JAPAN INTERNATIONAL COOPERATION AGENCY THE GOVERNMENT OF THE KINGDOM OF MOROCCO

FEASIBILITY STUDY ON WATER RESOURCES DEVELOPMENT IN RURAL AREA IN THE KINGDOM OF MOROCCO

FINAL REPORT

VOLUME VII DATA BOOK

AUGUST 2001

JOINT-VENTURE OF NIPPON KOEI CO., LTD.AND NIPPON GIKEN INC.

LIST OF FINAL REPORT VOLUMES

Volume I: Executive Summary

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Volume VII: Data Book

Data Book AR: Aero-Photo and Ground Survey
Data Book GC: Geology and Construction Materials

Data Book HY: Hydrology
Data Book SO: Soil Survey

Data Book NE:Natural EnvironmentData Book SE:Social EnvironmentData Book EA:Economic Analysis

The cost estimate is based on the price level and exchange rate of April 2000. The exchange rate is:

US\$ 1.0 = Moroccan Dirham (DH) 10.68 and

Japanese Yen 100.0 = Moroccan Dirham (DH) 9.90

FEASIBILITY STUDY ON WATER RESOURCES DEVELOPMENT IN RURAL AREA IN

THE KINGDOM OF MOROCCO

FINAL REPORT VOLUME VII DATA BOOK

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Volume VII Data Book

Rural Area in

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Feasibility Study on Water Resources Development in

Rural Area in

the

Kingdom of Morocco

Final Report

Volume VII Data Book

Data Book AR

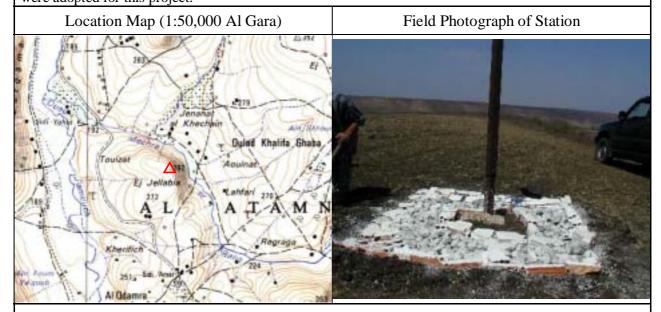
Aero-Photo and Ground Survey

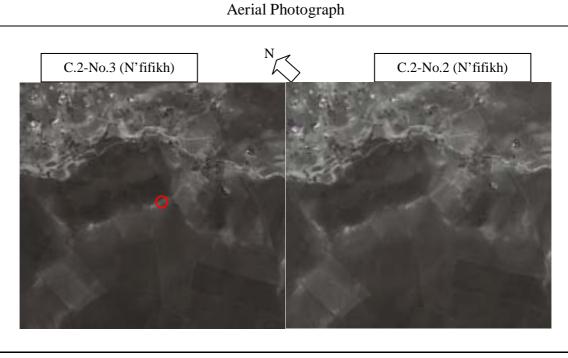
AR1 Description of Aero-Photo Signal at N'Fifikh

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
108		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zo	ne	Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Υ ((m)	H (m)
342 168,540	317 76	61,680	327.959 (3rd order leveling)
Location Map (1:50,000	Al Gara)	Field	Photograph of Station
322 Sali Ahmed Cherd to 312	Aerial Ph	otograph	
	N		
C.3-No.2 (N'fifikh)		5	C.3-No.3 (N'fifikh)

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
109		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zo	one	Ellipsoid Name
Lambert Conical Conform	Lambert Conical Conform Northern		Clarke 1880
	Coordinates	and Elevation	
X (m)	Y (m)		H (m)
344 655,296	317 717,662		290,443 (Trigonometric)

The existing IGN coordinates is X:344 654,65, Y:317 718,83. There is much difference between existing data and GPS observation results. Considering that this station was modified, the GPS observation results were adopted for this project.





		1
	Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
166		S. Kono
		9-Oct-2000
Zo	ne	Ellipsoid Name
Northern	Morocco	Clarke 1880
Coordinates a	and Elevation	
Y (m)	H (m)
320 13	32,900	320.833 (Trigonometric)
Al Gara)	Field	Photograph of Station
Aerial Ph	otograph	
N C	UAGI 3100 153.28	C.3-No.2 (N'fifikh)
	Northern Coordinates a Y (320 13 Al Gara) Aerial Ph	Checked by Date Zone Northern Morocco Coordinates and Elevation Y (m) 320 132,900 Al Gara) Field Aerial Photograph

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
138		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zo		Ellipsoid Name
Lambert Conical Conform	Northern		Clarke 1880
Lamoert Comear Comorni	Coordinates a		Clarke 1000
N. ()			TI ()
X (m)	Y (H (m)
342 420,030	315 82	22,700	344.688 (Trigonometric)
Location Map (1:50,000 a	Al Gara)	Field	Photograph of Station
AL KHBIZIYINE Al Quelana Quela Character Haydat	Aerial Ph	otograph	
C.3-No.4 (N'fifikh)	17		C.3-No.5 (N'fifikh)
	in a		A TOTAL

) SIGIVIL
Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
1 4 4		Checked by	S. Kono
144		Date	9-Oct-2000
Projection	Zo	ne	Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Y (m)	H (m)
344 123.620	316 24	11.880	251,279 (3rd order leveling)
Location Map (1:50,000	Al Gara)	Field	Photograph of Station
A L Knevation See See See See See See See See See Se	Aerial Ph	otograph	
		7	
C.3-No.4 (N'fifikh)			C.3-No.5 (N'fifikh)

DESCRIP			SIGIVIL
Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
145		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zo	ne	Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Y (m)	H (m)
345 476,040	314 10	07.140	372,130 (Trigonometric)
Location Map (1:50,000	Al Gara)	Field	Photograph of Station
18 10 261 361 361 361 362 363 363 363 363 363 363 363 363 363		otograph	
C.3-No.6 (N'fifikh)		5 [C.3-No.7 (N'fifikh)

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
150		Checked by	S. Kono
150		Date	9-Oct-2000
Projection	Zo	ne	Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Υ (m)	H (m)
342 891,760	317 16	51,520	198,323 (Trigonometric)
Location Map (1:50,000	Al Gara)	Field	Photograph of Station
and Diery W 317 Sport Favor 174 Proposition 184 Proposition 18	Touleast 252 A L Khentich 251, See 3mm		
	Aerial Ph	otograph	
C.3-No.3 (N'fifikh)			C.3-No.4 (N'fifikh)

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
159		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zo	ne	Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Υ ((m)	H (m)
344 482,300	319 70	03,100	338,731 (Trigonometric)
Location Map (1:50,000	Al Gara)	Field	Photograph of Station
Jenany Jenany di Khech	Duled Khalifa Ghab	otograph	
	7 Ki idi i i		
C.2-No.4 (N'fifikh)			C.2-No.3 (N'fifikh)

DESCRIP	TION OF A		
Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
105	107		S. Kono
195		Date	9-Oct-2000
Projection	Zo	ne	Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Y (m)	H (m)
340 486,510	327 17	77,850	308,504 (Trigonometric)
Location Map (1:50,000 Be	enslimane)	Field	Photograph of Station
Said Tigat Fodel 2120 Advis remed tal Laur	Aerial Ph	otograph	
	N		
C.1-No.20 (N'fifikh)	\bigcap \bigvee	<u> </u>	C.1-No.21 (N'fifikh)

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
200		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zo	ne	Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Y (m)	H (m)
340 760,200	324 02	26,200	314,259 (GPS)
Location Map (1:50,000 Be	enslimane)	Field	Photograph of Station
Al Halelba (X155.— Ach Chappur	Aerial Ph	otograph	
	N	, –	
C.2-No.8 (N'fifikh)	1		C.2-No.7 (N'fifikh)

			T
Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
220		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zone		Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Υ ((m)	H (m)
338 474,600	330 01	17,700	213,335 (GPS)
Location Map (1:50,000 Be	enslimane)	Field	Photograph of Station
At Gar a Gadina Gadina 129 150 150 Latte And Chery de	To be a Bled	notograph	
C.1-No.17 (N'fifikh)	\bigcap $\stackrel{N}{\sim}$	5	C.1-No.18 (N'fifikh)

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
230		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zone		Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Υ ((m)	H (m)
329 781,100	333 01	14,000	222,508 (3rd order leveling)
Location Map (1:50,000 Be	enslimane)	Field	Photograph of Station
M W A L / F (N E	Agrial Dk	otograph	
	Aeriai Pi	otograph	
C.2-No.18 (N'fifikh)	N K		C.2-No.17 (N'fifikh)

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)	
4152		Checked by	S. Kono	
		Date	9-Oct-2000	
Projection	Zone		Ellipsoid Name	
Lambert Conical Conform	Northern	Morocco	Clarke 1880	
	Coordinates a	and Elevation	,	
X (m)	Υ ((m)	H (m)	
336 597,150	332 49	94,250	276,170 (Trigonometric)	
Location Map (1:50,000 Be	enslimane)	Field	Photograph of Station	
Aerial Photograph				
C.1-No.15 (N'fifikh)	N	<	C.1-No.16 (N'fifikh)	
C.T. T.V. T.C. (T.Y. MIRKIT)				

T			1
Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
779B		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zone		Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Y ((m)	H (m)
337 437,570	331 50	08,000	272,651 (Trigonometric)
Location Map (1:50,000 Be	enslimane)	Field	Photograph of Station
A language and the same of the	Aerial Ph	otograph	
C.1-No.16 (N'fifikh)	¬ N _~	<	C.1-No.17 (N'fifikh)
C.1 110.10 (11 IIIIII)			C.I IV.II (IV IIIIII)

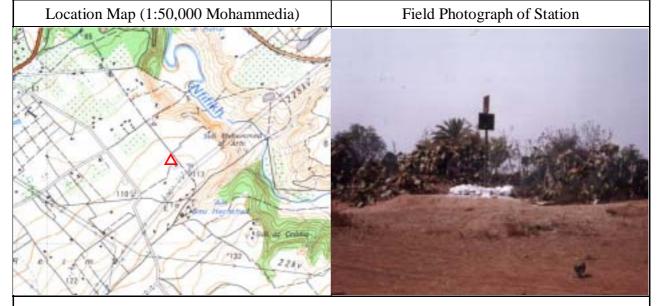
DESCRI	11011 01 1		S SIGIVIL
Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
904		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zone		Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Y (m)	H (m)
340 758,980	321 26	52,360	311,297 (Trigonometric)
Location Map (1:50,000	Al Gara)	Field	Photograph of Station
AJ AAva 315	Oslad Wahab Aerial Ph	otograph	
C.2-No.7 (N'fifikh)			C.2-No.6 (N'fifikh)

Station No.		H. Ragtaoui, M. Hakkaoui (SETA)
80		S. Kono
		9-Oct-2000
Zone		Ellipsoid Name
Northern	Morocco	Clarke 1880
Coordinates a	and Elevation	
Υ ((m)	H (m)
343 67	77,770	123,253 (3 rd order leveling)
hammedia)	Field	Photograph of Station
Aerial Ph	otograph	
		C.1-No.7 (N'fifikh)
	Northern Coordinates a Y (343 67) Shammedia) Aerial Ph	Northern Morocco Coordinates and Elevation Y (m) 343 677,770 Shammedia) Field Aerial Photograph

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
170		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zone		Ellipsoid Name
Lambert Conical Conform	Northern	Morocco	Clarke 1880
	Coordinates a	and Elevation	
X (m)	Υ ((m)	H (m)
319 951,770	346 48	36,070	48,072 (Terrass, 3 rd order leveling)
Location Map (1:50,000 Mo	phammedia)	Field	Photograph of Station
Dujed Lahser	Aerial Ph	otograph	
C.5-No.8 (N'fifikh)	$\overline{}$	5 [C.5-No.7 (N'fifikh)

Station No.		Operated by	H. Ragtaoui, M. Hakkaoui (SETA)
168		Checked by	S. Kono
		Date	9-Oct-2000
Projection	Zone		Ellipsoid Name
Lambert Conical Conform	Northern Morocco		Clarke 1880
Coordinates and Elevation			
X (m)	Y (m)		H (m)
322 503,335	343 363,045		120,283 (3 rd order leveling)

The existing IGN coordinates is X:322 464,89, Y:343 354,53. There is much difference between existing data and GPS observation result. Considering that this station was modified, the GPS observation results were adopted for this project



Aerial Photograph

