANG	2000			バラ	A4	1	北	1		寄贈	
73	地図	PETA DESA : REMBITAN	2000			バラ		1	北	1		寄贈	
74	地形図	PETA GEOLOGI LEMBAR SUMBAWA, NUSATENGARA	1998	Nusatenggara	日本語	Sheet		1	判種	1	A.SLORADJAT, S.ANDI MANGGA DAN ANDI KADARISMAN	購入	geological research and development center
75	地形図	PETA GEOLOGI LEMBAR SUMBAWA, NUSATENGARA	1994	Nusatenggara	日本語	Sheet		1	判種	1	S.KESOEMADINATA, Y.NOYA dan (and) J.KADARISMAN	購入	geological research and development center
76	地形図	PETA GEOLOGI LEMBAR KOMODO, NUSATENGARA	1977	Nusatenggara	日本語	袋		1	判種	1	Nana Ratman dan (and) Aswan Yasin	購入	geological survey of Indonesia
77	地形図	Geologi Lembar Waikabubak dan Waindaru, Nusatenggara	1994	Nusatenggara	日本語	製本		11	判種	1	A.C.Effendi dan (and) J. Apandi	購入	geological research and development center
78	地形図	Geologi Lembar Ende, Nusatenggara Timur	1990	Nusatenggara Timur	日本語	製本		21	判種	1	N. Suwama, S. Santosa dan S. Koesoemadinata	購入	geological research and development center
79	地形図	Geologi Lembar Lombren, Nusatenggara Timur	1990	Nusatenggara Timur	日本語	製本		17	判種	1	Y. Noya dan S. Koesoemadinata	購入	geological research and development center
80	地形図	PETA GEOLOGI LEMBAR KUPANG-ATAMBUA, TIMOR	1979	TIMOR	日本語	袋		17	判種	1	geological research and development center	購入	geological research and development center
81	地形図	PETA GEOLOGI TINJAU LEMBAR SUMBAWA, NUSA TENGGARA BARAT	1975	Nusatenggara	日本語	袋		1	判種	1	geological survey of cindonea	購入	
82	地形図	Geologi Lembar Lombok, Nusatenggara	1994	Nusatenggara	日本語	製本		9	判種	1	Geological Research and Development Center	寄贈	
83	地形図	Geology Lembar Lombok, Nusatenggara	1994	Nusatenggara	日本語	製本	A4	9	判種	1	PUSAT PENELITIAN DAN PENGEMBANGAN GEOLOGI	購入	
84	地形図	PETA TOPOGRAFI KECAMATAN NARMADA		Lombok Barat	日本語	Sheet	A3	1	判種	1		購入	
85	図面	LOKASI EMBUNG KECIL/CRESS PROGRAM	1997	Nusatenggara	日本語	Sheet	A1	1	判種	1	DEPARTEMEN PEKERJAAN UMUM	寄贈	

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表中、A、B+、B、C+、Cは、その順に、上水施設必要の度合いを示す。

Nusa Tenggara Barat-Lombok

Kabupaten Kecamatan Desa	Villages				Water Suuply Sources				Available Existing Water Supply System	Readiness for Introduction of Watwer Supply System; Possible Payment for Chage, Maintenance organization		
	Population	Area (k → ha	Elevation (m)	Village Type Collective C or Scattered S	Distance from National or Provincial Road ()	Access Road Condition Width (m) , Trafficability	Kind of Sources; Well, Spring, Others	Capacity (l /sec)			Distance from Village ()	Elevation Difference from Village (m)
1.Kec. Labu Api, Lombok Barat												
1) Kuranji A	4,813 (5,000); 581 pers./km ²	800.0	15to20m	see map	4.0	W=3.5m, approach W=6.0m paved road	Spring 1 Spring 2	6to7 l /sec less above	in village in village	3to5m 3to5m	adjacent village has WSS. but not available	desiring much knowing WSS of adjacent village. expecting water charge 10,000Rp/month Village people can if proper trained. Waterborne disease occurs in wet season.
*Water source is sufficient. *Priority is higher. *Recommended to introduce WSS considering present status of adjacent village. Motor pump & elevated water tank are necessary.												
2) Bajur B+	9,159 (6,300)		15to20m	see map	0.8	W=5.0m, paved road	Spring 1 Spring 2 Spring 3	3 l /sec unknown unknown	1.0 unknown unknown	1.5m	adjacent village has WSS. available or not ?	Desiring Expecting water charge 7,000to10,000Rp/month Village people can if proper trained. Electricity for motor pump is available. Waterborne diseases are found in wet season. Sep Nov diarrhea 59 95 disentry 19 28 skin disease 58 30
*Disease record is managed well. Water source is relatively enough. *Water source is relatively enough. *Priority is relatively high.												
3) Bagik Polak C+	5,783 (6,811)		18to25m	see map	1.0	W=3.5m, paved road	ground water	unknown unknown	unknown unknown		Existing water supply system is operated from 1998. 10% of village people are served. PDAM constructed and operated. Charge is low.	30% of village people can be served by the existing supply system. Each house has hand pump well of 7to12m depth.. Supply to house is not likely to be desired. expecting water charge 5,000to7,000Rp/month Waterborne diseases of diarrhea is found Electricity for motor pump is available.
*Water supply system exists even service is not sufficient. *Priority is relatively low. *PDAM operates WSS now. WSS is expected and to be installed by PDAM continuously.												
2.Kec. Namada, Lombok Barat												
4) Sembung Lendiang ?e A	(5163) 2,813	273.7		see map	2.9	W=3.0m, unpaved W=3.5m, paved Manual transportation is necessary for 1.0km to water sources.	Spring 1 Spring 2 Spring 3 Spring 4	1 l /sec 4 l /sec 1.5 l /sec 4 l /sec	1.0 1.0 0.8 0.6	-10m -10m -10m -10m	Some area is already supplied.	People are wonderful if water supply system is installed. It is possible for village people to operate and maintain if properly trained. Waterborne diseases of diarrhea is found Jan. Feb. Mar. diarrhea 68 44 52 disentry 8 5 8 skin disease 32 13 24 Apr. May Jun. diarrhea 50 43 50 disentry 4 5 12 skin disease 15 15 15 Electricity for motor pump is available.
*Disease record is managed well. Water source is relatively enough. *Water source is relatively enough. *Motor pump and elevated water tank is necessary. *Priority is high.												
5) Durman B+	5,124 1281 families		100	see map	3.8	W=3.5to4.0m paved road	Spring 1 Spring 2	high high to low	5.0 0.1	400 -7	WSS; not available	desiring much expecting water charge 1,000Rp/month O and M organization is already organized.. Waterborne disease; diarrhea 7, dysentry 7. (during wet season) 400to 500families in Villages of (田)-(休) are served by UNICEF, shallow wells or public tanks. Electricity for motor pump is not available.
*Water source is relatively enough. *Motor pump and elevated water tank may be necessary. *Priority is high. *Coordination of programes between JICA and UNICEF is necessary.												

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Nusa Tenggara Barat-Lombok

表中、A、B+、B、C+、Cは、その順に、上水施設必要の度合いを示す。

Kabupaten Kecamatann Desa	Population	Area (k→) ha	Villages		Distance from National or Provincial Road ()	Access Road Condition Width (m) , Trafficability	Water Suuply Sources			Available Existing Water Supply System	Readiness for Introduction of Watwer Supply System; Possible Payment for Chage, Maintenance organization	
			Village Type Collective C or Scattered S	Elevation (m)			Kind of Sources; Well, Spring, Others	Capacity (l /sec)	Distance from Village ()			Elevation Difference from Village (m)
2.Kec. Namada, Lombok Barat 6)Peresak B	10,000 2,500families	6,666.0	50	see map collectvive	1.0	W=3.5m, paved road Level difference bet. residence and village road is 2.0m	shallow well, public well dep.=14m Capacity is unknown.		water source in Lembua village 3.0	unknown	WSS; not available Public wells are used. 4families/1well Submersible water pump is supplied by local gov'm't. (150,000Rp is subsidised). to:principal house. Other wells are used with rope & bucket.	Desiring. People want clean water supply. Expecting water charge 1,000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases are found in wet season. diarrhea 20 dysentery 20 skin disease Public hydrant may be reccmended.
3.Kec. Batukllang, Lornbok Tengah 7)Pagutan C	(5,920) 1,505families	600.0	200	see map flat collectvive	7.0	W=3.0m, paved road	Springs Shallow wells	1.5to2.0	1.0 highest		WSS; not available Public well and house well are available.	Desiring much Expecting water charge 1,000to2,000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases of diarrhea is found diarrhea, dysentery, skin disease; 10.people more or less
4.Kec. Jonggat, Lombok Tengah 8)Jelantik A	7,204 1,771 families	646.0	80to85	see map collectvive	0.0	W=7.0m, paved	River Miri dam for irrigation Shallow wells	500,000	1.5 0.6	-3to-4m lower	Existing WSS; not available Dam water is available for potable water in south Lombok.7 to8km from here	enthusiastic Expecting water charge 7,500to10,000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases of diarrhea is found diarrhea, dysentery.25/month in-wet-season. skin disease small number
9)Labulia A	9,120 4,500families	1,000.0	100	see map scattered	6.3	W=3.5to4.0m, paved road	Shallow wells Public well	5m depth	0.3	-	Existing WSS; not available Public well are available. 3families/1public well	desiring for ten years Expecting water charge 20,000to25,000Rp/mon Farmer pay 15,000to20,000Rp/month for irrigation-water. Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases of diarrhea is found diarrhea 50to100/month in-wet season. skin disease beginning in transition period from wet to dry season

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Nusa Tenggara Barat-Lombok

表中、A、B+、B、C+、Cは、その順に、上水施設必要の度合いを示す。

Kabupaten Kecamatan Desa	Villages				Water Supply Sources			Available Existing Water Supply System	Readiness for Introduction of Water Supply System; Possible Payment for Charge, Maintenance organization			
	Population	Area (k→) ha	Elevation (m)	Village Type Collective C or Scattered S	Distance from National or Provincial Road ()	Access Road Condition Width (m) , Trafficability	Kind of Sources; Well, Spring, Others			Capacity (l /sec)	Distance from Village ()	Elevation Difference from Village (m)
5.Kec. Praya Barat, Lombok Tengah 10)Ranggagata C	4,125 1080families	500.0	100	see map Scattered	11.3	W=5.0m bad road	shallow well, 5to10m depth Well depth of 3.0m of which water level is 1.5m is existing. Water is very clean in a few wells Ausaid WSS supplies to Darek village nearby.	Water of some wells has salty taste. less water in dry season			Existing WSS; not available Ausaid WSS of which water source is Batujailab dam is broken. Public wells are used. 10families/1well Water for toilet use is short	desiring much expecting water charge 1,000Rp/month Village people can O and M if properly trained. Such organization was made ago. Electricity for motor pump is available. Waterborne disease 10to20/month in wet season diarrhea,dysentry
* Deep well is necessary to explore. *Motor pump and elevated water tank may be necessary. *Priority is higher. *Coordination of programes betweenJICA and Ausaid is necessary.												
11)Setangor A+	4,500 1,500families	1,176.0 ?		see map collective	3.0	W=3.5m, paved road	Shallow well in almost each family 11 Public wells for almost all families within village Depth=5to10m				Existing WSS; not available 11 Public wells for almost all families within In addition, 2 water tank rollies supply water in same price as electricity. Wells are used with rope & bucket. Child covays water.	Desiring much Expecting water charge 5,000to10,000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases are found in wet season. Diarrhea, dysentry are 10. Sskin disease are 20to30. Water tank; bottom=GL-3.2m, water level,-0.6m
* Deep well is necessary to explore. *Motor pump and elevated water tank may be necessary. *Priority is higher.												
6.Kec. Pujut, Lombok Tengah 12)Rembitan A+	7,427 1716families	1,318.0	5to10m	see map collective	9.0	W=5.0m, paved road	5 Public wells for 170 Families. well depth=13m, ID=2.5m, water depth=GL-5.0m Shallow well; depth=15m Farthest distance from public wells is 500m				Existing WSS; not available Queue for water at public well wells lasts up to night due to have to wait for recovery of ground water. Water pipeline is installed only for resort area near shore from Batujay dam 17km from here. But not available for village. Proposal is already submitted to PDAM and they	Desiring too much Expecting water charge; 2500to5000Rp/Month not worried.(Tax and people's money are mixed to pay.) Existing public wells have been installed and maintained by people themselves. Village people O and M if properly trained. Electricity for motor pump is available. Waterborne diseases are found in wet season. Diarrhea; 20 , dysentry; 20to30 Sskin disease; a few have already surveyed.
* Deep well is necessary to explore. *Motor pump and elevated water tank may be necessary. *Priority is higher. *Village locates near resort area. If water resource is obtained village develops.												
7.Kec. Sikur, Lombok Timur 13)Tete Batu C	9,280 2,493families	3,150.0	500	see map collective partially scattered	10to11	W=5.0m, paved road W=3.5m, paved road about 6km to the entrance of village.	5 big Springs Big water fall exist. Water source is plenty.	>10.0l/s	No.1; 5km No.2; 5km No.3; 5km No.4; 3km No.5; 0.1km Lingsar?	-10	Existing WSS; not available WSS were applied to NO.2 by UNICEF & No. 5 by DVREN respectively. But 5 of 13 distribution tanks are broken.15% of people are serviced. Others are going to take water at water sources and bringing it home.	Desiring too much Expecting water charge 5,000to10,000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases of diarrhea is a few. diarrhea a few dysentry a few skin disease a few Tourist's home stay place. Restaurant, hotel are there. Recommended to introduce WSS for toursim.
*Surface water resources exist and capacity is plenty. *Motor pump and elevated water tank may be necessary. *Priority is higher. *Village locates in tourist area. If water resource is obtained village develops.												

NTB村落聞き取り調査結果

表中、A、B+、B、C+、Cは、その順に、上水施設必要の度合いを示す。

Nusa Tenggara Barat-Lombok		Villages				Water Supply Sources				Available Existing Water Supply System	Readiness for Introduction of Water Supply System; Possible Payment for Charge, Maintenance organization	
Kabupaten Kecamatan Desa	Population	Area (k) ha	Elevation (m)	Village Type Collective C or Scattered S	Distance from National or Provincial Road ()	Access Road Condition Width (m) , Trafficability	Kind of Sources; Well, Spring, Others	Capacity (l /sec)	Distance from Village ()			Elevation Difference from Village (m)
8.Kec. Pringabaya, Lombok Timur												
14)Bagikpapan B	8,917 2219families	900?	150	see map collective	0.3	W=2.5m	Spring, Shallow wells (2to5m) River	medium	2.0	6m higher	Existing WSS by Ausaid; available in some higher area. Present water supply condition is not good.	Desiring too much expecting water charge 250 to 500Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne disease Both of diarrhea and dysentery are around 30/month.
*Surface water resources exist and capacity is more or less sufficient. *Motor pump and elevated water tank may be necessary. *Priority is relatively high. *Coordination of program between JICA and Ausaid is necessary.												
15)Selaparang B	3,304 995families	1,000.0	200	see map collective; Dusun partially scattered; between dusuns	3.7	W=3.5to4.0m, paved & good	Spring Lemor	very big	7.0	higher than village	Existing WSS; available PDMDK installed pipeline to public water tank in 1999 but it didn't work well due to small pipe size. (water source; Lemor) PDAM supplies water to 80 families. P2AT performed ground water survey, but not used. Proposal is already submitted to PDAM and they have already surveyed.	Desiring much Expecting water charge 1,000to1,500Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases of diarrhea is found diarrhea, dysentery 20/month in wet season. skin disease ?
9.Kec. Keruak, Lombok Timur												
16)Batunampar A	4,116 1,232	924km ²	5to10m	see map collective partially scattered	8.3	W=3.0m, paved road	Public shallow well; 7m depth River			0.1	Existing WSS; not available Mining Department installed a hand pump well 3 years ago. People used too much for getting clean water to break. PDAM's pipeline was installed. Ausaid set distribution tanks. But it is broken now. Tank lorry supplies water at 80,000Rp/(each 5,000l). 16Rp/l	Desiring too much Expecting water charge 5,000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases Diarrhea, dysentery, skin disease; 50 in wet season Malaria; a few Recommended to introduce WSS for people.
*Deep well is necessary to explore. *Motor pump and elevated water tank may be necessary. *Priority is higher.												
17)Tanjung Luar C	9,662 2,047families	2,229.0	3m	see map collective; developed housing area partially scattered	road side;	W=4.0to5.0m, paved & good	15 Public tanks; each for 50 families Other 5 didn't work well.				Existing WSS; available PDAM installed pipeline. but water supply is not sufficient due to small capacity of water source and long distance. UNICEF installed WSS for 15% of families and public hydrant for the rest 85%.	Desiring water supply to each family Public hydrant; People pay 18,000Rp/month now. House supply; Initial 300,000Rp, 5,000to7,000Rp/month Expecting water charge; People can pay. Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases is very few. WSS is relatively arranged well.
*Existing water supply system is more or less available. *Priority is low. *WSS is relatively arranged well.												

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Nusa Tenggara Barat-Lombok

表中、A、B+、B、C+、Cは、その順に、上水施設必要の度合いを示す。

Kabupaten Kecamatann Desa	Villages					Water Suupty Sources				Available Existing Water Supply System	Readiness for Introduction of Watwer Supply System; Possible Payment for Chage, Maintenance organization	
	Population	Area (k—) ha	Elevation (m)	Village Type Collective C or Scattered S	Distance from National or Provincial Road ()	Access Road Condition Width (m) , Trafficability	Kind of Sources; Well, Spring, Others	Capacity (l /sec)	Distance from Village ()			Elevation Difference from Village (m)
10.Kec. Alas, Sumbawa 18)Labuan Mapin A	4,700 1186familie	1.4 (k)	2to3m	collecvtive	0.8	W=2.5m	Spring,	10	7.0	800	Existing WSS is available PDAM installed WSS in 1988. 80% of Village people are supplied with water now. But quntity is short. Additional capacity is necessary.	People pay 6,750Rp/10m ³ /every month. Electricity for motor pump is available. Waterborne disease No. of diarrhea and dysentery are around 5. 5/month. Skin disease are same like. Water shotage will occur if WSS is installed through Lab. Mapin to Pot Tano village nearby Fishery Village
11.Kec. Taliwan, Sumbawa 19)Labuan Lalar A+	3,085 758families	30.8 (k)	3to4m	collecvtive	along road	W=5.0m, paved road	1 Public wells for 600 families. well depth=3.5m, ID=1.1m, water depth=GL-2.0m Shallow well; depth=3m,salty water Distance from public wells is 1.0km				WSS; not available Water is supplied by tank lorry.	Desiring too much since 1987. Expecting water charge; 10,000Rp/month O and M if properly trained. Electricity for motor pump is available. Waterborne diseases are found in wet season. Diarrhea; 1to2, dysentery; 1to2 Skin disease; a few, Malaria; a few <u>Priority is high.</u>
12.Kec. Jereweh, Sumbawa 20)Sekongkang Bawah C	590 157families	14,268.0	20to30m	collecvtive	along road	W=3.0m, paved road	Shallow well A few public shallow well; 10m depth for 3to4 families.				WSS; not available But, agreement to provide water supply for village people is done between Village and New-mont Co. USA based company.	Desiring too much Expecting water charge 5,000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases Diarrhea, dysentery, skin disease; In wet season same as Sekongkang Atas New Mont drilled well down to around 40m. ditto above.
21)Sekongkang Atas C	Hearing can not be done because of absence of the responsible village person. But same agreement is concluded between village and New Mont company. *Not necessary for JICA to study because New-Mont Co. introduces water supply system.										ditto above.	ditto above.
13.Kec. Moyo Hilir, Sumbawa 22)Poto B+	2,045 503families		200	Collective	10.0	W=3.0m	Shallow wells; 9m depth Public well; each for 5 families Drill well low 3.0			?	WSS;not available	desiring too much expecting water charge 2000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne disease: Diarrhea and dtseentry are few. Skin disease; 3persons in wet season
14.Kec. Ropang, Sumbawa 23)Tatebal C+	3,383 817families	22.9km ²	400	Collective up and down about 15 to 20 in village	along road	W=5.0m	Spring 1 high 2.0 Spring 2 high 6.0 Ca is slightly contained in spring water. Shallow wells; Public well; 12m depth, each for 5 families River water is used by a few families. Ausaid for SWS(Shallow well & sanitation was implemented in 1997.			30 7	Ausaid(KER) installed Water supply system for only 2 dusun. Current operation doesn't work enough due to flow decrease. Public hydrant is used.	desiring much because the existing WSS is insufficient and some dusun have no water. expecting water charge 1000Rp/month Village people can O and M if properly trained. Electricity for motor pump is not available in some dusuns(20%). Waterborne disease: Diarrhea and dtseentry are 20. PDAM installed tank and pipeline.
*Surface water resources exist and capacity is high. *Gravity flow is applicable. *Priority is relatively low. *Recommend to be handled by PDAM *Coordination of programes betweenJICA and Ausaid is necessary.												

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Nusa Tenggara Barat-Lombok

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Kabupaten Kecamatan Desa	Villages				Water Supply Sources				Available Existing Water Supply System	Readiness for introduction of Water Supply System; Possible Payment for Charge, Maintenance organization		
	Population	Area (k) ha	Elevation (m)	Village Type Collective C or Scattered S	Distance from National or Provincial Road ()	Access Road Condition Width (m) , Trafficability	Kind of Sources; Well, Spring, Others	Capacity (l /sec)			Distance from Village ()	Elevation Difference from Village (m)
15.Kec. Sanggar, Bima 24)PIONG B+	1,600 300families 200families were transmigrated.	360.0	30m?	Collective Scattered	along road	W=4.0m	Spring, Shallow wells; 9m depth Public well for some families	huge	4.0	-30m? lower from Village	WSS;not available Yokakarta university tried to apply wind generated submersible water pump in shallow well but failed They are left broken.	desiring too much 10 years ago. expecting water charge 1000 to 5000Rp/month Village people can O and M if properly trained. Electricity for motor pump is not available. Waterborne disease: Diarrhea and dtsestry are 10persons. Malaria: 7Spersons WSS is expected especially for transmigrant utilizing spring.
16.Kec. Wawu, Bima 25)Kawuwu B+	838 217families	730.0	100m	collectvive 2 dusun	12.0	unpaved, shallow river cross very bad road condition	5 Springs used by 1 dusun River water is used for life.		nearest 0.5	20	Upper dusun is supplied of water by the system UNICEF installed in 1996 to 1997. Lower dusun is not supplied of water due to piping was broken 10 months ago.	Desiring resume of water supply Expecting water charge 500Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne diseases Diarrhea, dysentery, skin disease; In wet season 10 kids
KALODU (Cancel)	Survey couldn't be implemented due to steep, quite bad and long access road to the village.											
17.Kec. Sanggar, Bima 26)Lab. Kenangga B+	1,004 470families	27,000.0	3to4m	Collective	0.1	W=3.0m	Spring Water fall Shallow well; 2-3m depth for each house		0.5 8.0	5 ?	WSS;not available in lower part of village. Ausaid(KER) installed water supply system in upper part of village in 1997. It is alive. Lower area people installed pipeline from spring to the residence area by themselves.	desiring too much expecting water charge 500 to 1000Rp/month Village people can O and M if properly trained. Electricity for motor pump is not available. Waterborne disease: Diarrhea and dtsestry are few. Malaria: 10persons Lower area people are envious for upper area people and desiring WSS too much.
18.Kec. Hu'u, Dompu 27)Ranggo A	5,008 2472families	6,050.0	50	Collective	along road	W=5.0m	Spring 1 Spring 2 Shallow wells; 9m depth Public well; each for 10 families 12m depth	?	4.0 3.0	high from Village high from Village	Ausaid(KER) installed water supply system in 1975. But it hasn't worked since 1998 after mini-dam was constructed at the river near village. Some area has 30mm distribution pipes.	desiring too much expecting water charge 1000 to 5000Rp/month Village people can O and M if properly trained. Electricity for motor pump is not available. Waterborne disease: Diarrhea 50 and dtsestry 5-10 people Skin disease; many

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Nusa Tenggara Barat-Lombok

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Kabupaten Kecamatan Desa	Population	Area (k→) ha	Villages			Access Road Condition Width (m) , Trafficability	Water Supply Sources				Available Existing Water Supply System	Readiness for Introduction of Water Supply System; Possible Payment for Charge, Maintenance organization
			Elevation (m)	Village Type Collective C or Scattered S	Distance from National or Provincial Road ()		Kind of Sources; Well, Spring, Others	Capacity (l /sec)	Distance from Village ()	Elevation Difference from Village (m)		
28)Jambu B+	2,580 564families	670.0	5to10	Collective	along road	W=4.0to5.0m	Shallow wells; 5m depth Public well; 5m depth Spring 1 Spring 2	0.7 0.5	1.0 3.0	? ?	WSS; not available Springs are used for irrigation currently.	desiring too much expecting water charge 10000Rp/month same as electricity charge. Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne disease: Diarrhea and dysentery; 10 persons, skin disease; 30persons. Fishery village and aquaculture of shrimp is carried out.
19. Kec. , Dompu 29)Hodo B	Water source is only surveyed.			Transmigrant village Scattered	along road	W=5.0m	Spring	huge	5.0	20	WSS is not available.	desiring too much Electricity for motor pump is not available. WSS is expected especially for transmigrant utilizing spring.
20.Kec. Kempo., Dompu 30)Kwangko A	200			Collective	along road	W=5.0m	Deep well by PDAM 90m depth Shallow well River; mini-dam	2.5	1.0		Existing PDAM water supply system by deep well services 25% of village population.	Hearing is performed from attended PDAM person because village chief and secretary are not present. Detail is unknown.
31)Konte C	1,015 215families	3,000.0	3to5m	Collective	along road	W=4.0m	Shallow wells; 13m depth Public well for some families nowater in dry season Spring, ?	?	5.0 m in swampy area		WSS is installed but not available because water pump was broken two years ago.. Pipeline is installed to the public tank only one in the village by PDAM. It is still alive. PDAM supplied water only a few months.PDAM can't receive water charge.?	desiring too much expecting water charge 5000Rp/month Village people can O and M if properly trained. Electricity for motor pump is available. Waterborne disease: Diarrhea are 50 persons. Skin disease; 100persons WSS is expected because village people were once supplied with water. Only new pump installation and rehabilitation of mechanical and electrical work are necessary.
												*Surface water resources exist and capacity is high. *Motor pump and elevated water tank may be necessary. *Priority is high. *Capacity of surface water is huge. *Motor pump and elevated water tank is necessary. *BAPPEDA policy for transmigration may affect JICA rural water supply study. *Priority is according to BAPPEDA. *Priority is low because existing PDAM system services some area. *Recommended to leave the matter to PDAM. *Priority is low because existing PDAM system services some area. *Recommended to leave the matter to PDAM. **

NTT村落聞き取り調査結果

No.	Village Name / Sub district / District	Population	No. of Families	Area (ha)	Elevation (MSL +m)	Average income/ family/month (Rp)	Distances between houses (m)	Distance to government road (km)	Road condition	Existing Geological Formation	Water Supply Main Source of Water Supply	Well	Spring
1	Burean / Amaras / Kupang	4000	501	25	470	100,000-200,000	12.5	0.5	Paved, OK for Lorries	Limestone	Wells and Spring	15 - 20 hand-dug wells (20 to 30m deep, 1m dia., No pump fitted) and 1 deep well (42m deep, 8in. Dia. Q=26 liter/sec)	1 spring 2km away. Never dries all the year round. Many families draw water from the springs using plastic water pipes by their own cost.
2	Tetaf / Amanuban Barat / TTS	3638 (Area A+B 957, C 942, D 944, E 832)	772	4200	800	25,000	20 - 30	15	Unpaved, OK for lorries.	Limestone and Clay	Wells and Spring	Total of 26 wells. (Area A has 10 wells (6 to 15m deep with an average of 12m, 1m dia.), 3 private and 7 public, used by 10 to 200 persons per well. Area B has 8 private wells (depth 4 to 15m with an average of 10m, 1m dia.) used by 10 families per well. Area C has 8 private wells (depth 4 to 10m with an average of 10m, 1m dia.) used by 10 families per well. Water depth in the well is typically 0.5 to 1m in dry season.	Areas D and E shares a spring at 2km away. Volume of water comes out if the spring is somewhat less in the dry seasons but never dries. Volume is fairly good (Water level remains stable with bailing out the water by 2 men with their full strength.). The spring is also shared by the neighbouring villages.
3	Ainiut / Insana / TTU	3030	797	36 km ²	500	15,000 - 25,000	5 - 15	0km, along the provincial road.	Paved, OK for lorries	-	Wells and Spring	Total of 17 wells. 13 in one Dusun and 4 in the other Dusun. Depth of the wells are 3 to 14m in depth and 1m in dia. Water levels in the wells are generally 2 to 5m below the ground level and they become close to the ground level in the rainy season and 0.5 to 1m above the bottom of the well in the dry seasons. The wells never dry in the dry seasons except for 3 wells. Wells are public wells and an average of 50 persons are sharing one well.	2 springs. One big and one small. About 1500 persons are are using the big one and 250 persons are using the small one. The water from the big spring is used for agriculture and fairly large beautiful rice field is developed in the vicinity of the big spring. The volume of the water from the second spring is somewhat reduced in the dry seasons but the spring never dries.
4	Nunirafo / Insana / TTU	1863	420	8.1 km ²	500	10,000 - 20,000	5 - 25	0km, along the provincial road.	Paved, OK for lorries	Limestone	Wells	A total of 6 wells. Well No.1 is 5m deep and 1m dia. Well No.2 is 6m deep with a dia. of 1m. Water depths in the both wells in dry seasons are 0.5m and the water levels become close to the ground level in rainy season. Well No. 3 is 4m deep with a dia. of 1m. Well No.3 is nearly dry in dry seasons. About 100 persons are using well No. 1 and about a total of 200 persons are using well Nos. 2 and 3. The depths of the well Nos. 4, 5 and 6 are 5m, 5m, and 7m, respectively, with a dia. of 1m. The water levels of the wells are close to the ground level in the rainy seasons and the water depth in the wells Nos. 4 and 5 are 0.5m in the dry seasons. Water level in well No. 6 in the dry season is not known because the well is new. A total of 350 persons are using the well Nos. 4, 5 and 6.	One spring is located at 2.5 km away. A pipeline is installed to draw the water to the village. 2 water outlet is installed in the village. About 1400 persons are using the spring water. The volume of the water is reduced significantly in dry seasons.
5	Eban / Miomoto / TTU	3078	603	4.9	1100	50,000 - 100,000	8 to 15	34	Paved, OK for lorries.	Limestone	Spring and PDAM water	N.A	A total of 5 springs. Spring No.2 is the largest with 2000 users. Nos. of users are No. 1: 150, No. 2: 2000, No. 3: 130, No. 4: 85 and No. 5: 250. Spring No.5 is small and dries in dry seasons. Water discharge of Spring No.2 is 7 liter/sec in rainy seasons and 2.5 liter/sec in dry seasons. Church installed a distribution pipes (2 to 3in. dia.) in 1970 but about 50% of the pipe system is now clogged with stains and etc.

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No.	Village Name / Suo district / District	Population	No. of Families	Area (ha)	Elevation (MSL +m)	Average income/ family/month (Rp)	Distances between houses (m)	Distance to government road (km)	Road condition	Existing Water Supply Geological Formation	Main Source of Water Supply	Well	Spring
6	Kereana / Malaka Tengah / Belu	1825 plus an additional 530 refugees	450	33.99km 2	500	10,000 - 15,000	15 - 30	56km from provincial road	Paved. OK for lorries. Not accessible by car in some area (11km, farthest).	Limestone (highly weathered)	Spring	N.A. Well is traditionally avoided by the villagers (their superstition?).	A total of 5 springs. Spring Oenitas (for 85 families), Spring Desedok (for 102 families), Spring Oetatanu (for 100 families), Spring Malolbean (for 25 families), Spring Oedubone (for 33 families). Only Spring Oetatanu has water in dry seasons (however, the volume of discharge becomes very very low and people have to wait for a long time to get water. Other springs dry up in dry seasons (Oct, Nov, Dec). Villagers travel a maximum of 2km to the spring.
7	Mekendatung / Kewapante / Sikka	3500	450	500	100	30,000 - 50,000	10 - 1000	12	Soil road, Only 4WDs can access.	Deposits of volcanic ejecta	Rain water, Water from banana trees	N.A	One small spring located about 2km away. The amount of water from the spring is little even in rainy seasons and the spring dries up in dry seasons. The other spring dried up after the earthquake in 1992. The tanks can be useful in rainy seasons of 3months period of an year.
8	Kokowahar / Kewapante / Sikka	2300	250	4km2	50	30,000 - 50,000	5 to 10	6	Paved. OK for lorries.	Deposits of volcanic ejecta	Rain water, Well, Water from banana trees	One well at 3km away. 80m deep. Water level in the well GL-40m. A volume of water obtained is 5liter /sec with a submersible electric pump. Well is constructed with 40m 8 in. dia. casing and 40m 6in. dia. strainer. It is planned that the water is distributed from a 50m3 main tank at the well to 8m3 small tanks in the village. However, the distribution pipeline is not ready yet.	N.A
9	Bantala / Tanjung Bunga / Flores Timur	1330	262	54	30	25,000 - 50,000	5 to 10	0.8km from provincial road.	Paved or metaled. Good for lorries.	Deposits of volcanic ejecta	Spring	N.A	One located 6km away. Volume of discharge is somewhat reduced in the rain season but the spring never dries. The spring is shared by four villages including this village. The spring water is stored in a large tank and distributed to supply points with small tanks with a capacity of 5m3. A total of 18 supply points was installed in the village with pipelines. About 30 families share the one supply point and the maximum travel distance to the supply points is 100m.
10	Sinar Hading / Tanjung Bunga / Flores Timur	1154	246	32km2	15	25,000 - 50,000	5 to 10	0	Paved. OK for lorries.	Deposits of volcanic ejecta	Well	Three wells. Well No.1 (7m deep, dia. 1m) is shared by 106 families. It nearly dries in dry seasons and people have to que up for obtaining the water. Well No.2 (5mdeep) is used by 100 families and it dries in dry seasons. Well No.3 is used by 23 families. It also dries in dry seasons and the water obtained is a little salty. Travelling distance to the wells is a maximum of 2km.	One located in the neighboring village at 6km away.

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No.	Village Name / Sub district / District	Population	No. of Families	Area (ha)	Elevation (MSL +m)	Average income/family/month (Rp)	Distances between houses (m)	Distance to government road (km)	Road condition	Existing Geological Formation	Main Source of Water Supply	Well	Spring
11	Ile Padung / Tanjung Bunga / Flores Timur	1051	250	2900	10	25,000 - 50,000	3 to 5		0 Paved. OK for lorries.	Deposits of volcanic ejecta	Spring	Used to have one. But the water in the well became salty after the earthquake in 1992. Depth of the well is 5m with a dia. of 1m. Water depth in the well is 0.5m in dry seasons. Water from the well is now used for bathing only.	One spring is located at the center of the village. The amount of water discharge is somewhat low in dry seasons but never dries. The travelling distance to the spring is a maximum of 2km.
12	Watuneso / Wolowaru / Ende	1590	461	8.35 km2	30	10,000 - 35,000	5 to 10		0 Paved. OK for lorries.	Deposits of volcanic ejecta	River water. Most of families use the river water.	One well at sea shore (5m deep, im dia. 10m from shoreline). Water level in the well is lowered from GL-2 to -3m in dry seasons but the well never dries. Used by 15 families.	One small hot spring in the village used by 10 families. Sulphur content of the water is high and the spring dries in dry seasons. There is a small spring in the neighboring village. 40 families of this village use the spring.
13	Wanda / Wolowaru / Ende	1658	358	8.25 km2	100	200,000 - 250,000	15 - 30		0 Pavement frequently damaged and partly unpaved. OK for lorries.	Deposits of volcanic ejecta	Springs	N.A	A total of 6. Spring is used by 120 families. Maximum travelling distance for the users to the well is 3km. Spring No.2 is the largest spring in the village and is used by 62 families. Users travel for a maximum of 2km. Springs Nos.1 and 2 never dries all the year round. Spring No.3 dries in dry seasons and is used by 65 families. Springs Nos. 4, 5 and 6 never dry and are used by 74, 34 and 26 families, respectively. The maximum travelling distance for the users are 500m, 2km, and 650m, respectively. Spring Nos.1 and 2 have pipeline for distribution.
14	Borokanda / South Ende / Ende	2254	442	9990	5	75,000 - 600,000	5 to 10		0 Paved. OK for lorries.	Deposits of volcanic ejecta	Well, PDAM water	12 wells. Each is used by 5 to 15 families, except for well No.12 which is used by 25 families. Wells run dry in dry seasons except for well Nos. 7 and 8. A total of 100 families out of the 442 use the water from the wells. Depths of the wells are 5 to 15m. All the wells are located close to the shore at 15 to 20m from the shore line, except for well No.12 which is located at 200m from the shore line. Water from well No.5 is salty. Users travel to the wells for a distance of 100m, at maximum,	N.A
15	Bheramari / Nangapanda / Ende	2200	365	16300	10	25,000 - 50,000	5 to 6		0 Paved. OK for lorries.	Deposits of volcanic ejecta	Well	8 wells. All the wells run dry in dry seasons (Aug., Sep. and Oct.) except for well No.1. Well No.1 is used by 30 families and 5m deep. Users' maximum travelling distance is 1km. Wells Nos.2 and 3 are 7m deep and each is used by 30 families. Their users' travelling distance is 100m at maximum. Well No.4 is 12m deep and is used by 30 families. The travelling distance is a maximum of 20m. Well Nos.5 to 8 are 1m deep and located close to the river.	2 springs. Spring No.1 is located at 4km away and is large. Spring No.2 is 9km away. They are not in use because they are too far for the villagers to travel for obtaining water. There is a plan to construct the water pipeline from Spring No.1 but no fund is available at this moment.

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No.	Village Name / Sub district / District	Population	No. of Families	Area (ha)	Elevation (MSL +m)	Average income/ family/month (Rp)	Distances between houses (m)	Distance to government road (km)	Road condition	Existing Geological Formation	Main Source of Water Supply	Well	Spring
16	Nggorea / Nangapanda / Ende	1829	410	16.8km ²	50	50,000 - 150,000	6 to 15		0 Paved. OK for lorries.	Deposits of volcanic ejecta	Well	There are 14 wells in the village (6 to 15m deep, dia. 1.5m). Water depth in the well is very low at 0.25m but never run dry completely. Water depths in the wells in rainy seasons are 1m. Travelling distance to the wells are 100m at maximum. Waters in all the wells are salty but villagers have no choice but use them for drinking.	2 springs. Spring No.1 at 3km away and spring No.2 (bigger) at 3.5 km away. Both springs are not used at this moment. Spring No.2 was once used before the earth quake in 1992 with a pipeline to the village. The volume of water discharge reduced significantly after the earthquake and service was terminated. The water discharge has been recovered. The villagers want to rehabilitate the water supply system from Spring No.2.
17	Ndorurea / Nangapanda / Ende	3758	773	1882	10	25,000 - 100,000	3 to 10		2 Metalled. OK for lorries.	Deposits of volcanic ejecta	Well, PDAM water	One deep well (130m deep) and many shallow wells (2 to 5m deep, dia. 1 to 1.5m). About 5 to 10 families share one shallow well. Water supply system with the deep well is operated by PDAM with a total length of pipeline of 7km. The water from the deep well is directly stored (no treatment is required) in a large tank constructed on top of the hill nearby for distribution.	There is a spring next to the deep well at about 1.5km from the village center.
18	Ndetundora 1 / Ende Selatan / Ende	700	154	5.4 km ²	600	250,000 - 500,000	5 to 10		9 Paved, OK for lorries. Lots of landslides were taken place along the main road.	Deposits of volcanic ejecta	Spring	N.A	2 springs. Spring No.1, used by 500 villagers, never runs dry in dry seasons. The vilagers travel a maximum of 1km to this spring. Spring No.2, used by 200 villagers, never runs dry but the discharge water reduced significantly in dry seasons. The maximum travelling distance of the users are 500m for Spring No.2. The villagers can obtain sufficient water for drinking from the springs but the springs are too far.
19	Hepang / Lela / Sikka	2474	567	4.47km ²	100	50,000 - 200,000	10 to 100		2 Paved. OK for lorries.	Deposits of volcanic ejecta	Spring, rain water, Well and water sold by PDAM or Chinese merchant.	2wells. Well 1(6m deep and 1.5m dia.) is used by 50 families. The travelling distance of the users is a maximum of 1km. Well No.2 (6m deep and 1.5m dia.) is used by 100 families. The travelling distance of the users is a maximum of 500m. Both wells Nos.1 and 2 run dry in dry seasons. The water in well No.2 is little salty. The users of wells Nos. 1 and 2 go to the spring for obtaining drinking water in dry seasons.	1 spring. 231 families use the spring. The travelling distance of the user is a maximum of as far as 3km. Volumeof discharge water is 5liter/sec in wet seasons and 3liter/sec in dry season. An NGO once studied the water supply system in 1990. They came up with some drawings but never hear anything since then. Villagers contributed a part of their expences (airfare?) at that time.

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No.	Village Name / Sub district / District	Population	No. of Families	Area (ha)	Elevation (MSL +m)	Average income/ family/month (Rp)	Distances between houses (m)	Distance to government road (km)	Road condition	Existing Geological Formation	Water Supply Main Source of Water Supply	Well	Spring
20	Bloro / Nita / Sikka	1619	350	13km2	200	150,000 - 500,000	3 to 10		1 Paved. OK for lorries.	Deposits of volcanic ejecta	Rain water and water sold by PDAM and Chinese merchant.	N.A	N.A There is a spring at 8km away in the neighboring vilage. It is too far to travel for obtaining water.
21	Watulung / Kewapante / Sikka	3185	383	6.87km2	50	25,000 - 75,000	5 to 10m		5 Paved. OK for lorries.	Deposits of volcanic ejecta	Rain water, Well, Water from banana trees	30 shallow wells in the area close to sea. About 6m deep. Water depth in the wells are 1m in rainy seasons and 0.25m in dry seasons. About 10 families use one well. Travelling distance to one of the wells is a maximum of 100m. There are 2 deep wells constructed by P2AT mainly for irrigation. Deep well Nos.1 and 2, constructed in 1993 and 1996, are 7.5m and 6.5m deep, respectively, with 8in. dia. Discharge of the both wells are 10liter/sec. Located at 1km and 0.7km from the sea shore. Travelling distance of the users to one of the wells is 4km, at maximum. Water from the both wells are slightly salty. Deep well No.1 has 2 outlets for drinking water and a total of 308 families are using the water from deep well No.1.	N.A
22	Patialadete / Walakaka / Sumba Barat	1215	233	80 km2	100	40,000 - 200,000	20 - 2000		25 Paved (partly damaged). OK for lorries.	Limestone	Spring, rain water and river water	N.A	5springs. About 40 families use one spring together. The springs run nearly dry in dry seasons. Villagers queue up at the spring for obtaining water from 4m but water often runs out before 6am in dry seasons. Travelling distance to the spring is 2 to 5km.

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No.	Village Name / Sub district / District	Population	No. of Families	Area (ha)	Elevation (MSL +m)	Average income/ family/month (Rp)	Distances between houses (m)	Distance to government road (km)	Road condition	Existing Water Supply Geological Formation	Main Source of Water Supply	Well	Spring
23	Weelebo / Walakaka / Sumba Barat	1747	349	18 km2	100	125,000 - 375,000	2 to 10	1 km from provincial road, 18 km from governmental road.	Unpaved and very steep. OK for 4WDs and difficult for lorries.	Limestone	Wells and Springs	6 wells. 7 to 12m deep and 1 to 1.5 dia. All of them are located beside the river and they never run dry all the year round. Water depth in the well is 2m. About 30 families use one well. Travelling distance to the well is 5 to 40m.	3 springs. Water discharge is somewhat reduced in dry seasons but the springs never run dry. Travelling distance to the springs is 300 to 1200m. One spring is used by an average of 25 families.
24	Weerame / Wejewa / Sumba Barat	2296	413	15 km2	300	100,000 - 300,000	10 - 200	0m, along the governmental road.	Paved. OK for lorries.	Limestone	Springs	2 private wells. Depths of the wells are 18 and 16m with a diameter of 2m. Each was used by 20 families. The wells never run dry in dry seasons. Travelling distance to the wells is 50m, at maximum.	20 springs. 7 of them are large and never run dry all the year round. The remaining 13 run dry in dry seasons for about 2 months (Aug. and Sep.). 40 to 50 families use one spring. Travelling distance to one of the spring is 20 to 500m. The water from the 7 springs is used for drinking, bathing, washing and livestock firming.
25	Kondamara / Lewa / Sumba Timur	3024	407	39.88 km2	200	40,000 (500,000/year)	10 - 500	8km from provincial road.	Unpaved, metalled. OK for lorries.	Limestone	Springs and wells	25 wells with 5 hand pumps. The hand pumps are provided by the government aid. Depths of the wells are 12 to 17m and the diameters of the wells are 1 to 1.5m. NGO dug 12 wells in 1988. About 50% of the wells run dry in dry seasons. 10 families use one well. Travelling distance to the wells is 10 to 500m.	5 springs. Water discharged is significantly less in dry seasons and the water becomes dirty (can not be used for drinking) in rainy seasons. The water from the springs is also used for irrigation. Travelling distance to the spring is 100m to 3000m.
26	Pulupanjang / Pandawai / Sumba Timur	1542	345	26km2	600	50,000 - 1,000,000	2km - 6km	11km from governmental road.	Unpaved, compacted. OK for 4WD, difficult by medium lorries.	Limestone	River water(75%), wells(5%) and springs(20%). Most of the villagers use the river water.	2wells dug with the government aid in 1995. The depth of the wells is 11m with a diameter of 1.5m. The wells are located close to the river and never run dry all the year round. The water from the wells is used for drinking only. One well is used by 6 families. Travelling distance to the well is 10m to 1km. Quality of the water from the wells is often not good. There are a few more wells but the wall collapsed.	16springs. Currently 11 springs are used. 25% of the wells in use run dry in dry seasons. The discharge water in the remaining springs become very much less in dry seasons. About 6 to 7 families use one spring together. Travelling distance to one of the springs is 3km to 3.5km. Quality of the water from the springs is good, apparently.
27	Oebao / Pantai Baru / Kupang	849	220	6000	70	5,000 - 15,000	20 - 100	16	Unpaved, compacted but damaged in some sections. Only 4WDs can access.	Limestone	Well and spring	10 public wells. 20m deep and dia. 1 to 1.5m. They nearly run dry in dry seasons but not completely dry. About 20 families use one well together. Travelling distance to one of the wells is 20m to 200m. Calcium content is high in the water from the wells.	2 springs. The volume of discharge water is very much reduced in dry seasons but never completely dry. 50 families use one spring together. In dry seasons, villagers obtain water from the springs by turn. Only 1 pail of water can be obtained per day in dry seasons. Travelling distance to the spring is 500m to 1km. The water from the springs are used for drinking only.

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No.	Village Name / Sub-district / District	Population	No. of Families	Area (ha)	Elevation (MSL +m)	Average income/family/month (Rp)	Distances between houses (m)	Distance to government road (km)	Road condition	Existing Geological Formation	Main Source of Water Supply	Well	Spring
28	Sonimanu / Pantai Baru / Kupang	498	125	5.76 km ²	10	5,000 - 20,000	25 - 200m	18	Unpaved, compacted but damaged in some sections. Only 4WD can access.	Limestone	Spring and well.	8 wells. They nearly run dry in dry seasons but never dry completely. About 20 families use one well together. Travelling distance to one of the wells is 6m to 250m.	2 springs. Spring 1 (located on a hill side) is used by 30 families. Spring 2 (located on a low land) is used by 56 families. The volume of water from the springs is sufficient for both drinking and bathing and it is not necessary to limit the volume of water obtained from the springs. The volume of water discharge is fairly consistent all the year round. Travelling distance to the springs is 20 to 30m.
29	Nusakdale / Pantai Baru / Kupang	850	225	15 km ²	10	5,000 - 50,000	20 - 200	30	Unpaved, compacted but damaged in some sections. Only 4WDs can access.	Limestone	Spring and well.	3 wells. 12m deep with dia. of 1 to 1.5m. 2 of the wells run dry in dry seasons. The volume of water obtained in the other well is reduced significantly in dry seasons but the well never runs dry completely. Travelling distance to the wells is 10m to 2km. 10 families use one well together. Water from the wells is salty.	10 springs. 7 of them are used for the irrigation. The remaining 3 springs are for drinking water. 2 out of the 3 springs for drinking water are large springs. Travelling distance to the large springs is a minimum of 2km. A pipeline with a diameter of 3in. and a length of 2.5km was installed to one of the large springs under an aid from Unicef. The pipeline was broken in 1997. Almost all the families in the village once used the water from the pipeline before the pipeline is broken. After the pipeline was broken, villagers use wells for water. Currently only 10 families use the spring-No.3, and Spring Nos. 1 and 2 are not used (too far). Spring No.3 is located close to the sea and the water in the well is salty in dry seasons.
30	Onatali / Rote Tengah / Kupang	1327	344	33.26 km ²	50	10,000 - 75,000	15 - 500	0km, along the provincial road.	Paved but half damaged.	Limestone	Well, spring and piped water.	20 wells. 8 of them never run dry in dry seasons. Drinking water can be obtained from 5 out of the 8 wells only. Water depths in the wells are typically 3m in rainy seasons and 0.5m in dry seasons. Depths of the wells are 10 to 18m with an average of 15m. Diameter of the wells are 1 to 1.5m. About 50 families use one well. Travelling distance to one of the wells is 10 to 500m.	5 springs. 2 are used for irrigation. The remaining 3 are too far from the village and are not used. 2 springs are large spring. A pipeline with a length of 2km was installed to one of the 2 large springs and piped water is served to 30 families (about 10% of the villagers). The pipeline system was installed by P3DT with OECF aid. Travelling distance of the users to the pipeline outlet is a maximum of 500m. The other spring without pipeline is used by 50 to 70 families.
31	Lenupetu / Pantai Baru / Kupang. information from district head, Camat, Mr. Martius	767	141	76	15	5,000 - 15,000	10 - 500	18	Unpaved, compacted but half damaged	Limestone	Well	4wells. 15 to 20m deep with 1 to 1.5m dia. Only one well never runs dry all the year round. Water in the well is salty. 20 to 30 families use one well together. Water depth in the well is 1m. Travelling distance to the well is 10 to 400m. Water is dirty in dry seasons.	Villagers of one dusun (77 families, one out of a total of 3dusun) travel 3km to a spring in the neighboring village for water. Other villagers go to the well (the one never dries in dry seasons) for drinking water, or go to river for drinking water. The travelling distance to the well is a maximum of 500m.

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No.	Village Name / Sub district / District	Reservoir	Water Tank	Pond	Lake	River (no)	Willingness to maintain current system	Willingness to have a better system	Willingness to bear cost of better system	Remarks	Impending Grade	Aid from Other country or Organisation
1	Burean / Amarasi / Kupang	1 at 8km away. For irrigation.	N.A	N.A	N.A	1 at 8km away. River water is for agricultural use only. Water depth 50cm in wet season and 10cm in dry season.	Want to have a better system	high	Ready to bear maintenance cost only	Deep well was drilled in 1992, fitted with submersible electric pump and control unit, by Italian aid. It produced a good amount of quality water. However, it is not in use because the village does not have 3-phases AC electric supply necessary for the pump. The water supply system will be ready with the provision of water supply tank and piping network, if the electricity is supplied. Changing the pump to a diesel pump or to provide the generator set may be the alternatives.	B-	A deep well by Italian gov. aid in 1992.
2	Tetaf / Amanuban Barat / TTS	1 in Area A. Water is used for washing, plantation and livestock firming only.	N.A	N.A	N.A	1 at 1km away from the village. The river dries during the dry season. Water from the river is for washing and bathing.	Want to have a better system	high	Redy to bear the maintenance cost only.	WHO and Health Department of Indonesia drilled a 22m deep well with a dia. of 6 in. equipped with a KAWAMOTO hand pump in Area A. 150 people are using the well. In Areas A and B, Unicef aided hand pumps were installed at the 7 private wells in 1988.	B	A well with a hand pump by WHO. 7hand pumps by Unicef in 1988
3	Ainiut / Insana / TTU	One reservoir. Water in the reservoir is used for the irrigation, livestock firming and washing. Only 10 family or 250 persons use the water in the reservoir.	N.A	Spring forms a pond.	N.A	N.A	-	Want to have a piping system to distribute the spring water to every family.	Maintenance cost only.	The spring supplies a large amount of water. Water is not a problem for those living in the vicinity of the spring. Villegers living far away from the spring (a maximum of 2 to 3km) are using wells. It seems that the water supply problem in this village is not really critical.	B-	No
4	Nunmafo / Insana / TTU	One reservoir with an area of 1ha, constructed in 1988. Water in the reservoir is used for the irrigation, livestock firming and washing. Only 10 family or 250 persons use the water in the reservoir.	N.A	N.A	N.A	N.A	Want to have a better system	High, Piping system to every family is desired.	Maintenance cost only.	Unicef provided cement lining for the wall of the wells (1999). A hand pump installed at well No. 2 was broken.	B	Unicef for well lining (1999). Hand pump by government?
5	Eban / Miomoto / TTU	N.A	N.A	N.A	N.A	One river at the village border. The river water is used only for agriculture.	Want to have a better system. Poor maintenance of the current system (Church's pipe system).	Want to have a piping system together with the neighboring village (Desa Sallo with a population of 2500) using the spring water. 21 out of a total of 25 Dusing can be covered by the water from spring No.2	Maintenance cost only.	A five-member committee is set up in the village to discuss the drinking water supply problems. A mentenance cost of Rp 1,200/family/year is collected currently. Those who are not using spring water are using PDAM water (supply source of the PDAM water is a spring in the neighboring village). The supply of the PDAM water is not consistent and frequently interrupted. The village wants to have one supply tank for each of 25 Dusing. Spring No.2 can supply water for 21 Dusing. The remaining 4 Dusing may use the water from spring No.5. (A well may be needed to increase the water production from spring No.5.)	B-	No

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No.	Village Name / Sub district / District	Reservoir	Water Tank	Pond	Lake	River (no)	Willingness to maintain current system	Willingness to have a better system	Willingness to bear cost of better system	Remarks	Impending Grade	Aid from Other country or Organisation
6	Kereana / Malaka Tengah / Belu	N.A	N.A	N.A	N.A	Those who cannot have water from springs in dry seasons obtain water from the river. Travelling distance to the river is a maximum of 11 km. Villagers obtain water from a small hole dug next to the river. River water quality is not very good.	Want to have better system.	Very high. Current supply of water is too little for healthy life.	Maintenance cost only.	To find good supply source is the problem. The Spring Genitas is too small to supply the water for the villagers. The capacity of Spring Oetatanu need to be checked. Probably, wells have to be developed for the sufficient supply of quality water. Villegers are ready to contribute Rp 500/month/family if a good water supply system is installed. Solution to the water supply problem has been the No. 1 request from the villege to the government.	A	No
7	Mekendatung / Kewapante / Sikka	N.A	Rainwater storage tanks 38 nos (OECF grant, cap. 5 - 9m ³) and 35 nos (private, in rich families, cap. 2.5 - 3m ³) for drinking water.	N.A	N.A	N.A	Want to have a better system.	Very high	Maintenance cost only.	Villagers sometimes have to drink water obtained from banana trees (cut down the tree and take water from the trunk) or "Ara tree"(cut the root and take water from the cutting face) during dry seasons (9 - 10 months of an year). One can take water 2 - 3 liter/day, lasting for 1 week. from a banana tree and 5 liter/night, lasting for 2 weeks from an Ara tree. Poor people have no shower most of the time, or go to other place by bus for washing and shower once a week. According to the study from a team from Bandung, ground water can be obtained from a depth of 40m.	A	38Nos. Of rain water storage tanks from OECF.
8	Kokowahor / Kewapante / Sikka	N.A	90 private rain water storage tanks and 200 rain water storage tanks. However the rain water storage tanks can be used for the 2 months rainy season in an year.	N.A	N.A	N.A	Want to have a better system.	high	Maintenance cost only	Travelling distance to any of the 4 water supply points (with 8m ³ small tank each) is a maximum of 600m. The villagers want to have more supply points. Villagers currently pay Rp 50/10liter for the water taken from the supply points. The amount of water can be taken is limited to 10liter/person/day, which is insufficient.	B	Aidap's (Australian aid) study cifirmed that the groundwater is available in this village. The well was constructed in 1992 under P3MD project (Village people development project). NGO provided 200 rain storage water tanks in 1984
9	Baritala / Tanjung Bunga / Flores Timur	N.A	N.A.	One. Dries in dry seasons. For agriculture and livestock firming only.	N.A	N.A	High. Looks working well.	High	Maintenance cost only.	The church provided the pipes for the pipeline from the spring and in the vilage. The villagers bore the construction cost of the tanks (shared). The tanks and pipelines were constructed in 1987. There is another spring with nearly the same discharge at 6km away. A team sponsored by the Australian gov. studied the spring once. The spring is lower than the vilage in elevation. Villagers want to have more water supply in dry seasons, as the current system can supply just enough water for orily drinking in dry seasons. Currently the cost for repairing is collected as and when necessary basis. A representative is assigned from each vilage for regular patrol and maintenance.	C	A study of another spring by Australian government. Pipes for the pipelines were provided by the church in 1987.
10	Sinar Hading / Tanjung Bunga / Flores Timur	N.A	A rain water storage tank (4mx2mxH2m) was installed. However, it is not used after the earthquake in 1998 due to leakage.	One used for only bathing. Water is dirty.	N.A	N.A	Want to have better system.	Very high. Current supply of water is too little for healthy life.	Maintenance cost only.	Only well No.1 has water at dry season (water depth 0.25m from the bottom) and the water is for drinking only (not enough for washing and bathing). Sometimes, the villagers fight each other over water. There was a water supply project by Australian government, for which the spring located at 6km from the vilage is used for the water supply sources. The project was not successful due to many damages in pipeline. The project was abandoned finally. A hot spring is located nearby the vilage but the water contains much sulphur.	A	Study of the water supply system using the spring located 6km away by Australian government aid.

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No.	Village Name / Sub district / District	Reservoir	Water Tank	Pond	Lake	River (no)	Willingness to maintain current system	Willingness to have a better system	Willingness to bear cost of better system	Remarks	Impending Grade	Aid from Other country or Organisation
11	Ile Padung / Tanjung Bunga / Flores Timur	N.A	PDAM provided 5 storage tanks. 2 of them are used for storing the rain water and 3 are damaged.	N.A	N.A	N.A	Want to have a better system.	High	Maintenance cost only.	Most people go to spring to obtain water. Distance to the spring is too far. An emergency water supply system consisting of a generator, a pump, pipeline to the village and water tanks (PDAM tank) was once installed by the government in 1992 for the preparation for earthquakes. The system worked well for 2months. However, the government took back the pump as the system is for the use in emergency only and not for the daily use. The system has been out of service since then. The generator is still at the spring.	A	Study on the spring water supply by Austrian Aid in 1996.
12	Watuneso / Wolowaru / Ende	N.A	The river water is stored once in a large tank (7.5m3 with a simple water filtering system) and distributed to four tanks (5m3) fitted with outlets in the village. Travelling distance to the tanks is generally less than 100m.	One but the water in the pond is dirty and cannot be used for drinking, not even for bathing.	N.A	One. The flow volume of the river reduced significantly in dry seasons.	Want to have better system.	High	Maintenance cost only.	Water intake point is at 3km upstream from the village center. The water taken from the river becomes dirty in rainy seasons because the filter system is not good enough to deal with the dirty river water in rainy seasons. Most villagers have access to water (any one of the water tanks, well and spring) within a distance of 100m. Upgrading the filter system is necessary. Forty families using the spring have to travel for 4km to another spring to obtain water in dry seasons (their spring dries in dry seasons). Villagers are currently paying Rp 250/month/family for water.	B+	Received government aid for the system. Labor force was provided by the villagers at the time of the construction of the intake and tanks etc.
13	Wonda / Wolowaru / Ende	N.A	One large tank at each spring (a total of 6, 1No. 3mx2.5mxH2m, 5Nos. 2mx2mxH2m) for storage and distribution with pipeline. There are 4 small tanks (1.5m x 1m x H1.7m) fitted with taps in the village. A total of 20 outlet is installed in the village and each outlet is used by about 15 families. The villagers travel a maximum of 100m to one of the outlet.	N.A	N.A	2 rivers. One dries for 1 month in dry seasons and the other never dries.	Villagers are satisfied with the current system. The system supplies sufficient water for the villagers for drinking, washing and bathing.		Yes	The village has fairly good income cacao, coconut oil and others. There is another spring at 2km away. If water is obtained from the spring, the service area can be extended to the village at 7km away. The village collects Rp 1000/month/family for water. Improvement on the quality of the water from spring No.1 may be expected from the villagers. Calcium content of the water is high.	C	A part of the current pipeline was constructed under Canadian aid in 1996.
14	Borokanda / South Ende / Ende	N.A	2 rain water storage tanks in the village.	N.A	N.A	N.A	Want to have a better system.	High	Maintenance cost only.	PDAM water supply system is installed under Australian Aid in 2 dusun of this village (4 dusun). There are two distribution tanks and 17 PDAM tap stations in the village. Each is used by 15 to 20 families and the travelling distance to the station is 100m at maximum. There is a spring in the neighboring village at 4km away. However, the neighboring village people are not happy to share the spring water with this village people. Australian aid program was terminated before system is extended to the remaining 2 dusun. PDAM's water supply system including 6 km pipeline from the spring in Geghoma was provided by Australian Aid in 1998.	B+ (2 dusung)	Australian Aid provided water supply system including the 6km pipeline in 1998.
15	Bheramari / Nangapanda / Ende	N.A	N.A	N.A	N.A	One river. Almost runs dry in the dryseasons.	Want to have better system.	Very high	Maintenance cost only.	In dry seasons (Aug. and Sep.), most of the villagers go to well No.1 for for obtaining just enough water for drinking. 3 dusung in the village has a water supply system under Australian Aid and water outlets are installed in the dusung. The remaining 2 dusung (94 families, Nangakeo1 and Nangakeo2) donot have a water supply system.	B+ (2 dusung)	Australian Aid provided a water supply system to 3 dusung with a water supply source in a spring at 40km away in 1995 and 1996.

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16	Nggorea / Nangapanda / Ende	N.A	N.A	N.A	N.A	N.A	Want to have better system.	High	Maintenance cost only.	There is a plan to instal a pipeline to the village from a spring located in the neighboring village (Desa Rapurendu). The neighboring village agreed to share the spring based on the condition that the pipeline also be extended to the village. The water intake and the first 1.5km section of the pipeline was installed under Australian Aid in 1997 and 1998. The remaining 5km section is left untouched. According to the Australian expert, the volume of water obtained from the spring is more than sufficient to supply water to the two villages. The Australian Aid project was finished and will not be continued. One alternative is to use Spring NosVillagers want to rehabilitate the water supply system once installed from Spring No.2 and rehabilitate the supply system.	B+	Australian Aid provided water intake and 1.5km section of the pipeline in 1997 and 1998.
17	Ndorurea / Nangapanda / Ende	N.A	N.A	N.A	N.A	1river. It runs dry in dry seasons and floods frequently in rainy seasons. River water is not for drinking.	High. But too costly for some villagers.	-	Maintenance cost only.	The deep well is managed by PDAM (1993), using a pump and a tank (8mx12mx42m) with gravity flow. About 200 families out of a total of 600 families have already installed the PDAM supply system. Two third of the village people has not used the PDAM water yet. The initial installation cost of Rp 377,000. is too expensive for many of the villagers. One family is using an average of 10m3 per month and pays Rp 3500/month.	C	No
18	Ndetundora 1 / Ende Selatan / Ende	N.A	About 20 rain water storage tanks. Water stored in the tank is not used for drinking but used for agriculture.	5 ponds. They run dry in dry seasons. Water in the pond is not for drinking.	N.A	N.A	Want have a better system.	Want to have piped water at once for their 3 dusun.	Maintenance cost only.	PDAM once supplied water to this village from spring No.1 for a trial period of 10 months in 1991 and 1992. The villagers were not happy with PDAM because (1) Water supplied was not clean, (2) Not all the villagers have water (creating jealousy and even fighting among the villagers), and (3) Too frequent damage of the system. PDAM terminated the service after the trial period. The possibility of the water supply from a spring located at 17km away may be investigated in the future study.	B	No
19	Hepang / Lela / Sikka	N.A	The village has a total of 176 rain water storing tanks (35Nos. 18m3, 21Nos. 9m3, 34Nos. 4.5m3). Australian Aid provided 70 of them in 1996 and OECF provided 22 of thm in 1999. About 60 tanks were provided by the government aid. 15 to 20 of the tanks are private properties. The tanks can be used for three months' rainy seasons. 6 to 7 families share one tank.	N.A	N.A	N.A	Want to have a better system.	High	Maintenance cost only.	According to PDAM, there is a large spring (14km away from the village) having water discharge of 28 liter/sec (used before earth quake, 1992), named Wairmera (Sikka village). At dry season, drinking water is obtained from the spring or the water purchased from PDAM or Chinese merchant. Bathing is allowed only some times in an week. Approximately 20% of the village families buy water from PDAM or Chinese merchants (Rp 75,000/5000liter). Villagers want to have a water supply system with a water supply sources of a spring.	A	Australian Aid and OECF provided rain water tanks in 1996 and 1999, respectively. The government also provided the rain water tanks. An NGO studied the water supply sources in 1990.

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20	Bloro / Nita / Sikka	N.A	There are 14 rain water storage tanks. 10 of them are aided by OECF. The remaining 4 is the public tanks (dia. 2m x H2m). 50% of the families have small private rain water storage tanks to collect and store rain water. The rain water tanks can only be used for 2 to 3 months in rainy seasons. Many of the tanks have leaking problem. Rain water is used for drinking only.	N.A	N.A	One river at 1 to 5km from the village. The river water is for bathing and washing only. The water level of the river is very low in dry seasons. The river frequently floods in rainy seasons.	Want to have a better system.	Very high	Maintenance cost only.	Villagers use water in the rain water tanks for drinking, washing and bathing in rainy seasons. However, they drink PDAM water or water purchased from PDAM or Chinese merchant. Those who do not have private rain water tanks use the public tanks. The maximum travelling distance of the user is 150m to one of the tanks. Villagers want to have PDAM piped water in their houses. PDAM studied the water supply system with a water supply source of a spring located 8km away in a neighboring village. The water discharge of the spring is good enough to supply water to more than 2 villages. The water discharge of the spring is 5liter/sec. PDAM has already installed a tank (2m x 1m xH1m) at the spring for water distribution and 7km pipeline under the government aid in 1999. The villagers hope that the remaining 1km of the 8km pipeline be completed in 2000. They are willing to construct by themselves if the construction of the pipeline was not financially accepted by the government.	B+	OECF aid on the rain water tanks in 1999. Government aid on water tank and pipeline in 1999 to 2000. Government provided the construction materials such as cement and pipes. The village provided labor forces.
21	Watuliwung / Kewapante / Sikka	N.A	There are 9 public rain water storage tanks (Dia.1.5m x H2m). They were constructed by P3DT under OECF aid in 1998. The travelling distance to one of the tanks is 3km at maximum. Pipelines are installed from the deep well No.1 to the public tanks and the public tanks are not using for storing the rain water. About 40% of the families have private rainwater storage tank (8000liter capacity).	N.A	N.A	N.A	Want have a better system.	Very high	Maintenance cost only.	Pumping in deep wells was stopped in rainy seasons (Jan. to Apr.). Villagers use rain water collected in the tanks for drinking in the rainy seasons. There are 70 families in the area at 5km from the sea shore. They have to drink water from banana trees in dry seasons, or drink purchased water (from PDAM or Chinese merchant). Villagers prefer to drink rain water than water from the wells because the rain water tastes better. Those who do not have rain water tanks obtain water from the public tanks, other private tanks, or purchase the PDAM water. Bathing is done in the rain.	B	9 water tanks were constructed under OECF aid (1998).
22	Patialadete / Walakaka / Sumba Barat	N.A	Only one dusun has 5 water tanks (dia. 2m x H1.5m) aided by Unicef. They can be used in rainy seasons only (about 4months). Rain water is for drinking only. Only 3 to 4 families per tank staying nearby (about 10m from the tank) use the tank. Tanks have leaks and can store the water for up to 10 days only.	N.A	N.A	3rivers. 2 rivers run dry in dry seasons and one never run dry completely but the volume of water flow is reduced significantly in dry seasons. Travelling distance to the river is 1 to 5km. River water is the last choice for the drinking purpose because the water is not very clean.	Want to have a better system.	High	Maintenance cost only.	Villagers sometimes quarrel over water because they can not obtain water evenly. Only 10 to 15 families staying near to the spring can obtain water from the spring in dry seasons. The remaining families (75% approx.) have to go to the river for obtaining water.	A	Unicef on rain water tank.

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23	Weelebo / Walakaka / Sumba Barat	N.A	N.A	N.A	N.A	1 river. It runs dry in dry seasons. River water is used for bathing and washing only.	Want to change to the piped water system.	Not so high.	Not willing to bear the cost of maintenance.	5 of 6 wells are not in use since the hand pump is broken. The wells are back-filled with stones because the side wall is collapsed. Villagers do not want to use the hand pumps (they are broken and too heavy) and prefer to take the water from river. In dry seasons, they dig a hole besides the river to obtain the water for drinking. Obtaining drinking water is really difficult for 2 dusung (about 33 families) in dry seasons.	B	Government provided hand pumps for all the 6 pumps in 1992.
24	Weerame / Wejewa / Sumba Barat	N.A	7 private tanks. 1 large tank (4m x 6m x H2m) and 6 small tanks (2m x 2m x H1m). 2 small tanks were built with the government aid (Health dept.). The water stored in the tanks is used for drinking. 1 to 3 families (mostly only one family) use the tank.	N.A	N.A	N.A	Want to have better system.	Want to have piped water system.	Maintenance cost only.	Most of the villagers use the water from springs. A pipeline was installed (800m long) from one of the 7 springs. The church provided the cement and pipes and villagers provided labour force (1995). The water from the pipeline runs non stop. The pipeline supplies water to 1.5 dusung out of 4 dusung in the village. The remaining 2.5 dusung people go to other springs or wells (whichever nearer) for obtaining water. Problem is the long travel to the springs. The water discharged from the spring with pipeline is also used for irrigation.	B	The church provided the materials for the pipeline in 1995.
25	Kondamara / Lewa / Sumba Timur	N.A	One large tank at the spring and 6 small tanks with taps in the village for water distribution. They are not in use now because the system is fail.	N.A	N.A	1 river. The river water is not for drinking but for bathing and washing only. The water depth of the river is 2m in rainy seasons and 0.2m in dry seasons. Travelling distance to the river is 30m to 3km.	Want to have better system.	Want to have piped water system.	Maintenance cost only.	More than 50% of the villagers use the water from the springs. More people use the water from springs in dry seasons because many wells run dry. A pump with solar batteries and a 5km pipeline were installed in 1994 at one of the springs to deliver the water in the village under the aid from the ADB. One large tank was constructed at the spring and 6 small tanks with water taps were constructed in the village for the water distribution. The travelling distance to one of the small tanks in the village is a maximum of 500m. However, the system was in use for 6 months period because the pipeline was damaged by the animals and the solar panels were stolen. The villagers could not do anything because the incident took place before the system was handed over to the village. The water from springs is also used for irrigation.	A	NGO dug a total of 12 wells in 1988. (villagers bore a half of the cost.) ADB provided a pump with solar battery and a 5km pipeline in 1994.
26	Pulupanjang / Pandawai / Sumba Timur	N.A	N.A	N.A	N.A	1 river. About 75% of the villagers use the river water. Water depth of the river is 2m in rainy seasons and 1.5m in dry seasons. Travelling distance to the river is 500m to 1km. The river water is used for drinking, bathing and washing.	Want to have better system.	Very high	Maintenance cost only.	The serious problem is the quality of the river water (the river water is too dirty, partly because of the livestock firming in upstream). Springs are too far and quantity of the water from the springs is too small in dry seasons. 75% of the villagers use river water for drinking and daily use.	A	No.
27	Oebao / Pantai Baru / Kupang	N.A	N.A	N.A	N.A	1 river. Not for drinking water	Want to have a better system.	Very high	Maintenance cost only.	In dry seasons, villagers have to make a long queue to obtain water and each family only allow to get water 30 liter/day from the spring or well. Also, the water obtained becomes dirty in dry seasons (touching the bottom of spring or well). Villagers can wash and take bath only twice a week in dry seasons. Situation is rather critical but yet come to the stage that villagers rely their drinking water on banana tree water. At this moment, public work with the highest priority is the road construction followed by electricity and water.	B+	No

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28	Sorimanu / Pantai Baru / Kupang	N.A	N.A	N.A	N.A	1 river. It runs dry in dry seasons.	Want to have a better system.	Vary high.	Maintenance cost only.	86 families are using springs and 40 families are using wells. Villagers of 2 dusun, 56 families, travel daily about 2km for obtaining water. Springs have sufficient water but they are too far. Villagers take bath in the river in rainy seasons and they use water from wells or springs for bathing in dry seasons.	B+	No. NGO provided cement for well lining.
29	Nusakdale / Pantai Baru / Kupang	N.A	N.A	N.A	N.A	1 river. It runs dry in dry seasons. The river water is used only for bathing and washing and not for drinking (water is often dirty).	Want to have a better system.	Very high	Maintenance cost only.	Most of the villagers use wells for drinking water after the pipeline was broken. In 1989, UNICEF assisted the pipeline system (2.5km long) to the village. A total of 3 outlet points, each with 2 water taps, were also installed in the village. The pipeline, made of ductile iron and PVC pipes, was broken when a landslide took place at river banks in 1997. The pipeline crossed the river at the failed river banks. Villagers also mentioned that the pipeline and the water tap were frequently clogged with soils and leaves. Flushings and cleanings were not really effective because the water intake had no cover. The villagers once paid a maintenance cost of Rp 100/month/family but they stop payment after the pipeline was out of service. If one of the large spring is used as a water supply source, it can supply sufficient water for not only one but also two or three villages (including Desa Renupetu, one of the most water-hungry village in the region).	B+	In 1989, a pipeline with a length of 2.5km was installed under Unicef aid.
30	Onatali / Rote Tengah / Kupang	N.A	10 rain water storage tanks (2m x2mx H1.5m) were installed in the village with the government aid in 1994. The water stored in the tanks is used for bathing and washing. The tanks are mainly used only by the families staying close to the tanks.	N.A	N.A	1 river. Water level in the river becomes significantly low in dry seasons but the river never runs dry. River water is used for bathing and washing only. Travelling distance to the river is 10 to 100m.	Want to have a better system.	High	Maintenance cost only.	Currently, 250 families use water from wells, 30 families use water from pipeline system and 65 families use water from the spring. Travelling distance to the wells, to the outlet of the piped water and to the other spring is a maximum of 500m (it is too far with up and downs). Villagers want to have easier access to water and like to have piped water to every family. There is a very large spring (Kaden) in other village at about 6km away from this village. Potential of this very large spring as a water supply source to this village may be investigated for a better and sustainable water supply system. Estimated total length of the pipeline from the very large spring to every dusun in this village is 15km.	B-	The existing pipeline with a length of 2km was installed with an aid of OECF.
31	Lenupetu / Pantai Baru / Kupang, information from district head, Camat, Mr. Martius	N.A	N.A	N.A	N.A	1 river. It runs dry in dry seasons and floods frequently in rainy seasons. Some villagers obtain drinking water from the river in dry seasons by digging a hole beside the river.	need better	very high	maintenance	Water in the well (which never dries) becomes dirty and salty in dry seasons. Villagers have no other choice but to drink the dirty and salty water in the well.		