Table 81 JUSTIFICATION OF 5-HR PEAKING POWER GENERATION UNDER CONSTANT DRAFT OPERATION

Proposed Dam	HWS (El. m)	Installed capacity (MW)	Annual Equivalents: Capacity benefit ($ 10^6)	Energy benefit ($ 10^6)	Cost ($ 10^6)	B - C ($ 10^6)	B - C if energy benefit doubled ($ 10^6)
Bamseonggol	292.5	37.4	2.28	2.01	2.60	1.69	3.70
	300	46.5	2.76	2.25	3.00	2.01	4.26
	305	49.7	2.90	2.35	3.10	2.15	4.50
Inje	315	75.0	4.66	3.96	7.00	1.62	5.58
	324.5	93.8	5.68	4.48	8.00	2.16	6.64
	332.6	105.5	6.29	4.83	8.70	2.42	7.25
Hongcheon	110	51.6	3.10	2.82	3.10	2.82	5.64
	115	62.1	3.62	3.13	3.60	3.15	6.28
	120	72.9	4.12	3.45	4.20	3.37	6.82
Gujeol	743.5	40.2	2.73	2.11	4.60	0.24	2.35
	747	46.2	3.13	2.23	4.90	0.46	2.69
	748	48.4	3.28	2.28	5.20	0.36	2.64
Dalcheon	109	18.1	1.13	1.15	2.91	-0.63	0.52
	114	28.5	1.69	1.43	3.74	-0.62	0.81
	117	33.2	1.92	1.57	4.11	-0.62	0.95
Ganhyeon	103.5	16.6	0.93	0.95	2.53	-0.65	0.30
	108.5	21.6	1.15	1.12	2.92	-0.65	0.47
	111.4	25.0	1.29	1.22	3.21	-0.70	0.52
Bonghwa	267	40.2	2.39	2.26	3.50	1.15	3.41
	276	49.2	2.82	2.53	4.10	1.25	3.78
	285	58.0	3.23	2.80	4.50	1.53	4.33
Imha	180	34.7	2.05	1.79	2.90	0.94	2.73
	185	40.5	2.33	1.96	3.10	1.19	3.15
	192	47.6	2.64	2.18	3.30	1.52	3.70
Hamyang	376	37.4	2.36	2.04	4.87	-0.47	1.57
	384	45.6	2.85	2.27	5.41	-0.29	1.98
	392	52.0	3.20	2.45	5.85	-0.20	2.25
Juam (Main Stream)	114	21.0	1.06	1.12	2.51	-0.33	0.79
	117	24.0	1.19	1.21	2.63	-0.23	0.98
	120	28.1	1.37	1.32	2.87	-0.18	1.14

Table 82 JUSTIFICATION OF 18-HR POWER GENERATION UNDER CONSTANT DRAFT OPERATION

Proposed Dam	HWS (El. m)	Installed capacity (MW)	Annual Equivalents: Capacity benefit ($ 10^6)	Energy benefit ($ 10^6)	Cost ($ 10^6)	B - C ($ 10^6)	B - C if energy benefit doubled ($ 10^6)
Dalcheon	109	5.0	0.32	1.15	1.00	0.47	1.62
	114	7.9	0.47	1.43	1.10	0.80	2.23
	117	9.2	0.53	1.57	1.20	0.90	2.47
Ganhyeon	103.5	4.6	0.26	0.95	0.90	0.31	1.26
	108.5	6.0	0.32	1.12	1.10	0.34	1.46
	111.4	6.9	0.36	1.22	1.10	0.48	1.70
Hamyang	376	10.1	0.64	1.99	1.61	1.02	3.01
	384	11.6	0.72	2.08	1.68	1.12	3.20
	392	12.6	0.76	2.13	1.71	1.18	3.31
Juam (Main Stream)	114	5.8	0.30	1.12	0.79	0.63	1.75
	117	6.7	0.33	1.21	0.81	0.73	1.94
	120	7.8	0.38	1.32	0.83	0.87	2.19

Table 83 DESCRIPTION OF OPTIMUM SIZE OF PROPOSED DAMS

Name of Dam	HWS (El. m)	Description
Constant Draft Operation		
Bamseonggol	305	DMZ
Inje	315	Studied minimum
Hongcheon	120	Hongcheon town
Gujeol	747	Intermediate crest of B - C
Dalcheon	117	Goesan town
Ganhyeon	111.4	Weonju city
Bonghwa	267	Studied minimum
Imha	192	Topographic maximum
Hamyang	392	Studied maximum
Juam (Main Stream)	120	Boseong dam
Variable Draft Operation		
Hongcheon	120	Hongcheon town
Dalcheon	117	Goesan town
Ganhyeon	111.4	Weonju city
Imha	185	Intermediate crest of B - C
Juam (Main Stream)	111	Intermediate crest of B - C
Juam (Diversion, Route A)	120	Boseong dam
Juam (Diversion, Route B)	114	Intermediate crest of B - C
Juam (Diversion, Route C)	120	Boseong dam

Table 84 SALIENT FEATURE OF PROPOSED DAM SCHEMES UNDER CONSTANT DRAFT OPERATION (1/2)

Name of Dam		Bamseonggol	Inje	Hongcheon	Gujeol	Dalcheon	Ganhyeon	Bonghwa	Imha	Hamyang	Juam (Main Stream)
1. Hydrology											
1.1 Catchment area	km^2	583	1,043	1,473	101	1,348	1,180	1,135	1,230	264	1,010
1.2 Annual rainfall	mm	1,276	1,200	1,340	1,186	1,106	1,349	1,033	995	1,422	1,382
1.3 Annual inflow	10^6 m^3	509	857	1,351	79	932	945	695	725	276	701
2. Reservoir											
2.1 Flood water surface	El. m	306	316	121	748	118	113.4	268	194	393	121
2.2 High water surface	El. m	305	315	120	747	117	111.4	267	192	392	120
2.3 Low water surface	El. m	264	287	93	723	101	91	238	158	339	85
2.4 Surface area	km^2	13	18	49	5.5	50	39	13	48	7.0	44
2.5 Active storage capacity	10^6 m^3	368	376	954	67	540	540	269	920	251	780
2.6 Flood control space	10^6 m^3	16	19	52	6	53	92	13	100	8	48
2.7 Regulated outflow	10^6 m^3	403	558	1,065	60	737	702	410	608	220	559
3. Dam											
3.1 Type		R	CG	CG	R	CG	CG	CG	CG	R	CG
3.2 Crest	El. m	309	318	123	751	120	115.4	270	196	396	123
3.3 Height	m	105	98	80	66	57	50	97	87	94	69
3.4 Volume	10^3 m^3	5,170	850	830	1,040	410	183	700	728	4,380	610
4. Power Facilities											
4.1 Maximum discharge	m^3/s	61.4	85.0	162.2	9.1	31.1	29.7	62.4	92.6	9.3	23.6
4.2 Rated water head	m	96.4	105.0	53.5	603.0	35.2	27.8	76.8	61.2	161.1	39.4
4.3 Installed capacity	MW	50	75	73	46	9	7	40	48	13	8
4.4 Firm peaking output	MW	34.7	60.5	47.1	44.8	6.2	3.5	29.4	29.2	9.6	3.2
5. Financial Investment Cost (Excluding interest during construction)											
5.1 Compensation:											
Land	$ 10^6	11.74	9.28	50.16	5.64	90.00	58.56	9.74	38.38	9.06	54.00
Ground facilities	$ 10^6	5.58	11.28	11.28	5.64	8.76	9.60	4.40	21.00	3.34	34.84
5.2 Dam	$ 10^6	81.37	75.45	74.33	20.96	50.84	26.82	61.80	68.20	74.42	61.15
5.3 Power facilities	$ 10^6	25.90	59.60	33.70	40.80	10.00	8.90	30.20	27.30	14.48	6.76
5.4 Total	$ 10^6	124.59	155.61	169.47	73.04	159.60	103.88	106.14	154.90	101.30	169.41

Remarks; Dam type R: Rockfill dam Dam type CG: Concrete gravity dam

Table 85 SALIENT FEATURE OF PROPOSED DAM SCHEMES UNDER CONSTANT DRAFT OPERATION (2/2)

Name of Dam		Bamseonggol	Inje	Hongcheon	Gujeol	Dalcheon	Ganhyeon	Bongwa	Imha	Hamyang	Juam (Main Stream)
6. Construction Horizon											
6.1 Construction start		2003	2003	2003	1981	2003	2003	1985	1985	1985	1981
6.2 Year of commission		2008	2008	2008	1986	2008	2008	1990	1990	1990	1986
6.3 Target of full supply		2010	2008	2011	1986	2011	2010	1990	1997	1991	1993
7. Project Output											
7.1 Net water output	m^3/s	10.0	1.6	18.1	-	14.4	12.9	1.4	15.6	4.6	17.7
7.2 Effective power output	MW	42.2	67.8	60.0	45.5	7.7	5.2	34.8	38.4	11.1	5.5
7.3 Annual energy output	GWh	102.6	173.3	150.8	97.7	68.5	53.4	99.0	95.2	93.2	57.9
7.4 Energy increase in existing power stations	GWh	67.9	14.3	34.9	-	5.3	3.6	2.4	-	2.3	-
8. Economic Cost											
8.1 Investment cost	$ 10^6	107.20	139.00	113.33	64.08	66.12	43.10	91.59	110.61	87.63	93.81
8.2 Replacement cost less salvage value	$ 10^6	14.53	29.20	32.09	25.00	16.32	14.11	23.09	26.33	10.02	14.01
8.3 O & M cost	$ 10^6	0.99	1.76	1.14	1.10	0.44	0.33	0.99	0.92	0.69	0.45
9. Economic Annual Equivalents (Discount rate: 8 %)											
9.1 Benefits											
M&I water supply	$ 10^6	5.51	0.87	6.26	-	4.49	4.13	0.66	5.37	2.96	12.60
Agricultural water supply	$ 10^6	0.34	0.17	0.49	-	0.42	0.39	0.53	2.09	0.88	0.69
Flood control	$ 10^6	0.08	0.08	0.32	0.05	0.71	0.90	0.09	1.78	0.05	0.21
Power production											
Capacity value	$ 10^6	2.90	4.66	4.12	3.13	0.53	0.36	2.39	2.64	0.76	0.38
Energy value	$ 10^6	3.90	4.29	4.25	2.23	1.69	1.30	2.32	2.15	2.18	1.32
Production foregone	$ 10^6	-0.70	-0.74	-1.87	-0.01	-3.62	-2.80	-0.27	-1.05	-0.32	-1.88
Total	$ 10^6	12.03	9.33	13.57	5.40	4.22	4.28	5.67	13.01	6.51	13.32
9.2 Costs											
Dam	$ 10^6	8.33	8.34	8.22	2.54	5.75	3.52	6.40	8.52	8.34	8.75
Power facilities	$ 10^6	3.10	7.00	4.20	4.90	1.20	1.10	3.50	3.30	1.71	0.83
Total	$ 10^6	11.43	15.34	12.42	7.44	6.95	4.62	9.90	11.82	10.05	9.58
9.3 Benefit - cost	$ 10^6	0.60	-6.01	1.15	-2.04	-2.73	-0.34	-4.23	1.19	-3.56	3.74
9.4 Benefit/cost		1.1	0.6	1.1	0.7	0.6	0.9	0.6	1.1	0.6	1.4
10. B/C if energy value doubled		1.4	0.9	1.4	1.0	0.9	1.2	0.8	1.3	0.9	1.5

Table 86 SALIENT FEATURE OF PROPOSED DAM SCHEMES UNDER VARIABLE DRAFT OPERATION (1/2)

Name of Dam		Hongcheon	Dalcheon	Ganhyeon	Imha	Juam (Main Stream)	Juam (Diversion) Route A	Route B	Route C
1. Hydrology									
1.1 Catchment area	km^2	1,473	1,348	1,180	1,230	1,010	1,010	1,010	1,010
1.2 Annual rainfall	mm	1,340	1,106	1,349	995	1,382	1,382	1,382	1,382
1.3 Annual inflow	10^6 m^3	1,351	932	945	725	701	701	701	701
2. Reservoir									
2.1 Flood water surface	El. m	121	118	113.4	188	112	121	115	121
2.2 High water surface	El. m	120	117	111.4	185	111	120	114	120
2.3 Low water surface	El. m	93	101	91	158	85	85	85	85
2.4 Surface area	km^2	49	50	39	38	31	44	35	44
2.5 Active storage capacity	10^6 m^3	954	540	540	583	448	780	530	780
2.6 Flood control space	10^6 m^3	52	53	92	114	30	48	36	48
2.7 Regulated outflow	10^6 m^3	1,064	696	666	542	417	473	372	473
3. Dam									
3.1 Type		CG	CG	CG	CG	CG	CG	CG	CG
3.2 Crest	El. m	123	120	115.4	190	114	123	117	123
3.3 Height	m	80	57	50	81	60	69	62	69
3.4 Volume	10^3 m^3	830	410	180	610	460	610	510	610
4. Financial Investment Cost (Excluding interest during construction)									
4.1 Compensation:									
Land	$ 10^6	50.16	90.00	58.56	33.96	46.08	54.00	48.80	54.00
Ground facilities	$ 10^6	11.28	8.76	9.60	18.60	28.74	30.84	29.50	30.84
4.2 Dam	$ 10^6	74.33	50.84	26.82	60.38	51.26	61.15	54.90	61.15
4.3 Total	$ 10^6	135.77	149.60	94.98	112.94	126.08	145.99	133.20	145.99
5. Construction Horizon									
5.1 Construction		2003	2003	2003	1985	1981	1981	1981	1981
5.2 Year of commission		2008	2008	2008	1990	1986	1986	1986	1986
5.3 Target of full supply		2025	2023	2022	2000	2009	2005	1999	2005
6. Project Output									
6.1 Net water output	m^3/s	93.0	81.3	79.7	22.0	27.2	24.4	21.2	24.4
6.2 Energy increase in existing power stations	GWh	29.0	6.2	6.0	-	-	-	-	-

Remarks; Dam type CG: Concrete gravity dam

Table 87 SALIENT FEATURE OF PROPOSED DAM SCHEMES UNDER VARIABLE DRAFT OPERATION (2/2)

Name of Dam		Hongcheon	Dalcheon	Ganhyeon	Imha	Juam (Main Stream)	Juam (Diversion) Route A	Route B	Route C
7. Economic Cost									
7.1 Investment cost	$ 10^6	81.33	56.52	34.60	75.03	76.00	87.39	87.39	87.39
7.2 Replacement cost less salvage value	$ 10^6	8.69	9.12	8.35	7.47	8.73	8.73	8.73	8.73
7.3 O & M cost	$ 10^6	0.34	0.24	0.13	0.29	0.24	0.29	0.29	0.29
8. Economic Annual Equivalents (Discount rate: 8 %)									
8.1 Benefits									
M&I water supply	$ 10^6	22.56	19.03	18.77	6.32	18.32	17.61	13.77	13.04
Agricultural water supply	$ 10^6	1.28	1.21	1.19	2.59	0.92	0.88	0.86	0.88
Flood control	$ 10^6	0.32	0.71	0.90	1.82	0.14	0.21	0.16	0.21
Power production									
Capacity value	$ 10^6	-	-	-	-	-	-	-	-
Energy value	$ 10^6	0.66	0.14	0.14	-	-	-	-	-
Production foregone	$ 10^6	-1.87	-3.62	-2.80	-0.95	-1.57	-1.88	-1.67	-1.88
Total	$ 10^6	22.95	17.47	18.20	9.78	17.81	16.82	13.12	12.25
8.2 Costs									
Dam	$ 10^6	8.22	5.75	3.52	7.55	7.61	8.75	8.01	8.75
8.3 Benefit - cost	$ 10^6	14.73	11.72	14.68	2.23	10.20	8.07	5.11	3.50
8.4 Benefit/cost		2.8	3.0	5.2	1.3	2.3	1.9	1.6	1.4
9. B/C if energy value doubled		2.9	3.1	5.2	-	-	-	-	-

Table 88 ESTIMATED UNIT VALUE OF M&I WATER OUTPUT

Name of Dam		Net M&I Water Supply Capacity (m^3/s)	Unit Value (mill/m^3)
Bamseonggol	(C)	9.8	18.6
Hongcheon	(C)	17.7	12.3
	(V)	90.9	13.5
Dalcheon	(V)	79.8	12.2
Ganhyeon	(V)	78.2	12.1
Imha	(C)	11.3	19.4
	(V)	15.8	18.0
Juam Main Stream	(C)	9.7	62.0
	(V)	18.6	52.5
Juam Diversion	(V)		
Route A		16.1	51.5
Route B		14.9	45.2
Route C		16.1	38.5

Remarks; C: Constant draft operation

V: Variable draft operation

Table 89 EIRR OF THE JUSTIFIED PROJECTS

Unit: %

Name of Dam		A Normal	B Benefit Reduction by 10%	C Cost Increase b7 20%	D Delayed Benefit by 1-year	E Energy Value Doubled	F B+C	G B+C+D
Bamseonggol	(C)	8.5	7.6	6.9	7.8	11.1	6.1	5.7
Hongcheon	(C)	8.8	7.9	7.3	8.1	11.5	6.4	6.0
	(V)	14.8	14.0	13.4	12.7	15.1	12.7	11.9
Dalcheon	(V)	15.3	14.5	14.0	13.2	15.4	13.2	12.4
Ganhyeon	(V)	20.3	19.3	18.6	18.8	20.4	17.7	16.4
Imha	(C)	8.8	8.0	7.4	8.2	10.1	6.6	6.2
	(V)	9.8	9.1	8.6	9.2	9.8	7.9	7.5
Juam Main Stream	(C)	10.8	9.8	9.3	10.0	11.6	8.4	7.9
	(V)	14.5	13.5	12.9	13.3	14.5	12.0	11.2
Juam Diversion	(V)							
Route A		12.8	11.8	11.3	11.8	12.8	10.5	9.9
Route B		12.5	11.6	11.0	11.5	12.5	10.1	9.5
Route C		10.3	9.5	9.1	9.7	10.3	8.4	7.9

Remarks; C: Constant draft operation

V: Variable draft operation

Table 90 EIRR OF JUAM DAM DIVERSION PLAN WITH ROUTE A BY VARYING EIRR VALUE OF ALTERNATIVE FACILITIES

Unit: %

EIRR of Alternative Facilities	A Normal	B Benefit Reduction by 10%	C Cost Increase by 20%	D Delayed Benefit by 1-year	F B+C	G B+C+D
8	12.8	11.8	11.3	11.8	10.5	9.9
10	14.5	13.6	12.9	13.4	12.0	11.2

Remarks; Conditions A and E are identical, because of no power benefit.

Table 91 EIRR OF SELECTED PROJECTS ASSUMING THE M&I AND POWER BENEFIT STREAMS TO BE THE COST STREAMS OF ALTERNATIVE FACILITIES

Unit: %

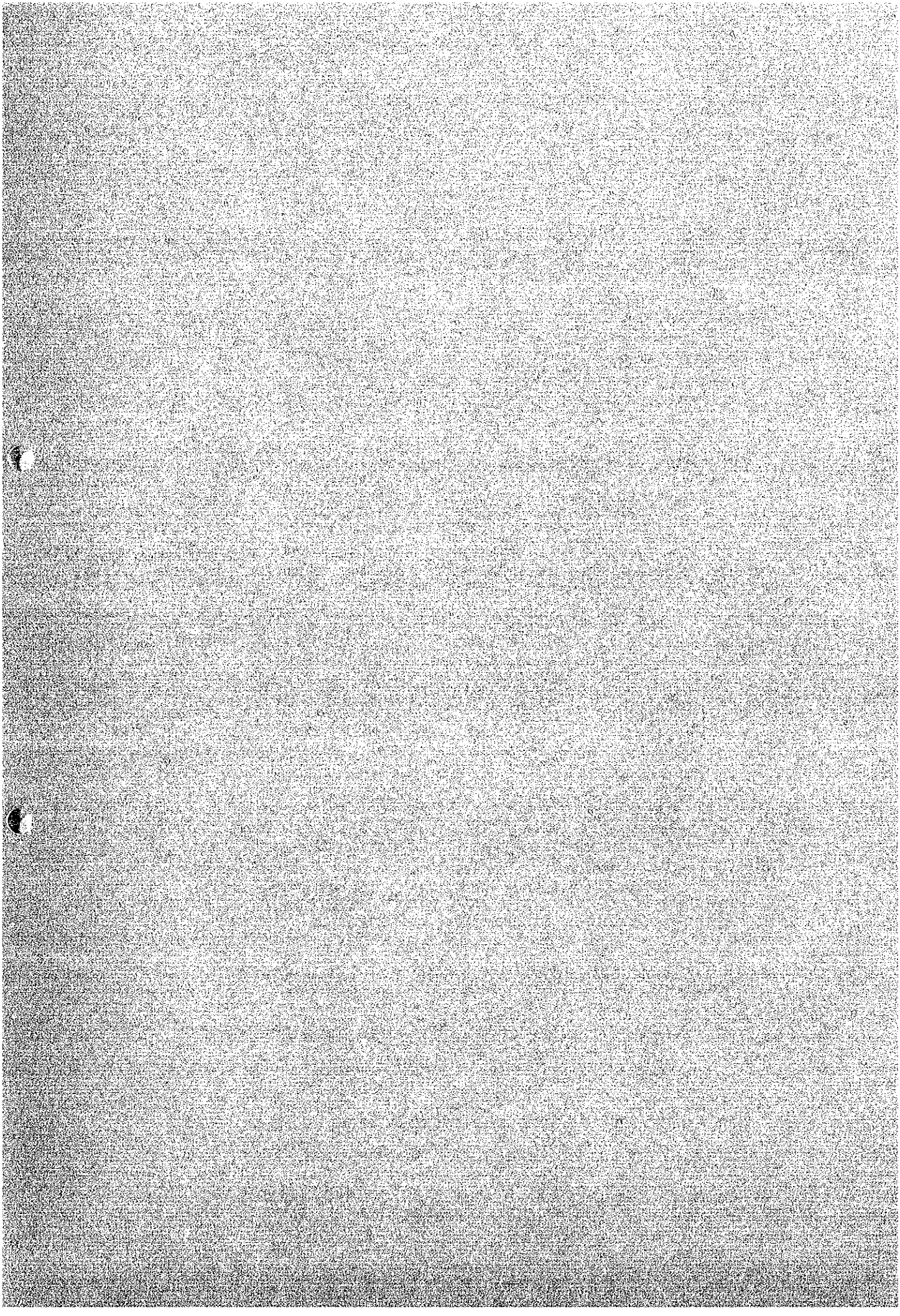
Name of Project		A Normal	B Benefit Reduction by 10%	C Cost Increase by 20%	D Delayed Benefit by 1-year	E Energy Value Doubled	F B+C	G B+C+D
Hongcheon	(C)	9.6	7.9	6.7	8.2	14.3	5.3	4.7
Imha	(C)	9.5	7.5	6.4	8.0	12.6	4.9	4.4
Juam Main Stream	(C)	39.3	26.7	20.0	19.6	42.0	10.8	7.2
Juam Diversion	(V)							
Route A		40.0	30.0	24.2	22.6	40.0	18.5	13.5
Route C		18.8	13.7	11.1	13.1	18.8	8.5	7.1

Remarks; C: Constant draft operation
V: Variable draft operation

Table 92 JUAM DAM MAIN STREAM PLANS
BY RESERVOIR OPERATION METHOD

Operation Method		Constant Draft	Semi-variable Draft	Variable Draft
FWS	El. m	121	121	112
HWS	El. m	120	120	111
LWS	El. m	85	85	85
Active Storage Capacity	10^6 m^3	780	780	448
Flood Control Space	10^6 m^3	48	48	30
Regulated Outflow	10^6 m^3	559	553	417
Net Water Supply Capacity	m^3/s	17.7	24.6	27.2
Firm Discharge	m^3/s	17.7	16.4	1.2
Maximum Discharge	m^3/s	23.6	21.9	-
Rated Water Head	m	39.4	39.4	-
Installed Capacity	MW	8	7	-
Firm Peaking Output	MW	3.2	3.2	-
Financial Investment Cost				
- Compensation	$ 10^6	88.84	88.84	74.81
- Dam	$ 10^6	61.15	61.15	51.26
- Power facilities	$ 10^6	6.76	6.69	-
Total	$ 10^6	169.41	156.68	126.08
Target Year of Water Supply		1993	2005	2009
Effective Power Output	MW	5.5	5.3	-
Annual Energy Output	GWh	58	56	-
Annual Equivalent of Benefit				
- M&I water supply	$ 10^6	12.60	17.26	18.32
- Agricultural water supply	$ 10^6	0.69	0.88	0.92
- Flood control	$ 10^6	0.21	0.21	0.14
- Power generation	$ 10^6	1.70	1.64	-
- Production foregone	$ 10^6	-1.88	-1.88	-1.57
Total	$ 10^6	13.32	18.11	17.81
Annual Equivalent of Cost				
- Dam	$ 10^6	8.75	8.75	7.61
- Power facilities	$ 10^6	0.83	0.82	-
Total	$ 10^6	9.58	9.57	7.61
Benefit - Cost	$ 10^6	3.74	8.54	10.20
EIRR	%	10.8	12.9	14.5

Remarks; The net water supply capacity was calculated based on the water deficit assuming the shut down at the damsite.



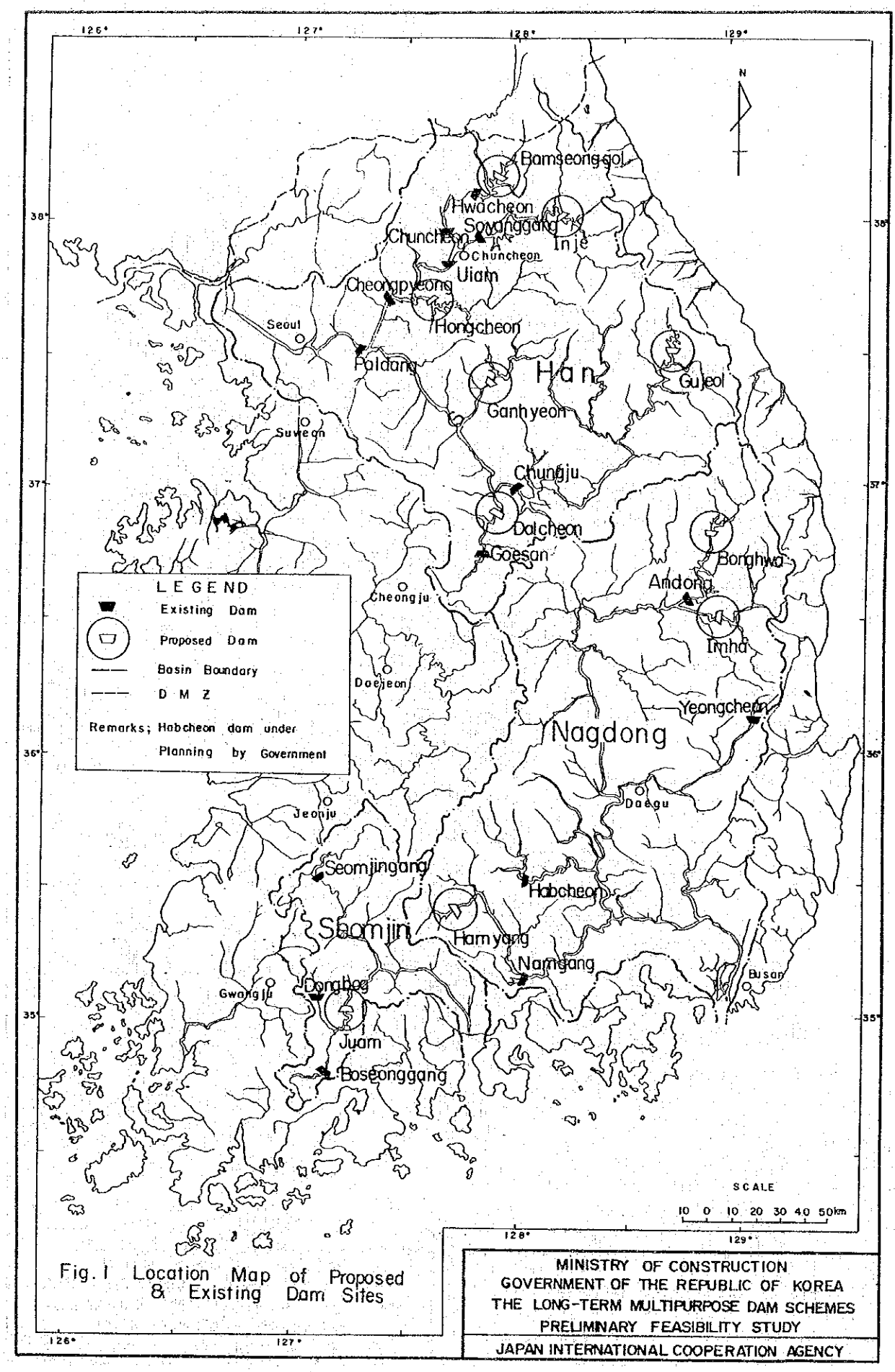


Fig. 1 Location Map of Proposed & Existing Dam Sites

MINISTRY OF CONSTRUCTION
GOVERNMENT OF THE REPUBLIC OF KOREA
THE LONG-TERM MULTIPURPOSE DAM SCHEMES
PRELIMINARY FEASIBILITY STUDY
JAPAN INTERNATIONAL COOPERATION AGENCY

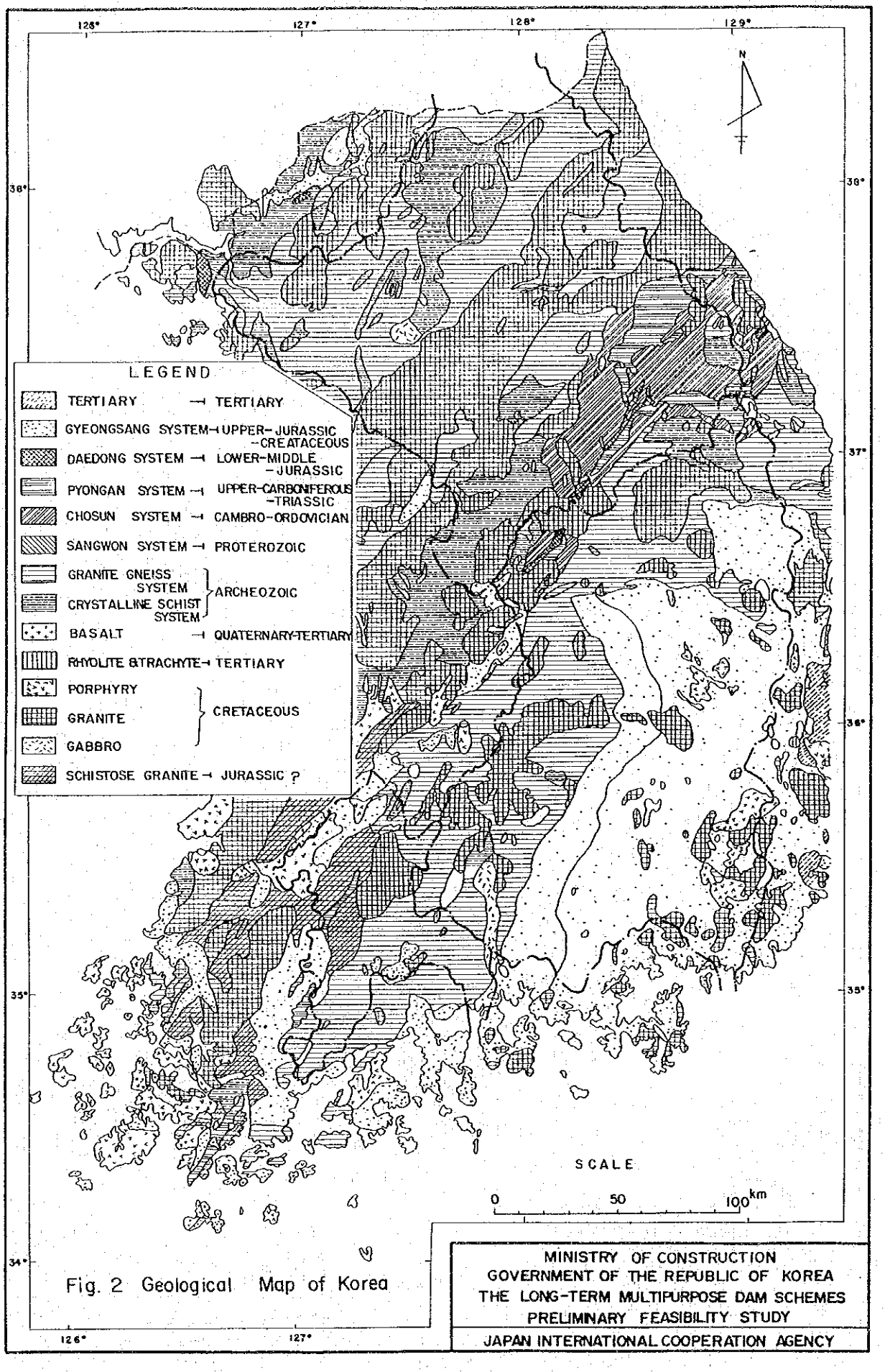


Fig. 2 Geological Map of Korea

MINISTRY OF CONSTRUCTION
GOVERNMENT OF THE REPUBLIC OF KOREA
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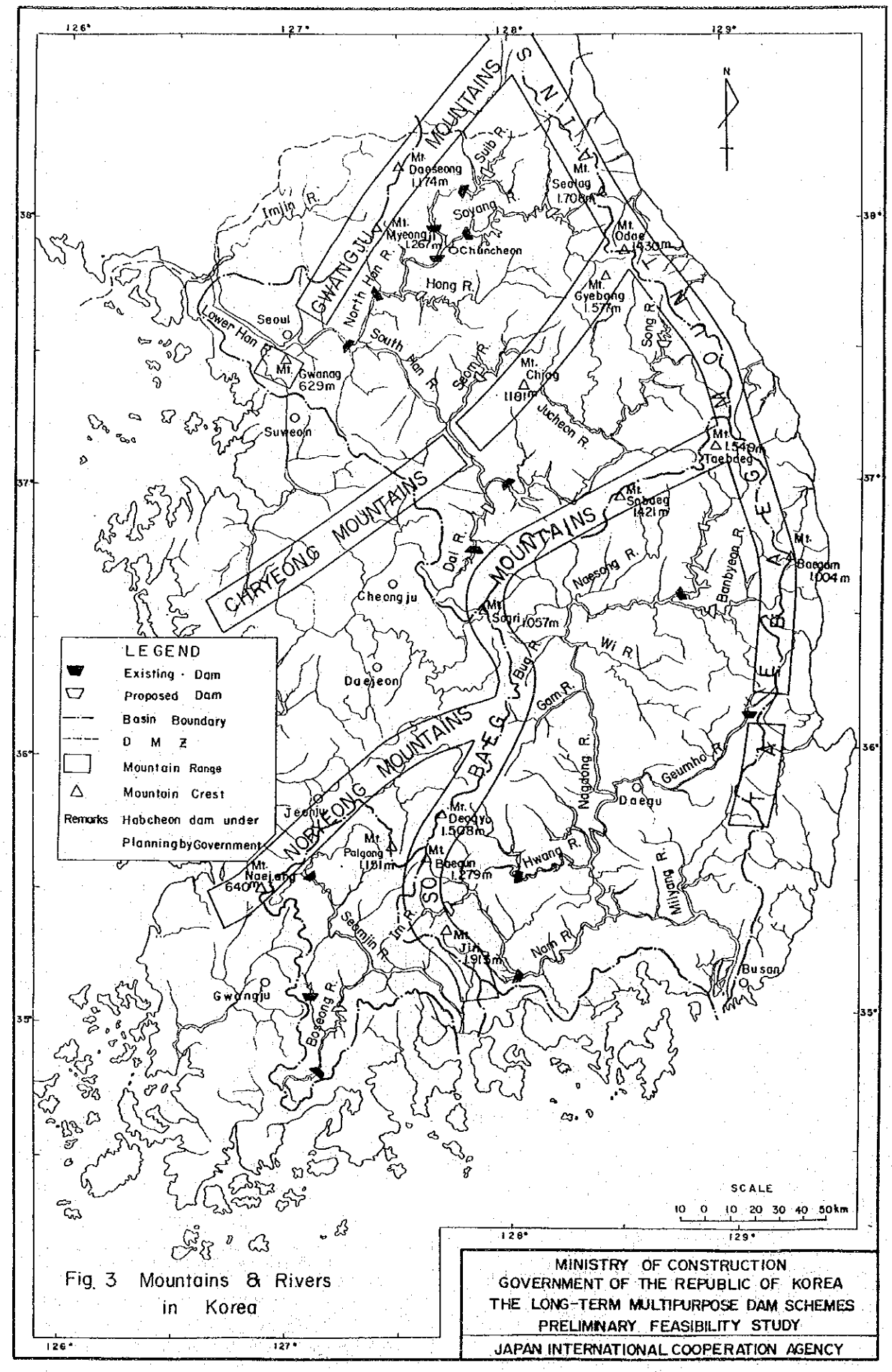

Fig. 3 Mountains & Rivers in Korea

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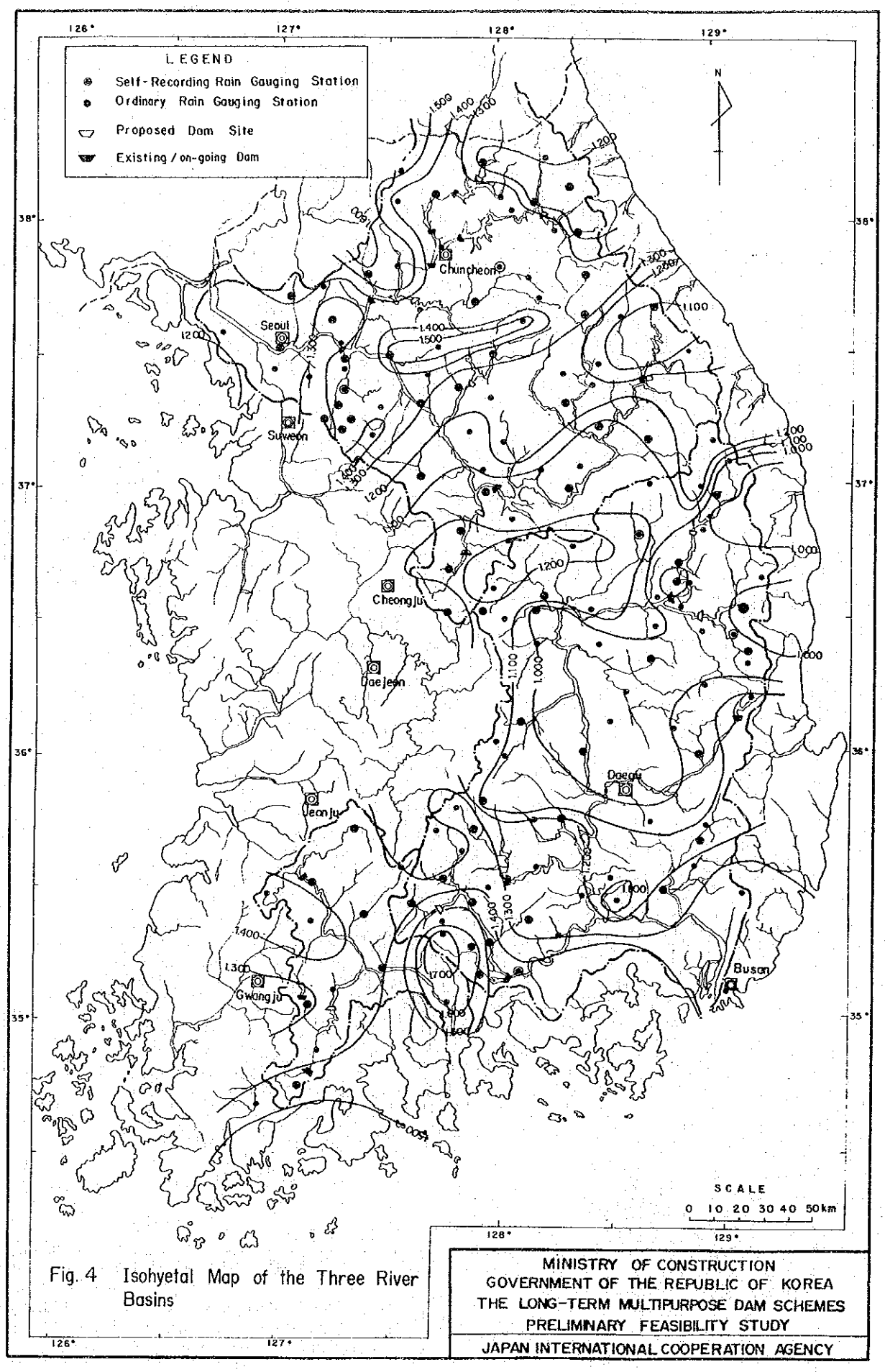

Fig. 4 Isohyetal Map of the Three River Basins

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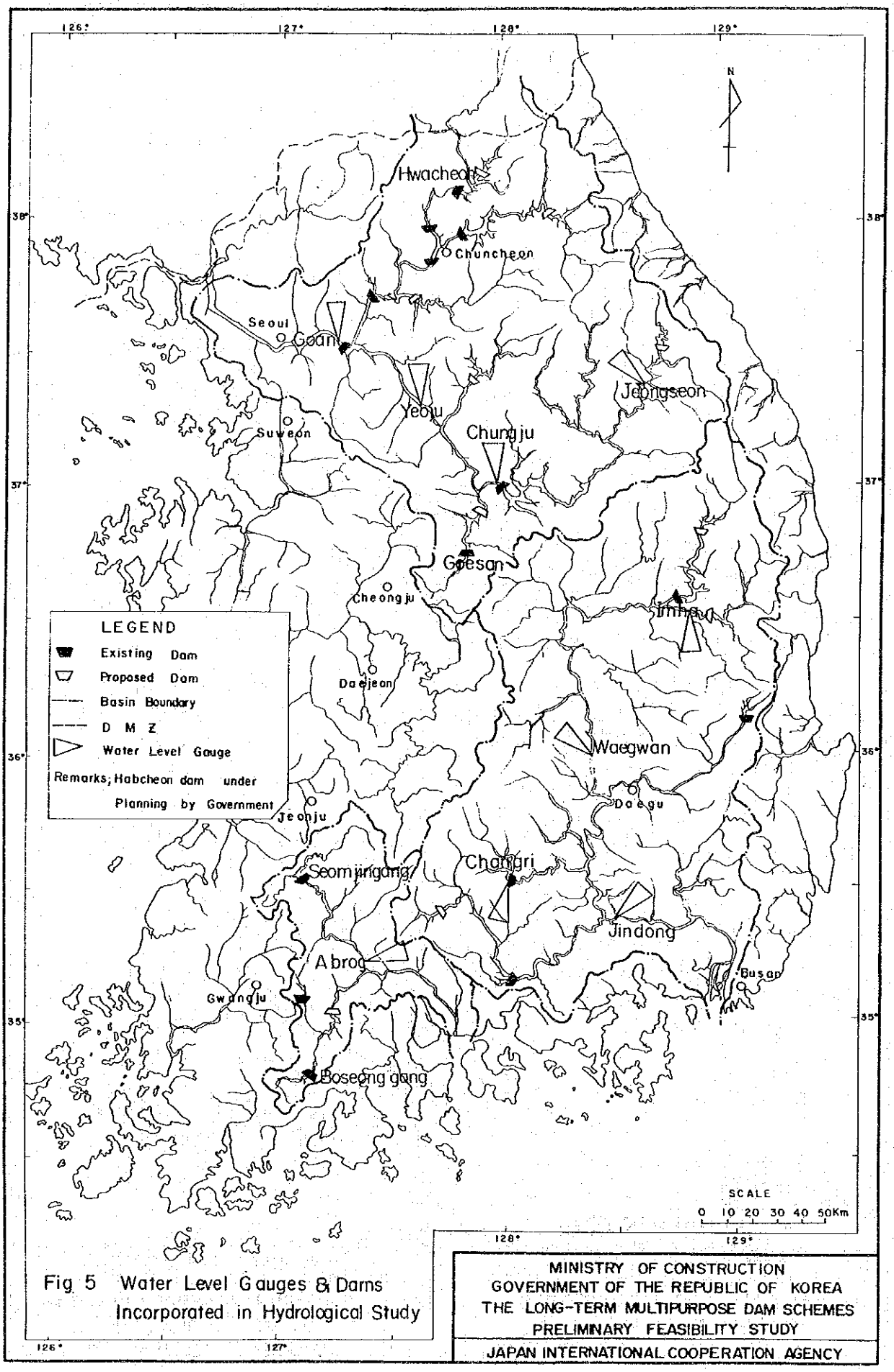

Fig. 5 Water Level Gauges & Dams Incorporated in Hydrological Study

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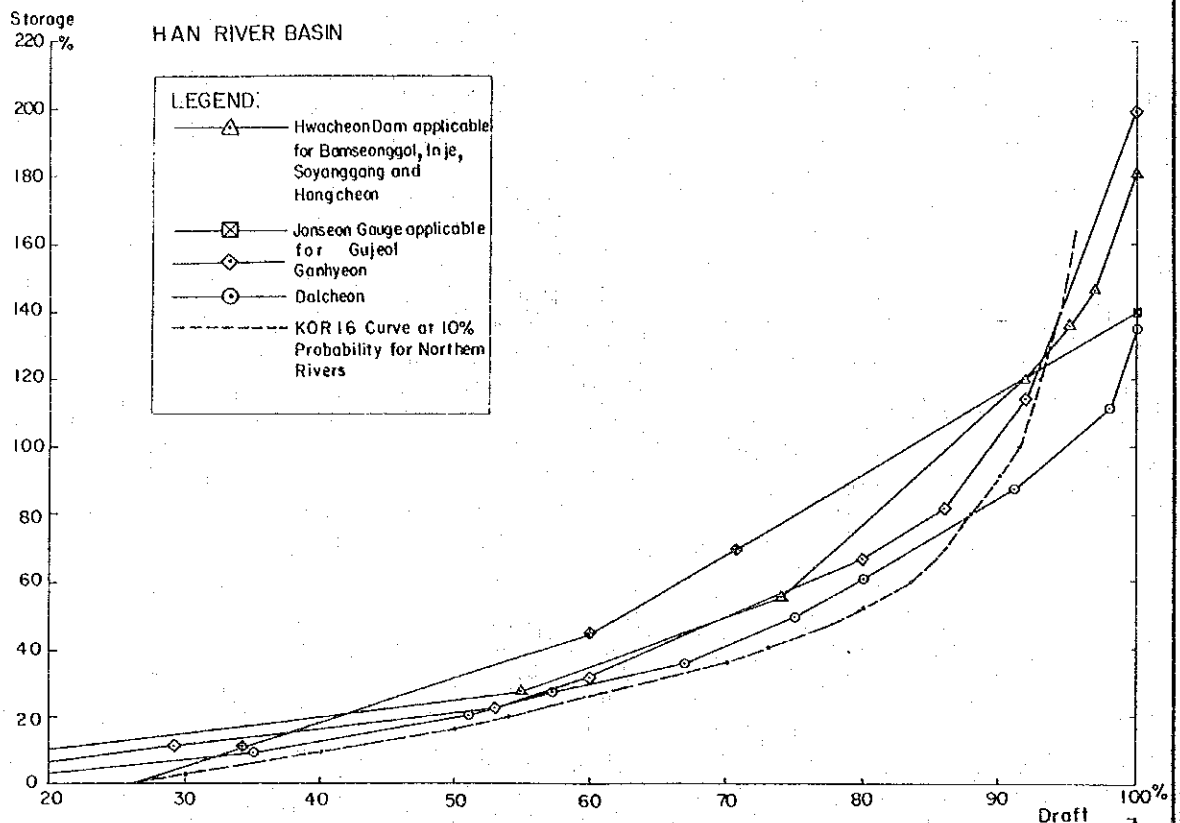

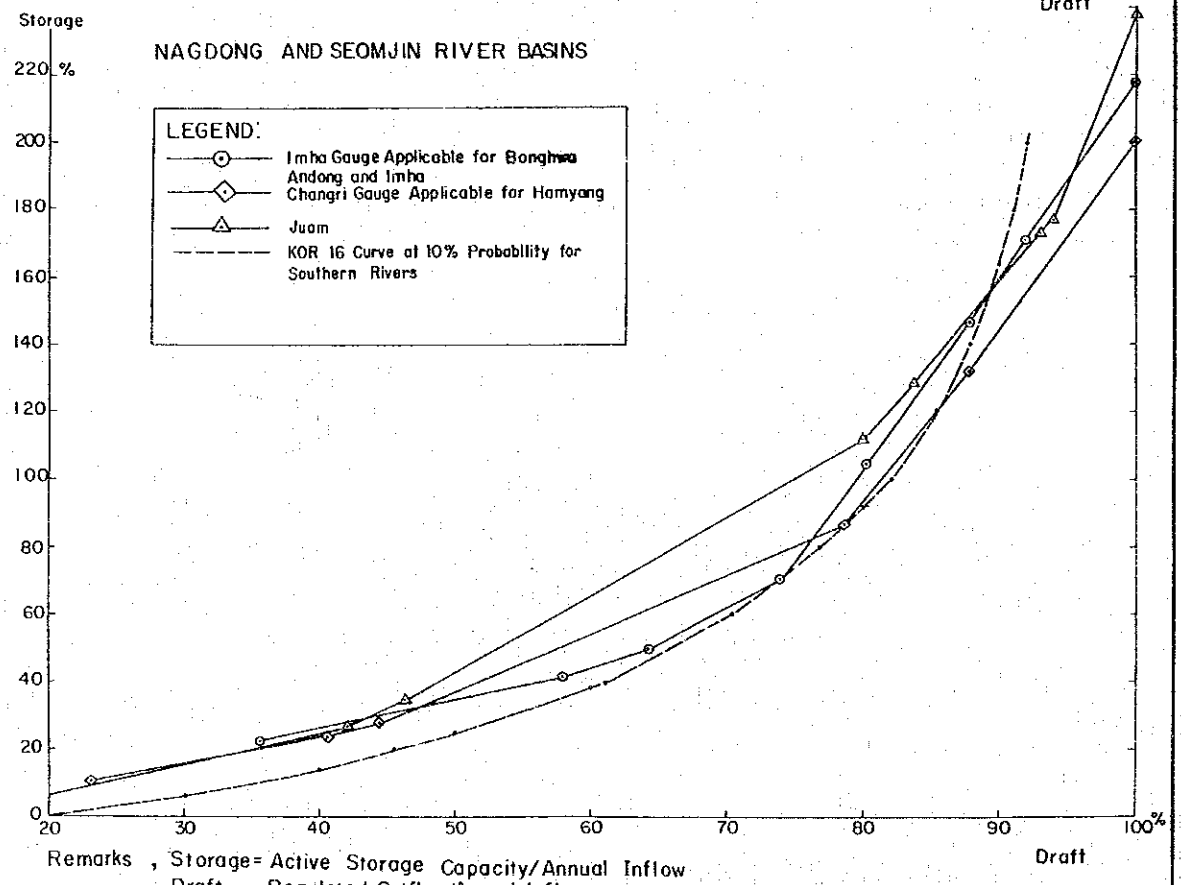

Remarks , Storage = Active Storage Capacity/Annual Inflow
Draft = Regulated Outflow/Annual Inflow

Fig. 6 Non-dimensional Storage-Draft Curve

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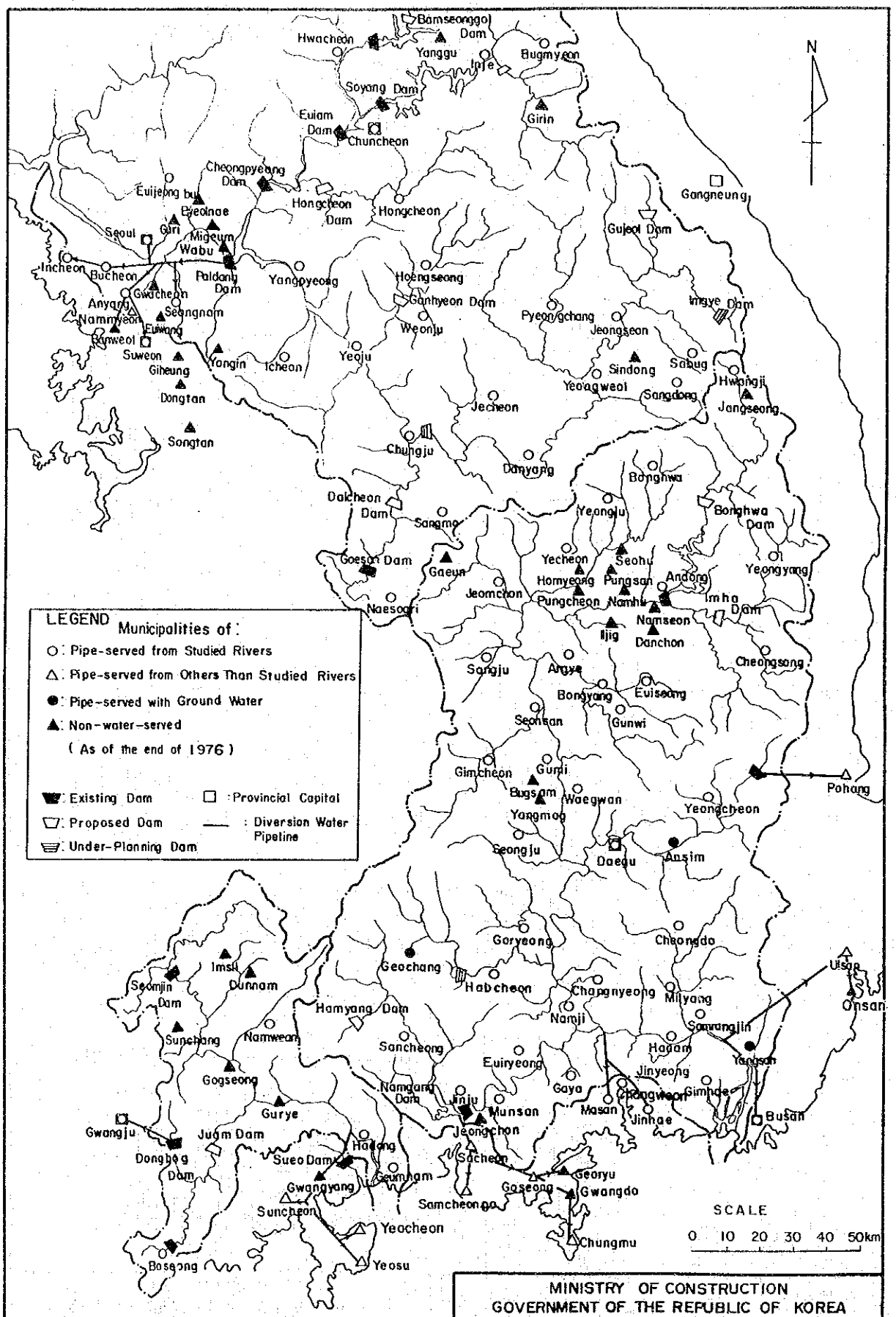

Fig. 7 Location Map of M&I Demand Centers

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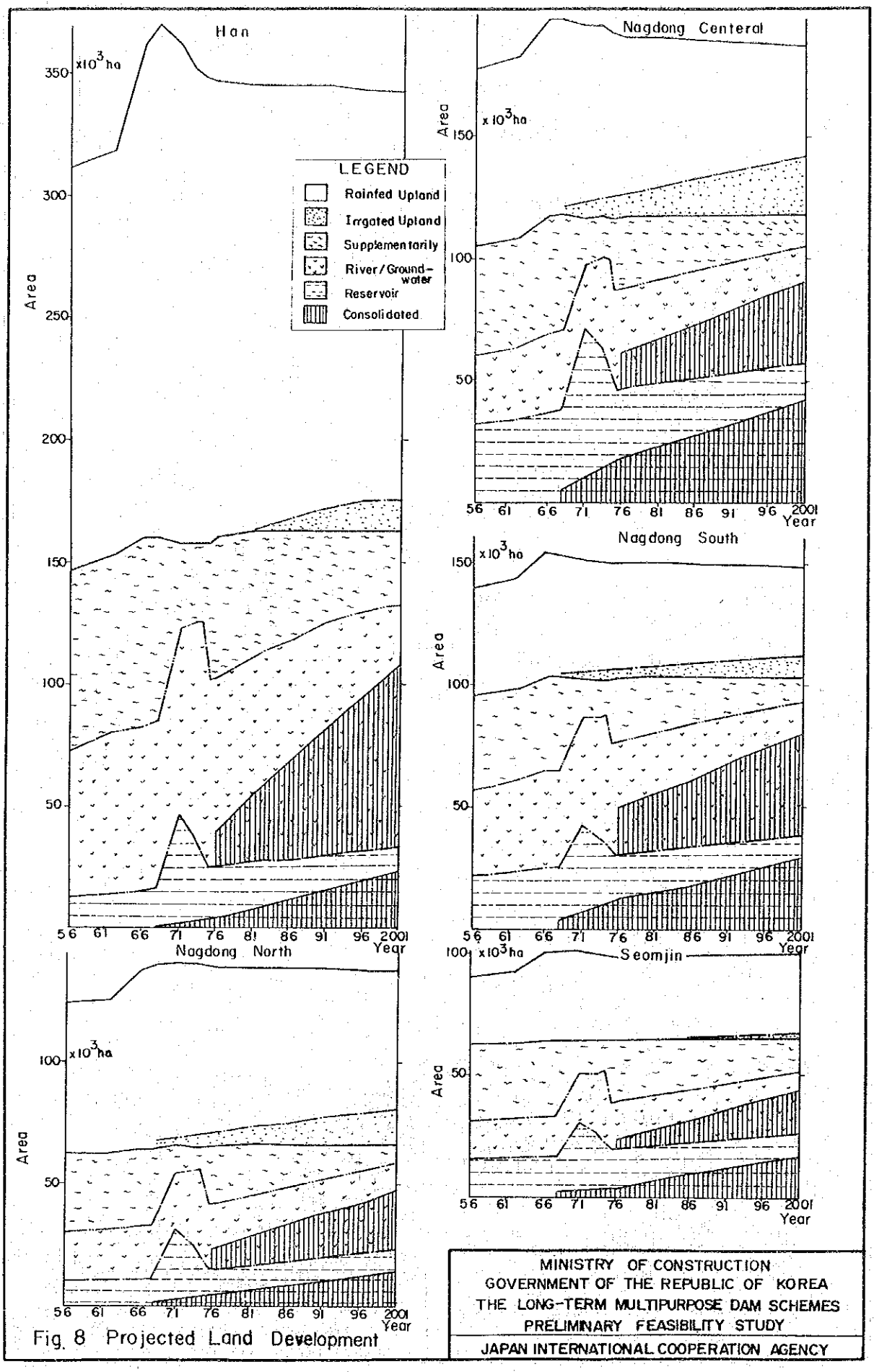

Fig. 8 Projected Land Development

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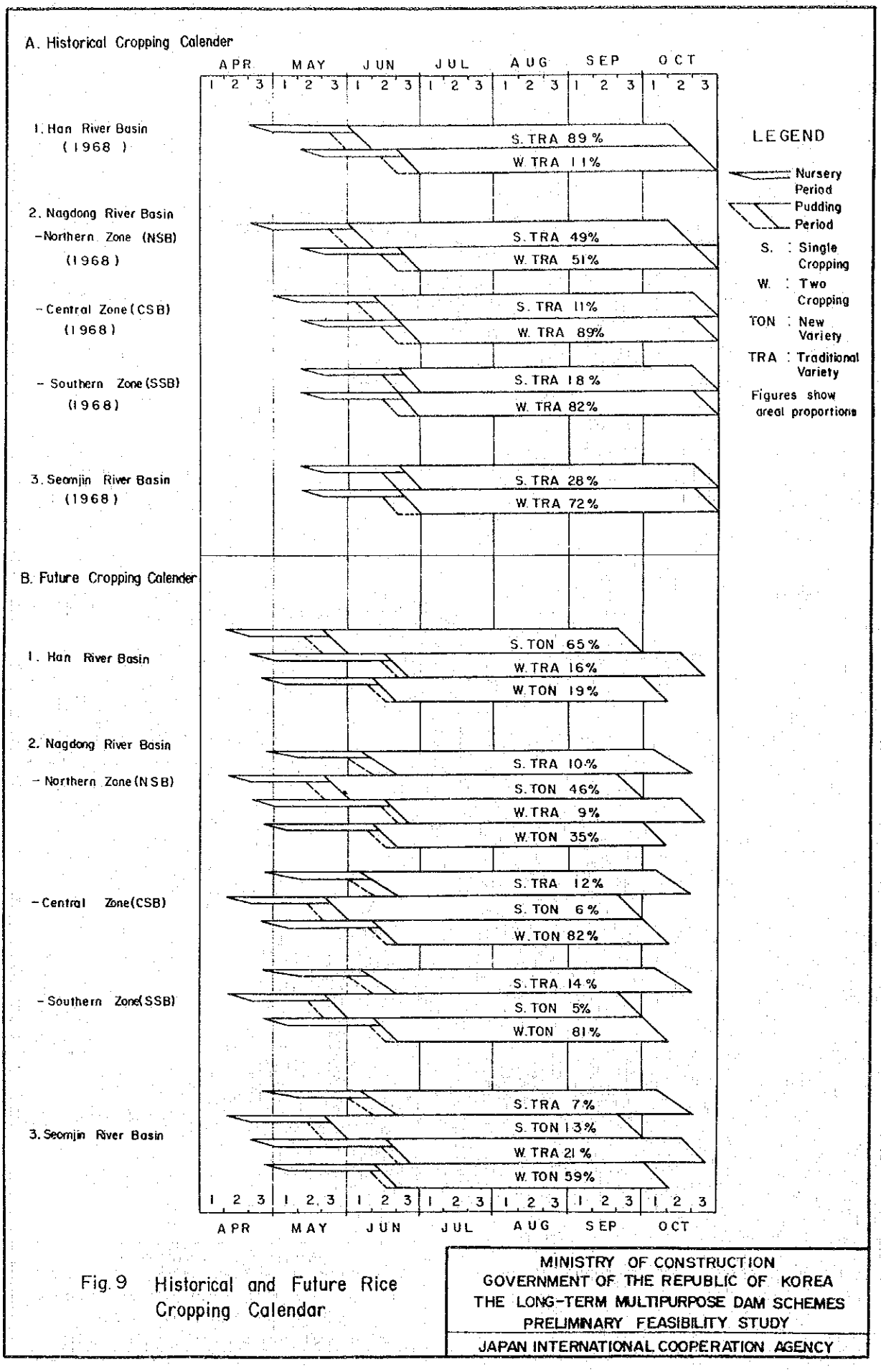

Fig. 9 Historical and Future Rice Cropping Calendar

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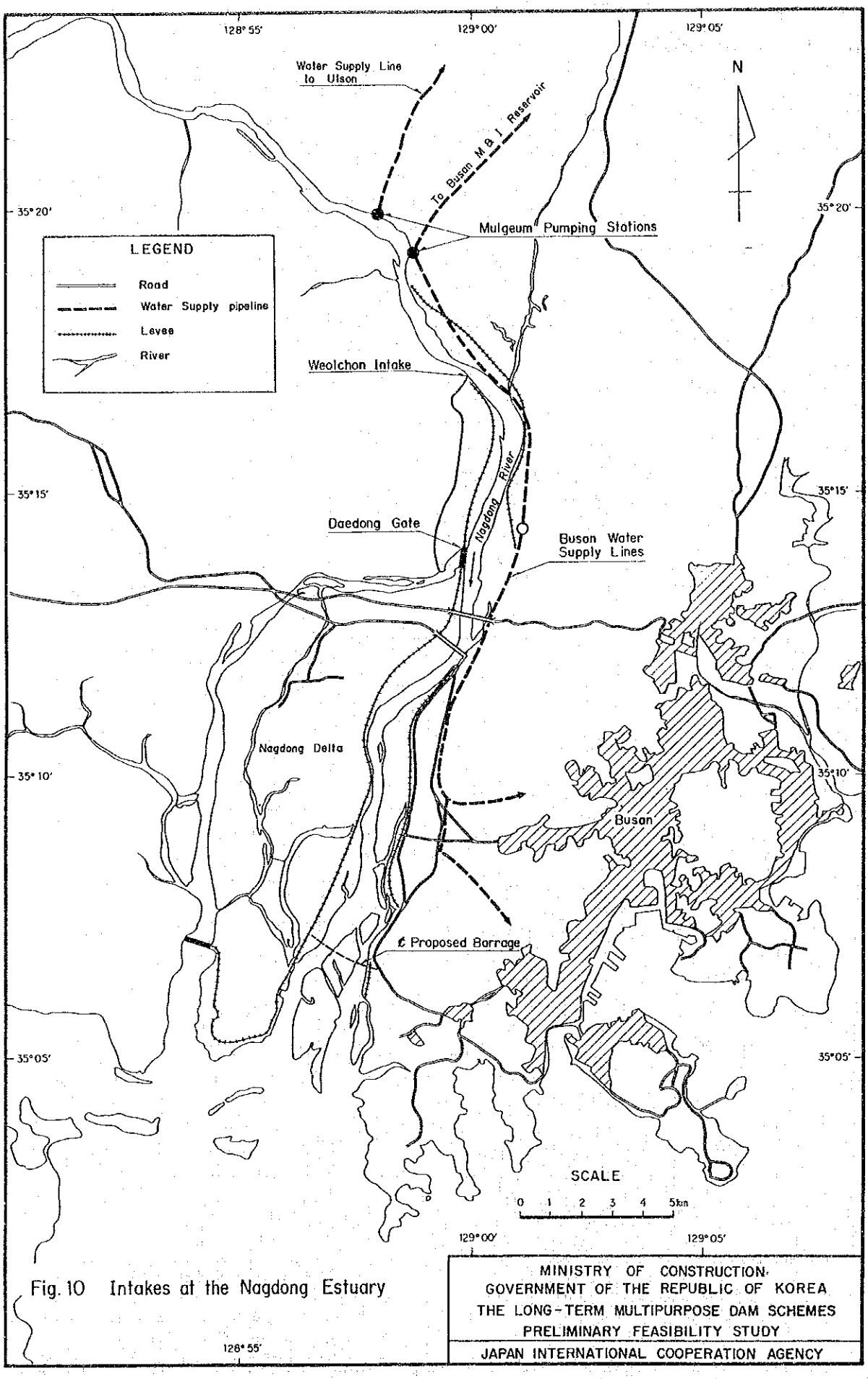

Fig. 10 Intakes at the Nagdong Estuary

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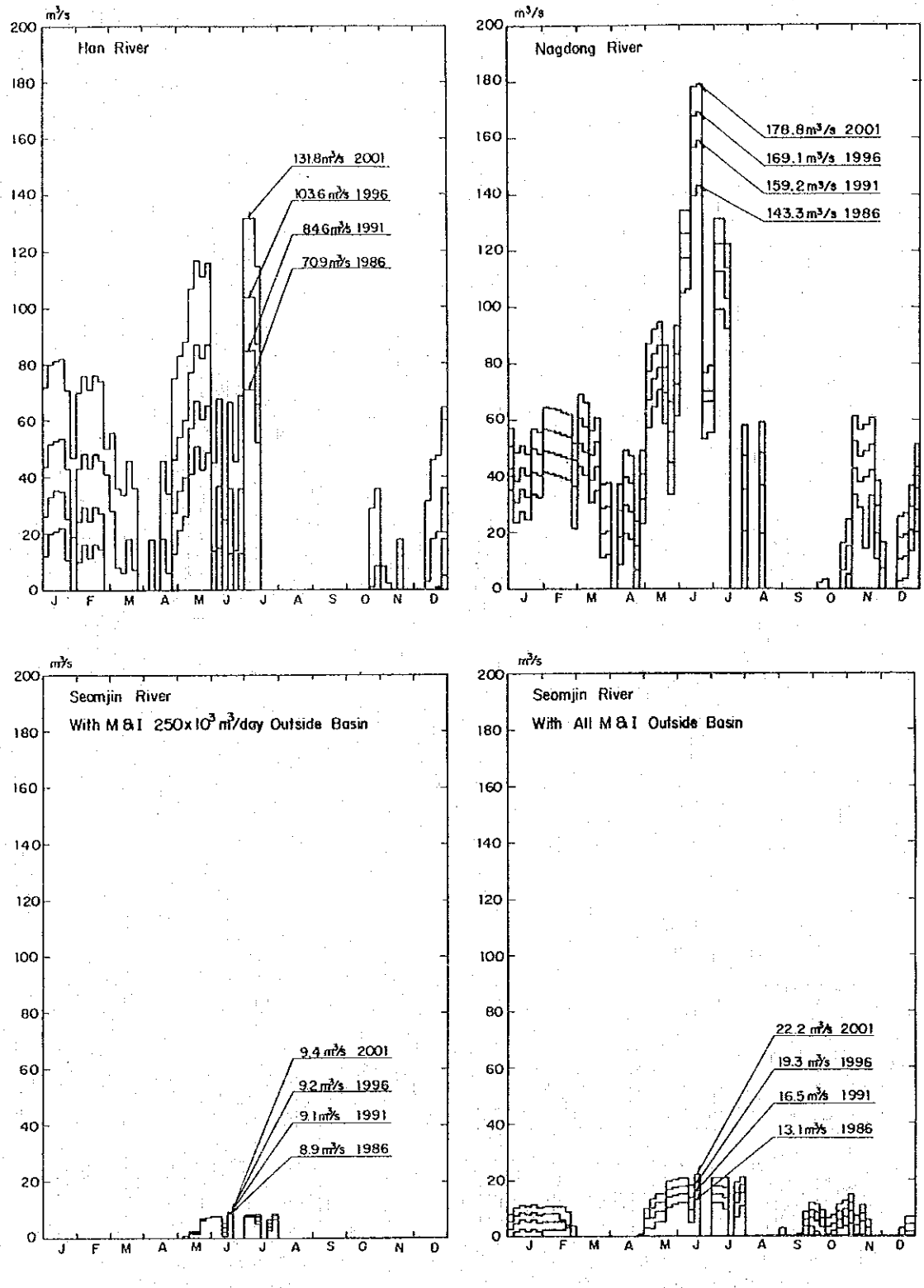

Fig.11 Estimated Water Deficit

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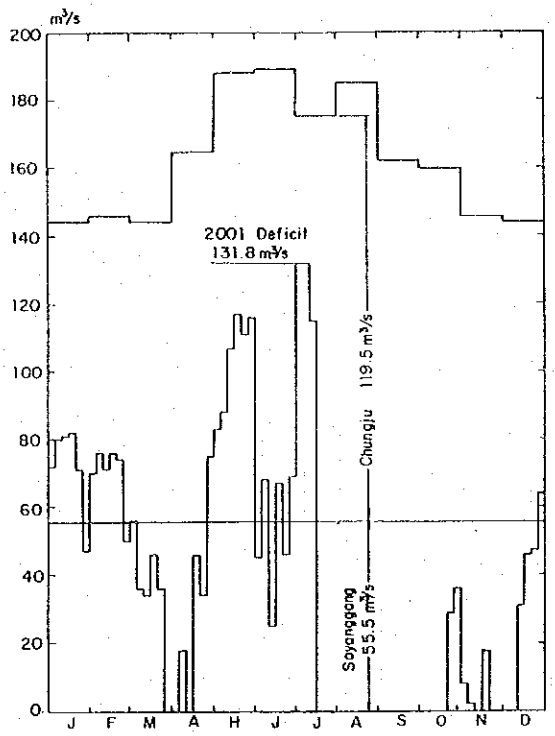

Fig.12 Supply & Deficit in the Han River

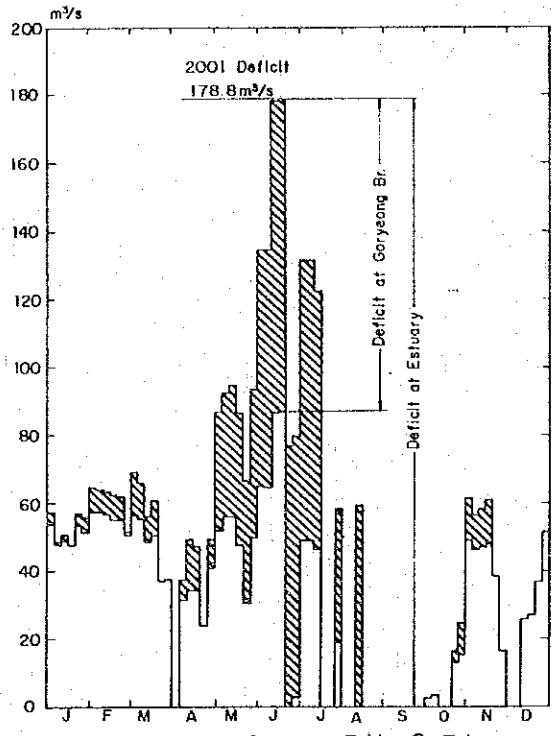

Fig.13 Deficits at Goryeong Bridge & Estuary

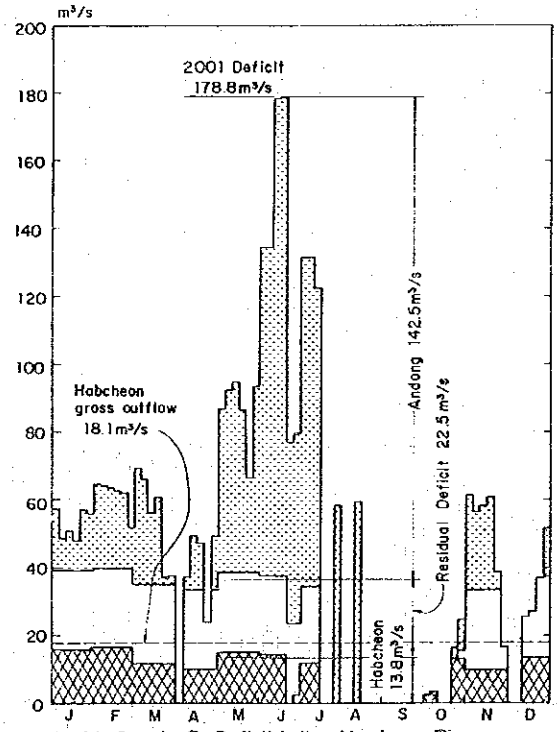

Fig.14 Supply & Deficit in the Nagdong River
(with Habcheon Dam)

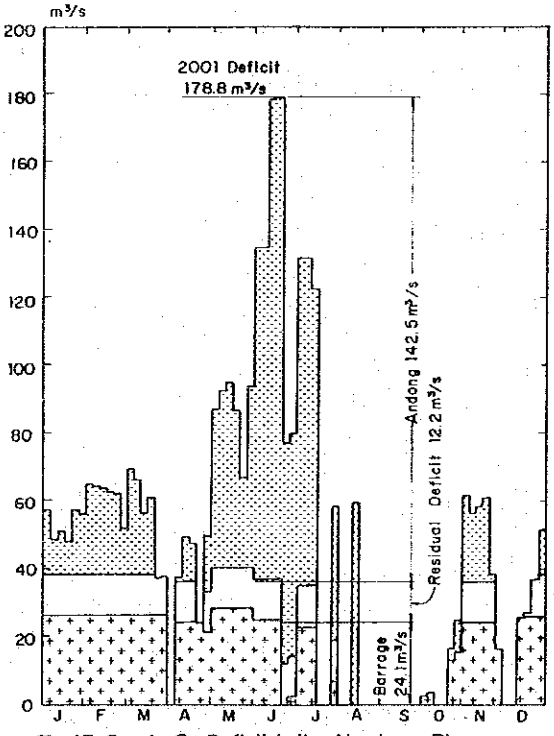

Fig.15 Supply & Deficit in the Nagdong River
(with Estuary Barrage)

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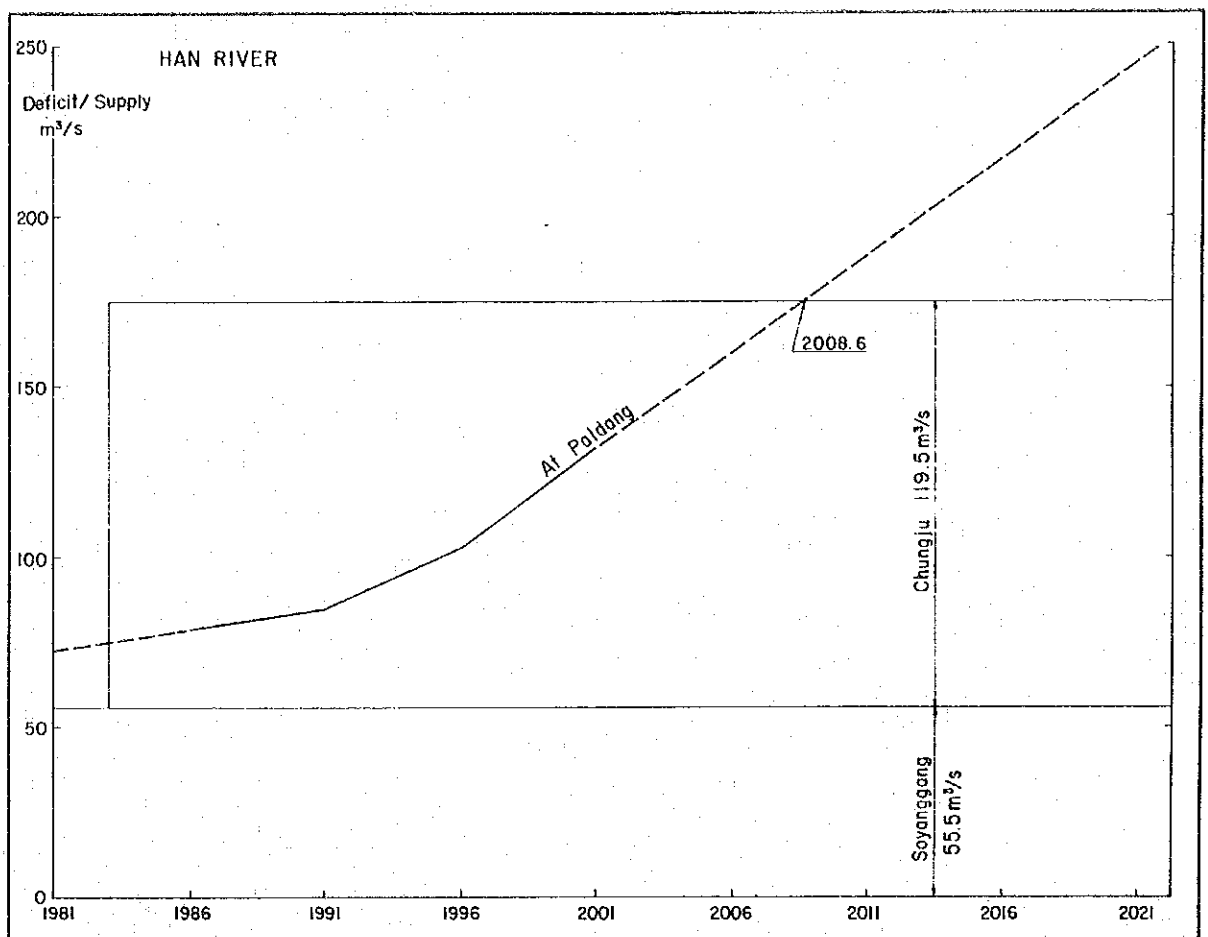

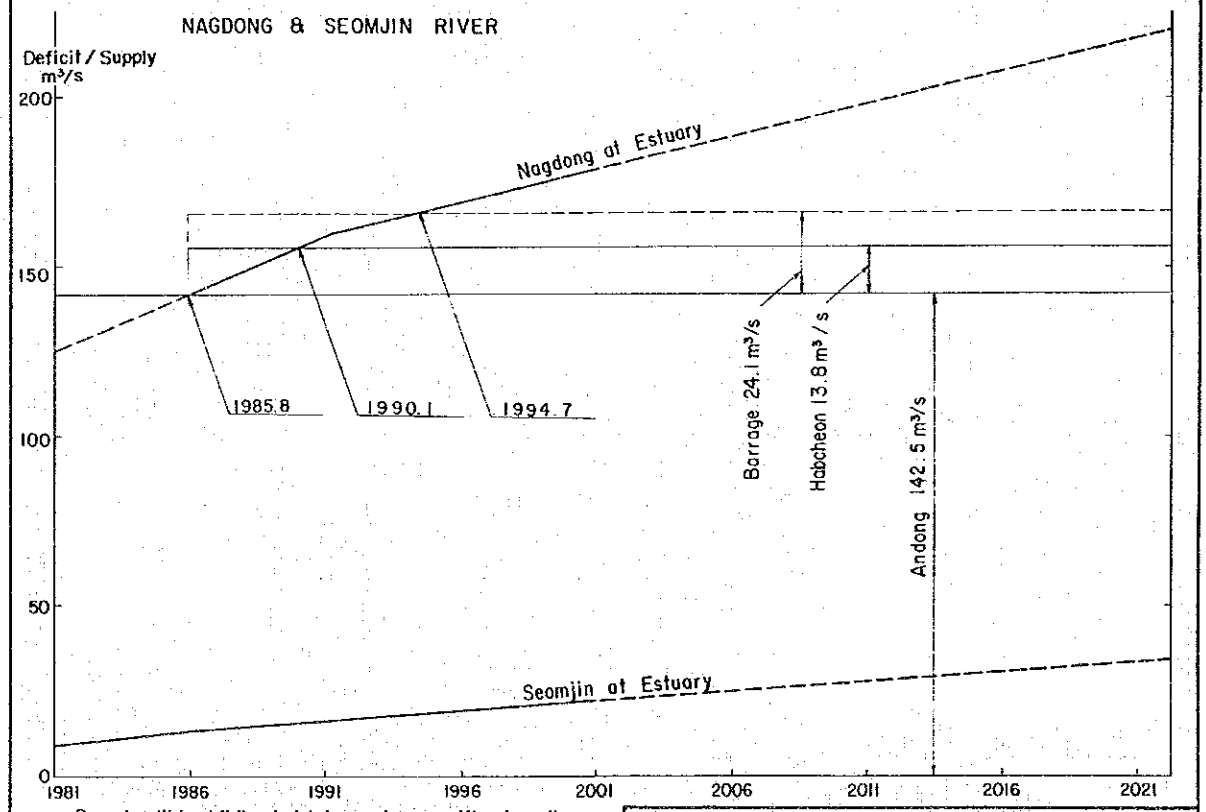

Remarks; Water deficit calculated assuming no outflow from the Soyanggang and Chungju dams for the Han river and from the Andong dam for the Nagdong river, respectively

Fig. 16 Water Deficit Build-up Curve

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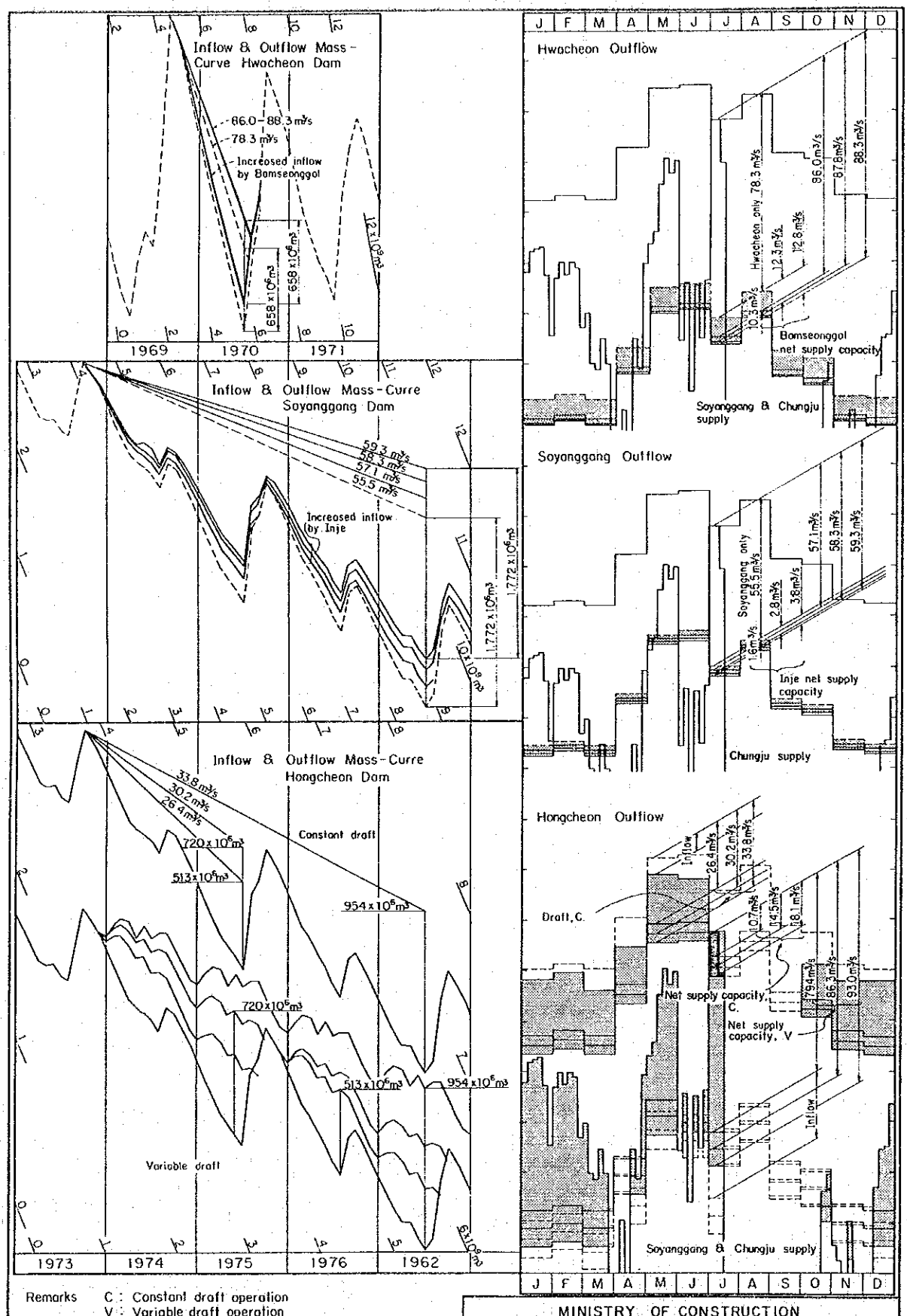

Remarks C : Constant draft operation
V : Variable draft operation

Fig.17 Water Supply by the Proposed Dams (1/4)

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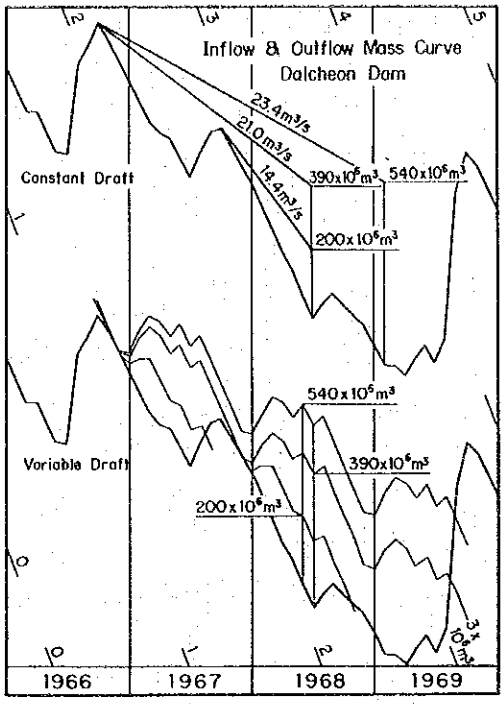
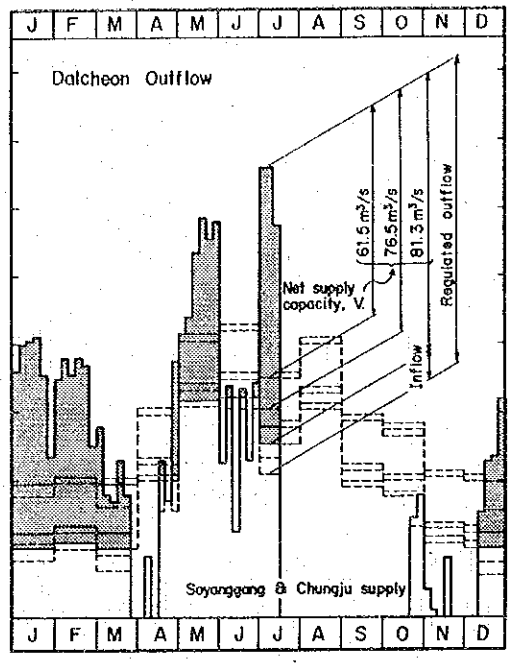
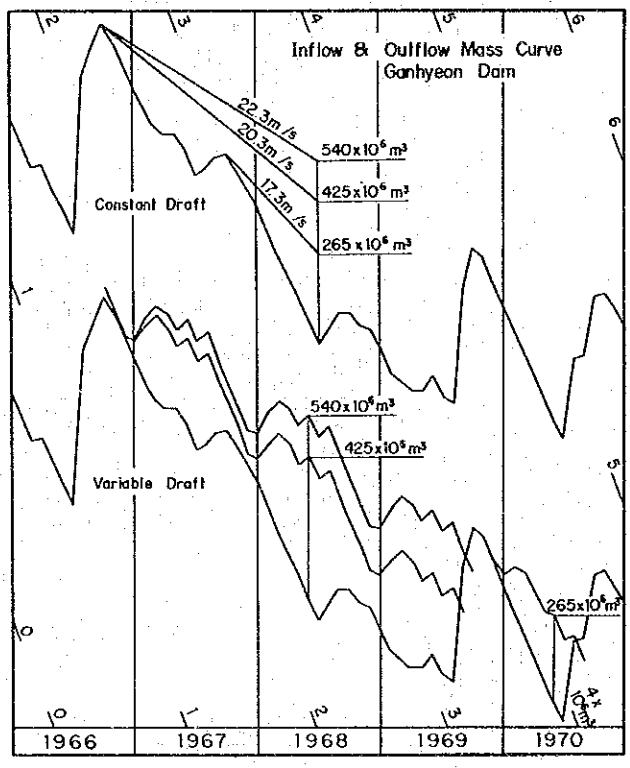
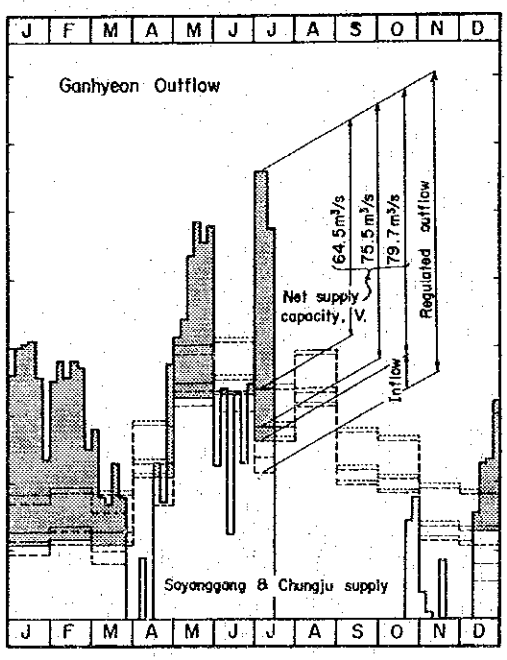




Remarks: Constant draft not shown





Remarks: Constant draft not shown

Remarks C: Constant Draft Operation
V: Variable Draft Operation

Fig.18 Water Supply by the Proposed Dams (2/4)

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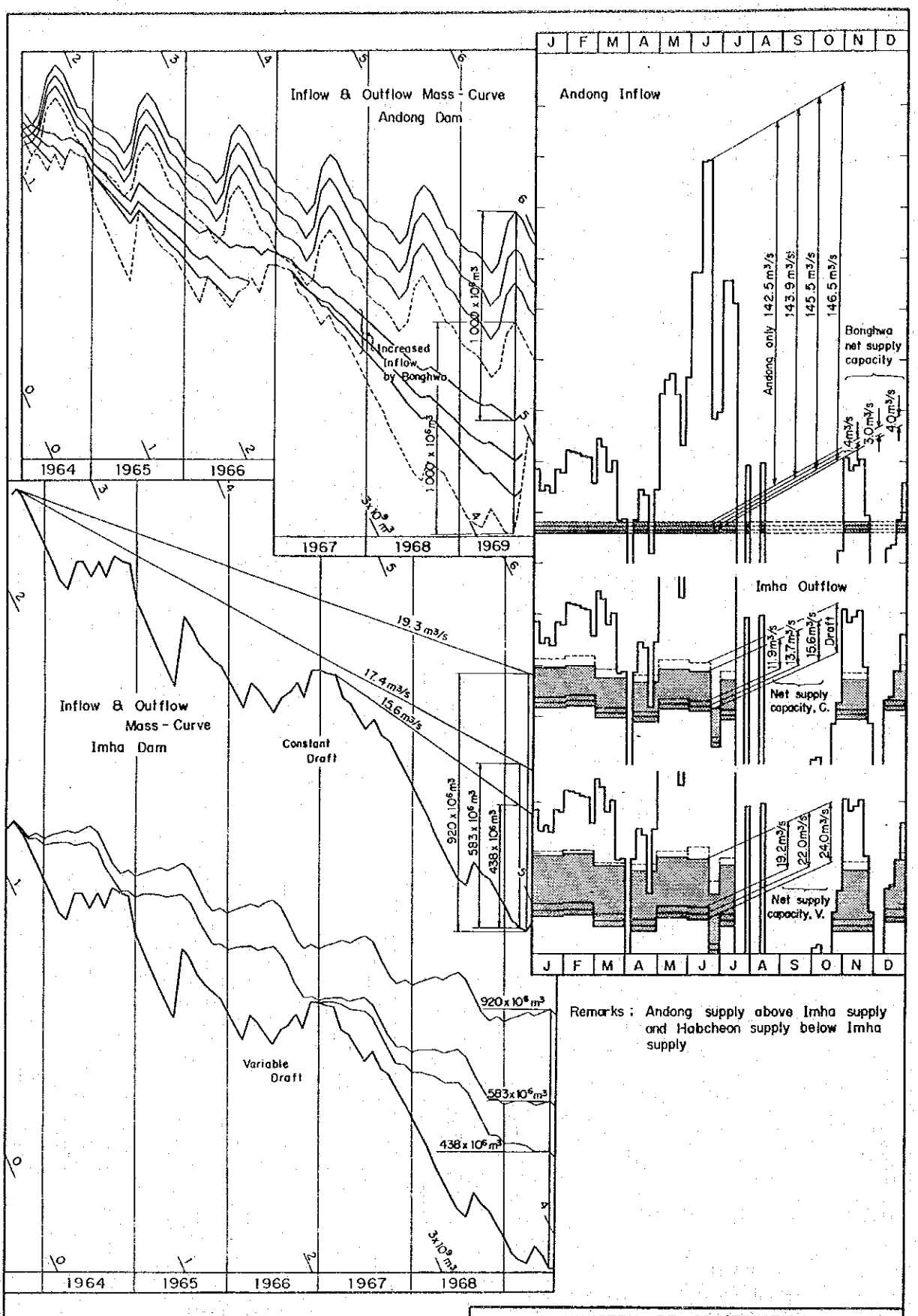

Remarks : Andong supply above Imha supply and Hapcheon supply below Imha supply

Remarks C : Constant Draft
V : Variable Draft

Fig. 19 Water Supply by the Proposed Dams (3/4)

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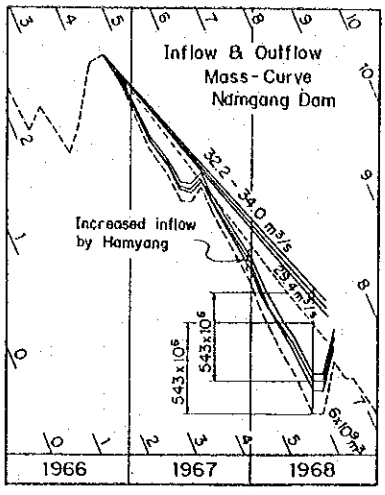
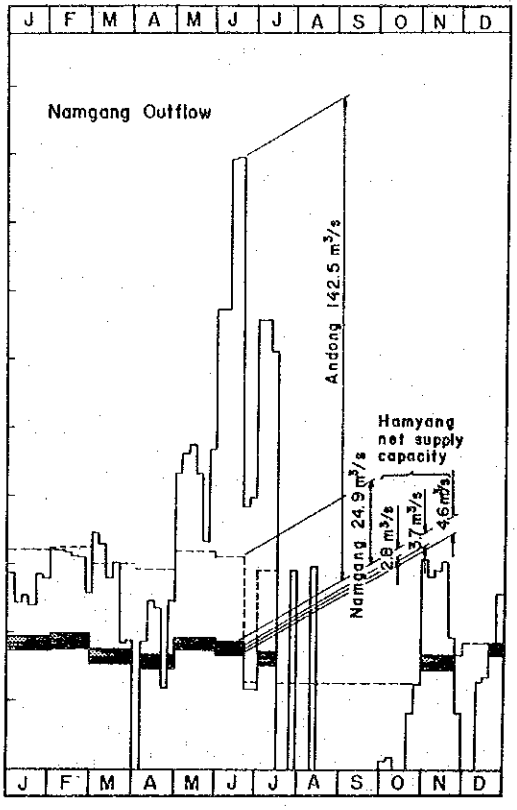
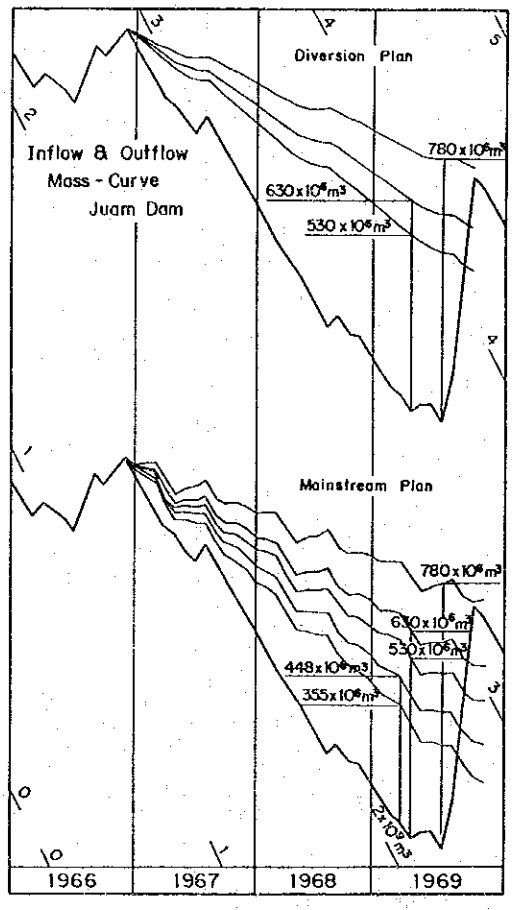
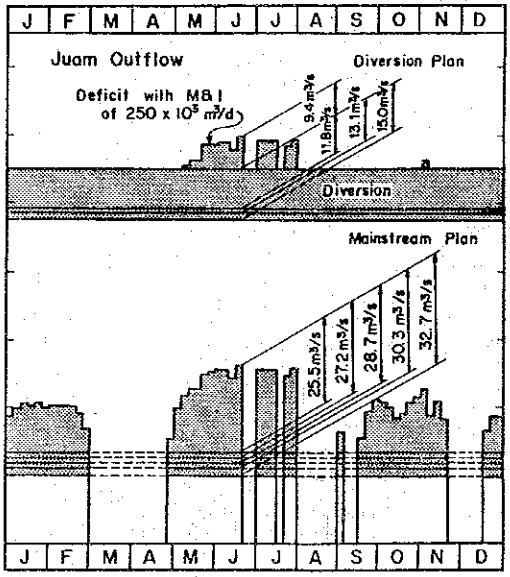




Remarks ; Habcheon supply below Namgang supply



Remarks C : Constant Draft Operation
V : Variable Draft Operation



Remarks ; Deficit calculated assuming shut-down at Juam site

Fig. 20 Water Supply by the Proposed Dams (4/4)

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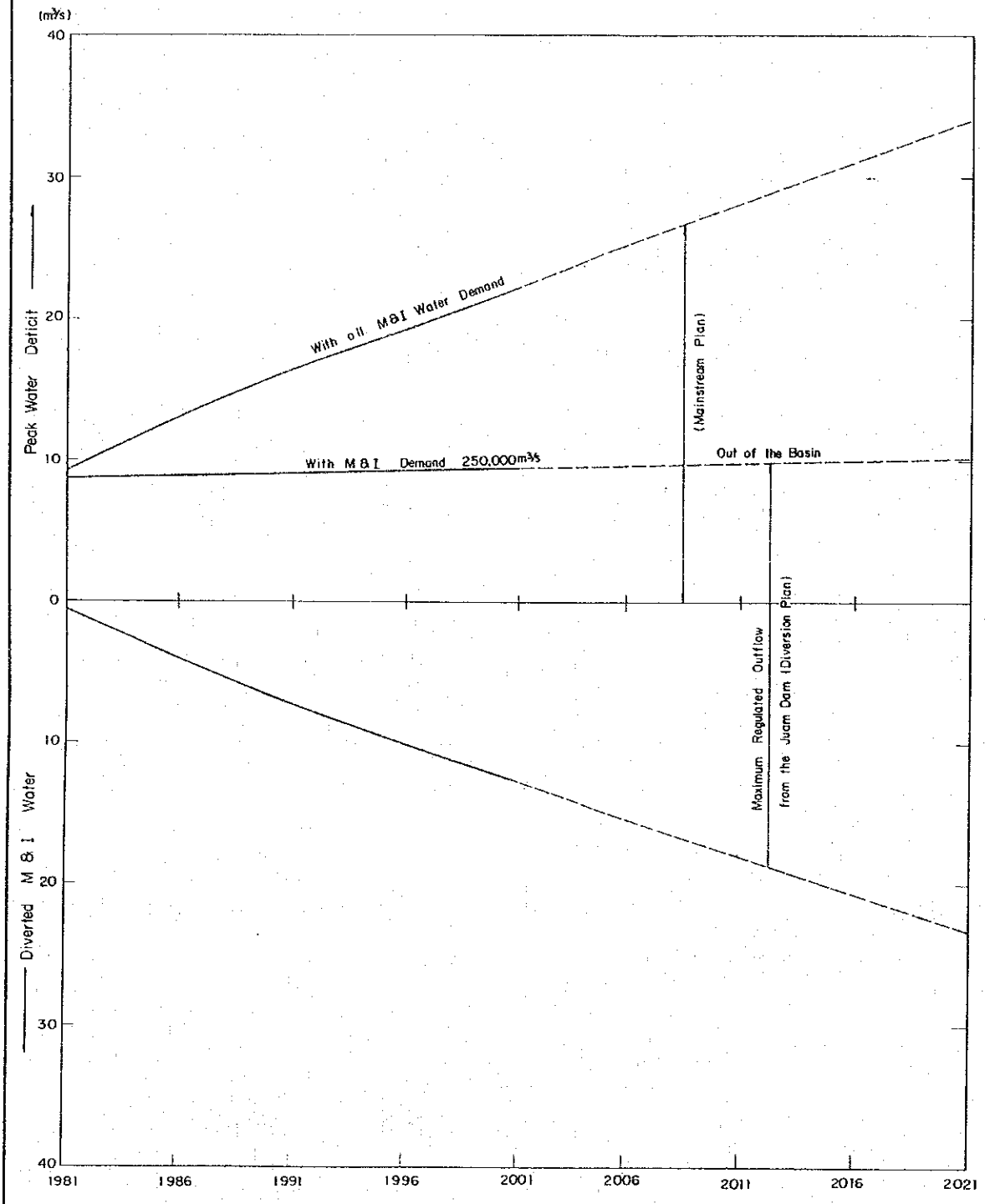

Remarks: Deficit estimated assuming the shut-down by the Juam Dam

Fig. 21 Water Deficit Build-Up Curve for the Juam Dam

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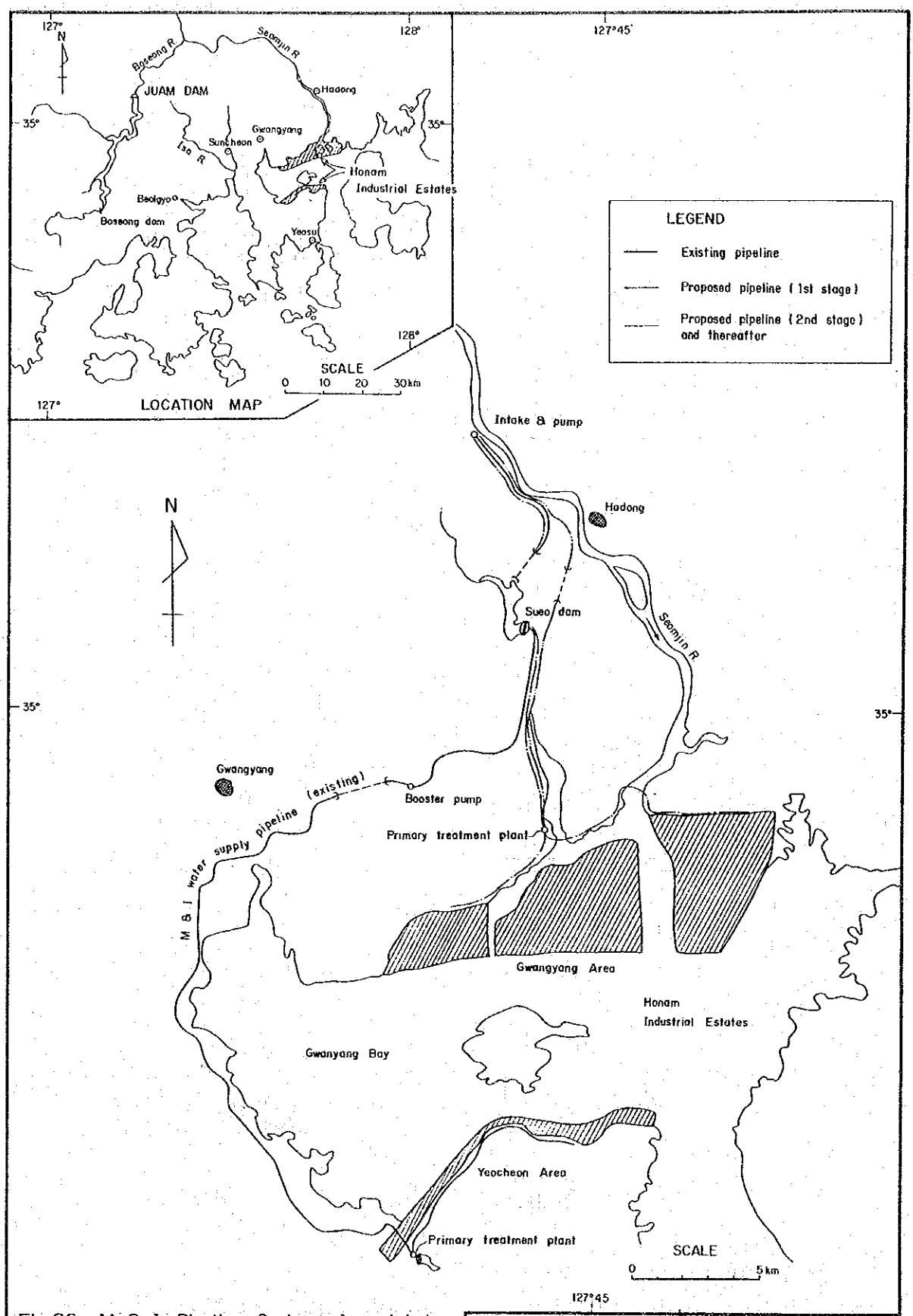

Fig.22 M & I Pipeline System Associated with The Juam Dam Scheme (Main Stream Plan)

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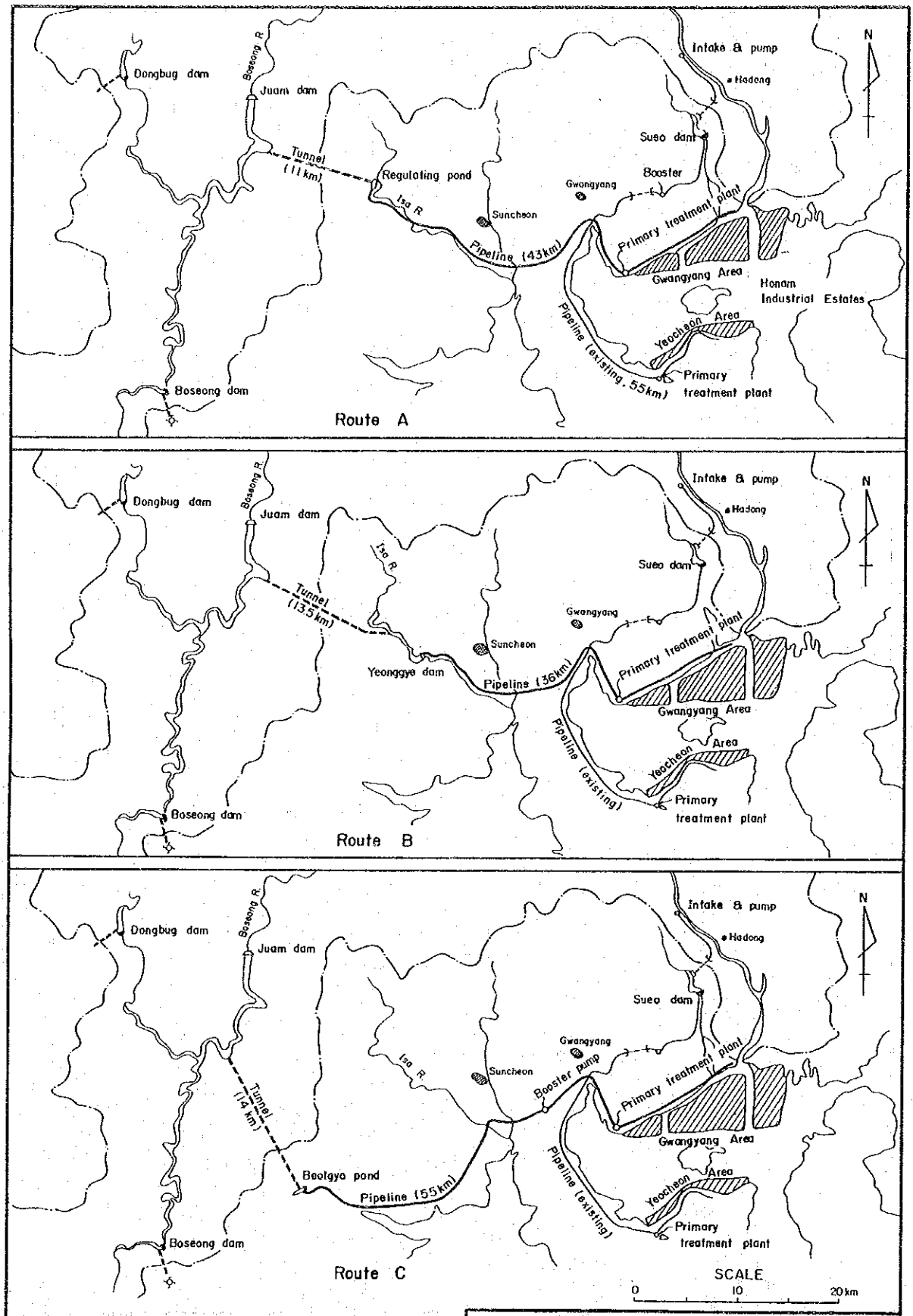

Fig. 23 Outline of Alternative M & I Pipeline Systems Associated with the Juam Dam Scheme (Diversion plan)

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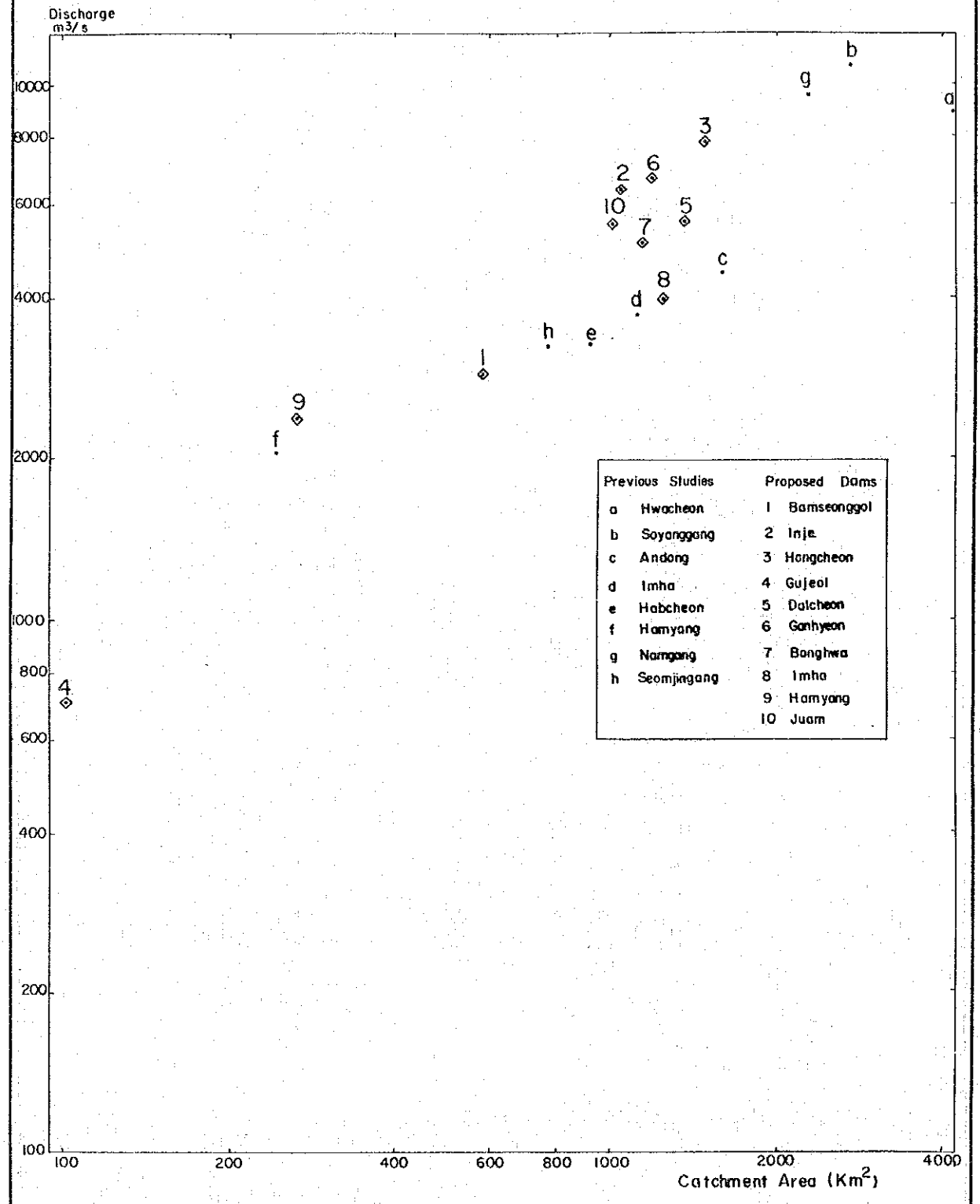

Fig. 24 Catchment Area - 100 - year Flood Discharge Relationship

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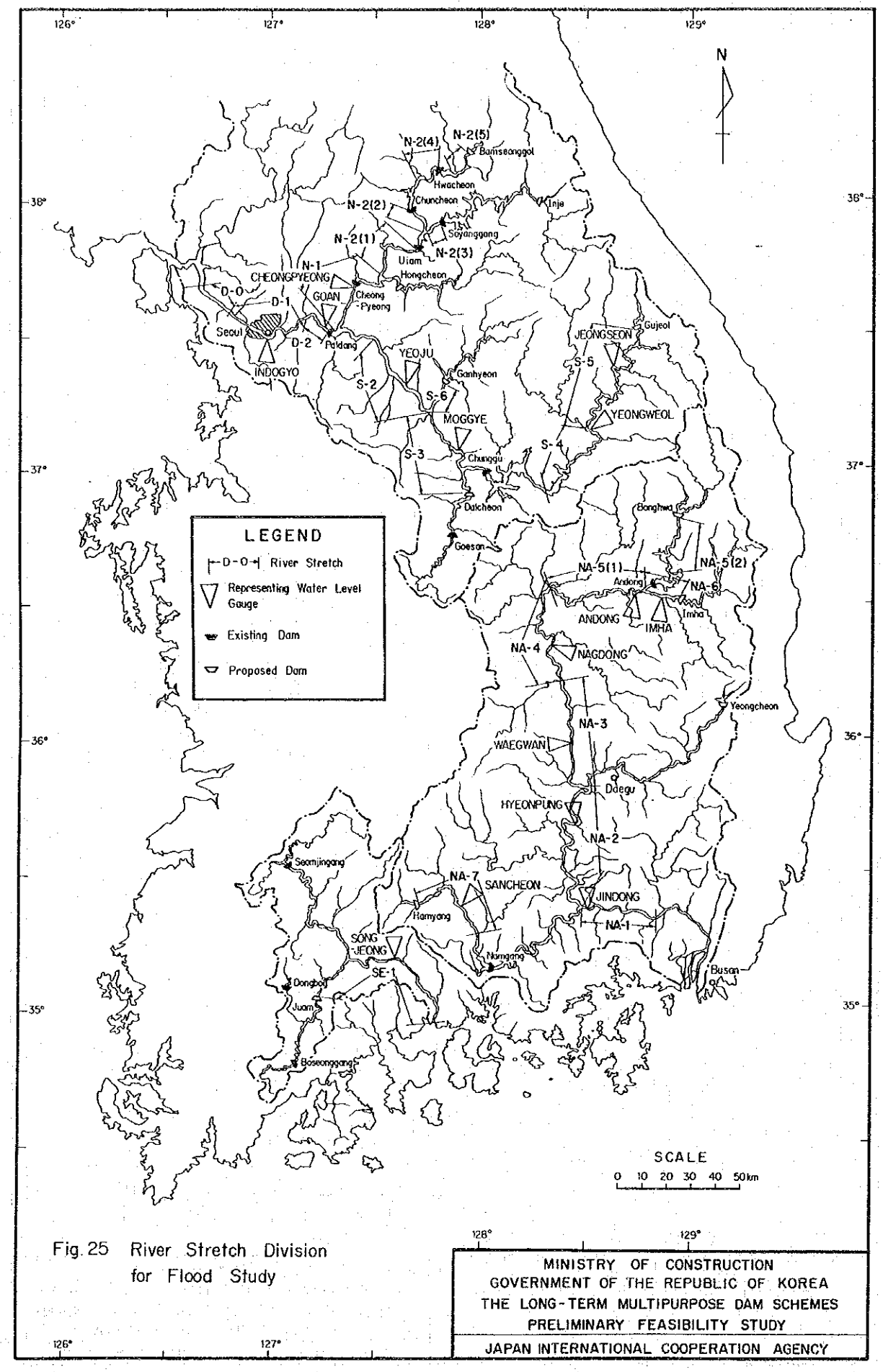

Fig. 25 River Stretch Division for Flood Study

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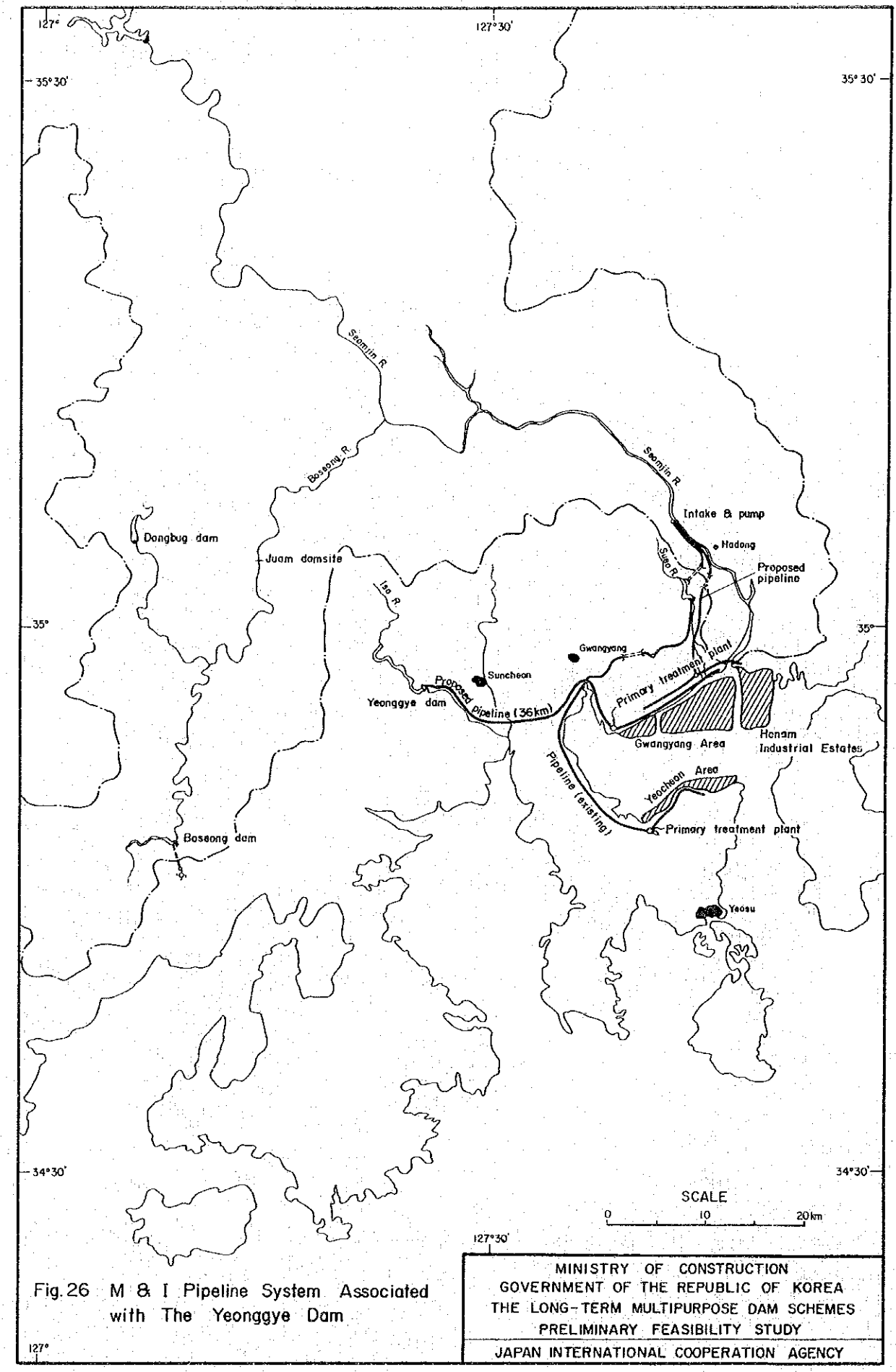

Fig. 26 M & I Pipeline System Associated with The Yeonggye Dam

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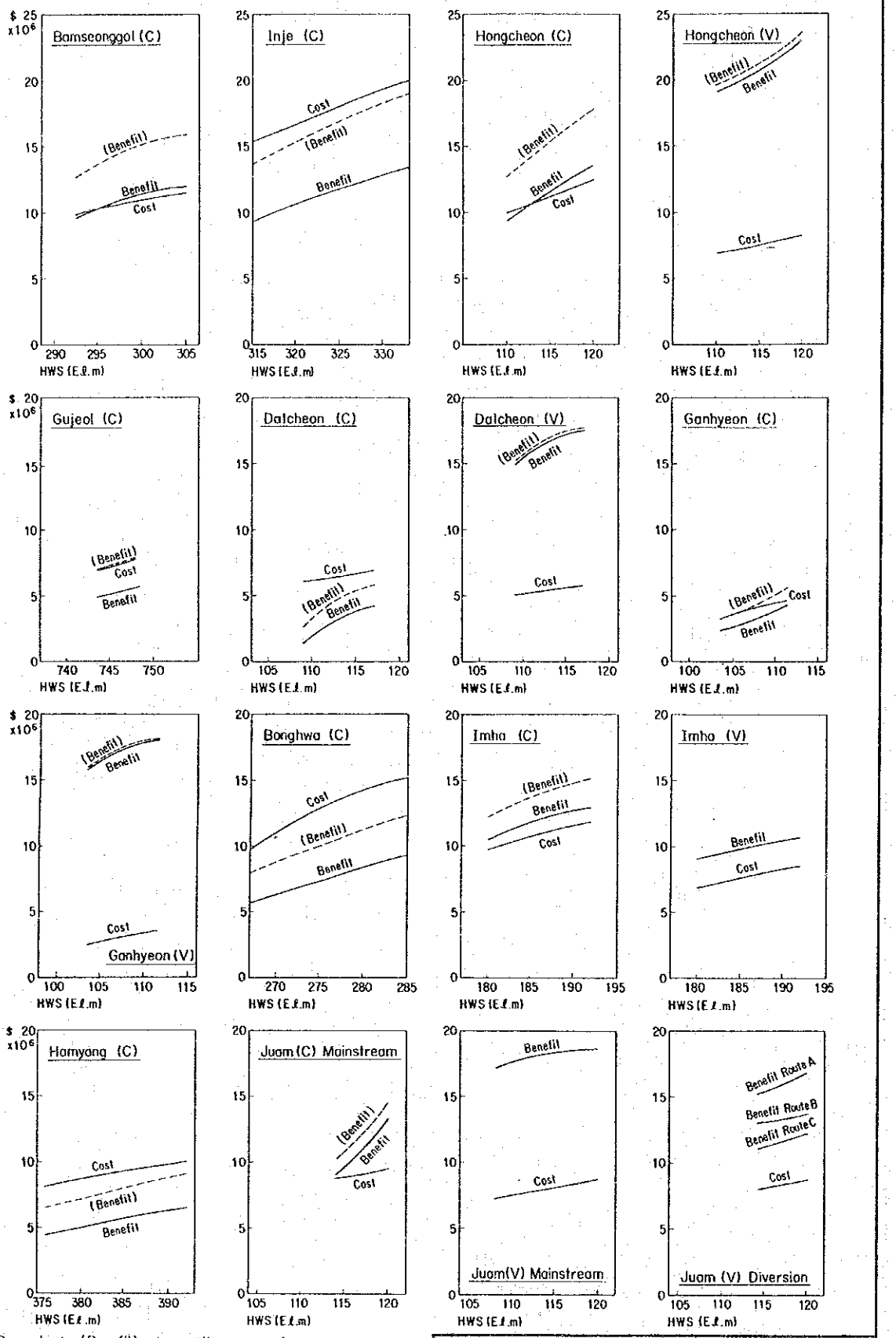

Remarks : (Benefit) shows the case of energy benefit doubled

Revised

Fig. 27 Annual Benefit and Cost of the Proposed Dam Schemes

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