

FIGURES

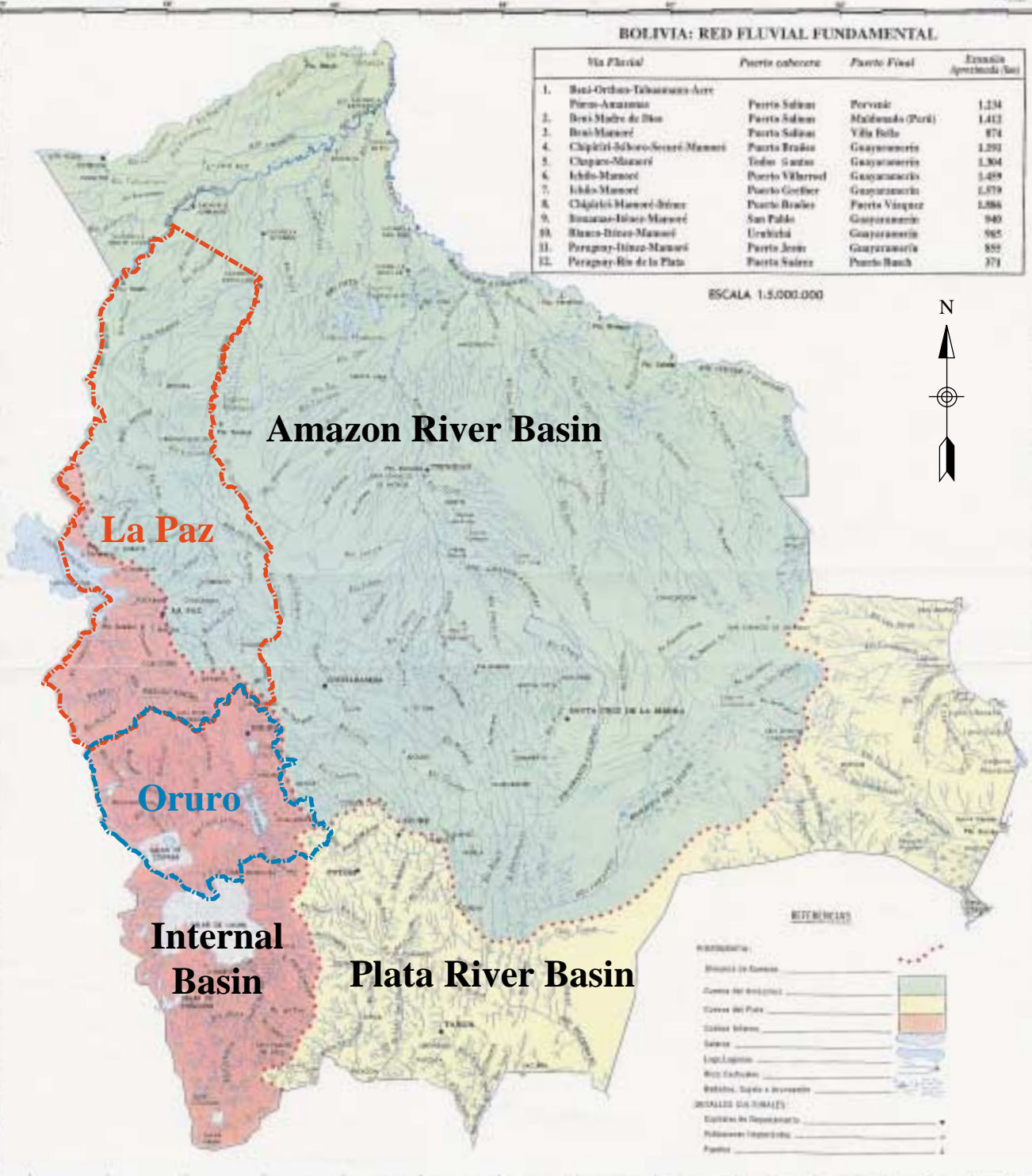
MAPA HIDROGRAFICO DE BOLIVIA



BOLIVIA: RED FLUVIAL FUNDAMENTAL

Via Fluvial	Puerto cabecera	Puerto Final	Estrada Aproximada (Km)
1. Beni-Ordes-Tahuamanu-Arre Pirre-Amanani	Puerto Salinas	Porzucá	1.234
2. Beni-Madre de Dios	Puerto Salinas	Maldonado (Paz)	1.412
3. Beni-Masisei	Puerto Salinas	Villa Bello	874
4. Chapirí-Sabor-Sacred-Masisei	Puerto Brañas	Guaymaseria	1.291
5. Chapaco-Masisei	Tobos Santos	Guaymaseria	1.204
6. Ichilo-Masisei	Puerto Villarreal	Guaymaseria	1.429
7. Ichilo-Masisei	Puerto Godínez	Guaymaseria	1.579
8. Chapirí-Masisei-Ordes	Puerto Brañas	Puerto Viaguera	1.086
9. Beni-Madre de Dios	San Pablo	Guaymaseria	940
10. Beni-Madre de Dios	Urubichá	Guaymaseria	985
11. Paraguay-Ordes-Masisei	Puerto Jesús	Guaymaseria	852
12. Paraguay-Río de la Plata	Puerto Salinas	Puerto Banch	371

ESCALA 1:5.000.000



REFERENCIAS



SUPERFICIE DE CUENCAS Y SUB CUENCAS HIDROGRAFICAS

CUENCA DEL AMAZONAS			CUENCA CENTRAL			CUENCA DEL PLATA		
SUB CUENCAS	SUP. Km ²	%	SUB CUENCAS	SUP. Km ²	%	SUB CUENCAS	SUP. Km ²	%
SUB CUENCA ACRE	300	0,2	SUB CUENCA TITICACA	1967	1,3	SUB CUENCA PLOCOMARCO	11880	18,3
SUB CUENCA GRUVA	24112	2,2	SUB CUENCA DESAGUADERO POONI	3180	4,7	SUB CUENCA BERMEO	1200	1,1
SUB CUENCA MADRE DE DIOS	18116	1,8	SUB CUENCA CORCHA	2174	2,2	SUB CUENCA INDIATRAY	3948	9,1
SUB CUENCA MADRE DE DIOS	2806	2,8	SUB CUENCA UYUNI	6376	5,6			
SUB CUENCA BEBI	15009	11,3						
SUB CUENCA MAMORE	25775	24,3						
SUB CUENCA ITENEZ	25781	18,9						
SUB CUENCA INDIATRAY	4521	4,4						
TOTAL	72117	65,7	TOTAL	15128	11,8	TOTAL	20418	20,3

Source: "Atlas Geografico de la Republic de Bolivia", Instituto Geografico Militar Bolivia

MAPA OROGRAFICO DE BOLIVIA

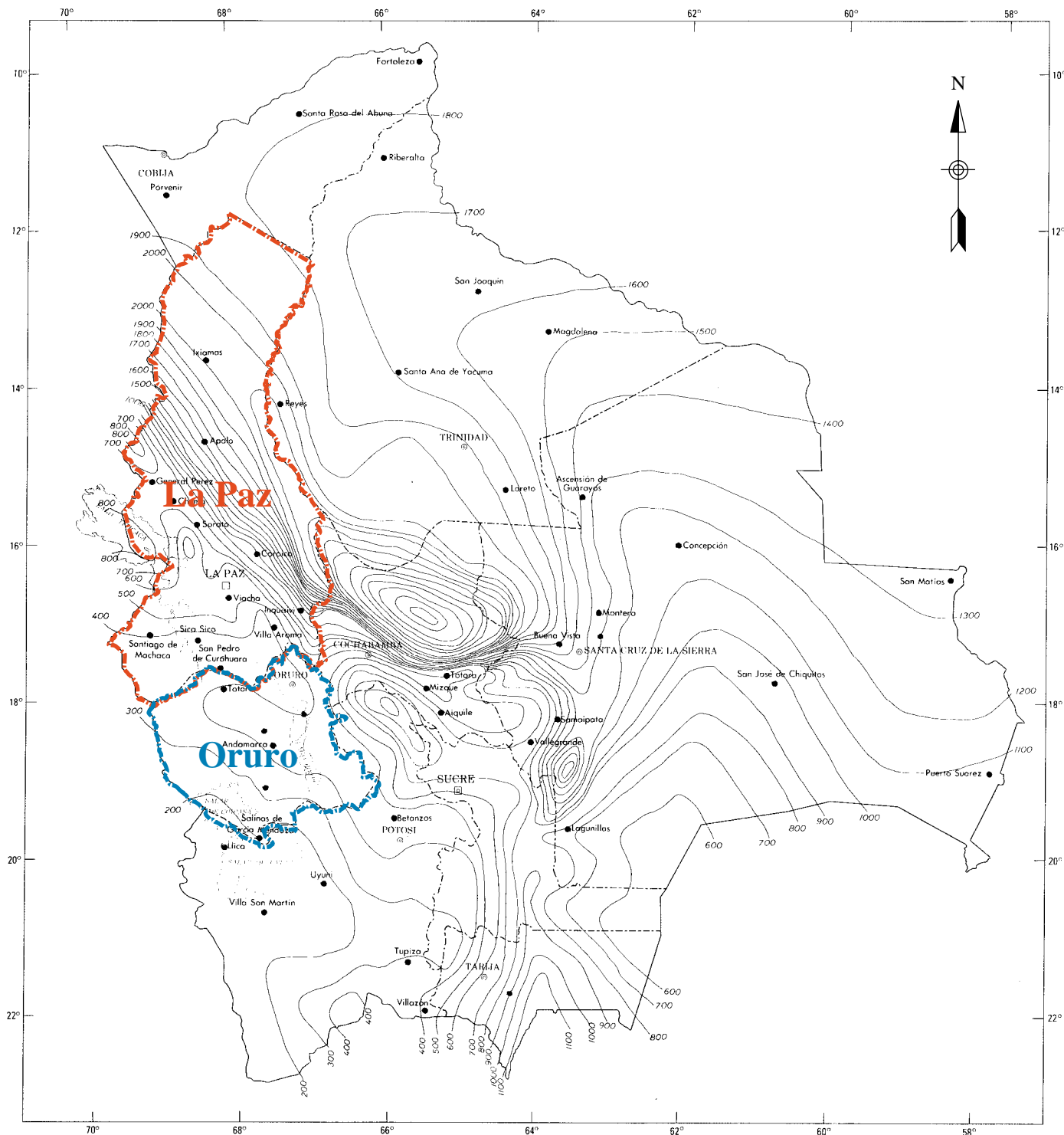


Source: "Atlas Geografico de la Republic de Bolivia", Instituto Geografico Militar Bolivia

Figure 2.2

Satellite Image of Bolivia

PRECIPITACIONES ANUALES PERIODO 1961-1990



REFERENCIAS

- LIMITE INTERNACIONAL ————
- LIMITE DEPARTAMENTAL - - - - -
- CAPITAL DE REPUBLICA □
- SEDE DE GOBIERNO □
- CAPITAL DE DEPARTAMENTO ○
- CAPITAL DE PROVINCIA ●

ESCALA APROXIMADA 1:5,300,000

SERVICIO NACIONAL DE
METEOROLOGIA E HIDROLOGIA

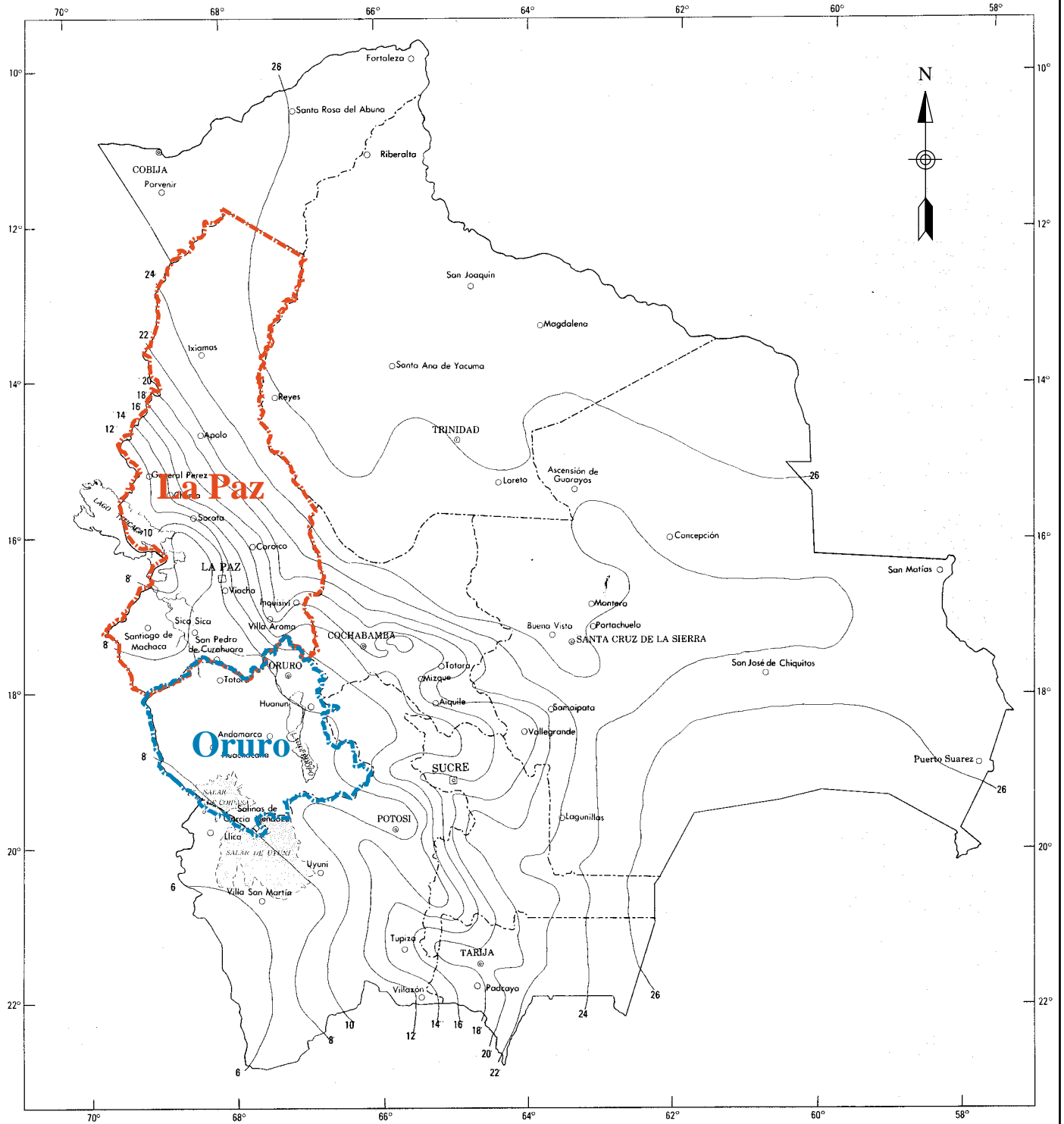
ELABORADO POR: Sr. REYNALDO MALDONADO

Source: "Atlas Geografico de la Republic de Bolivia", Instituto Geografico Militar Bolivia

Figure 2.3

Isohyetal Map (Annual Precipitation)
of Bolivia (1961-1990)

MAPA DE TEMPERATURA MEDIA ANUAL PERIODO 1961-1990



REFERENCIAS

- LIMITE INTERNACIONAL _____
- LIMITE DEPARTAMENTAL - - - - -
- CAPITAL DE REPUBLICA []
- SEDE DE GOBIERNO []
- CAPITAL DE DEPARTAMENTO []
- CAPITAL DE PROVINCIA []

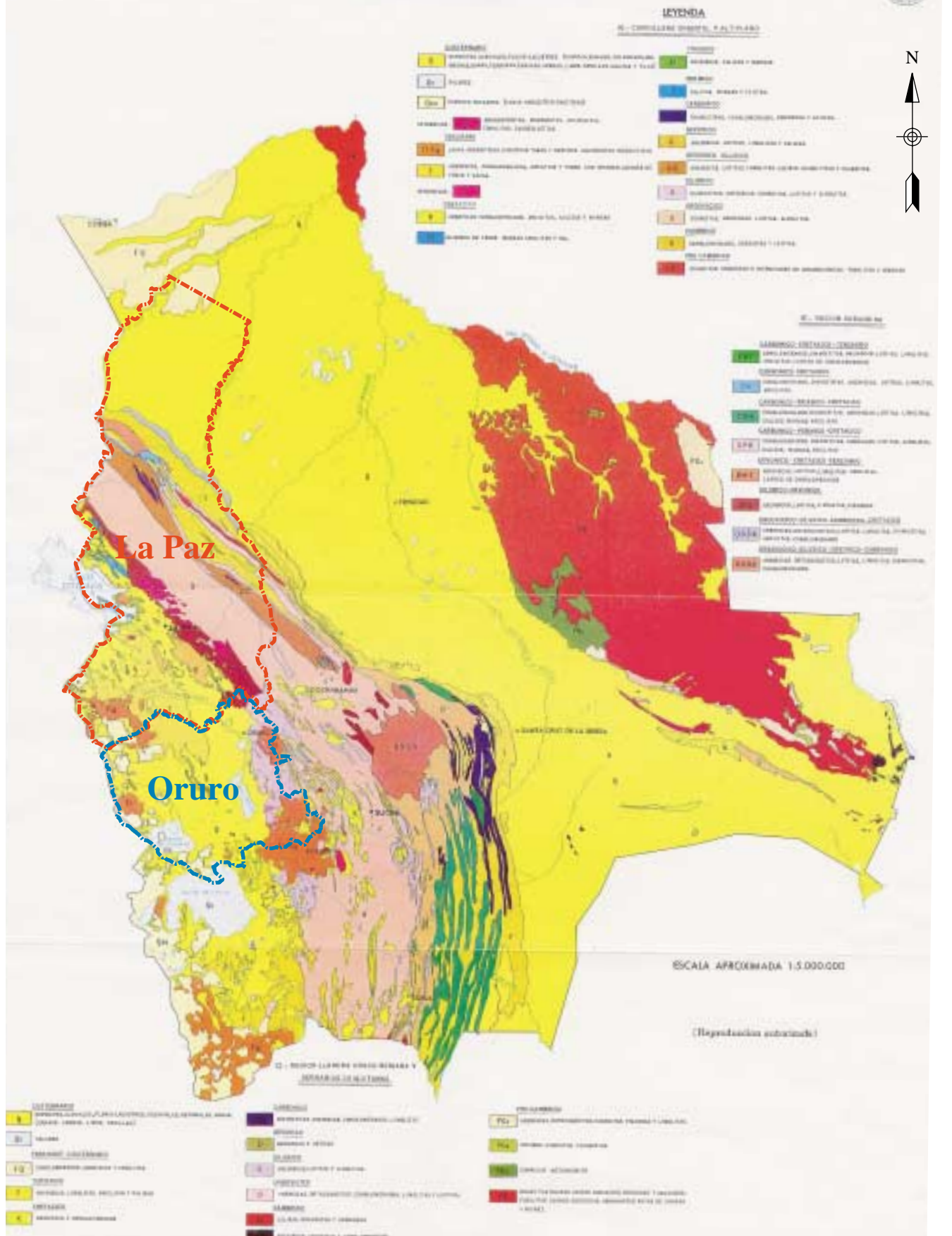
ESCALA APROXIMADA 1:5,300,000

SERVICIO NACIONAL DE
METEOROLOGIA E HIDROLOGIA
ELABORADO POR: Sr. REYNALDO MALDONADO

Source: "Atlas Geografico de la Republic de Bolivia", Instituto Geografico Militar Bolivia

Figure 2.4

Annual Temperature of Bolivia
(1961-1990)



Source: "Atlas Geografico de la Republic de Bolivia", Instituto Geografico Militar Bolivia

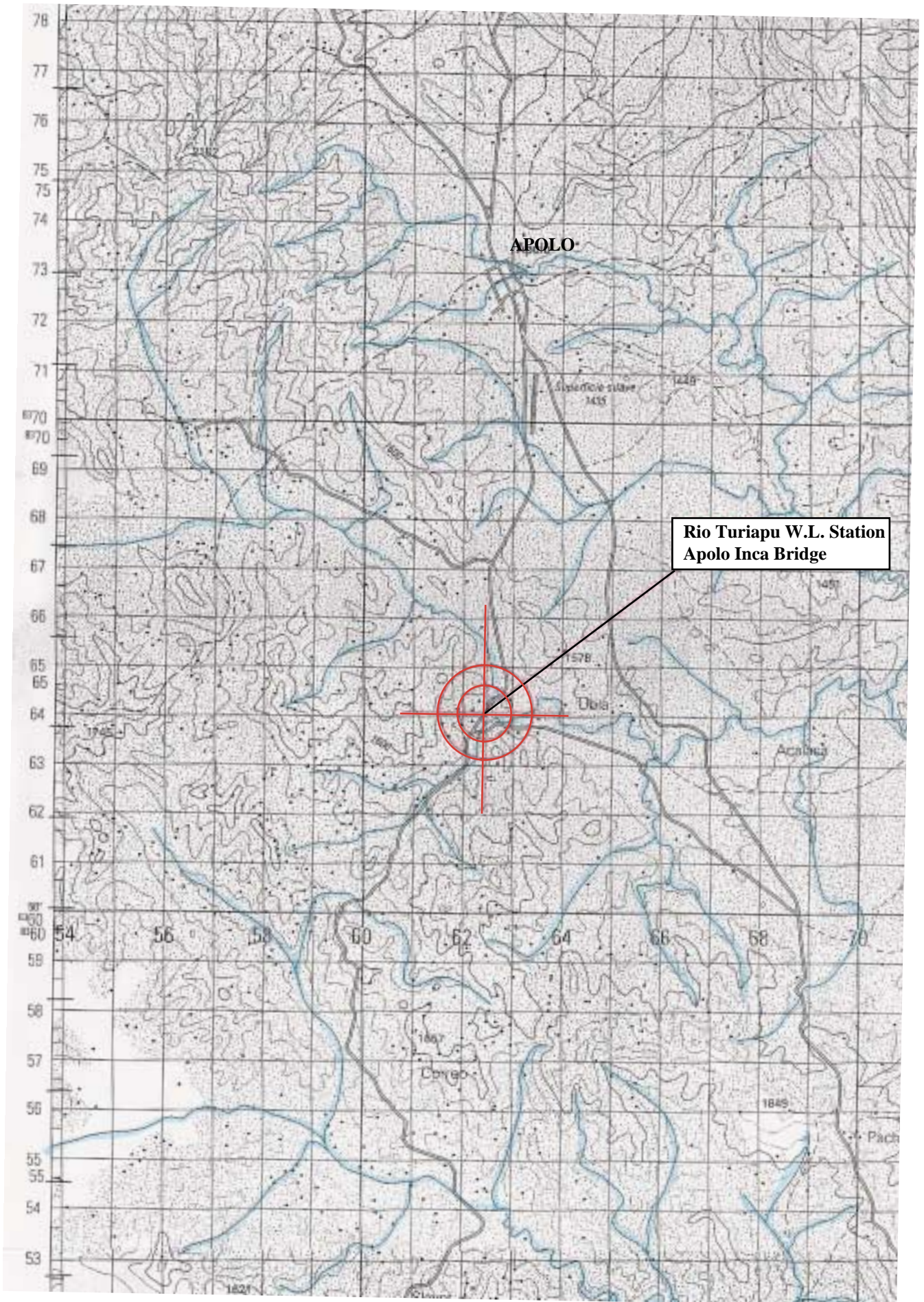
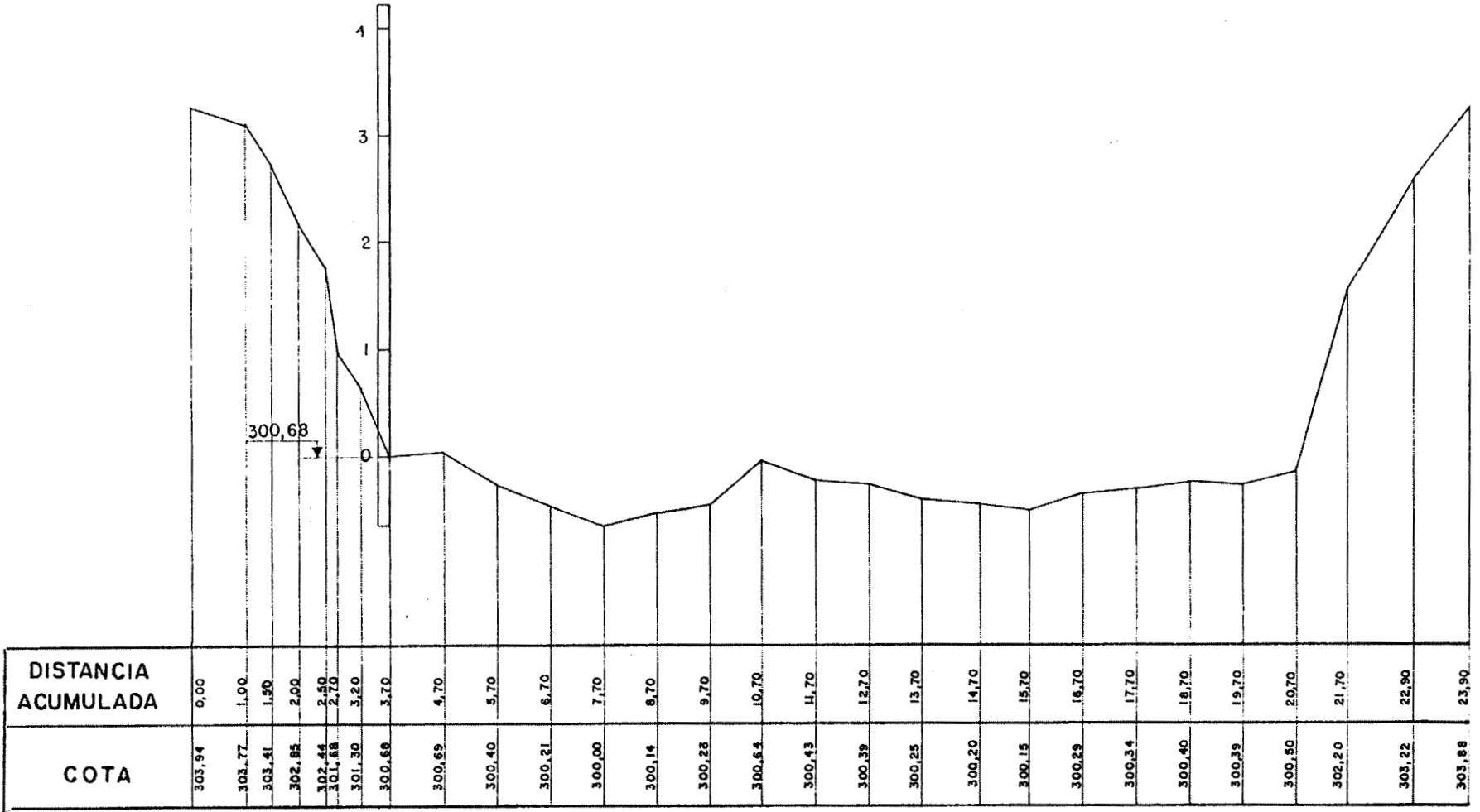


Figure 2.6

Location of Rio Turiapu W.L. Station
 (Apolo/F.Tamayo/La Paz)

SECCION TRANSVERSAL RIO TURIAPU (APOLO)
Escala. H: 1:100
V: 1:50



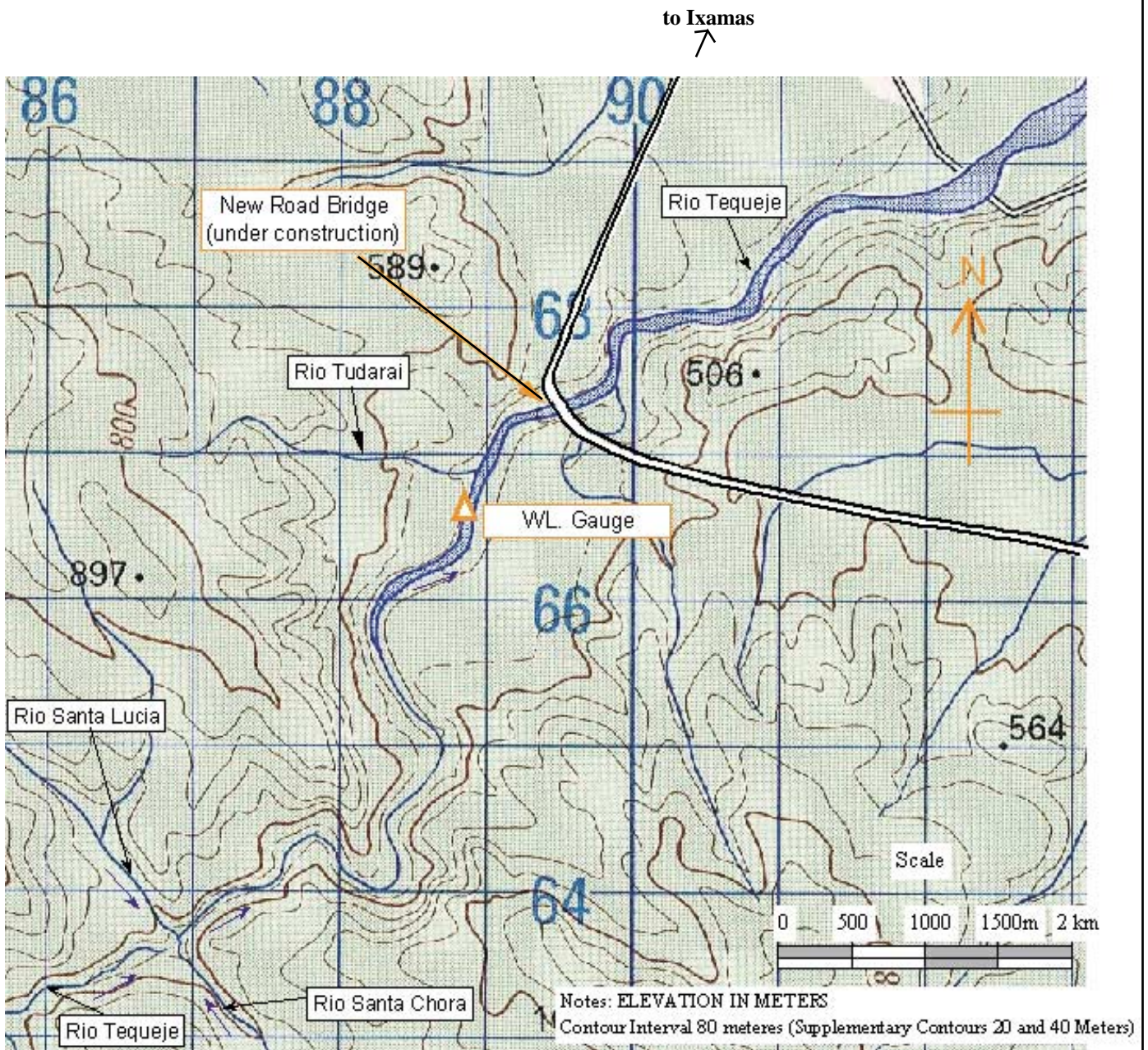
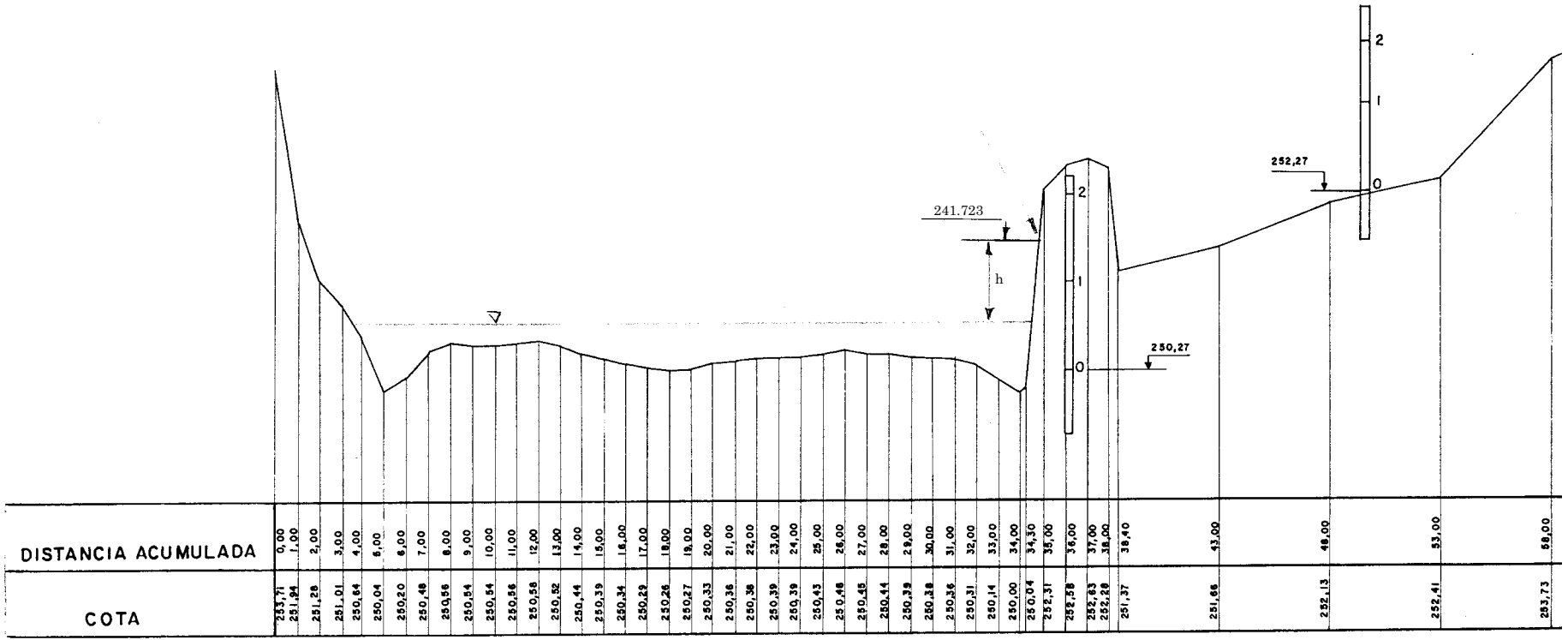


Figure 2.8

Location of Rio Tequeje W.L. Station
(Ixiamas / Iturralde / La Paz)

SECCION TRANSVERSAL - RIO TEQUEJE (IXIMAS)

Escala. H: 1:200
V: 1:50



THE STUDY ON RURAL ELECTRIFICATION
IMPLEMENTATION PLAN BY RENEWABLE ENERGY
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JAPAN INTERNATIONAL COOPERATION AGENCY

Figure 2.9
Cross Section at Rio Tequeje W.L. Station
(Iximas / Iturralde / La Paz/23 Oct. 1999)

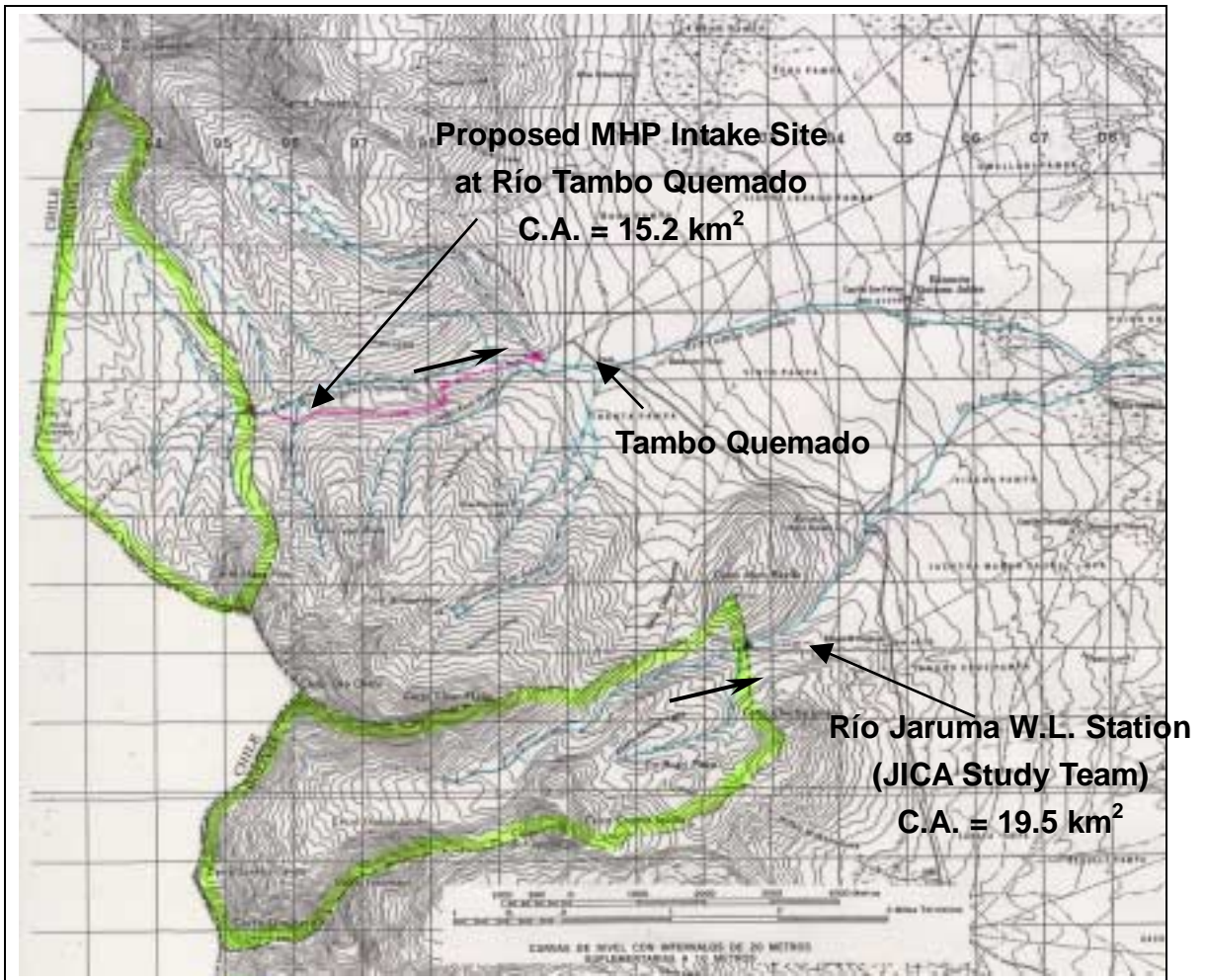


Figure 2.10 Location Map of Río Jaruma W. L. Station
(Chachacomani/Turco/Sajama/Oruro)

SECCION TRANSVERSAL RIO JARUMA

Esc: H: 1:10

V: 1:10

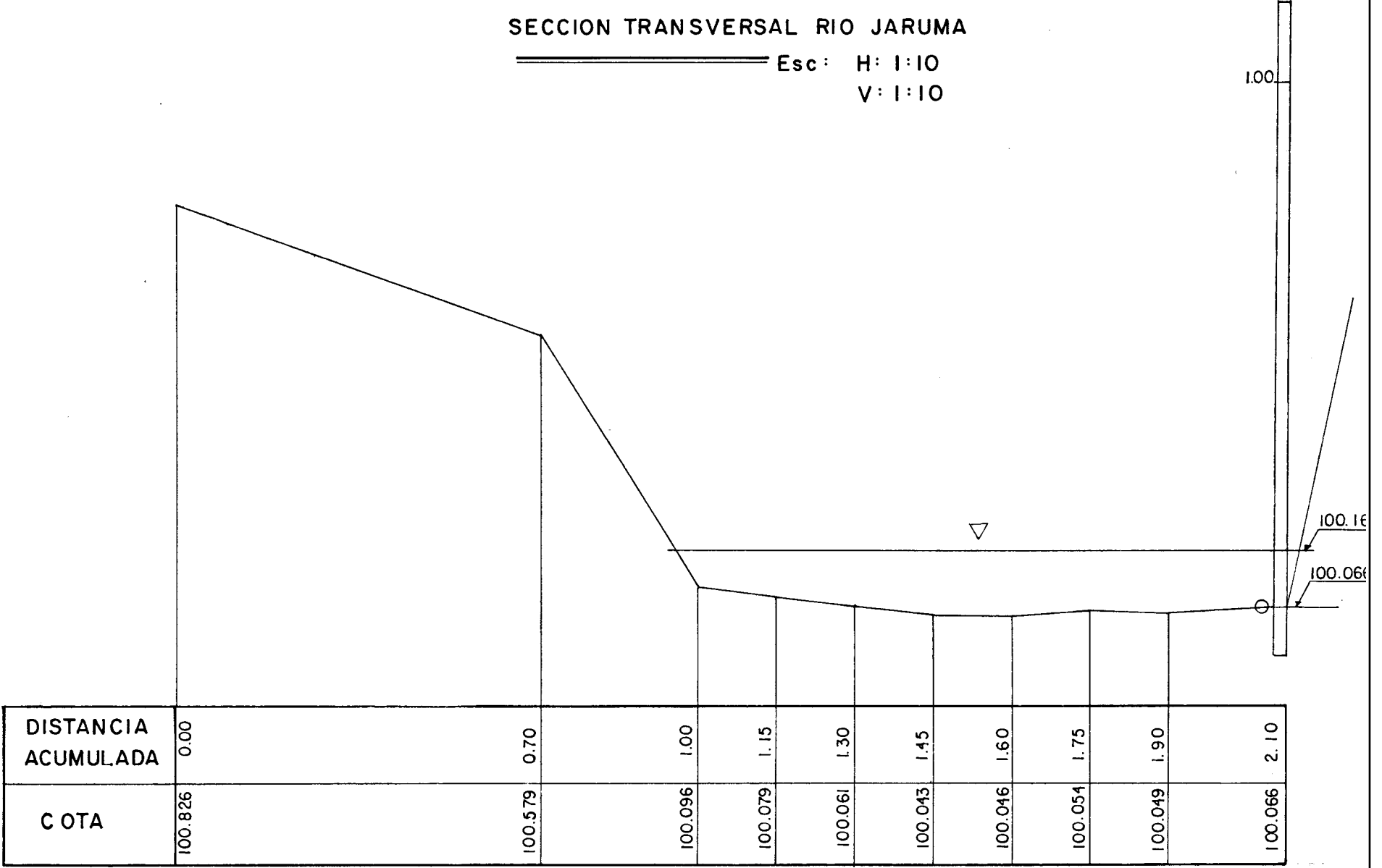
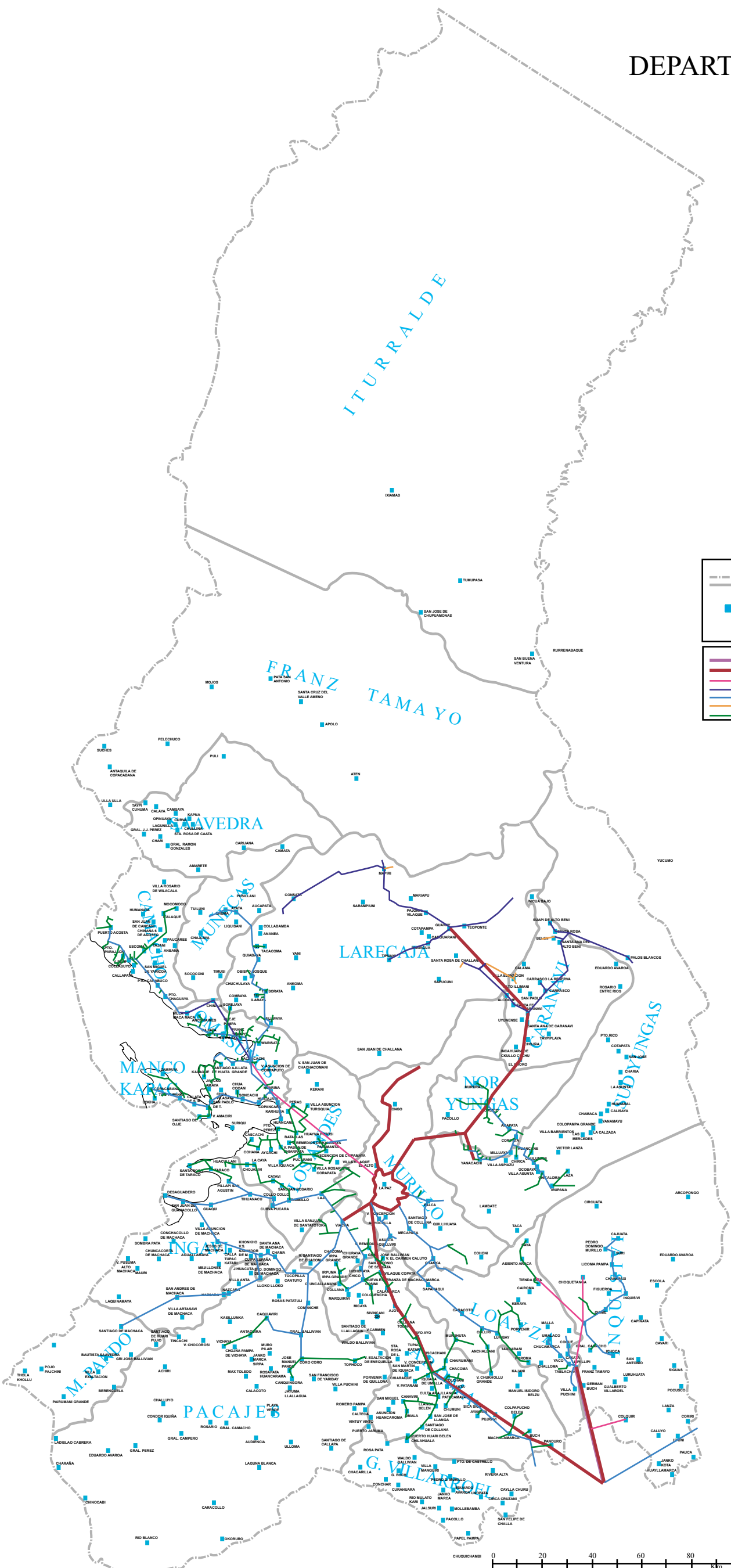


Figure 2.11

DEPARTAMENTO DE LA PAZ

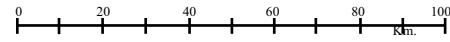


LEGEND

- Department
- Province
- Capital of Canton

LEGEND

- T/L 230kV(Exist. 2000)
- T/L 115kV(Exist. 2000)
- T/L 69kV(Exist. 2000)
- T/L 34.5kV(Exist. 2000)
- T/L 24.9kV(Exist. 2000)
- T/L 19.9kV(Exist. 2000)
- T/L 14.4kV(Exist. 2000)



THE STUDY ON RURAL ELECTRIFICATION IMPLEMENTATION PLAN BY RENEWABLE ENERGY IN THE REPUBLIC OF BOLIVIA
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Figure 3.3
Existing Transmission Line(La Paz)
(as of Early 2001)

DEPARTAMENTO DE ORURO

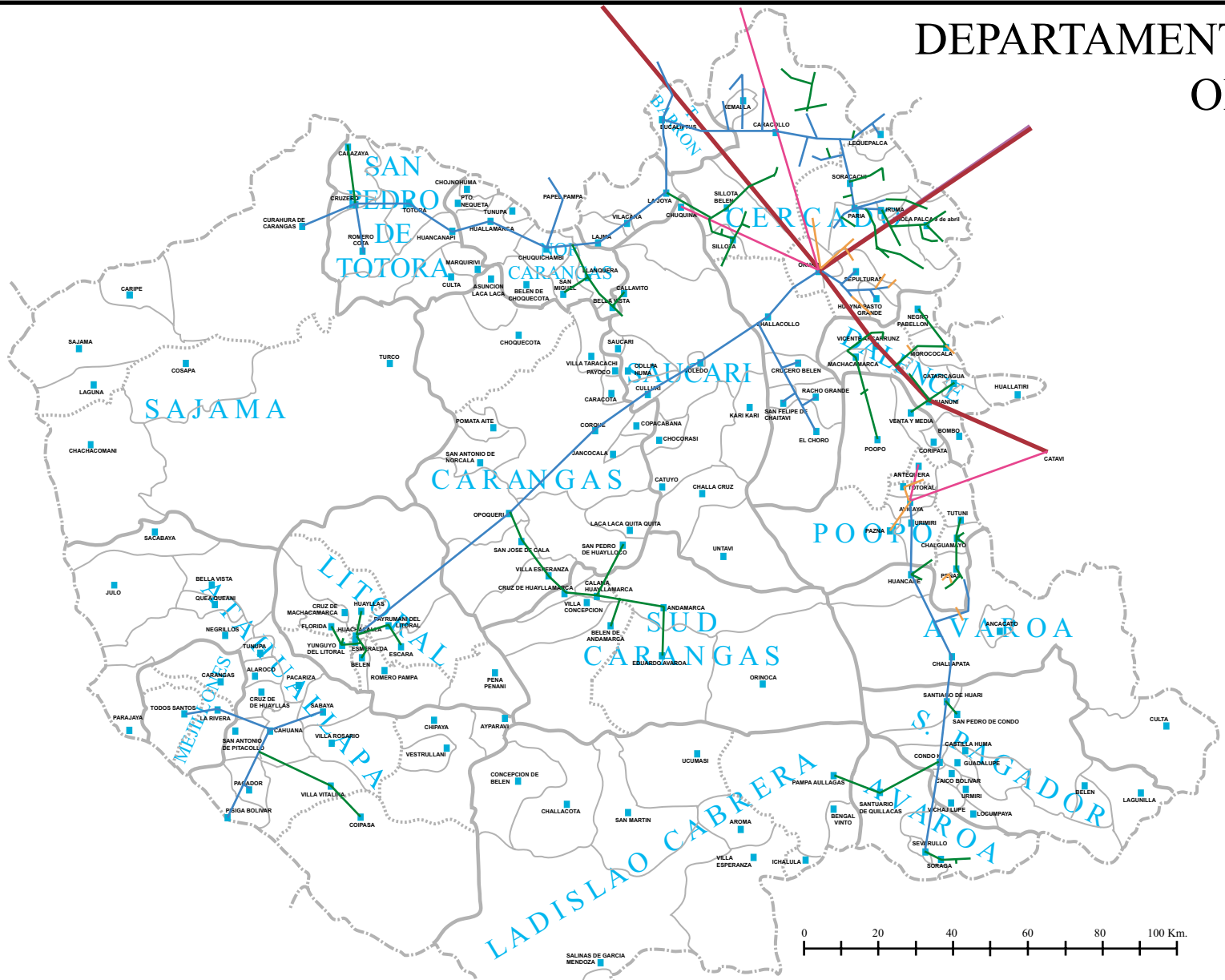


LEGEND

- Department
- Province
- Municipio
- Canton
- Capital of Canton

LEGEND of Transmission Line

- TL 230kV (Exist. 2000)
- TL 115kV (Exist. 2000)
- TL 69kV (Exist. 2000)
- TL 24.9kV (Exist. 2000)
- TL 14.4 kv. (Exist. 2000)
- TL 6.6 kv. (Exist. 2000)



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Figure 3.4
 Existing Transmission Line (Oruro)(as of Early 2001)

DEPARTAMENTO DE LA PAZ

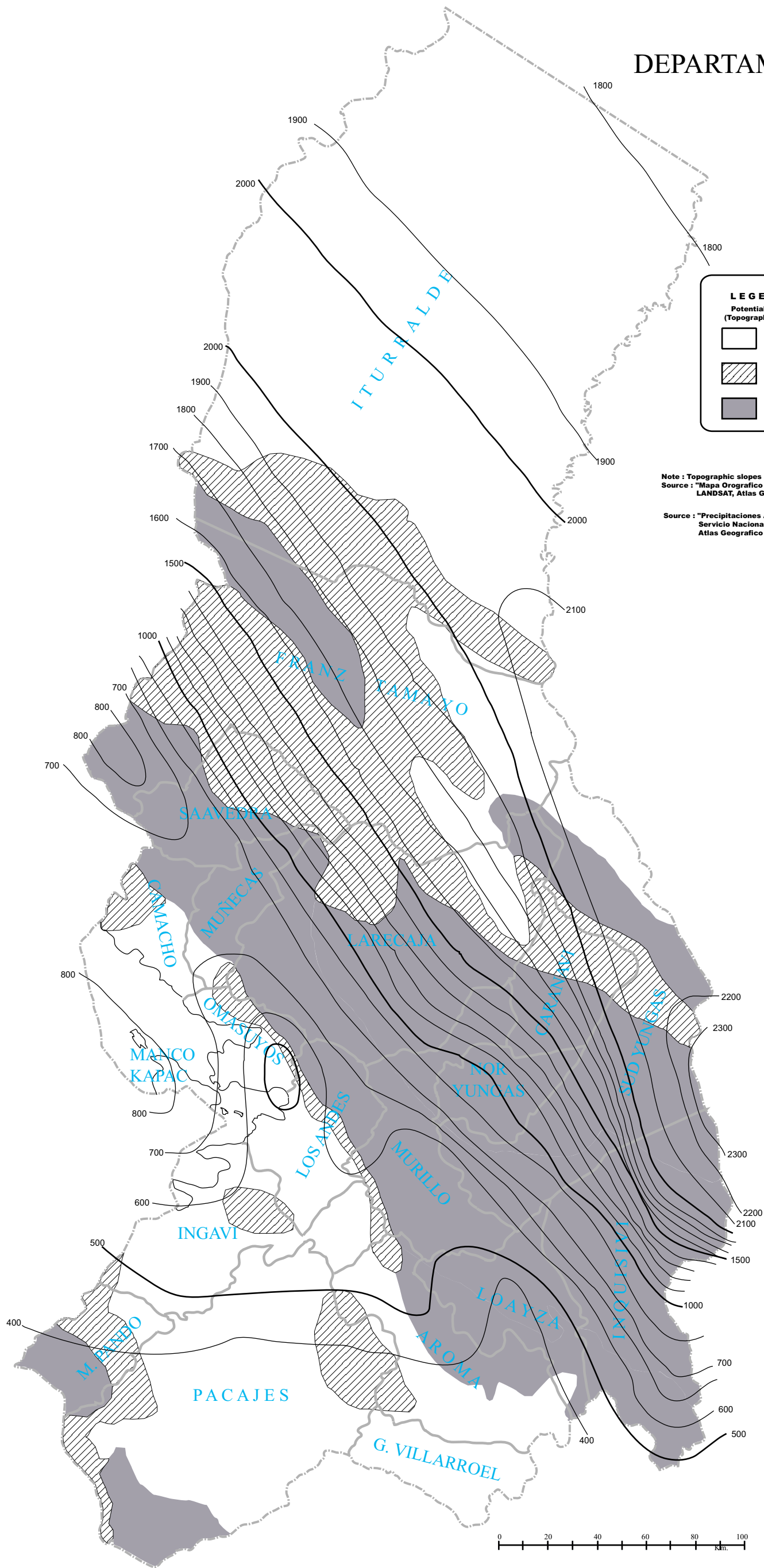


LEGEND
Potential Head (Topographic Slope)

- Low (Flat area)
- Moderate (Mountain area)
- Steep (Mountain area)

Note : Topographic slopes are decided based on the LANDSAT image.
 Source : "Mapa Orografico de Bolivia", Mapa Base, Con Mosaico de Imagenes LANDSAT, Atlas Geografico de la Republica Bolivia, I.G.M.

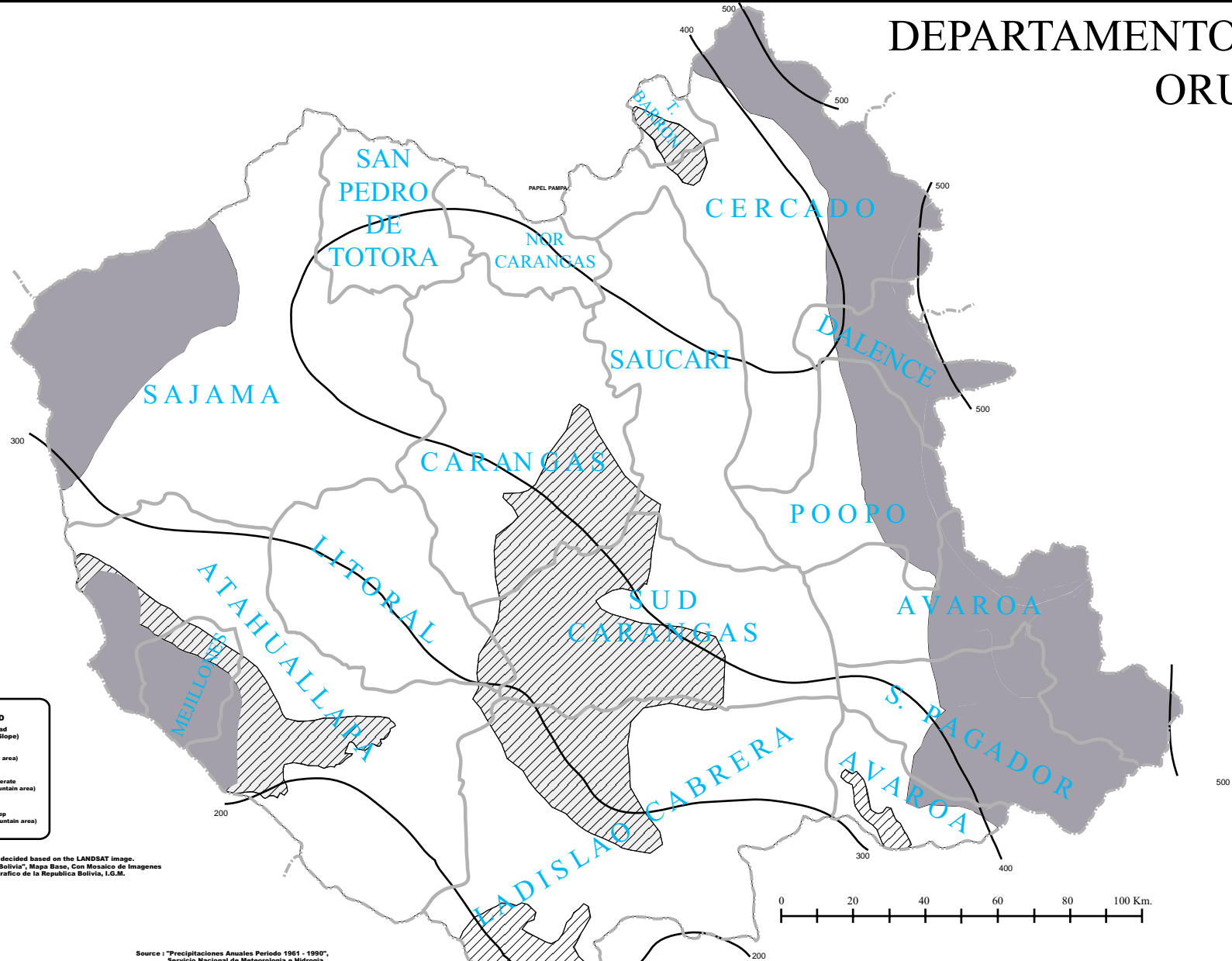
Source : "Precipitaciones Anuales Periodo 1961 - 1990", Servicio Nacional de Meteorologia e Hidrologia, Atlas Geografico de la Republica Bolivia, I.G.M.



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Figure 4.1
 Isohyetal Map of Annual Rainfall with Potential Head(La Paz)

DEPARTAMENTO DE ORURO

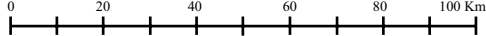


LEGEND
 Potential Head
 (Topographic Slope)

- Low (Flat area)
- Moderate (Mountain area)
- Steep (Mountain area)

Note : Topographic slopes are decided based on the LANDSAT image.
 Source : "Mapa Orografico de Bolivia", Mapa Base, Con Mosaico de Imagenes LANDSAT, Atlas Geografico de la Republica Bolivia, I.G.M.

Source : "Precipitaciones Anuales Periodo 1961 - 1990", Servicio Nacional de Meteorologia e Hidrologia, Atlas Geografico de la Republica Bolivia, I.G.M.



THE STUDY ON RURAL ELECTRIFICATION
 IMPLEMENTATION PLAN BY RENEWABLE ENERGY
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Figure 4.2
 Isohyetal Map of Annual Rainfall with Potential Head(Oruro)