CONTENTS

1

INTRODUCTION

Introduction

This report is based upon the belief that few people involved in policy making are acquainted with the potentials of indigenous methods, designs and materials in meeting shelter and settlement requirements. With this in mind, the authors have set out to show that indigenous methods, because they are based upon solid experience and knowledge of what is locally available, can provide a comfortable living environment cheaply and in harmony with the needs, capabilities and culture of a region.

This report deals with the indigenous building of the Caspian Region and is envisaged as the first in a series of studies which would eventually cover the whole of Iran. This report can be seen as a model for such future studies. The Caspian Region was chosen for the pilot study for several reasons. It can be seen as a homogenous area with distinct regional characteristics. Also, high quality building has been a tradition of the area. A great deal can be learned from Caspian building tradition which could be of value to other regions of Iran, notably in the use of timber for framing and reinforcing.

This study focuses particularly on the indigenous processes of building, housing and settlement. These issues are seen as dynamic processes of change and evolution, and are viewed within their relevance and practicality to the contemporary needs of the region. The indigenous built environment reflects an ongoing process of experience accumulated by local builders who have developed building systems to meet local demands. They have effectively employed local resources and materials in a way that is responsive not only to physical and environmental conditions but also to socioeconomic and cultural requirements. On the other

hand, the recent trend is toward the use of building forms, techniques and materials imported from outside the region. These, for reasons of prestige and the image of modernity, are being introduced on an increasingly wider scale. Unfortunately such solutions frequently fail to meet the real local requirements. This process of "modernization" is also tending to make the region less self reliant. However, in spite of this trend, the Caspian remains an area of decentralized rural building production. This is a reflection of a generally agricultural economy. Because of the nature of settlement distribution in the Caspian, the manufacture of building products has been through small scale units scattered throughout rural areas. For this reason building related activities are an important source of rural, non agricultural employment.

The various aspects of the built environment in the Caspian Region have been presented in this report in order to provide both an understanding of the existing indigenous building methods and industries and an assessment of their potentials in meeting contemporary shelter needs. The area of the study has been divided into sub regions displaying different settlement patterns, building forms, uses of construction materials and technologies. The built environment characteristics of each sub region have been first analysed separately, while their relationship and morphology have been discussed in the typology section. In this section the fundamental constituents of the house (e.g. plan and sectional form, materials, orientation, etc.) have been classified, representing the predominant house types in the region. The house has also been analysed in terms of its behaviour toward socioeconomic and environmental determinants of its surroundings. The indigenous building materials and prevailing construction technologies have been described in detail and proposals for their improvement are presented within the appropriate sections.

Methodology

This report has been produced from the analysis of research carried out in the study region, and from the documentation of existing literature concerned with the study area.

The organization of the research has been based upon a matrix, relating aspects of the built environment: settlement distribution, settlement pattern, house form and elements of the house; to a set of determinants which influence the built environment: geography, climate, hydrology, history, socioculture, economics and building resources. It is the interrelationships of these determinants which, combined, shape the built environment. Furthermore, the built environment should not be considered as being in a static condition, since each aspect of it is constantly changing. Hence, the determinants have also been considered within a time scale, which helps one to see not only how, but also why elements of the built environment have changed and will continue to do so.

The information in the Caspian Region was gathered on three broad levels: visual observation, physical surveys, and case study interviews.

While travelling through the region, visual observations on changes in house types, building materials, settlement pattern and distribution, as well as topography and land use, were recorded in writing and small illustrations, taking the form of Route Notes. This information was also documented photographically. Similar visual observations were recorded on settlements and houses. This material has provided a valuable broad reference to the whole region.

Settlements were selected at regular intervals throughout the region and physically surveyed. The settlement pattern was

drawn up and observations were made on the local topography, climate, water resources, social characteristics, defense measures and building resources, at the same time noting what influence these have had on the form of the settlement. This information was recorded on a settlement observation sheet (see following chart). In each settlement several representative houses were selected for detailed survey and many others were sketched and photographed. Plans, sections and elevations were measured and drawn up, and a house observation sheet (see following chart) on space use and building technology was filled in.

In the houses surveyed an interview on various aspects of the settlement and the house was held, usually with the head of the family (see House Interview Sheet). These interviews, in addition to providing detailed current information, also provided much of the local historical information and details on the development of the house and settlement.

Based on a preliminary study of the region, physical surveys and interviews were conducted on local building and production industries, complementing the information collected on houses and settlements(see Building materials production questionnaire). Whenever possible, local builders were interviewed in addition to the house surveys and interviews. Builders were asked to demonstrate or explain particular local building methods and their opinions on various building materials and techniques were obtained, as well as comparative costs. A questionnaire was used for recording information on specific building methods (see following chart).

Samples of building materials have also been collected and analysed.

In parallel to the field research, articles and books with re-

ference to the Caspian Region and this particular study were extensively documented in Farsi, French and English. This material has been particularly valuable in completing the historical perspective for the region, and in tracing the development of building methods and materials.

No.	Place	Date

INFLUENCES	COMMENT
TOPOGRAPHY	
CLIMATE	
WATER	
SOCIAL	
DEFENCE	

HOUSE OBSERVATIONS

No.	Place		Date
ACTIVITIES	SUMMER	WINTER	GENERAL COMMENTS.
Sleeping			
Cooking			
Eating			
Family			
Guests			
Store			
Animals			
TECHNOLOGY	COMMENTS		
Structure			
Floor			
Walls			
Roof.			

SETTLEMENT QUESTIONAIRE

No.	Place		Date	COMMENT
POPULATION	Per Household	Households	Total	
ETHNIC GROUP				
ECONOMY	Activity	Product		
OCCUPATION	Owner	Employer	Worker	
	Trader	Craftsman	Builder	
	Agriculture	Husbandry	Migrant	
	Other			
MIGRANT WORKERS	No.	Period	Place	
	Occupation			
LINKS WITH MAJOR SETTLEMENT (market)				
AGE (history)				
BUILDING MATERIAL SOURCE	Timber	Brick	Tile	
	Other			

No.	Place		Date	COMMENT
POPULATION	Per Household	Households	Total	
ETHNIC GROUP				
ECONOMY	Activity	Product		
OCCUPATION	Owner	Employer	Worker	
	Trader	Craftsman	Builder	
	Agriculture	Husbandry	Migrant	
	Other			
MIGRANT WORKERS	No.	Period	Place	
	Occupation			
AGE (history)				
PROVISION OF HOUSE	Self Built	Builder Built	Bought	Rented
REQUIRED IMPROVEMENTS				
PREFERRED NEW HOUSE TYPE.				

CONSTRUCTION MATERIALS AND TECHNOLOGY CHECK LIST

Name of place — Name & place of builder

Name of material — local name

Uses of material : wall, roof, floor, others

Production method : small kiln, mass prod., on site, others

location of plant

ownership of production plant

consumer's cost per unit of material (specify unit)

Cost of construction

Time in production

Time in construction (per m2)

Labour requirements in production

Labour requirements in construction & organization

Specialist requirements

Life span of material

Maintenance requirements

Problems of materials

Construction difficulties

Comments

MATERIALS PRODUCTION CHECK LIST

Item — Local name

Location — Name of Interviewee

Cost per unit now — previous cost - 5 years — 10 years

Production method

Production rate

No. of workers, activity, wage

If seasonal, other occupation

Source of labour

Where kiln used, no. of bricks/tiles per firing

No. of firings per month

Process of firing - time/labour for laying, firing, removal, etc.

Type, source, & cost of fuel, quantity per firing

Lifespan of unit

Delivery cost to consumer

Source of raw material — cost

Ownership — name

No. of kilns/workshops etc. in area — in village

Is production increasing/decreasing, etc. — why?

Limits to area of production — why?

Reasons for particular form/shape of unit

Comparison with other forms

Comments

Case Studies

The following charts contain a summary of information obtained from the settlement and housing case studies. Sections within the body of the report, such as the "Regionalization" and "Typography" draw heavily on this base data.

Region	Settlement	Population	Households	Ethnic Group	Age of Settlement	Economic Activity	Products	Links to Main Settlements
1	Kashfi	?	20?	Turk Talesh	+50	small farmers	rice	Astar
3	Shijan	10 thous.	700	Gilak	400	agric.	rice	Rasht
3	Shijan							
4	Dogoor	2800	280	Talesh	-	60%agr. 40%migr.	rice tobacco silk	Soumeh sara
4	Dogoor							
5	Maklavan	2000	?	Talesh	+70	agric.	rice	Foumar
5	Maklavan	-	-	-		agric. an.hus.	rice tea	Foumar
6	Masouleh	5000 past= 20000		Masouleh	800-900	tourist trade crafts	knitted goods, wool dairy prod.	Foumar
6	Masouleh	1500 w/s 3000		Masouleh (sedentary) Talesh(nom)	1300?	an.hus. gov't.	craft,metal knives,wood	F/Kar past- Zanj
8	Toulehsara	400-500	50	Gilak	+50	agric.	rice	Shah- savar Hashl
8	Toulehsara	-	38	Gilak	+120	agric.	rice oranges	Ramsa Shal- Lashk
10	Kodir	1500	200	Kords	7gen.	an.hus. agric.	honey,wheat barley, cow&sheep	Alam Howsh Chalu
11	Muzibagh	450	65	Mazand.	35	agric. an.hus.	cotton rice, beans wheat	Sari
12	Chajkam	250	30	Gilak	v.old 200	agric. an.hus.	wheat, barley,rice	Sari
13	Rostam Kola	7000 8000	1300	Mazand.	+500	agric.	sunflower rice,barley wheat,cott.	Behsh Sari
15	Alten-takhmaq	150	30	Turkoman	50	agric. an.hus.	wheat barley	Pahl B.

Region	Settlement	Occupations									
		owners	employers	workers	traders	craftsmen	builders	agriculture	animal husb.	migrants	other
1	Kashfi							●			
3	Shijan	●					3	●	cows	●	
3	Shijan										
4	Dogoor					6	5	●		●	
4	Dogoor										
5	Maklavan							●			
5	Maklavan						●	●	●	●	
6	Masouleh				○	○	○		◑	◑	tourist
6	Masouleh				○	○	○			○	
8	Toulehsara							○		○	
8	Toulehsara	○	○	○		○	4	◑		○	rice mi
10	Kodir					20	15	○	◑		
11	Muzibagh	some	6-7	○		2	3	○		◑	
12	Chajkam					3	4	○	◑	◑	
13	Rostam Kola	○		○	○	8	many	○		○	
15	Altentakhmaq	○				2	3	○	○	○	

Region	Settlement	Migrant Workers			
		number	period	place	occupation
1	Kashfi	young	permanent	Astara Tehran	
3	Shijan	1000	summer autumn	Rasht	
3	Shijan				
4	Dogoor	40%	Mordad Tir, Azar Farvardin	Rasht	building workers
4	Dogoor				
5	Maklavan	few			
5	Maklavan	-	-	Tehran	construction site & factory
6	Masouleh	-	more permanent migration	Tehran Rasht	-
6	Masouleh	-	-	-	-
8	Toulehsara	10-20	school holiday	Shahsavar	-
8	Toulehsara	few	Tir-Shahrivar	Shahsavar Ramsar	labourers, apprentice builders
10	Kodir		winter	Nowshahr area	rice growing
11	Muzibagh	¼ of pop.	permanent some only winter	Sari	manual work
12	Chajkam	5-6	permanent	Sari	manual work
13	Rostam Kola	50 hsehlds.	permanent	Tehran Shahrud Sari	worker
15	Altentakhmaq	5-6	2-3 mons. in summer	B.Shah P.Dej	workers

Region	Settlement	Building Materials + Source										
		timber	concrete block	brick	packed earth	mud brick	tile	rice thatch	reed thatch	shingles	stone	galvanised
1	Kashfi	L.					L.					
3	Shijan	●							●			
3	Shijan											
4	Dogoor	hills			L.	L.		hse. L.	out bldgs. L.			
4	Dogoor											
5	Maklavan	L.						L.				
5	Maklavan	L.										
6	Masouleh	●	●	●		●					●	
6	Masouleh	Julfa or L.				●						
8	Toulehsara	●		●								
8	Toulehsara	L.	Khorramabad									
10	Kodir	L.									L.	
11	Muzibagh	L.		●								
12	Chajkam	L.				L.		●		L.		
13	Rostam Kola	L. & Behshahr		40-50			●					
15	Altentakhmaq	B.Shah	50	B. Shah		P. Dej						

Region	Settlement	Physical Topography	Climate
1	Kashfi		
3	Shijan	flat, marshy	heavy rain; steep roof slope
3	Shijan		
4	Dogoor	flat; scattered settlement	warm, humid
4	Dogoor		
5	Maklavan		
5	Maklavan	flat; at foot of hills scattered houses in garden plots	moderate, cooler than coast; more humid than hills
6	Masouleh	steep; junction of 3 valleys	temperate, drier; high wind; rain/snow from N. cold winter
6	Masouleh		
8	Toulehsara	flat coastal plain	temperate, humid
8	Toulehsara		
10	Kodir	valley settlement N&S facing	cool-moderate summer; co winter; cool nights
11	Muzibagh	flat; clustered settlement	warm, humid; lower pitch roofs
12	Chajkam	hilly	cooler than coast & less humid
13	Rostam Kola	flat; at foot of hills hill land cultivation	thick walls; large s.faci windows; masonry bldgs.
15	Altentakhmaq	flat	drier; pitched roof to collect rain; strong wi

Region	Settlement	water supply	social
1	Kashfi		
3	Shijan	high water table; piped in village	teashops at intersections plots fenced
3	Shijan		
4	Dogoor	irrigation=flooded paddy drinking water from wells	extended family in house
4	Dogoor		
5	Maklavan		
5	Maklavan	wells for domestic consumption	little indication of grouping; feudal ownersh
6	Masouleh	springs & mtn. stream piped to public tap	central bazaar; men meet teahses; women at H_2O pt.
6	Masouleh		
8	Toulehsara	wells & surface water	scattered clusters; lin along road
8	Toulehsara	central public well 5-6 hshlds. own wells	
10	Kodir	stream centre of valley sprng piped to pblc taps	group of detached house
11	Muzibagh	river for nondrinking; wells for drinking	houses stand independent in garden
12	Chajkam	spring in village; reservoir for bath incomplete	3 major families; small holders
13	Rostam Kola	tap-piped water at points in town	clstr plan, walled crty many mosque, sq&pub. sp
15	Altentakhmaq	roof drains for drinking; piped for animal, washing	fairly scattered; 3 main clusters

Region	Settlement	Defence	Comments
1	Kashfi		
3	Shijan	NA	
3	Shijan		
4	Dogoor	not strong	teashop for community meeting; school mosque in upper & lower Dogoor
4	Dogoor		
5	Maklavan		
5	Maklavan	-	local shop in M. & new bath 3 mon. ag heavier wall const. Bldgs. face S-SE.
6	Masouleh	strategic pass	conc.blk=5tomans ea.; high trans. cos pass between Tabriz, Khalkhal, Rasht
6	Masouleh		products sold to tourists & nomads Masouleh people come in summer
8	Toulehsara	-	
8	Toulehsara		15% landless agric. wrkrs; ½ of migr office wrkrs emply people on their l
10	Kodir	clstrd crtyds in old sett.	rice in wint.quarters. Timber beams spring water piped to public taps
11	Muzibagh	walled yards with gatehses	co-op shop in village. People settled from Kiasar
12	Chajkam		local travelling salesmen. Village be tween 3 hills. Bath
13	Rostam Kola	dense sett. clstr; upper windows on st.	local tile kiln not working; old tile from Babol. Mosque, schools, shops
15	Altentakhmaq	building on raised ground	school, mosque, shop. water tank for imals; rain for drinking water

Region	Settlement	House	Inhabitants	Households	no./household	Ethnic Group	Economic Activity	Product	Age of House
1	Kashfi	1.1	9	1	9	Turk	Agric.	rice	20?
3	Shijan	3.1	3	1	3	Gilak	Agric.	rice	+100; r built 3
3	Shijan Balah	3.2	7	1	7	husb. Turk wife Gilak	Agric.	rice	4
4	Dogoor	4.1	16	2	14 +2	Gilak	Agric.	rice silk	20
4	Dogoor	4.2	10	2	6 +4	Gilak	Agric.& AnHusb.	rice corn silk	130
5	Maklavan	5.1	5	1	5	Talesh	Agric.	rice	?
5	Maklavan	5.2	8	2	4 +4	-	Agric.	rice	10
6	Masouleh	6.1	3	1	3	Masouleh	son a teacher		360; pa part 80
6	Masouleh	6.2	7	1	7	Masouleh	civil servant	-	under const.
8	Toulehsara	8.1	2			-	Agric.	rice	70?
8	Toulehsara	8.2	9	1	9	Gilak	Agric.	rice	10
10	Kodir	10.1	18	3		Gilak	Agric.	wheat barley	150w.; 80s.
11	Muzibagh	11.1	5	1		Gilak?	Agric.	wheat cotton rice	40+
12	Chajkam	12.1	5	1		Mazand.	Agric.	wheat barley rice	23+
13	Rostam Kola	13.1	10	3	2, 3, 5	Gilak	Agric.	wheat cotton rice	120
15	Altentakhmaq	15.1	5	1	5	Turkoman	Agric. AnHusb.	wheat barley	40

Region	Settlement	House	Occupation							
			owner	employer	worker	craftsman	agricultural	animal husbandry	migrant	other
1	Kashfi	1.1	○		○		●			
3	Shijan	3.1	land reform	sea-sonal			●	few		
3	Shijan Balah	3.2	1hect.		○					
4	Dogoor	4.1	○						●	
4	Dogoor	4.2	○		○					
5	Maklavan	5.1			p		p			
5	Maklavan	5.2	○				◑			
6	Masouleh	6.1								teac[illegible] father= scribe
6	Masouleh	6.2							◑	civil servant
8	Toulch-sara	8.1	○	○			○		5 sons	
8	Toulch-sara	8.2	○	○	○		○			
10	Kodir	10.1	○	○			○			○
11	Muzibagh	11.1	○		○					
12	Chajkam	12.1	○		○					
13	Rostam Kola	13.1	○		○	1				
15	Alten-takhmaq	15.1	○				◑	◑		

Region	Settlement	House	Migrant Workers			
			number	period	place	occupation
1	Kashfi	1.1				
3	Shijan	3.1				
3	Shijan Balah	3.2				
4	Dogoor	4.1	1	off agric. season	Rasht	worker
4	Dogoor	4.2				
5	Maklavan	5.1	0			
5	Maklavan	5.2				
6	Masouleh	6.1				
6	Masouleh	6.2		9 months in winter	Rasht	civil servant
8	Toulehsara	8.1	5	permanent	Shahsavar Ramsar Tehran	bank employee shopowner
8	Toulehsara	8.2				
10	Kodir	10.1	18	winter	Narangebon Nowshahr	rice growing
11	Muzibagh	11.1				
12	Chajkam	12.1				
13	Rostam Kola	13.1				
15	Altentakhmaq	15.1				

Region	Settlement	House	Povision of House				
			self built	builder	bought	rented	other
1	Kashfi	1.1	●	●			
3	Shijan	3.1		●			
3	Shijan Balah	3.2	with wife	carpenter			
4	Dogoor	4.1	●	●			
4	Dogoor	4.2	●	●			
5	Maklavan	5.1					living in owner's house; owner in Fouman
5	Maklavan	5.2		●			
6	Masouleh	6.1		●			
6	Masouleh	6.2		●			
8	Toulehsara	8.1		●			
8	Toulehsara	8.2	●	●			
10	Kodir	10.1		●			
11	Muzibagh	11.1	●				
12	Chajkam	12.1		●			
13	Rostam Kola	13.1	●	●			
15	Altentakhmaq	15.1	●	●			

Region	Settlement	House	Required Improvements	Prefered House Type
1	Kashfi	1.1		
3	Shijan	3.1	tin roof windproof though thatch cooler	
3	Shijan Balah	3.2		steel & concrete block city hse. lasts longer
4	Dogoor	4.1	extend	3 rooms; galvanised ir roof
4	Dogoor	4.2	concrete block wall; bath, kitchen, w.c.	
5	Maklavan	5.1		
5	Maklavan	5.2	tin roof	
6	Masouleh	6.1		traditional style
6	Masouleh	6.2		as built
8	Toulehsara	8.1		
8	Toulehsara	8.2	extend	today's fashion
10	Kodir	10.1	preserve old style	use of stone & mud & timber bracing better earthquakes
11	Muzibagh	11.1	tin roof; add rooms with brick or block	
12	Chajkam	12.1	metal roof; walls as before	
13	Rostam Kola	13.1	more space; separate animals	
15	Altentakhmaq	15.1		

Region	Settlement	House	House Technology	
			Structure	Floor
1	Kashfi	1.1		
3	Shijan	3.1	timber frame	plank
3	Shijan Balah	3.2	timber frame	packed mud
4	Dogoor	4.1	mud walls, timber frame	packed earth & cement; upper=timber plank
4	Dogoor	4.2	timber frame; 12x12cm. cut	ground floor=packed mud 1st=timber plank
5	Maklavan	5.1	timber lap joint mud infill; 2 storey	ground floor=packed mud upper=timber plank
5	Maklavan	5.2		timber and mud
6	Masouleh	6.1	loadbearing walls	timber planks
6	Masouleh	6.2	ground=stone & cement upper=mud brick	ground floor=stone upper=timber
8	Toulehsara	8.1	ground=logs w lap jnts upper=timber frame	
8	Toulehsara	8.2	concrete block brick secondary	cement
10	Kodir	10.1	partial timber frame stone&mud loadbearing	wood and cement
11	Muzibagh	11.1	outhses frame struct. platform loadbearing	compact mud
12	Chajkam	12.1	timber frame	compact mud
13	Rostam Kola	13.1	loadbearing	compact earth (googi)
15	Altentakhmaq	15.1	loadbearing brick	cement

Region	Settlement	House	House Technology	
			walls	roof
1	Kashfi	1.1		
3	Shijan	3.1	reed, mud plastered	reed thatch
3	Shijan Balah	3.2	reed wall; internal mud plaster	reed thatch
4	Dogoor	4.1	mud brick; outbuilding =plastered reed screen	rice thatch=5 yrs; reed thatch=10 yrs.
4	Dogoor	4.2	chineh & mud brick	timber truss & thatch
5	Maklavan	5.1	timber log packed w mud lumps; front elev. mud plastered	thatch with truss frame
5	Maklavan	5.2	plastered over timber with mud lumps	rice thatch (kuloush)
6	Masouleh	6.1	stone up to 2 metres mud brick above	timber
6	Masouleh	6.2	stone up to 3½ metres m-b & timber ring above	timber & mud; slope 1:
8	Toulehsara	8.1	timber & mud	tin with timber frame
8	Toulehsara	8.2	brick	tin on timber truss
10	Kodir	10.1	loadbearing stone&mud mud wash cream colour	shingle; timber truss
11	Muzibagh	11.1	outbuildings= wheat & barley stems filled with mud	reed thatch (galeh)
12	Chajkam	12.1	chineh	rice thatch
13	Rostam Kola	13.1	chineh, mud brick	timber truss & tile
15	Altentakhmaq	15.1	brick	pitched; truss

Region	Settlement	House	Typology Classification	Comments
1	Kashfi	1.1	B2s	
3	Shijan	3.1	C2m	
3	Shijan Balah	3.2	C2s	
4	Dogoor	4.1	C2m	house roof blt. by himself & local carpente problems of thatch fire, mice, rot & dust.
4	Dogoor	4.2	C3m3	7 sons in Tehran. Animals shelter=reed mat walls. Ground floor walls becoming concrete Floor=new timber plank.
5	Maklavan	5.1	C3d3	living in owner's house, caring for garden land. Unco-operative.
5	Maklavan	5.2	C2d2	¾hect. spoilt by floods. She works at Behda 2nd hhld. temporary stay. Local timber no good; better in forests.
6	Masouleh	6.1		prev.9 persons, now 3. All hses min. 2 stor max.3 st.; backrooms=winter; front=summer. Roofs def. drainage slope against wind direc
6	Masouleh	6.2		old settlement around bazaar & immamzadeh. 18 hammams, 17 mosques.
8	Toulehsara	8.1	C2d2	
8	Toulehsara	8.2	B2s	Aivan roof on concrete pipes. Outbldgs. In const. & sml. ones wattle & daub. New w.c. shop/entrance conc.blk. Shop unused; no mor
10	Kodir	10.1	B5d5	Lost land in l.reform. Stones holding shing Main hse symetrical formal plan. Successive blt. to form ext.family around courtyard.
11	Muzibagh	11.1	C3s	more info. in questionnaires. Sheep, goats cows to yeylaq (Tilak); return fall to stab
12	Chajkam	12.1	C2s	mother, father, 3 daughters, 2 sons in Gari own 1 hec. 1 bldr. & carpenter/builder.
13	Rostam Kola	13.1	C2d2	
15	Altentakhmaq	15.1	B2s	builder

The Caspian Region

The field area for this study is defined by the northern slopes of the Alborz mountains; a region which exhibits similar ecological characteristics from Astara in the northwest to the foothills of Gorgan in the east of the region. The Alborz mountains, forming a barrier to the penetration of rain clouds into the south, contain the abundant rain and humidity on their northern slopes and the coastal plains of the Caspian* .

The study area can be divided into two broad ecological subregions.

The plains are occupied by a sedentary population who were traditionally engaged in rice cultivation, silk production, and animal husbandry. The plains have a high mean annual rainfall, humidity and air temperature.

The hills are covered by forests and vegetation and provide good grazing grounds for animal husbandry. The population engaged in this activity migrates to the cooler, less humid hills in the summer and returns to the plains in the winter months.

The Caspian's narrow coastal plain has an average width of about fifty kilometres, and was produced by a general retreat of the sea, which at one time probably extended as far as the foot of the Alborz mountains. Numerous rivers originate in the northern foothills of the Alborz, but they are all short and cover small distances before they reach the sea. There are, however, four rivers of importance that empty their water in the Caspian. They are, in order of importance and from west to east: Aras (Araxes), Sefid Rud, Gorgan, and Atrek. These rivers have respectively built the Moghan Plain, the

* see climatic map: mean annual precipitation.

Sefid Rud Delta (Rasht Plain), the Gorgan and Atrek Plains. In addition, a group of rivers - Talvar, Haraz, Babol, and Tejan - have built up the Mazandaran Plain.

The northern foothills and the slight to moderately sloping foothills areas of the Alborz mountains bordering the southern coast of the Caspian Sea are characterised by a humid and subhumid subtropical climate. These areas include the Caspian provinces of Gilan, Mazandaran, and Gorgan. Climatic conditions in these regions differ from those of other parts of Iran and have certain similarities to the Mediterranean climate; it is humid in the western part and subhumid, semiarid in the eastern part.