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**State Planning Organization
The Republic of Turkey**

**THE STUDY ON THE REGIONAL DEVELOPMENT PLAN
FOR THE EASTERN BLACK SEA REGION
IN THE REPUBLIC OF TURKEY
(DOKAP)**

Final Report

Volume III Economic Sectors

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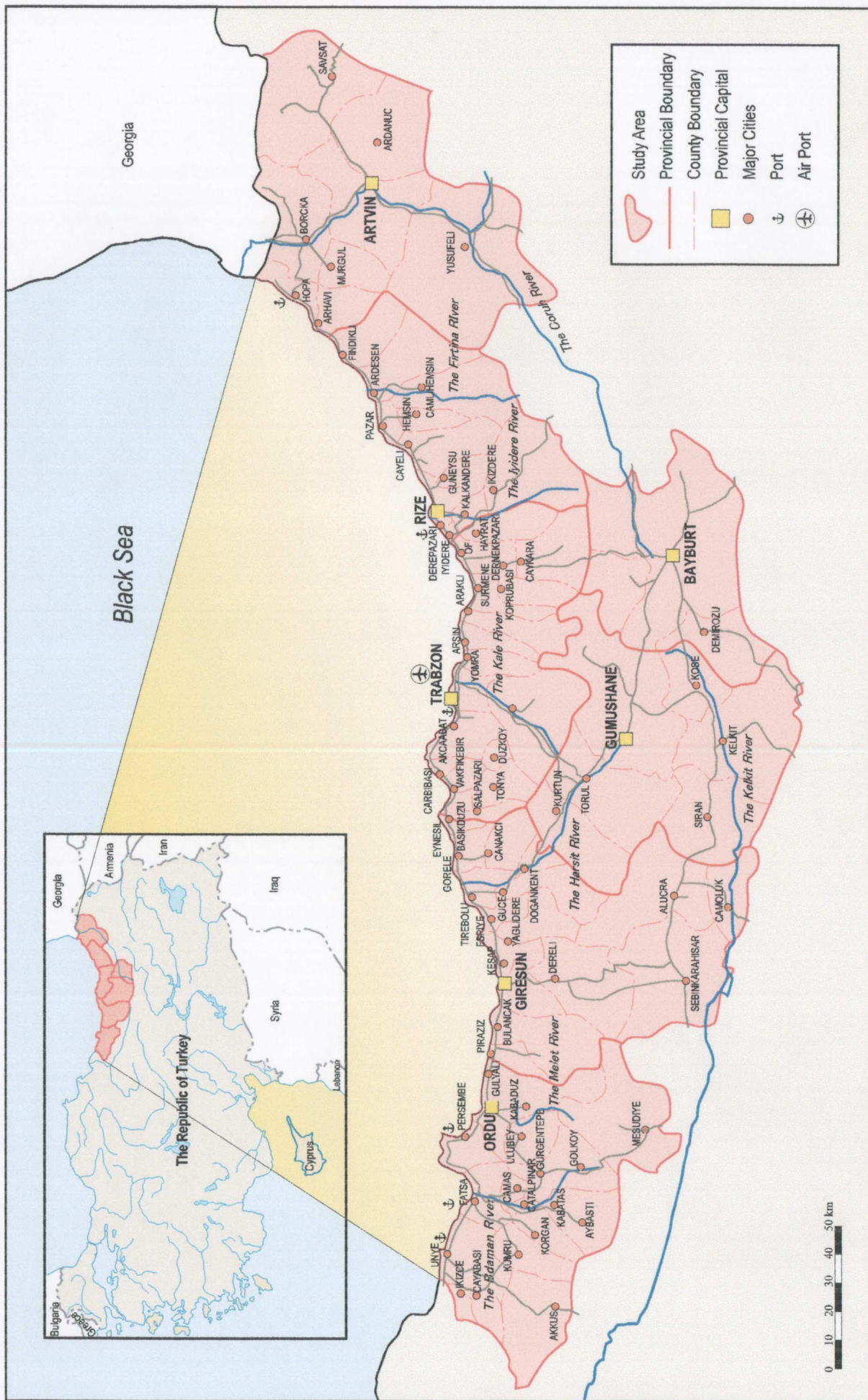
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Location Map of Study Area

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ON
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THE REPUBLIC OF TURKEY**

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ABBREVIATIONS

AGM	General Directorate of Afforestation and Erosion Control (Agaçlandırma ve Erozyon Kontrolü Genel Müdürlüğü)
ASOR	International convention on the harmonization of frontier controls acceding to the convention.
BECC	Black Sea Economic Cooperation Council
BOD	Biological Oxygen Demand
BOO	Build, own and operate
BOP	Bank of Provinces
BOT	Build, operate and transfer
BOTAS	Petroleum Pipelines Corporation (Boru Hatları ile Petrol Tasıma A.Ş.)
BSEC	Black Sea Economic Cooperation
BSEAP	Black Sea Environmental Action Plan
CDA	County directorates of agriculture
CI	Corporate Identity
CIS	Commonwealth of Independent States
CMR	Convention on the contract for the international carriage of goods by road
COTIF	Convention Concerning International Carriage by Rail
CS	Customers Satisfaction
DHKD	Society for the Protection of Nature (Doğal Hayati Koruma Derneği)
DOKAP	Eastern Blacksea Regional Development Plan (Doğu Karadeniz Bölgesel Gelişme Planı)
DSİ	General Directorate of State Water Works (Devlet Su İşleri Genel Müd.)
EIA	Environmental impact assessment
EİE	Electrical Power Resources Survey and Development Administration
EİEİ	Electric Survey Administration (Elektrik İşleri Etüt İdaresi)
FAO	Food and Agriculture Organization of U.N.
FCCC	UN Framework Convention on Climate Change
FCRI	Field Crop Research Institute
FIRR	Financial Internal Rate of Return
FİSKOBİRLİK	Association for Hazelnut Marketing Cooperatives (Fındık Tarım Satış Kooperatifleri Birliği)
FTSİİ	Forest Trees and Seed Improvement Institute
GAP	Southeastern Anatolia Project (Güneydoğu Anadolu Pro.)
GATT	General Agreement on Trade and Tariffs
GDAR	General Directorate of Agricultural Research (Tarımsal Araştırmalar Genel Müdürlüğü)
GDNPGW	General Directorate of National Parks, Game and Wildlife
GDP	Gross domestic product
GDRS	General Directorate of Rural Services (Köy Hizmetleri Genel Müdürlüğü)
GDVA	General Directorate of Village Affairs

GEF	Global Environmental Facility
GIS	Geographic information system
GPS	Global Positioning System
GNP	Gross national product
GOT	Government of Turkey
GPRA	Government Performance and Results Act
GRDP	Gross regional domestic product
GSM	Global system for mobile communications
GVA	Gross value added
IFAD	International Fund for Agricultural Development
IGEME	Export Development Center (Ihracati Gelistirme Etud Merkezi)
IIBK	Institute for Finding Jobs and Workers
ILLER Bankasi	Bank of Province
IRR	Internal rate of return
ISP	Internet service providers
IT	Information Technology
ITB	International Tourismus – Boerse
IUCN	World Conservation Union
JICA	Japan International Cooperation Agency
KGM	General Directorate of State Highways (Karayollari Genel Mudurlugu)
KOSGEB	Small and Medium Size Enterprises Development Organization (Kucuk ve Orta Olcekli Sanayileri Gelistirme ve Destekleme Idaresi Baskanligi)
KÖK	Association for Protection of Characteristics of Blacksea (Karadenizin Ozelliklerini Koruma Dernegi Klübü)
KÖYKOBIRLIK	Union of Village Cooperatives
KTÜ	Blacksea Technical University (Karadeniz Teknik Universitesi)
MARA	Ministry of Agriculture and Rural Affairs (Tarim ve Köy Isleri Bakanligi)
M&E	Monitoring and evaluation
MENR	Ministry of Energy and Natural Resources (Enerji ve Tabii Kaynaklar Bakanligi)
METU	Middle East Technical University
MOC	Ministry of Culture
MOF	Ministry of Forestry (Orman Bakanligi)
MONE	Ministry of Natural Education
MOT	Ministry of Tourism (Turizm Bakanligi)
MPGM	General Directorate of National Parks and Wildlife (Milli Parklar ve Av-Yaban Hayati Genel Mudurlugu)
MTA	Mineral Research Institute (Maden Tetkik Arama)
NARS	National agricultural research system
NGO	Non governmental organization
NPR	National Performance Review
OECD	Organization for Economic Cooperation and Development
OGM	General Directorate of Forestry (Orman Genel Mudurlugu)

OIZ	Organized industrial zones (Organize Sanayi Bolgeleri)
ORKOY	Forest Village Relations General Directorate (Orman ve Koy iliskileri Genel Mudurlugu)
OSCE	Organisation for Security and Co-operation in Europe
PDA	Provincial Directorate of Agriculture
PGRRI	Plant Genetic Resources Research Institute
PMU	Project Management Unit
PPA	Power purchase agreement
PTT	Mail Telephone Telegraph General Directorate (Posta Isletmeleri Genel Mudurlugu)
PVC	Polyvinyl Chloride
RIC	The convention concerning the international transport of goods by rail
RIV	The international convention to facilitate the crossing of frontiers for goods carried by rail
SEKA	Government Paper Corporation
SFYP	Seventh Five-year Development Plan
SID	Small Industry Districts (Kucuk Sanayi Siteleri)
SIS	State Institute of Statistics (Devlet Istatistik Enstitusu)
SME	Small and medium enterprise
SMI	Small and medium industry
SPO	State Planning Organization (Devlet Planlama Teskilati)
SSK	Social Security Agency (Sosyal Sigortalar Kurumu)
STOL	Short Take-off and Landing
TCDD	General Directorate of State Railways (Turkiye Cumhuriyeti Devlet Demiryollari)
TCZB	Agricultural Bank of Turkey (Turkiye Cumhuriyeti Ziraat Bankasi)
TDI	Turkish Maritime Company (Turkiye Denizcilik Isletmesi)
TEDAS	Turkish Power Distribution Company (Turkiye Elektrik Dagitim Anonim Sirketi)
TEAS	Turkish Power Generation and Transmission Company (Turkiye Elektrik Uretim Iletim Anonim Sirketi)
TESK	Union of Associations of Artisans and Traders
TIR	Transports Internationaux Routiers
TKK	Agricultural Credit Cooperatives (Tarim Kredi Kooperatifleri)
TODAIE	Institute of Public Administration for Turkey and the Middle East (Turkiye ve Ortadogu Amme Idaresi Enstitusu)
TOE	Ton of oil equivalent
TPAO	Turkish Petroleum Corporation (Turk Petrolleri Anonim Ortakligi)
TQM	Total Quality Management
TTGV	Technology Development Foundation of Turkey (Turkiye Teknoloji Gelistirme Vakfi)
TTK	Turkish Hard Coal Enterprise (Turkiye Taskomuru Kurumu)
TÜBİTAK	Turkish Scientific and Technical Researches Council (Turkiye Bilimsel ve Teknik Arastirmalar Kurumu)

TÜPRAS	Turkish Petroleum Refineries Corporation (Turkiye Petrol Rafineleri AnonimSirketi)
TÜSİAD	Association of Turkish Industrialists and Businessmen (Turkiye Sanayiciler ve Isadamlari Dernegi)
TV	Training and visit system
USAID	U.S. Agency for International Development
VAT	Value added tax
VGT	Village group technicians
WTO	World Trade Organization
YIBO	Regional primary education boarding schools (Yatili Ilkogretim Bolge Okullar)

Abbreviation of Measures

Extent

cm² = Square-centimeters
m² = Square-meters
km² = Square-kilometers
ha. = Hectares (10,000 m²)

Volume

cm³ = Cubic-centimeters
m³ = Cubic-meters
l = Liter

Length

mm = Millimeters
cm = Centimeters (cm = 10 mm)
m = Meters (m = 100 cm)
km = Kilometers (km = 1,000 m)

Weight

g. = Grams
kg = Kilograms
ton = Metric tonne
DWT = dead weight ton

Energy

kcal = Kilocalories
TOE = Tons of oil equivalent
kW = Kilowatt
MW = Megawatt
kWh = Kilowatt-hour
MWh = Megawatt-hour
GWh = Gigawatt-hour

Others

% = Percent
°C = Degree Celsius

1. Agriculture and forestry

CHAPTER 1 INTRODUCTION

Turkey has an area of 774,815 km², with a population of 62.8 million as of 1997. The population grew at an average rate of 1.5% per annum between the two census years of 1990 and 1997. Average population density in 1997 was 81.1 people/km². Urbanization has rapidly been going on, due mainly to internal migration from rural to urban.

Gross Domestic Product (GDP) in Turkey amounted to TL14,772,110 billion in 1996, 52.2% of which or TL7,708,046 billion was produced by service sector, followed by industry and mining sector (31.0% or TL4,574,290 billion) and agriculture, forestry and fishery sector (16.9% or TL2,489,774 billion). GDP per capita in the same year was TL231,738,000.

Administratively Turkey is divided into seven (7) regions and further divided into 80 provinces. Western provinces are generally rich in terms of development as well as economy. Per capita GDP as of 1994 was more than US\$3,000 in several western provinces including Ankara, Istanbul, Izmir, etc., while provinces having per capita GDP of less than US\$1,000 appear mostly in the eastern part of the country.

Rectification of this large disparity among provinces and regions is one of the crucial goals to be realized in the current 7th five year national development plan (1996-2000). Agricultural development is expected to contribute to the attainment of this goal.

CHAPTER 2 PRESENT SITUATION

2.1 Demography

The Study Area, called the Eastern Black Sea (DOKAP) region, consists of seven provinces: five provinces of Ordu, Giresun, Trabzon, Rize and Artvin, located along the eastern coast of the Black Sea, and two inland provinces of Gumushane and Bayburt. Total area of the region is 39,361 km² and the population totals 2.91 million as of 1997 with an average population density of 74.0 people/km², as shown in Table 1.

The share of land area and population of DOKAP region in Turkey is 5.0% and 4.6%, respectively, which makes population density of DOKAP region smaller than Turkey's average (80.7 people/ km²).

Table 1 Population of DOKAP and Turkey, 1990 and 1997

No.	Province	Area (km ²)	Total population		Urbanization rate		AAGR 1990-1997			Density 1997 (people/km ²)
			1990	1997	1990	1997	Total	Urban	Rural	
8	Artvin	7,436	212,833	184,070	31.1%	43.6%	-2.1%	2.8%	-4.8%	24.8
28	Giresun	6,695	499,087	460,805	43.9%	51.9%	-1.1%	1.2%	-3.3%	66.2
29	Gumushane	6,748	169,375	153,990	34.8%	41.0%	-1.4%	1.0%	-2.7%	22.8
52	Ordu	6,142	830,105	840,148	40.6%	46.9%	0.2%	2.3%	-1.4%	137.0
53	Rize	3,920	348,776	325,581	38.2%	53.0%	-1.0%	3.8%	-4.8%	83.1
61	Trabzon	4,498	795,849	846,876	38.1%	49.6%	0.9%	4.7%	-2.0%	188.3
69	Bayburt	3,652	107,330	99,638	38.5%	47.2%	-1.1%	1.9%	-3.2%	27.3
DOKAP Total		39,361	2,963,355	2,911,108	39.1%	48.6%	-0.3%	2.9%	-2.6%	74.0
Turkey Total		779,452	56,473,035	62,865,574	59.0%	65.0%	1.5%	3.0%	-0.7%	80.7

Source: Statistical Yearbook of Turkey 1997, Census of Population 1990 and Final Results of 1997 Census

Artvin province has the largest land area in the DOKAP region, with an area of 7,436 km², which accounts for 19% of the total land in the region. Second largest province is Giresun with 6,695 km² (18%), followed by Gumushane (6,748 km² or 17%), Ordu (6,142 km² or 16%), Trabzon (4,498 km² or 11%), Rize (3,920 km² or 10%), and Bayburt (3,652 km² or 9%).

Population distribution in the region differs very much among provinces as well as districts. Majority of population concentrates along the coastal highways. Trabzon and Ordu provinces have more than 800,000 in population and high population densities; 188 people/km² and 137 people/km², respectively. The provinces of Bayburt, Artvin and Gumushane have populations less than 200,000 with population densities less than 30 people/km².

Annual average population growth rate in the region as a whole between the last two census periods (1990 and 1997) was slightly negative with minus 0.3%, as

compared with the country's 1.5%, as a result of out-migration to other regions. Only two provinces of Trabzon and Ordu show positive growth in the same period.

Even within the region, migration from rural to urban areas is obvious. Annual average population growth rate in DOKAP rural area between 1990 and 1997 was minus 2.6% while that in urban area in the same period was 2.9%. As a result, urbanization rate in the region increased from 39.1% in 1990 to 48.6% in 1997, although the figure is still lower than national average of 65.0% in 1997.

2.2 Economic Structure

Economic structure in the DOKAP region is shown in Table 2.

Table 2 Share of GRDP by Sectors in DOKAP and Turkey, 1996

Sector	Unit: %								
	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
1 Agriculture/forestry/fishery	17	30	28	34	28	17	24	25	15
2 Industry/Mining	43	10	3	15	13	17	5	18	28
3 Construction	3	9	7	8	8	8	8	7	6
4 Wholesale/retail trade	13	15	11	16	17	24	16	17	21
5 Transportation/communication	17	19	33	13	19	18	25	18	13
6 Financial institutions	1	2	2	1	1	2	3	1	2
7 Housing	2	7	7	5	6	5	9	5	5
8 Business/personal services	1	1	0	1	1	2	1	1	2
9 Imputed bank services	0	-3	-2	-1	-1	-2	-2	-1	-2
10 Sector total	96	91	89	92	92	90	88	92	92
11 Government services	4	6	10	5	4	8	12	6	4
12 Private non-profit institutions	0	0	0	0	0	0	0	0	0
13 Total	100	98	99	98	96	98	100	98	96
14 Import duties	0	2	1	2	4	2	0	2	4
15 GDP/GRDP (purchasers' prices)	100	100	100	100	100	100	100	100	100

Source: State Institute of Statistics (cited from a report prepared by the JICA Preparatory Study Team for the DOKAP Study)

Agriculture, including forestry and fisheries, is the most important sector in the region's economy. The sector produced 25% of the total GRDP in 1996, followed by industry/mining, transportation/telecommunication and wholesale/ retail trade. As compared with Turkey as a whole, the economic structure in DOKAP is relatively agriculture oriented.

However, the economic structure differs much from province to province in the DOKAP region. Mining is the most important sector in Artvin due to the existence of major copper mining activity in the province. In Gumushane and Bayburt, on the other hand, transportation is the most important sector because of their strategic locations. Ordu, Giresun, and Rize are agricultural provinces for their special products of hazelnut and tea, capitalizing on their climatic conditions favorable for

those crops. The wholesale/retail sector is more important in Trabzon, which is currently serving as a regional trade center.

Despite the lower share in total GRDP, the construction and housing sectors are also significantly important in all provinces except Artvin, reflecting rapidly proceeding urbanization.

2.3 Natural Environment

The DOKAP region may be divided broadly into two climatic zones through the existence of alpine mountain ranges such as Canik, Giresun, and Dogu Karadeniz mountain ranges, running east-west in the region. One is the coastal and northern slope of the mountain range zone which is characterized by high rainfall and mild temperature, and the other is the south of the mountain range which has similar climate as the Central Anatolia characterized by dry continental climate. Annual rainfall along the coastal area is larger in the eastern part of the region than in the western part, according probably to the height of the alpine mountain ranges.

The region is also characterized by harsh topography. Steep and high mountain ranges near the coastal area limit flat land, making both ordinary life and development activities difficult and costly. This may be one reason for out-migration from the region.

On the other hand, these characteristics on climate and topography create a variety of natural conditions in the region. Present various agricultural activities, valuable forest resources with bio-diversity are based on these natural conditions, and prospective tourism development would be realized capitalizing on the nature.

2.3.1 Climate

(1) Temperature

Monthly average temperature shows similar pattern in coastal cities of the region, with annual average temperature ranging from 13.7 °C to 14.2 °C, as shown in Table 3. On the other hand, in inland cities such as Gumushane and Bayburt, monthly average temperature is far lower due to higher elevation. Winter temperatures in these provinces can fall below zero degree Celsius, and their annual average temperature is less than 10 °C; 9.6 °C at Gumushane and 6.5 °C at Bayburt, respectively. The lower temperature limits crop selection in inland provinces.

Table 3 Monthly Average Temperature in DOKAP

Unit: °C

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt
January	2.7	7.1	-2.0	6.5	3.7	7.3	-7.1
February	3.8	7.0	-0.5	6.7	6.6	7.3	-5.4
March	7.1	7.8	3.7	7.7	7.8	8.2	-3.0
April	12.0	11.1	9.6	11.3	11.3	11.6	6.8
May	15.9	15.4	13.8	15.3	15.7	15.7	11.6
June	18.6	19.8	17.1	17.8	19.8	20.0	15.0
July	20.5	22.4	19.9	22.2	22.2	22.6	18.8
August	20.6	22.6	19.8	22.1	22.4	22.9	18.4
September	17.9	19.6	16.6	19.0	19.5	20.0	14.5
October	13.8	15.9	11.2	15.3	15.8	16.3	8.8
November	9.2	12.5	5.2	11.7	12.2	12.9	2.6
December	4.6	9.3	0.3	8.9	8.7	9.5	-3.4
Annual average	12.2	14.2	9.6	13.7	13.8	14.5	6.5

Note: Elevations of each meteorological station are as follows: Artvin: 628 m; Giresun: 37 m; Gumushane: 1,219 m; Ordu: 4 m; Rize: 4 m; Trabzon: 30 m; and Bayburt: 1,584 m.

Source: State Meteorological Affairs

Temperature in Artvin, located at the top of a hill along the downstream stretch of the Coruh river, is intermediate between coastal and inland areas. Difference in temperature between coastal and inland cities is larger in the winter season.

While difference in monthly average temperature between summer and winter seasons is some 20 °C in inland areas, that in coastal areas is 15 °C to 16 °C. Difference in temperatures between day and night is also larger in inland areas than in coastal areas from spring through autumn.

Monthly average maximum temperature is higher in inland areas than in coastal areas from April through September while monthly average minimum temperature is always lower in inland areas than in coastal areas. Thus, the climate of coastal areas is milder than that of inland areas with respect to temperature.

(2) Humidity

Humidity is higher in coastal areas than in inland areas. Annual average humidity in coastal areas ranges from 73% in Trabzon to 78% in Rize while in inland areas it is lower with 62%, as shown in Table 4.

Humidity in coastal areas is lower in winter and higher in summer in general while that in inland areas have reverse pattern: higher in winter and lower in summer.

Table 4 Monthly Average Humidity in DOKAP

Unit: %

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt
January	64	69	67	69	72	67	74
February	64	72	64	72	73	68	74
March	62	75	62	77	75	72	71
April	61	78	59	79	77	74	64
May	65	81	60	80	79	78	61
June	68	78	58	75	77	75	59
July	72	77	58	76	79	74	53
August	71	78	57	76	80	73	51
September	70	78	58	78	80	74	52
October	66	78	63	79	79	72	62
November	65	73	67	74	76	69	71
December	65	69	69	70	72	66	74
Annual average	66	76	62	75	77	72	64

Source: State Meteorological Affairs

(3) Precipitation

Annual precipitation differs much from place to place in the DOKAP region. Annual precipitation in the western coastal areas is some 1,000 mm while that in eastern coast is much higher with more than 2,000 mm, as shown in Table 5. On the other hand, annual precipitation in inland areas is as low as 400 to 500 mm. Artvin has intermediate annual precipitation with 640 mm. Seasonal precipitation pattern is similar throughout the region: more in winter and less in summer.

Table 5 Monthly Average Precipitation in DOKAP

Unit: mm

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt
January	85.1	131.2	34.0	118.6	230.7	85.2	24.8
February	71.4	110.4	29.1	102.3	196.9	65.2	27.1
March	55.6	100.1	38.5	103.4	165.8	58.1	36.6
April	53.1	81.4	56.8	76.4	101.6	58.4	57.8
May	50.3	65.8	72.2	55.8	96.5	53.8	67.6
June	46.8	77.0	46.4	73.3	130.3	53.1	53.4
July	27.0	85.4	11.9	80.2	148.1	37.0	21.2
August	25.8	96.6	12.6	75.6	195.0	47.7	14.6
September	35.1	131.3	20.7	102.0	253.1	78.3	20.9
October	55.6	159.9	40.4	123.6	279.5	113.2	39.7
November	70.0	158.8	43.0	135.7	261.1	99.0	35.0
December	87.1	126.6	38.1	129.7	241.7	84.8	27.5
Annual total	662.9	1,324.5	443.7	1,176.6	2,300.3	833.8	426.2

Source: State Meteorological Affairs

The difference in precipitation pattern forms different kinds of soils in the area, which, with difference in temperature by elevation, may generally determine the crops that can be grown. Western part of the coastal areas in the region, with relatively low elevation and precipitation, are planted predominantly with hazelnut,

while the eastern part, having higher precipitation, is planted with tea. Inland dry areas are planted with field crops.

2.3.2 Soil conditions

Soil conditions in the DOKAP region are variable, reflecting the range of parent materials, the interaction between precipitation and evaporation, and the extent of weathering and human activities.

The DOKAP region can be classified broadly into 14 major soil categories, as shown in Table 6.

Table 6 Land Area by Soil Groups in DOKAP

Soil Group	Unit: km ²							DOKAP
	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	
Alluvial soils	23	13	75	43	21	12	329	515
Colluvial soils	3	32	81	11	8	11	71	217
Red-yellow podzolic soils	1,303	1,855		554	2,434	1,379		7,525
Grey-brown podzolic soils		1,453	54	3,924	6	1,948		7,386
Brown forest soils	1,313	864	2,022	769		305	14	5,286
Brown forest soils without lime	3,170	755	1,494		404		62	5,885
Dark brown soils			250				288	538
Brown soils		546	919				2,117	3,582
Brown soils without lime			3	484			313	800
Vertisols		1						1
Sierozems			29					29
High mountain soils	913	1,024	1,328	181	565	925	422	5,356
Coastal sand dune		2	0	1	0	1		5
Other soils	711	389	320	35	482	104	37	2,077
Total	7,436	6,965	6,748	6,142	3,920	4,498	3,652	39,203

Note: Other soils include river bed, bare rocks and unidentified areas such as resettlement areas.
Source: JICA Study Team based on the land assessment reports by GDRS.

Of the 14 groups, six soil groups dominate in the region. They are: Red-yellow podzolic soils, Grey-brown podzolic soils, Brown forest soils, Brown forest soils without lime, Brown soils and High mountain soils.

Some features of these major soil groups and distribution of the soils are briefly explained below:

Red-yellow podzolic soils: These soils are well-developed and well-drained. They usually develop over forest areas of the humid climates. The soils are generally acidic, which resulted from leaching of bases such as calcium by much rainfall and organic acid. Chemical properties of these soils are generally poor. They are distributed on lower part of the northern slopes of the mountain ranges with high rainfall. The soils occupy 7,525 km², accounting for 19% of the region's total land.

Rize has the largest area of these soils with 2,434 km², followed by Giresun (1,855 km²), Trabzon (1,379 km²), Artvin (1,303 km²), etc. Inland provinces of Gumushane and Bayburt do not have these soils.

Grey-brown podzolic soils: These soils occur in cooler climates than red-yellow podzolic soils. The soils develop in pine forest areas where the cooler climate slows the decomposition of surface organic materials forming a humus layer. The humus layer then turns into a greyish brown A₁ horizon high in organic matter. Generally they are shallow and very shallow soils. Thin surface soil and low soil fertility limit the growth of crops. The total area under this soil is 7,386 km², or 19% of the total land area. Ordu has the largest area under this with 3,924 km², followed by Trabzon (1,948 km²), Giresun (1,453 km²), etc.

Brown forest soils: These soils generally develop in association with broad leaf forest, shrubs and pasture. The main parent material of this type of soils is limestone, which makes the soils neutral to alkaline. The structure is granular and porous, leading to good drainage. Chemical properties of the soils are generally good. Erosion hazard, because of steep slopes, may be a critical limiting factor. The area under this type of soil totals 5,286 km², corresponding to 13% of the total land area in the region. Gumushane has the largest area with 2,022 km², followed by Artvin (1,313 km²).

Brown forest soils without lime: These appear generally on steep sloping land with broad leaf forest. The soils are generally shallow or very shallow. The total area under these soils is 5,885 km², accounting for 15% of the DOKAP region, of which 3,170 km² are in Artvin.

Brown soils: The brown soils can be seen in different climates from arid to semi-arid or from temperate to cool. The vegetation is bush and shrub. Soil reaction is neutral to alkaline. Drainage condition is good. Parent material contains lots of limestone. They occur generally on steep slopes and are sometimes stony. The soils occupy 3,582 km² or 9% of the DOKAP region. Of the Brown soils, 59% or 2,117 km² are in Bayburt.

High mountain, meadow soils: These soils can be seen in cool temperate or alpine climates in high altitudes or high latitudes beyond the limits that can support forest. Drainage is imperfect and vegetation is mainly bush and meadow. The productivity is limited because of cold temperatures. These soils occupy 5,356 km² which accounts for 14% of the DOKAP region. Gumushane has the largest area of this type of soils with 1,328 km², followed by Giresun (1,024 km²), Trabzon (925 km²) and Artvin (913 km²).

2.3.3 Land capability classification

The land area of the DOKAP region is classified into seven capability classes according to suitability for cultivation. Capability class is determined by the three kinds of factors: erosion hazard, soil wetness, and soil physico-chemical properties .

Land under class I has no or few limitations for crop cultivation while land under class VIII is not suitable for any kind of crops because of prohibitive constraints. Land with the capability classes I to IV are suitable for crops, orchard, and pasture under good soil management practice, while land with the capability classes V to VII are generally unsuitable for crop production because of severe constraints. Only tree crops and pasture may be grown on the class V to VII land under careful soil management/protection practices.

The area of each capability class in the DOKAP region is shown by province in Table 7.

Table 7 Distribution of Land Area by Land Capability Classes in DOKAP

Unit: km²

Capability Class	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
I	1	2	23	13	5	0	107	151
II	21	29	190	76	14	17	299	646
III	48	78	224	232	15	39	209	845
IV	272	379	286	675	85	215	270	2,182
V	0	0	0	0	0	0	0	0
VI	1,551	1,979	1,692	1,026	1,054	1,382	748	9,432
VII	4,832	4,078	3,838	3,942	2,265	2,927	1,981	23,863
VIII	711	361	280	30	462	59	37	1,940
Unknown	0	30	42	6	20	44	2	144
Total	7,436	6,936	6,575	6,000	3,920	4,683	3,653	39,203

Note: Area under unknown class includes established area.

Source: JICA Study Team based on the land assessment reports by GDRS.

Most land in the DOKAP region falls in classes VI and VII which are unsuitable for crop cultivation. The land area under these classes is 33,295 km², consisting of 23,863 km² with class VII and 9,432 km² with class VI. Land under both classes accounts for 85% of the whole DOKAP region. There is no land classified as class V. Land under class VIII, which is considered impossible for agricultural activities, occupies 1,940 km², of which 37% is in Artvin.

Land area under the classes I to IV totals 3,824 km² corresponding to 9.8% of the DOKAP. Ordu has the largest land area suitable for crop cultivation with 996 km², accounting for 17% of the province, followed by Bayburt (885 km², 24% of the province) and Gumushane (723 km², 11%). On the other hand, only 119 km² is suitable for crop cultivation in Rize, a mere 3% of the province.

Limiting factors or constraints to crop growth are erosion hazard and soil properties for land in class VII, while soil properties, erosion and wetness are the main limiting factors for land under class VI, as shown in Table 8.

Crop growth limiting factors of the soil under class VII are erosion and soil properties such as soil shallowness and steep slope, while those under class VI are soil properties, wetness including flood, and erosion.

Table 8 Areal Distribution by Capability Classes and Limiting Factors in DOKAP

Unit: km²

Capability class	Limiting factors to crop growth								Total
	e	es	s	se	sw	w	ws	-	
I	0	0	0	0	0	0	0	151	151
II	185	0	157	14	0	291	0	0	646
III	589	162	28	47	9	9	0	0	845
IV	1,552	508	2	120	0	0	0	0	2,182
V	0	0	0	0	0	0	0	0	0
VI	2,787	1,266	0	25	5,354	0	0	0	9,432
VII	0	22,897	2	964	0	0	1	0	23,863
VIII	0	0	0	0	0	0	0	1,940	1,940
unknown								144	144
Total	5,113	24,832	189	1,169	5,363	301	1	2,235	39,203

Note: limiting factors : e: erosion, s: soil properties, w: wetness

Source: JICA Study Team based on the land assessment reports by GDRS.

Major limiting factors of the soil suitable for crop cultivation under classes I to IV are erosion and soil properties. The possibility of erosion hazard is related to slope gradient. Harsh topography of the region is reflected in the results of land capability classification.

2.4 Agriculture

2.4.1 Agricultural land use

The agricultural land area in the DOKAP region in 1996 totaled 762,564 ha, as shown in Table 9. Ordu has by far the largest agricultural land in the region with an area of 262,363 ha, accounting for 34% of the region's agricultural land. Giresun has the second largest agricultural land with 156,963 ha, or 21% of the region, followed by Trabzon (110,659 ha or 15%), Gumushane (84,094 ha or 11%), Bayburt (56,992 ha or 7.5%), Rize (54,152 ha or 7.1%) and Artvin (37,341 ha or 4.9%).

Table 9 Agricultural Land Use in DOKAP and Turkey, 1996

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Total land area (km ²)	7,436	6,934	6,575	6,001	3,920	4,685	3,652	39,203	774,815
Agricultural land (ha)	37,341	156,963	84,094	262,363	54,152	110,659	56,992	762,564	26,986,548
Share of agr. Land (%)	5.0	22.6	12.8	43.7	13.8	23.6	15.6	19.5	34.8
Cultivated field area (ha)									
Area sown	20,756	53,581	69,133	86,413	1,259	43,598	37,974	312,714	18,634,987
Fallow land	25	4,219	12,862	103	-	-	18,709	35,918	5,094,478
Total	20,781	57,800	81,995	86,516	1,259	43,598	56,683	348,632	23,729,465
Vegetable gardens (ha)	2,406	4,081	796	3,616	757	1,885	255	13,796	785,308
Fruits area (ha)	14,154	95,082	1,303	172,231	52,136	65,176	54	400,136	2,471,775

Source: JICA Study Team based on the Agricultural Structure 1996, SIS

The share of the agricultural land area in total land area in the DOKAP region as of 1996 is 19%, much less than the national average of 35%. Only Ordu has the larger share with 43.7% than the national average, followed by Trabzon (23.6%), Giresun (22.6%), Bayburt (15.6%), Rize (13.8%), and Gumushane (12.8%), while Artvin has the very small share with 5%.

The smaller share of the agricultural land in the region can be explained by the harsh topographic condition, and more areas are planted with fruit trees which can grow on slope land. The share of fruit trees area including tea in total agricultural land area in the region in 1996 was 52.5%, which is by far larger than national average of 9.2%. Field crops are also planted significantly in the region with the share of 41%. In Gumushane and Bayburt, particularly, more than 90% of the agricultural areas are planted with field crops including fodder crops for livestock, and also with considerably large fallow areas.

2.4.2 Land holding

(1) Number of holdings and size

The last agricultural census conducted in 1991 provides the most recent data about agricultural land holding. According to the results, there are 380,826 agricultural holdings in the region, which corresponds to 9.6% of the national total agricultural holdings, as shown in Table 10.

Trabzon has the largest number of holdings with 103,296, accounting for 27% of the DOKAP total, followed by Ordu (96,933 or 25%), and Giresun (66,440 or 17%), while Bayburt has the least holdings with 9,314, corresponding merely to 2.4% of the region.

Table 10 Number of Agricultural Holdings by Size in DOKAP

Unit: number

Size of land (ha)	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
less than 0.5	3,142	6,086	2,540	4,457	2,806	9,869	127	29,027	251,686
0.5 to 0.9	8,112	10,959	2,358	10,746	7,947	27,036	537	67,695	381,287
1.0 to 1.9	11,293	20,896	4,538	21,397	23,743	32,794	1,645	116,306	752,156
2.0 to 4.9	8,174	22,148	6,096	44,976	16,516	25,458	2,416	125,784	1,274,609
5.0 to 9.9	1,334	5,323	2,974	12,523	1,016	5,711	2,161	31,042	713,149
10 to 19.9	120	925	1,278	1,632	488	2,024	1,341	7,808	383,323
20 to 49.9	61	87	307	1,141	-	404	1,063	3,063	173,774
50 to 99.9	-	16	-	61	-	-	24	101	24,201
100 to 249.9	-	-	-	-	-	-	-	-	10,266
250 to 499.9	-	-	-	-	-	-	-	-	1,930
500 and over	-	-	-	-	-	-	-	-	441
Total	32,236	66,440	20,091	96,933	52,516	103,296	9,314	380,826	3,966,822

Source: Agricultural Census 1991, SIS

As compared with the national average, larger portion of holdings is under the smaller size in the DOKAP region, as shown in Table 11.

Table 11 Distribution of Agricultural Holdings by Size in DOKAP

Unit: %

Size of land (ha)	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
less than 0.5	9.7	9.2	12.6	4.6	5.3	9.6	1.4	7.6	6.3
0.5 to 0.9	25.2	16.5	11.7	11.1	15.1	26.2	5.8	17.8	9.6
1.0 to 1.9	35.0	31.5	22.6	22.1	45.2	31.7	17.7	30.5	19.0
2.0 to 4.9	25.4	33.3	30.3	46.4	31.4	24.6	25.9	33.0	32.1
5.0 to 9.9	4.1	8.0	14.8	12.9	1.9	5.5	23.2	8.2	18.0
10 to 19.9	0.4	1.4	6.4	1.7	0.9	2.0	14.4	2.1	9.7
20 to 49.9	0.2	0.1	1.5	1.2	-	0.4	11.4	0.8	4.4
50 to 99.9	-	0.0	-	0.1	-	-	0.3	0.0	0.6
100 to 249.9	-	-	-	-	-	-	-	-	0.3
250 to 499.9	-	-	-	-	-	-	-	-	0.0
500 and over	-	-	-	-	-	-	-	-	0.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: Calculations of the JICA Study Team based on Agricultural Census 1991, SIS

More than 25% of the holdings in the region are less than 1.0 ha in size, and nearly 90% are less than 5.0 ha, while that in Turkey is 16% and 67%, respectively. In Trabzon and Artvin, particularly, as high as 35% of the holdings are less than 1.0 ha, and more than 90% are less than 5.0 ha.

In Rize also, more than 95% of the holdings are less than 5.0 ha, and all holdings are less than 20 ha. In Bayburt, on the other hand, almost 50% of the holdings are more than 5.0 ha, compared with 11% in the region as a whole and with 33% in the nation.

(2) Area of holdings

The area of agricultural holdings in the DOKAP region totals 948,345 ha which corresponds to some 4% of that in Turkey, as shown in Table 12.

Table 12 Agricultural Land Area by Holding Size in DOKAP

Unit: ha

Size of land (ha)	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Less than 0.5	963	1,728	625	1,454	952	3,232	47	9,001	66,706
0.5 to 0.9	5,423	7,542	1,431	6,852	5,882	18,224	347	45,700	251,109
1.0 to 1.9	14,703	28,594	6,214	27,789	32,549	44,294	2,141	156,282	1,004,250
2.0 to 4.9	21,970	66,281	17,580	136,047	43,397	70,407	7,620	363,303	3,866,896
5.0 to 9.9	8,706	32,999	20,241	76,870	5,730	39,634	13,485	197,664	4,675,069
10 to 19.9	1,279	9,975	15,918	19,056	6,098	27,815	16,221	96,363	4,921,663
20 to 49.9	1,354	2,060	7,210	27,479	-	8,484	27,606	74,193	4,648,743
50 to 99.9	-	800	-	3,660	-	-	1,380	5,840	1,498,249
100 to 249.9	-	-	-	-	-	-	-	-	1,385,662
250 and over	-	-	-	-	-	-	-	-	1,132,751
Total	54,397	149,977	69,219	299,208	94,607	212,090	68,848	948,345	23,451,099

Source: Agricultural Census 1991, SIS

Ordu has the largest agricultural holding area with 299,208 ha, accounting for 32% of the region. Trabzon comes next with 212,090 ha (22%), followed by Giresun with 149,977 ha (16%), while Artvin has the smallest agricultural land area with 54,397 ha, corresponding to 6% of that in the region.

The largest land area with 363,303 ha which is 38% of the total agricultural land area in the region falls in the holding size category of between 2.0 to 5.0 ha. On the other hand, in Turkey as a whole, the largest agricultural land area is seen in the category of between 10 and 20 ha. More than 50% of the agricultural area in the region are under less than 5.0 ha holdings. Exception is Gumushane and Bayburt, in which land with holding size of more than 5.0 ha occupy 63% and 85%, respectively.

Average agricultural holding size in the DOKAP region is 2.49 ha, less than half of the national average of 5.91 ha, as shown in Table 13.

Table 13 Average Agricultural Holding Size in DOKAP

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Size (ha)	1.69	2.26	3.45	3.09	1.80	2.05	7.39	2.49	5.91

Source: Calculated by JICA Study Team based on the Agricultural Census 1991, SIS

The smallest average area is 1.69 ha for Artvin, followed by Rize with 1.80 ha, Trabzon with 2.05 ha. Only Bayburt has the larger average holding size with 7.39 ha than that in Turkey. The large difference in average holding size among provinces

may be explained by the topographic condition. Smaller average holding sizes are found in provinces having larger land area with steep slope.

2.4.3 Overall sector performance

(1) GRDP

Past GRDP in the agricultural sector of the DOKAP region from 1987 to 1997 is shown in Table 14.

Table 14 GRDP in Agricultural Sector in DOKAP and Turkey

Unit: million TL at 1987 constant price

	Crop & livestock	Forestry	Fishery	Total	Turkey
1987	640,907	45,675	69,319	755,901	13,314,272
1988	697,229	42,257	63,238	802,724	14,356,433
1989	656,469	41,502	40,771	738,742	13,272,220
1990	637,546	41,613	23,919	703,078	14,176,792
1991	627,943	40,160	31,018	699,121	14,048,843
1992	775,682	44,935	37,952	858,569	14,651,066
1993	565,417	38,436	48,896	652,749	14,462,970
1994	657,262	46,573	64,618	768,453	14,358,229
1995	631,366	44,468	52,004	727,838	14,640,222
1996	682,454	40,253	45,668	768,375	15,284,401
1997	627,565	34,640	42,116	704,321	14,927,152

Source: Gross Domestic Product by Provinces, Turkey, SIS

The crop and livestock subsector has had the dominant share with some 85 to 90% of the total agricultural GRDP. The rest is shared by forestry and fisheries subsectors more or less evenly.

The agricultural GRDP in the DOKAP region as a whole has been stagnant in the past 11 years, decreasing its share in the country from 5.7% in 1987 to 4.7% in 1997. It is noteworthy that the share of DOKAP fishery subsector in Turkey as a whole is as large as 14%, due to the dominant anchovy production.

GRDP in the agricultural sector for DOKAP in 1996 is shown in Table 15.

Table 15 GRDP in Agricultural Sector in DOKAP by Province, 1996

Unit: million TL at 1987 constant price

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Crops & livestock	53,472	119,076	26,716	239,389	116,531	114,788	12,482	682,454
Forestry	15,762	7,831	2,706	7,053	2,063	4,770	68	40,253
Fishery	377	4,116	117	5,976	11,900	23,078	104	45,668
Total	69,611	131,023	29,539	252,418	130,494	142,636	12,654	768,375

Source: Gross Domestic Product by Provinces, Turkey, SIS

Ordu is the largest producer in the agricultural sector in the DOKAP region with TL252,418 million, accounting for 33% of the total products in the region, followed by Trabzon with TL142,636 million, Giresun with TL131 million and Rize with TL130,494 million. Agricultural output in the inland provinces of Gumushane and Bayburt is very small with TL29,539 million and TL12,654 million, respectively, total of which corresponds only to 5.5% of the whole of the DOKAP region.

Subsector shares vary by provinces although the share of crop and livestock subsector is by far the largest. Crop and livestock subsector is much more important in Ordu and Bayburt, while forestry subsector contributes much to the economy in Artvin and Gumushane. Fishery subsector has significant share in Trabzon and Rize.

(2) Gross value added

Gross value added (GVA) for important crops, animal and animal products in the DOKAP region in 1996 was estimated using value of production data from SIS and crop budget data from PDAs. The results are shown in Table 16.

Table 16 Estimated GVA of Major Crops and Livestock in DOKAP, 1996

	Value of Prod.	GVA ratio	Unit: million TL	
			GVA	
			Current price	1987 const.
Crops	73,051,414	85%	62,079,939	347,809
Wheat	2,306,989	65%	1,499,543	7,405
Barley	1,024,070	65%	665,646	3,287
Maize	3,356,153	65%	2,181,499	10,773
Potatoes	5,228,041	75%	3,921,031	30,407
Hazelnut	27,209,149	94%	25,576,600	127,225
Tea	15,000,000	90%	13,500,000	67,153
Hay and straw	8,914,316	84%	7,466,404	57,900
Others	10,012,695	73%	7,269,217	43,661
Livestock	81,498,416	57%	46,422,306	285,690
Cattle	36,823,990	50%	18,411,995	113,310
Sheep	8,396,690	55%	4,618,180	28,421
Cow's milk	21,938,159	62%	13,601,658	83,707
Cattle's meat	3,866,873	60%	2,320,124	14,278
Honey	5,100,701	78%	3,978,546	24,485
Others	5,372,004	65%	3,491,803	21,489
Agricultural craft			7,237,100	48,955
Forestry	5,947,414	71%	4,210,769	40,253
Fishery	14,222,868	71%	10,098,236	45,668
Total	256,218,527	69%	176,470,656	768,375

Source: JICA Study Team's estimates based on data from SIS, MOF and PDAs

The most important crop in terms of GVA is hazelnut with TL127,225 million at 1987 constant price, accounting for 37% of the crop subsector's output, followed by

tea (TL67,163 million, 19%), hay and straw (TL57,900 million, 17%), and potatoes (TL30,407 million, 9%). In livestock subsectors, cattle production is the largest contributor of GVA, with the value of TL113,310 million which corresponds to 40% of the total livestock subsector's output. The second largest is cow's milk with TL83,707 million, accounting for 29% of the subsector total, followed by sheep, and honey.

2.4.4 Crop production

(1) Crops cultivated

A variety of crops are planted in the DOKAP region according to the varied soil and climate conditions. Among field crops, cereals are planted predominantly in the DOKAP region, as shown in Table 17.

Table 17 Harvested Area of Field Crops, Vegetables and Tea in DOKAP and Turkey, 1996

Unit: ha

Crop species	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Cereals	15,299	46,871	48,060	76,008	820	31,694	27,946	246,698	13,895,559
Pulses	886	3,370	6,421	1,003	154	930	1,927	14,691	1,872,749
Industrial crops	25	361	1,246	-	1	1,755	934	4,322	1,467,833
Oil seeds	180	-	-	-	-	-	-	180	701,711
Tuber crops	2,089	1,346	2,524	8,878	284	8,852	875	24,848	321,305
Fodder Crops	2,275	1,483	10,598	524	-	367	6,292	21,539	311,300
Field crops total	20,754	53,431	68,849	86,413	1,259	43,598	37,974	312,278	18,570,457
Vegetable total	2,406	4,081	796	3,616	757	1,885	255	13,796	785,308
Green Tea	8,600	2,221	-	26	50,054	15,842	-	76,743	76,743

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

More than 70% of the field crop area in the region or 247,000 ha are planted with cereals. In coastal area, maize is the major crop while in inland area wheat and barley are predominant, according to the different condition on soils and climate.

Other important field crops are: tubers, particularly potatoes, in Ordu and Trabzon; tobacco in Trabzon; sugar beets and fodder crops including cow vetches in Gumushane and Bayburt.

Vegetables are planted mainly in coastal areas, although the area is very limited.

Tea is one of the most important cash crops in the region, particularly in the eastern coastal areas centering on Rize province, where annual rainfall is abundant. The region is the only area producing tea in Turkey. Tea area in the region totals 76,743 ha in 1996, 65% of which or 50,054 ha is in Rize.

Fruits are also important in the DOKAP region. Various kinds of fruit trees are planted in the region, of which hazelnut is extremely important in the western coastal areas. Number of fruit bearing trees in the region is summarized and shown in Table 18, as data on fruit area by species are not available.

Table 18 Number of Fruit Bearing Trees in DOKAP and Turkey, 1996

Unit: '000 trees

Crop species	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Pome fruits	365	489	256	692	194	507	26	2,528	47,260
Stone fruits	465	187	115	175	60	253	5	1,258	124,513
Citrus	53	28	-	21	178	69	0	348	24,537
Nuts	2,577	55,249	114	83,842	878	20,581	0	163,241	304,009
Grape-like fruits	105	101	14	160	30	109	0	520	15,374

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

The number of nut trees amounts to 163,241,000, 99.7% of which or 162,790,000 are hazelnut. The number of hazelnut trees accounts for 60% of the country total. The hazelnut area is much concentrated in the western coastal areas including Ordu (83,727,000), Giresun (55,249,000) and Trabzon (20,581,000).

Other important fruits in the region as to the share of the number of trees in national total include: pears, apples, cherries, walnuts, mulberry and persimmon. It is noteworthy that Artvin produces many kinds of fruits despite the limited area.

Although planted area is very limited, kiwi fruit is becoming an increasingly important cash crop as an alternative to tea and hazelnut, in the region.

(2) Yield

Yields of crops in the DOKAP region are generally low, as compared with the national averages. Yields of major field crops in the region in 1996 are shown in Table 19.

Except tobacco and dry beans, yields of most crops are much lower than national average. Maize, potatoes and alfalfa shows particularly low yield.

Yield of green tea in Rize is the highest with 8.3 tons/ha among DOKAP provinces, followed by Trabzon (7.3 tons/ha), Artvin (6.5 tons/ha) and Giresun (5.0 ton/ha).

Table 19 Yield of Major Field Crops in DOKAP and Turkey, 1996

Unit: kg/ha

Crop species	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Wheat	1,434	1,342	1,589	1,116	-	1,372	1,281	1,389	1,985
Barley	1,717	1,705	2,154	958	-	944	1,557	1,661	2,203
Maize	1,940	2,047	767	1,462	1,945	1,860	1,370	1,706	3,640
Dry beans	<u>1,654</u>	1,260	1,564	<u>1,688</u>	1,068	1,044	1,111	<u>1,436</u>	1,335
Tobacco	<u>960</u>	<u>1,349</u>	-	-	<u>1,000</u>	<u>1,099</u>	-	<u>1,139</u>	952
Sugar beets	-	-	31,415	-	-	-	33,920	32,488	34,935
Potatoes	10,265	15,910	13,685	12,607	6,827	15,517	9,023	13,518	23,576
Alfalfa	7,874	7,633	6,166	6,076	-	5,025	6,517	6,542	14,833
Green tea	6,523	5,031	-	2,308	8,343	7,263	-	7,818	7,818

Source: Agricultural Structure 1996, State Institute of Statistics, Prime Ministry, Republic of Turkey

Fruit yield may be simply expressed as per fruit bearing tree basis. Yield of major fruits are shown in Table 20.

Table 20 Yield of Major Fruits in DOKAP and Turkey, 1996

Unit: kg/fruit bearing tree

Fruit species	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Pears	33	33	25	30	19	24	30	28	36
Apples	32	25	26	28	19	20	39	26	68
Cherries	30	32	<u>34</u>	18	11	26	-	27	32
Walnuts	24	<u>34</u>	30	19	13	21	-	23	33
Hazelnuts ^{1/}	<u>2,031</u>	1,379	1,308	1,497	744	<u>1,752</u>	-	1,493	1,650
Mulberry	<u>45</u>	<u>31</u>	<u>46</u>	24	10	21	-	31	28
Persimmons	23	-	-	<u>28</u>	19	17	-	25	26

Remarks: ^{1/} gram per ocak

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

Like field crops, yields of fruits are generally lower than national average, except mulberry and persimmons. Apples show among others low yield, less than 50% of the national average yield. Relatively higher yield was recorded for most fruits in Artvin while low performance is seen in Rize and Ordu.

(3) Production

Production of crops in the DOKAP region differs from province to province, reflecting difference in area and yield. Production of major field crops in the region is shown in Table 21.

It is obvious that coastal areas and inland areas do not compete with each other in terms of field crop production. Coastal area produces dominantly tea, maize and potatoes, while inland area produces more wheat, barley, sugar beets, and fodder crops. Artvin's contribution to the region is small, due to limited agricultural land.

Table 21 Production of Major Field Crops and Tea in DOKAP and Turkey, 1996

Unit: tons

Crop species	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Cereals	24,797	79,802	84,072	100,713	1,595	58,886	38,821	388,685	29,231,100
Wheat	12,188	24,112	<u>50,109</u>	16,306	-	59	22,315	125,089	18,500,000
Barley	4,177	<u>17,316</u>	<u>28,674</u>	8,587	-	34	12,036	70,824	8,000,000
Maize	8,198	<u>38,374</u>	891	<u>67,738</u>	1,595	<u>58,793</u>	37	175,626	2,000,000
Pulses	854	3,961	2,876	943	158	903	381	10,076	1,832,221
Dry beans	850	165	<u>2,674</u>	648	158	903	30	5,428	230,000
Cow vetches	4	<u>2,807</u>	-	160	-	-	-	2,971	160,000
Industrial crops	24	487	39,143	-	1	1,929	31,681	73,265	17,686,140
Tobacco	24	487	-	-	1	<u>1,929</u>	-	2,441	225,216
Sugar beets	-	-	<u>39,143</u>	-	-	-	<u>31,681</u>	70,824	14,543,277
Tuber crops	21,328	20,838	34,007	113,610	1,939	138,523	7,895	338,140	7,040,000
Potatoes	20,365	19,378	33,774	<u>111,395</u>	1,939	<u>132,128</u>	7,895	326,874	4,950,000
Fodder Crops	14,975	9,362	60,039	2,783	-	1,844	37,225	126,228	4,004,970
Alfalfa	12,189	7,770	<u>37,677</u>	2,631	-	1,844	<u>29,925</u>	92,036	3,381,515
Sainfoin	2,786	1,592	<u>22,362</u>	152	-	-	7,300	34,192	623,455
Green Tea	56,100	11,173	-	60	417,600	115,067	-	600,000	600,000

Note: Underlined figures show more than 20% of share of production in the DOKAP region

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

Relatively important field crops in the region in terms of production share in the nation may be maize and potatoes.

Production of major fruits in the DOKAP region is shown in Table 22. Unlike the case of field crops, fruits are mainly produced in three provinces: Artvin, Giresun and Ordu. Important fruits in terms of shares in national production include hazelnuts, kiwi, persimmons, mulberry, cherries and pears. Trabzon province also produces various fruits in significant amount.

Table 22 Production of Major Fruits in DOKAP and Turkey, 1996

Unit: tons

Fruit species	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Pome fruits	11,394	13,516	6,628	19,457	3,669	10,766	962	66,392	2,717,900
Pears	3,468	<u>5,880</u>	1,566	<u>5,829</u>	2,064	4,337	122	23,266	415,000
Apples	6,883	7,189	4,970	<u>13,073</u>	1,485	5,867	840	40,307	2,200,000
Stone fruits	8,995	4,738	2,956	2,598	655	3,780	120	23,842	2,925,400
Plums	<u>1,351</u>	<u>1,121</u>	430	1,041	409	1,101	85	5,538	195,000
Cherries	<u>3,356</u>	<u>2,785</u>	534	1,392	198	1,955	-	10,220	200,000
Sour cherries	374	182	<u>1,109</u>	88	19	133	14	1,919	110,000
Olive	<u>1,367</u>	-	-	9	-	<u>482</u>	-	1,858	1,800,000
Nuts	7,767	77,826	664	127,386	1,232	36,780	-	251,655	729,000
Walnuts	<u>2,544</u>	<u>1,610</u>	537	<u>1,628</u>	230	780	-	7,329	115,000
Hazelnuts	4,987	76,040	126	<u>125,356</u>	610	36,000	-	243,119	446,000
Grape-like fruits	7,070	4,801	624	4,377	737	2,942	-	20,551	4,283,485
Mulberry	<u>2,584</u>	<u>1,753</u>	604	<u>1,553</u>	85	893	-	7,472	74,000
Persimmons	<u>233</u>	-	-	<u>749</u>	126	21	-	1,129	9,400
Grapes	<u>3,587</u>	1,548	-	-	392	-	-	5,527	3,700,000
Kiwi fruit	1	3	-	3	<u>22</u>	3	-	32	85

Note: Underlined figures show more than 20% of share of production in the DOKAP region

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

Rize, Gumushane, and Bayburt provinces, on the other hand, produce less fruits due to very limited area for fruits. In Rize, however, kiwi fruit production is becoming increasingly popular, as an alternative crop for tea.

Production of major vegetables is shown in Table 23. Except for cabbage, which is dominantly produced in inland provinces of Gumushane and Bayburt, most vegetables are produced in the coastal provinces.

Table 23 Production of Major Vegetables in DOKAP and Turkey, 1996

Unit: tons

Vegetable species	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Leafy or stem	1,843	10,856	4,931	7,587	644	5,442	5,656	36,959	1,506,080
Cabbage	1,114	1,145	<u>4,888</u>	371	-	-	<u>5,600</u>	13,118	575,000
Black cabbage	540	8,343	20	6,226	644	4,265	-	20,038	103,000
Leguminous	3,550	8,280	2,444	3,099	564	3,005	272	21,214	607,750
Bean, fresh	3,195	8,029	2,444	2,652	331	2,715	260	19,626	455,000
Fruit bearing	5,305	7,115	348	5,985	324	5,637	215	24,929	17,321,000
Root, bulb & tuberous	646	607	76	236	93	400	62	2,120	696,450

Note: Underlined figures show more than 20% of share of production in the DOKAP region

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

Although overall vegetable production in the region is very small compared to national total, black cabbage produced mainly in Giresun, Ordu, and Trabzon accounts for as high as 20% of the country's total production.

(4) Fertilizer use

The amount of chemical fertilizer used in the DOKAP region in 1996 is shown in Table 24.

Table 24 Amount of Chemical Fertilizer Used by Element in DOKAP and Turkey, 1996

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
21% Nitrogen	1,183	44,748	6,484	74,520	6,534	29,055	5,518	168,042	5,417,964
(share in %)	0.7	26.6	3.9	44.3	3.9	17.3	3.3	100.0	
16-18% Phosphorus	344	14,680	2,527	14,231	6,817	3,185	4,404	46,188	3,374,777
(share in %)	0.7	31.8	5.5	30.8	14.8	6.9	9.5	100.0	
48-52% Potassium	32	699	163	19	1,855	665	112	3,545	161,117
(share in %)	0.9	19.7	4.6	0.5	52.3	18.8	3.2	100.0	
Total	1,560	60,185	9,183	88,845	15,225	32,929	10,047	217,975	8,953,858
(share in %)	0.7	27.6	4.2	40.8	7.0	15.1	4.6	100.0	

Source: Agricultural Structure 1996, State Institute of Statistics

Among three major fertilizer elements, nitrogen fertilizer is by far the most important in the region, followed by phosphorus and potassium; the same tendency as in the country.

The amount of nitrogen fertilizer with 21% nitrogen (N) equivalent used in the region in 1996 was 168,042 tons, 44% of which or 74,520 tons were used in Ordu, followed by Giresun (26.6% or 44,748 tons), and Trabzon (17.3% or 29,055 tons).

Phosphorus fertilizer with 16 to 18% phosphate (P_2O_5) equivalent used in the region amounted 46,188 tons, 32% of which or 14,680 tons were used in Giresun, followed by Ordu (31% or 14,231 tons), and Rize (15% or 6,817 tons).

Of the total of 3,545 tons of potassium fertilizer with 48 to 52% potassium (K_2O) equivalent used in DOKAP, 52% of which or 1,833 tons were used in Rize, followed by Giresun (20% or 699 tons), and Trabzon (19% or 665 tons).

In Artvin, Gumushane, and Bayburt provinces, the amount of chemical fertilizer used was small.

In order to know the amount of fertilizer element applied per unit area, amount of fertilizer is converted into elements basis using effective element rate, which is further divided by agricultural land area in each province. The results are shown in Table 25.

Table 25 Element Application Rate per Unit Area in DOKAP and Turkey, 1996

Unit: kg/ha

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Nitrogen (N)	6.7	61.5	19.1	59.7	25.3	55.1	30.3	48.6	42.2
Phosphate (P ₂ O ₅)	1.6	16.3	6.0	9.2	21.4	4.9	19.6	10.8	21.3
Potassium (K ₂ O)	0.4	2.3	1.1	0.0	17.1	3.0	1.5	2.4	3.0

Source: JICA Study Team based on the Agricultural Structure 1996, State Institute of Statistics

Balance of applied amount of fertilizer among three major elements may be divided into several patterns: (i) Giresun, Ordu and Trabzon with high level of nitrogen application; (ii) Rize with balanced but low level application of three major elements; (iii) Gumushane and Bayburt with low level of nitrogen application and relatively higher level of phosphate application; and (iv) Artvin with very low level of fertilizer application.

This difference in fertilizer application may be reflected on the difference in cropping system. For example, the dominant crop in Rize is tea, which require high level of potassium. Yet fertilizer application level is generally low, especially phosphorus and potassium.

Aside from the use of chemical fertilizers, considerable amount of organic fertilizer including animal dung is widely used to maintain soil fertility. Quantity of the elements augmented to soils through this activity is, however, not known.

(5) Tractors

There are some 6,000 tractors in the DOKAP region, the number of which accounts for less than 1% of the total in the country, as shown in Table 26.

Table 26 Number of Tractors in DOKAP and Turkey, 1996

Type of tractor	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Two-wheel tractors	14	9	0	210	0	1	0	234	5,695
Four-wheel tractors	256	1,144	1,982	1,030	0	57	1,280	5,749	801,209
Less than 35 HP	50	9	420	135	-	12	-	626	97,914
35 HP and over	206	1,135	1,562	895	-	45	1,280	5,123	703,295
Track-laying tractor	0	0	26	87	0	0	0	113	399
Grand Total	270	1,153	2,008	1,327	0	58	1,280	6,096	807,303

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

The smaller share of the number of tractors in the region can be explained by its topographic conditions. With limited flat land, mechanization is difficult. Rize, where almost all lands are planted with tea on steep slope, has no tractors.

Most popular tractors in DOKAP are four-wheel ones with more than 35 horsepower (HP). They are commonly seen in inland areas where field crops are cultivated in larger scale. Gumushane province has the largest number of tractors with 2,008, 75% of which are four wheel ones with more than 35 HP, followed by Ordu (1,327), Bayburt (1,280) and Giresun (1,153). In Ordu province, however, more than 15% of the tractors are two-wheel ones, suggesting a significant number of small scale farmers exist.

2.4.5 Livestock¹

Livestock in the DOKAP region is also a very important economic activity. In particular, cattle, dairy, and honey production are of national importance.

(1) Livestock population

Livestock population in the region in 1996 is shown in Table 27.

Table 27 Number of Major Animals in DOKAP and Turkey, 1996

Livestock	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Sheep	107,080	<u>198,820</u>	130,280	158,270	9,610	185,000	157,410	946,470	33,072,000
Ordinary goats	<u>20,730</u>	10,930	10,930	1,300	4,250	10,800	3,130	62,070	8,242,000
Cattle	99,600	155,240	102,350	<u>241,960</u>	65,170	<u>205,400</u>	65,150	934,870	11,886,000
Buffaloes	60	<u>5,080</u>	1,620	<u>3,900</u>	-	2,300	1,080	14,040	235,000
Horses	1,850	2,960	1,500	<u>9,350</u>	390	560	800	17,410	391,000
Mules	580	<u>2,990</u>	880	<u>7,020</u>	440	400	-	12,310	154,000
Asses	1,710	1,640	2,070	<u>11,180</u>	60	440	510	17,610	689,000
Hens	88,420	298,800	219,000	535,200	67,700	278,100	133,000	1,620,220	152,956,970
- Broiler	4,400	1,500	-	<u>35,500</u>	-	-	3,500	44,900	99,073,900
- Laying hens	84,020	297,300	219,000	<u>499,700</u>	67,700	278,100	129,500	1,575,320	53,883,070
Turkeys	110	1,700	13,150	1,550	<u>14,000</u>	370	5,000	35,880	3,063,540
Ducks	2,730	3,070	2,560	2,500	<u>8,100</u>	610	2,300	21,870	1,093,860
Geese	200	610	<u>6,120</u>	180	-	-	1,000	8,110	1,641,845
Beehives	42,756	104,676	39,620	<u>302,361</u>	44,091	78,064	24,110	635,678	3,964,718
Milked animal	125,450	223,920	146,000	210,380	50,590	226,370	83,110	1,065,820	29,697,910
- Sheep	54,610	<u>127,040</u>	79,160	84,390	5,020	98,900	56,420	505,540	18,890,080
- Cow	60,180	87,950	59,010	<u>123,440</u>	43,030	<u>119,700</u>	24,710	518,020	5,968,220

Note: Underlined figures show more than 20% of share of production in the DOKAP region

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

Major livestock in the region are sheep, cattle, laying hens, bees, and dairy animals. Horses, buffaloes, mules, asses, etc., are mainly for draft.

Total number of sheep in the region in 1996 was 946,470, which accounts for less than 3% of the country's total. All sheep raised in the region are local breeds which

¹ In this text, livestock includes poultry and apiculture, unless otherwise mentioned.

are well adapted to the mountainous topographic conditions, and they are more or less evenly distributed throughout the region except Rize. The number of cattle in DOKAP in 1996 was 934,870, accounting for some 8% of the nation's total. Local breeds and cross breeds are almost the same in number, although their proportion in number differs among provinces.

Ordu has the most cattle in the region with a total number of 241,960 or 26% of the region's total, followed by Trabzon (205,400 with a share of 22%), Giresun (155,240 with 17%), Gumushane (102,350 with 11%), and Artvin (99,600 with 11%).

The number of laying hens in 1996 totaled 1.57 million in the region, accounting for 2.9% of Turkey's total. Ordu has the most hens with 499,700, which is 32% of the region. Next comes Giresun with 298,800 (19% of the region's total), followed by Trabzon (278,100, 18%), and Gumushane (219,000, 14%).

Broilers have not yet been so popular in the region. The total number of broilers in 1996 was only 44,900, 79% of which or 35,500 were in Ordu.

Apiculture in DOKAP has been an important business. The number of beehives in 1996 totaled 635,678, which accounts for 16% of the country's total. Ordu has the most beehives in the region with 302,361, followed by Giresun (104,676), and Trabzon (78,064).

Draft animals are seen mainly in Ordu province, where sloping agricultural lands are dominant, while other poultry such as turkeys, ducks, and geese are relatively important in Rize and Gumushane.

Important milked animals in DOKAP are cow and sheep. There were about 500,000 head each of cow and sheep in the region in 1996. Giresun has the largest number of milking sheep with 127,040, followed by Trabzon (98,900), Ordu (84,390), Gumushane (79,160), etc., while the most milking cows are found in Ordu with 123,440, followed by Trabzon (119,700), and Giresun (87,950).

(2) Animal products

Among animal products produced in the DOKAP region, important ones in terms of production amount are cow milk, beef, cattle hides, hen eggs, honey, and wax. The production of animal products in the region in 1996 is shown in Table 28.

Table 28 Animal Products in DOKAP and Turkey, 1996

Unit: tons

Animal products	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Milk	65,585	106,050	65,650	183,800	56,770	210,740	30,500	719,095	10,760,915
Sheep milk	1,690	<u>4,575</u>	3,405	3,205	270	<u>5,635</u>	2,425	21,205	921,660
Cow milk	63,115	98,015	60,760	<u>178,390</u>	56,350	<u>202,915</u>	27,550	687,095	9,465,620
Meat ^{1/}	710	2,180	775	2,800	1,250	4,345	360	12,420	416,815
Sheep meat	160	115	<u>230</u>	100	15	105	85	810	98,125
Beef	505	1,955	505	<u>2,660</u>	1,235	<u>4,185</u>	250	11,295	301,835
Hides (number)	16,360	37,490	19,070	32,720	14,330	51,500	6,920	178,390	8,883,170
Sheep hides	8,380	7,580	<u>12,500</u>	6,560	800	6,100	4,720	46,640	6,055,330
Cattle hides	5,330	<u>27,370</u>	5,090	<u>25,820</u>	13,510	<u>44,510</u>	1,640	123,270	1,991,020
Wool	159	<u>376</u>	198	248	21	<u>480</u>	239	1,721	49,847
Hair	8	6	4	1	1	10	1	31	3,310
Poultry meat	-	24	23	<u>101</u>	17	<u>283</u>	25	473	422,094
Hen eggs ^{2/}	479	2,355	1,478	<u>5,035</u>	870	2,077	839	13,133	611,701
Honey	774	1,341	911	<u>7,615</u>	478	1,160	151	12,430	62,950
Wax	27	42	35	<u>513</u>	35	67	2	721	3,235

Note: Underlined figures show more than 20% of share of production in the DOKAP region

Remarks: ^{1/} includes data from the municipal of slaughterhouses and the Moslem festival of sacrifice;

^{2/} 16,000 eggs equals to 1 ton.

Source: JICA Study Team based on Agricultural Structure 1996, State Institute of Statistics

Total cow milk production in the DOKAP region in 1996 was 687 thousand tons, which accounted for 7.3% of the country's total. Trabzon produced cow milk most among DOKAP provinces with 202,915 tons, followed by Ordu (178,390 tons), Giresun (98,015 tons), and Artvin (63,115 tons). Sheep milk production in the region in the same year was 21,000 tons or only 3% of cow milk.

In 1996, cattle meat production in the region totaled 11,295 tons, which shared only 3.7% of the Turkey total. Trabzon is the largest meat production province with 4,185 tons, followed by Ordu (2,660 tons), and Giresun (1,955 tons). Small amount of sheep meat was produced in DOKAP with 810 tons, accounting for less than 1% of the national total and 6.5% of the total meat production in the region. In Gumushane, Bayburt, and Artvin provinces, however, sheep meat is relatively important with higher share in total meat production.

Total hide production in DOKAP in 1996 was 178,390, 69% of which or 123,270 were from cattle while 26% or 46,640 were from sheep. The share of the region's cattle hide production in national production was 6.2%, and that of sheep hides was 0.8%. Trabzon produced the largest number of cattle hides with 44,510, followed by Ordu (25,820) and Giresun (27,370). Sheep hide production in Gumushane, Bayburt and Artvin surpasses the cattle hide production, although the number is not so big.

The production of honey and wax in the DOKAP region is particularly important in the nation. Total honey and wax production in the region as a whole in 1996 were 12,430 tons for honey, and 721 tons for wax, respectively, each sharing 20% and 22% of the national total production.

Ordu is the dominant honey and wax producer with the production of 7,615 tons for honey and 513 tons for wax, respectively, both of which accounted for more than 60% of the region's total production.

For other animal products, either Trabzon (for wool, hair, and poultry meat) or Ordu (chicken eggs) is the center for production.

2.5 Forestry

2.5.1 Forest situation

(1) Forest area

Forest area in the DOKAP region accounts for 34% of the area or 13,427 km². The forest coverage ratio in the region is larger than that in Turkey as a whole (27%). Distribution of the forest in the region is shown in Table 29.

Table 29 Forest Area by Type in DOKAP, 1999

Unit: ha

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
High Forest	277,650	225,388	122,549	168,405	134,230	157,487	5,205	1,090,914
Coniferous	166,368	92,218	109,177	28,420	19,019	45,224	4,808	465,234
Broad leaf	52,716	96,157	4,441	129,420	46,018	73,346	97	402,195
Mixed	58,566	37,013	8,931	10,565	69,193	38,917	300	223,485
Coppice	112,799	19,922	43,110	16,254	24,187	26,589	8,958	251,819
Total	390,449	245,310	165,659	184,659	158,417	184,076	14,163	1,342,733

Source: Ministry of Forestry

Forest consists of high forest and coppice, the former being far more important in economic value, while the latter is also important in terms of socio-economic and environmental value. All the provinces except Bayburt have dominantly larger high forest areas than coppice area.

Major tree species found in DOKAP are scotch pine and spruce in coniferous trees, and beech, alder oak and chestnut in broad leaf trees. Other tree species include fir, juniper, hornbeam, poplar, etc.

Artvin has the largest forest area in DOKAP with 390,449 ha, corresponding to 29.1% of the total forest area, followed by Giresun with 245,310 ha or 18.3% of the total, Ordu (184,659 ha or 13.8%), and Trabzon (184,076 ha or 13.7%) while

Bayburt has 14,163 ha of forest area which accounts for 1.1% of the regional forest area.

Dominant tree types vary from province to province. In Artvin and Gumushane, coniferous high forests are dominant, while in Ordu and Trabzon, broadleaved forests represent the largest area. Giresun has almost same area for coniferous and for broadleaved forests, respectively. Rize has the largest mixed forests.

(2) Condition of forests

Forest area has been classified into two categories in terms of condition: normal forest and degraded forest. The degraded forests are defined as the forests affected by human activities such as logging, grazing, forest fire, etc.

Although the extent of degradation varies, degraded forest area is more than 50% of the total forest area in DOKAP as well as the country as a whole, as shown in Table 30. Artvin, Ordu, and Trabzon provinces have relatively well-preserved high forest areas with degraded forest percentage ranging from 30% to 34%.

Table 30 Share of Degraded Forest Area in DOKAP, 1999

Forest Type	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
High forest	33.4%	46.9%	53.8%	30.3%	66.6%	31.1%	89.0%	42.0%	42.9%
Coppice	93.8%	93.1%	93.6%	99.5%	100.0%	97.9%	63.3%	94.0%	72.1%
Total	50.8%	50.7%	64.2%	36.4%	71.7%	40.8%	72.8%	51.8%	51.9%

Source: JICA Study Team based on the primary data from the Ministry of Forestry

On the other hand, high forests in the provinces of Gumushane, Rize and Bayburt are more degraded than Turkey as a whole. Coppice forests in the DOKAP region are mostly degraded with an average degradation rate of as high as 94%, as compared with the national average of 72%. High degradation of coppice forest in the DOKAP region may explain a threat to environmental degradation such as erosion, floods, landslides, etc.

As a result, forests in Ordu and Trabzon are relatively well-preserved while Gumushane, Rize and Bayburt need to pay more attention to forest degradation issues.

(3) Forest area and standing volume by category

Forest areas are classified broadly into six categories: (i) protected forest area, (ii) production forest area, (iii) national parks, (iv) nature parks, (v) nature reserve, and (vi) private forest. Areal distribution of those areas in DOKAP are shown in Table 31.

Table 31 Areal Distribution of Forests by Category in DOKAP, 1999

Unit: ha

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Protected forest	79,911	46,423	2,445	54,121	53,326	91,250	-	327,474
Production forest	273,140	199,069	162,134	130,453	95,091	91,933	15,531	967,351
National parks	13,909	-	-	-	8,960	897	-	23,766
Nature parks	-	-	-	-	-	1,212	-	1,212
Nature reserve	1,191	-	263	-	-	-	-	1,454
Private forest	-	35	-	748	-	-	-	783
Total	368,151	245,527	164,842	185,322	157,377	185,291	15,531	1,322,040

Source: Ministry of Forestry

Production forest area where logging activities are allowed totals 967,351 ha in the DOKAP region, accounting for 73.2% of the region's total forest area. Next comes protected forest area, where logging activities are not allowed, covering 327,474 ha or 24.8% of the total. In practice, however, protected forest areas have been deteriorated in terms of standing volume per ha by illegal logging, over-grazing, etc.

The total forest area of national parks, nature parks and nature reserve is 26,432 ha, corresponding to merely 2.0% of the region's total forest area. Private forests cover only 783 ha, still negligible.

Standing volume of forests in the region is as shown in Table 32.

Table 32 Standing Volume of Forests by Category in DOKAP, 1999

Unit 1,000m³

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Protected forest	5,553	2,330	157	2,689	2,201	4,902	0	17,833
Production forest	33,169	23,144	8,387	13,996	10,239	11,730	309	100,973
National parks	3,675	-	-	-	1,709	249	-	5,633
Nature parks	-	-	-	-	-	323	-	323
Nature reserve	352	-	77	-	-	-	-	429
Private forest	-	4	-	92	-	-	-	96
Total	42,749	25,478	8,621	16,777	14,150	17,204	309	125,287

Source: Ministry of Forestry

Of the total standing volume of the forests with 125 million m³, 81% of which, or 101 million m³, are found in the production forest. Protected forests have 17.8 million m³, or 14%, of the total, followed by national parks with 5.6 million m³ or 4.5% of the total.

(4) Incremental volume and annual allowable cut of production forests

Annual incremental volume and annual allowable cut of the production forests in DOKAP are shown in Table 33.

Table 33 Incremental Volume and Annual Allowable Cut of Production Forest in DOKAP, 1999Unit: m³

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
High Forest	609,520	502,332	190,803	332,754	77,039	285,565	1,519	1,999,532
Degraded High Forest	20,022	59,794	15,804	14,674	36,730	6,472	1,197	154,693
Coppice Forest	5,528	2,183	2,846	0	0	529	8,592	19,679
Degraded Coppice Forest	20,409	5,050	5,597	18,335	15,341	2,165	5,090	71,987
Total	655,479	569,359	215,051	365,763	129,110	294,731	16,398	2,245,890
Annual Allowable Cut	398,817	225,082	95,113	174,606	65,712	143,653	6,464	1,109,446

Source: Ministry of Forestry

Except Bayburt, high forest accounts for most incremental volume of the whole production forests. Total incremental volume of the production forest is 2,245,890 m³, 89% of which or 1,999,532 m³ comes from high forest.

Total annual allowable cut (AAC) in the region is 1,109,446 m³. Artvin has the largest AAC with 398,817 m³, accounting for 36% of the region's AAC, followed by Giresun (225,082 m³ or 20% of the total), Ordu (174,606 m³ or 16%), Trabzon (143,653 m³ or 13%), etc. The ratio of AAC to incremental volume in the region is 0.49, ranging from 0.39 in Bayburt to 0.61 in Artvin.

2.5.2 Silvicultural activities

Silviculture refers to forest stand management, and includes activities of: (i) natural regeneration, (ii) cleaning/weeding, (iii) release cutting, (iv) establishment of energy forest, (v) artificial regeneration, (vi) artificial regeneration culture maintenance and (vii) reforestation and erosion maintenance. These activities having been done in the DOKAP region in the last five years are shown in Table 34.

Table 34 Silvicultural Activities in DOKAP, 1994-1998

Unit: ha

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Natural Regeneration	11	590	119	54	0	59	0	833
Cleaning/weeding	1,863	5,480	1,793	5,194	0	1,104	0	15,434
Thinning	110	46	95	600	0	61	0	912
Establishment of Energy Forest	286	0	70	32	0	0	152	540
Artificial Regeneration	1,260	1,036	220	1,226	235	557	0	4,534
Artificial Regeneration Culture Maintenance	12,832	13,334	2,986	8,762	3,070	8,733	80	49,797
Reforestation and Erosion Maintenance	10,162	12,549	2,294	5,265	7,718	11,591	538	50,117

Source: Ministry of Forestry

Reforestation and erosion maintenance and artificial regeneration culture maintenance are more active in Artvin, Giresun, Ordu, Rize and Trabzon. Cleaning and weeding are widely practiced in Giresun and Ordu. Natural regeneration,

thinning and energy forest establishment seem not to be major activities. The work quantities in each activity have been decreasing in the last three years in all provinces due to budget constraint.

2.5.3 Afforestation and erosion control activities

Afforestation and erosion control activities put more emphasis on conservation of forests. They consist of: (i) reforestation, (ii) erosion control, (iii) range rehabilitation, (iv) green belt and (v) private plantation. These past activities in DOKAP are shown in Table 35.

Erosion control is a major activity in Artvin and Gumushane while reforestation is more important in Trabzon, Ordu and Rize. Gumushane has been practicing these activities rather constantly, while they are erratic in other provinces.

Table 35 Afforestation and Erosion Control Activities in DOKAP, 1994-1998

Unit: ha

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Reforestation	732	841	307	679	507	1,801	0	4,867
Erosion Control	6,028	705	2,067	0	0	627	464	9,891
Range Rehabilitation	0	35	650	0	0	50	0	735
Green Belt	0	0	1,337	0	0	0	364	1,701
Private Plantation	27	0	121	1,255	0	0	141	1,544

Source: Ministry of Forestry

2.5.4 Forest villages

Villages located within or adjacent to forest areas are considered as forest villages according to the forest legislation. In the DOKAP region, there are 1,459 forest villages, accounting for 54% of all villages in the region, as shown in Table 36.

Table 36 Number of Village by Category in DOKAP

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Forest Villages								
Inner	160	76	57	72	41	24	-	430
Adjacent	143	222	125	287	69	156	27	1,029
Total	303	298	182	359	110	180	27	1,459
Total Villages	310	554	325	501	349	482	169	2,690
Share (%)	98	54	56	72	32	37	16	54

Source: Ministry of Forestry

The share of forest villages in total varies from province to province. Almost all villages in Artvin are forest villages while in Bayburt there are only 27 forest villages out of 169 villages. With the exception for Artvin where more than half of the forest villages are located within the forest area, other provinces have fewer

“inner” forest villages than “adjacent” ones. Bayburt has no “inner” village. In DOKAP as a whole, 29% of the forest villages or 430 are located inside forest.

Population of forest villages in DOKAP is 547,934 as of 1999, accounting for 54% of the total village population, as shown in Table 37.

Table 37 Population of Villages by Category in DOKAP, 1999

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Forest Villages								
Inner	47,769	38,193	14,456	31,382	7,994	10,461	-	150,255
Adjacent	45,152	75,913	22,067	147,798	24,123	74,081	8,545	397,679
Total	92,921	114,106	36,523	179,180	32,117	84,542	8,545	547,934
Total	100,564	197,598	65,578	255,311	131,645	229,084	39,363	1,019,143

Source: Ministry of Forestry

Average population per village does not differ between forest villages and other villages in DOKAP as a whole: 376 for forest villages versus 383 for other villages.

There seems to be no relationship between the village type and population size. Only in Rize, there is a tendency that inner forest villages are smaller in population than adjacent ones, and that forest villages are smaller than other villages.

Life of forest villagers are severely constrained by various factors. Social infrastructure including roads, drinking water, electricity, etc., and other support services like agricultural extension, land and water resources development, education, health are relatively poor in the forest villages.

Difficult terrain conditions, shallow top soils and long and cold winter restrict agricultural activities. The agricultural land is limited due to the coverage of state forest and communal grazing lands nearby. Significant parts of the existing agricultural lands have been gained by encroachment into forest areas.

Animal husbandry is a major economic activity of the forest villages. Most village households, even those who possess no land of their own, own one or two cows and a few sheep and goats, most of which are local breeds with low productivity.

Employment in the forestry activities (felling, extraction, transportation, nursery production, reforestation, forest maintenance) is one of the main sources of income, although it is generally seasonal and only for short duration. In addition to this, some other rights and supports are also provided to the forest villagers by the forestry organization, including provision of logs and fuelwood needs at subsidized prices and part of fuelwood production for sales in the market.

Scarcity of the employment opportunities and difficult living conditions lead the forest villages populations to seek alternative job opportunities outside the village areas, promoting out-migration.

Seasonal migration results in young and middle age male members of the forest villages going to urban areas leaving their families in the villages to work as unskilled labor (mostly in construction sector) for six to eight months a year.

However, living apart from the family members for long periods creates serious social strains and suffering. Work burden of women is significantly increased. Men work and live under difficult conditions to earn and save money for the family needs.

The Forest Village Relations General Directorate (ORKOY), organization of the Ministry of Forestry has been assisting forest villagers in leading better lives by providing them with various services including credit and technical assistance.

ORKOY encourages forest villagers to generate more income by extending credits for various agricultural activities such as milking cow and sheep, apiculture, fresh water fish culture, mushrooms, and greenhouses, all of which do not need large area.

2.6 Agricultural and Forestry Support Services

2.6.1 Irrigation

(1) Institutions related to irrigation development

There are two official agencies responsible for irrigation development: DSI and GDRS. While DSI is responsible basically for large scale irrigation development, GDRS handles small scale development. The large scale development is defined either by the discharge capacity of canal with more than 0.5 m³/l in case of head works type irrigation, or by the crest height with more than 20 m in case of reservoir type irrigation.

Irrigation development is also planned and implemented by the private sector including individual farmers on their own agricultural areas.

DSI and GDRS projects are planned by them and implemented by private contractors under the supervision of those agencies using public funds. While the development by the private sector will be planned and implemented by their own resources.

After the completion of projects, both DSI and GDRS will be responsible for operation and maintenance (O&M) of the systems in principle. For GDRS projects, however, there are a few cases that organized beneficiaries take over the responsibility for O&M.

(2) Situation of irrigation development

Of the irrigable area of 635,434 ha, 26% or 166,522 ha are covered by either existing, ongoing or planned projects as shown in Table 38. Gumushane has the most development in terms of irrigation with a total project area of 75,342 ha, which is nearly 80% of the area suitable for irrigation in the province. Bayburt has the second largest project area with 50,484 ha accounting for 45% of the area suitable for irrigation. These two provinces shares 76% of the total irrigation project area in the DOKAP region.

Table 38 Area Suitable for Irrigation and Project Area in DOKAP

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Area suitable for irrigation (ha)	77,668	120,883	94,483	119,498	50,292	59,773	112,837	635,434
Irrigated area by operation body (ha)	14,827	10,194	27,023	1,658	0	2,672	14,527	70,901
- DSI	0	295	725	0	0	0	675	1,695
- GDRS	10,827	4,600	16,566	1,358	0	2,452	9,450	45,253
- Cooperatives	0	0	263	0	0	0	216	479
- Private (Individual)	4,000	5,299	9,469	300	0	220	4,186	23,474
Ongoing project area (ha)	1,766	1,238	15,444	0	0	26	20,897	39,371
Planned project area (ha)	5,882	967	32,875	376	300	790	15,060	56,250
Total project area (ha)	22,475	12,399	75,342	2,034	300	3,488	50,484	166,522

Source: DSI and GDRS

As the coastal area receives sufficient rainfall, other provinces seem not to need as much irrigation development as what they are physically capable of supporting. Of all the project areas, 70,901 ha are irrigated, 39,371 ha are under construction and 56,250 ha have been studied.

Large scale development projects

There are 19 large scale irrigation projects under DSI in the three provinces of the DOKAP region with the total area of 51,658 ha, as shown in Table 39.

Table 39 Large Scale Irrigation Projects in DOKAP

	Giresun		Gumushane		Bayburt		DOKAP	
	Nos.	Area (ha)	Nos.	Area (ha)	Nos.	Area (ha)	Nos.	Area (ha)
Existing	2	295	3	725	1	675	6	1,695
Ongoing	1	183	4	14,039	2	19,665	7	33,887
Planned			2	5,827	4	10,249	6	16,076
Total	3	478	9	20,591	7	30,589	19	51,658

Source: DSI, 1999

At present there are six existing irrigation projects with a total area of 1,695 ha, accounting only for 3.3% of the total project area. There are seven projects, covering 33,887 ha or 65.6% of the total as of 1999, while six planned projects amounts to 16,076 ha, sharing 31.1% of the total.

Over 99% of the projects are concentrated in Gumushane and Bayburt provinces in terms of project area. In Bayburt, the Aydin-tepe or Masat irrigation project with a total irrigation area of 10,348 ha is expected to start operation soon. For other projects, however, construction works have been delayed due to budget constraints.

Small scale development projects

There are 845 existing projects with a total area of 45,253 ha under GDRS, as shown in Table 40.

Table 40 Summary of Small Irrigation Projects under GDRS in DOKAP

Province District	Existing		Ongoing		Planned				Grand Total	
	Nos.	Area (ha)	Nos.	Area (ha)	New Irrigation		Maint. & Repair		Nos.	Area (ha)
Artvin	233	10,827	13	1,766	105	5,882	15	-	351	18,475
Ardanuc	36	1,074	4	1,356	24	1,480	1	-	64	3,910
Borcka	0	0	0	0	11	1,535	0	-	11	1,535
Merkez	48	1,924	3	97	19	651	1	-	70	2,672
Murgul	12	45	0	0	4	204	0	-	16	249
Savsat	53	3,598	2	0	19	928	3	-	74	4,526
Yusufeli	84	4,186	4	313	28	1,084	10	-	116	5,583
Giresun	127	4,600	15	1,055	30	967	10	-	172	6,622
Alucra	25	1,051	3	159	11	553	0	-	39	1,763
Camoluk	31	641	5	192	7	142	4	-	43	975
Sebinkarahisar	71	2,908	7	704	12	272	6	-	90	3,884
Gumushane	300	16,566	23	1,405	100	27,048	19	-	423	45,019
Kelkit	100	7,593	6	351	26	7,481	4	-	132	15,425
Kose	11	972	1	229	5	1,029	1	-	17	2,230
Kurtun	17	618	0	0	4	228	0	-	21	846
Merkez	71	2,177	6	262	31	3,501	11	-	108	5,940
Siran	62	4,055	6	500	12	8,243	1	-	80	12,798
Torul	39	1,151	4	63	22	6,566	2	-	65	7,780
Ordu	53	1,358	1	0	3	376	1	-	57	1,734
Akkus	2	42	0	0	0	0	0	-	2	42
Mesudiye	50	1,276	1	0	2	136	1	-	53	1,412
Unye	1	40	0	0	1	240	0	-	2	280
Rize	0	0	0	0	1	300	0	-	1	300
Ikzdere	0	0	0	0	1	300	0	-	1	300
Trabzon	45	2,452	13	26	19	790	4	-	77	3,268
Akcaabat	24	1,745	1	26	5	104	1	-	30	1,875
Arsin	1	52	0	0	1	64	0	-	2	116
Besikduzu	2	96	0	0	1	30	0	-	3	126
Carsibasi	0	0	0	0	2	21	0	-	2	21
Caykara	0	0	0	0	1	29	0	-	1	29
Duzkoy	0	0	0	0	1	25	0	-	1	25
Kinik	0	0	0	0	1	30	0	-	1	30
Macka	8	278	0	0	4	61	3	-	12	339
Merkez	5	105	0	0	1	7	0	-	6	112
Salpazari	0	0	0	0	1	9	0	-	1	9
Vakfikebir	1	17	0	0	1	410	0	-	2	427
Yomra	4	159	0	0	0	0	0	-	4	159
Bayburt	87	9,450	13	1,232	62	4,811	12	-	162	15,493
Aydintepe	1	52	2	136	4	86	1	-	7	274
Demirozu	14	1,028	2	865	4	474	1	-	20	2,367
Merkez	72	8,370	9	231	54	4,251	10	-	135	12,852
DOKAP Total	845	45,253	66	5,484	320	40,174	61	-	1,243	90,911

Source: GDRS

Almost all existing projects are found in inland provinces and inland counties of coastal provinces. Gumushane has the largest irrigation area with 16,566 ha by 300 projects, followed by Artvin (10,827 ha with 233 projects), Bayburt (9,450 ha with

87 projects), etc. Out of 845 projects, 61 projects need repair works on the canal systems.

Ongoing projects in the DOKAP region as a whole totals 66 covering 5,484 ha. Many of these projects started construction in early 1990s and have been expected to be completed in three years. Because of the lack of finance, however, they have not been completed by this time, and it will take some more time to finish them.

There are 320 new irrigation development plans covering more than 40,000 ha identified by GDRS. Gumushane has the largest area with 27,048 ha, followed by Artvin (5,882 ha) and Bayburt (4,811 ha).

2.6.2 Research and development

(1) National Agricultural Research System (NARS)

Agricultural research system in Turkey, so-called NARS (National Agricultural Research System) is composed of research divisions of several governmental ministries and universities. The Turkish NARS consists basically of the following three main components:

- The governmental agricultural research and research/development institutes, namely: the General Directorate of Agricultural Research (GDAR) within the Ministry of Agriculture and Rural Affairs (MARA) which governs 55 Research Institutes; Agricultural Economics Research Institute governed by the Research, Planning and Coordination Council of MARA; 12 research institutes of the General Directorate of Rural Services (GDRS), research institutes of which are specialized mainly in soil and water management; 11 research institutes of the Research Directorate of Ministry of Forestry (MOF), and a few other highly specialized agricultural research institutes, affiliated to various Ministries and State enterprises.
- The 51 faculties specialized in agricultural sciences, including the faculties of agriculture, veterinary medicine and forestry under the governance of the Ministry of Education through the Higher Education Council.
- The “other NARS institutions” in which agricultural research activities cover a more or less small part of the mandate area. They are affiliated mostly to Scientific Institutions.

Involvement of the private sector and NGOs in agricultural research is negligible.

The Scientific and Technical Research Council of Turkey directly governed by Prime Ministry, had an official mandate for defining the national research policy in all fields including agriculture, but has a marginal role for execution of agricultural research.

Currently there is no single national agricultural research authority which is officially responsible for direction of the overall national agricultural research policy. The cabinet and ministerial level decisions such as employment and funding policies are supervised by the State Planning Organization (SPO) and related ministries, but GDAR, GDRS, universities and the other NARS institutions and their respective ministries make research policy decisions independently from each other.

(2) Agricultural research in DOKAP

The following research institutes are responsible for various research fields covering the DOKAP region.

(i) General Directorate of Agricultural Research of MARA

- Black Sea Regional ARI in Samsun,
- Eastern Anatolia ARI in Erzurum,
- Hazelnut Research Institute in Giresun,
- Apiculture Research Institute in Ordu,
- Veterinary Control and Research Institutes in Samsun and Erzurum, and
- Horticultural Research Institute in Erzincan.

(ii) General Directorate of Rural Services

- Rural Services Research Institute in Samsun

(iii) Ministry of Forestry

- Eastern Black Sea Forestry Research Institute in Trabzon

(iv) Public Enterprise Research Institute

- Tea Research Institute in Rize

(v) Faculties of Agricultural Sciences

- Faculty of Forestry of Black Sea Technical University in Trabzon

2.6.3 Extension

(1) Organizational structure

In the central organization of the Ministry of Agriculture and Rural Affairs, General Directorate of Organization and Support is responsible for extension services besides cooperatives and handicraft activities.

At the provincial level, each province has its own agricultural directorate with seven sections, one of which is Farmer Training and Extension (FTE) section. Under province, there are counties having their own directorates responsible for all agricultural activities corresponding to duties of sections placed in provincial directorate. Each county has a number of villages where people are intensively engaged in agriculture. In selected villages, there are Village Group Technicians (VGTs) working with farmers.

(2) Extension approach

The current approach of extension was originally based on the Training and Visit (T&V) system, but was quite modified and evolved into the current structure in 1984.

FTE section focuses on transferring information to and from farmers, working closely with the agricultural research centers aiming at providing the interaction among farmers, extension and research. This section prepares annual extension programs utilizing different kinds of methods such as demonstration, farmers meeting, farm visits, short and long term courses, etc. Subject matter specialists team in FTE provides technical assistance and also necessary training to the field level extension staff called Village Group Technicians (VGT).

VGTs are responsible for assisting farmers in interpreting their problems and in passing them to higher extension and research levels (if they are not able to solve the problems), giving appropriate technical advice to homogenous groups of farmers to lift productivity and farm income, etc.

Most of the extension activities provide farmers with technical information about various agricultural subjects like field crops, horticulture, vegetable growing, livestock, etc.

(3) Problems

In spite of the existing organizational set up, there are several constraints hampering the effective implementation of the agricultural extension. They are outlined.

(i) Non-existence of budget for extension

There is no specially allocated budget for extension activities. Extension activities are implemented by province using local governments' budget. Extension activities, therefore, depend on the priority set by the provincial government.

(ii) Very weak linkage between central and local governments

The linkages between central unit and provinces are only through official correspondence. Extension, research, and training are operated individually, which make them inefficient.

(iii) Lack of farmers involvement in policy formulation

This brings about a supply driven extension system, which often produces extension messages irrelevant to farmers' circumstances.

(iv) Poor research – extension linkage

Two way vital linkage between research and extension is ineffective. Latest research findings do not transmit to farmers timely on the one hand, and farmers' voices do not reach researchers.

2.6.4 Credit

Agricultural credit plays very important role to assist farmers in procuring inputs and/or investing for new business.

(1) Agricultural Bank of Turkey (TCZB)

TCZB, founded in 1863, is the oldest and largest public bank in Turkey. It is also the most important institution providing financial support to the agricultural sector in the form of seasonal credit and investment loans. It extends loans to individuals and groups of farmers either directly or through the Agricultural Credit Cooperatives (TKK). TCZB allocates credit in accordance with the government directives, following its agricultural policy.

There are 1,271 branches of TCZB in Turkey. DOKAP Region has 85 of these: 10 in Artvin, 13 in Giresun, 6 in Gumushane, 16 in Ordu, 14 in Rize, 23 in Trabzon, and 3 in Bayburt.

There are largely two types of credit: operational credits and investment credits. Operational credits or short term credits will be applied to all types of working capital requirements such as farm inputs including seeds, fertilizer, chemicals, etc., operation and maintenance of agro-machinery, purchase of livestock and poultry,

transportation of agro-products for marketing, etc. Another type, not yet in the category of operational credit, is the special agricultural credit for several specific production activities such as greenhouse, floriculture, irrigation, silkworm production, etc. Investment credits or medium-to long term credits, on the other hand, will be disbursed for the investment to be made by enterprises, including construction of buildings related to agriculture, purchase of agro-machinery, establishment of vineyards and orchard nurseries, land consolidation, soil improvement, etc.

In order to apply for loans, borrowers need collateral in terms of real estate or group liability. The borrowers' contributions should correspond to the equity ranging from 25% to 60% of the total investment according to subjects for both operational and investment credits as shown in Table 41.

Table 41 Equity Contribution Ratio

Type of credits	Equity contribution ratio
Operational credits	
Poultry credit (broiler, layer, parent stock)	40 – 60% depending on the size (amount)
Green house (floriculture)	40%
Other operational credits	25%
Investment credits	
Dairy and parent stock sheep breeding	25 – 50% depending on the size (amount)
Agricultural industry	60%
Tractor	25% for the first purchase; 50% for the second
Greenhouse	40 – 60% depending on the size (amount)
Other investment credits	25%

Source: Agricultural Bank of Turkey

Interest rates range from 54% to 75% depending on the subjects for both operational and investment credits, as of July 1, 1998. Maturity period also varies by credit types: three months to two years for operational credits and seven years to 20 years for investment credits, as shown in Table 42.

In 1998, TCZB extended agricultural credit with the amount of TL396,612 billion for the whole country, consisting of TL293,958 billion for normal operational credits, TL30,505 billion for special agricultural credit, and TL72,148 billion for investment credit. Some 70% of the total credit or TL278,537 billion were provided through agricultural credit cooperatives.

Table 42 Interest Rate and Maturity Period by Credit Type

Type of credit	Interest rate	Maturity period
Operational credits		
Crop production credit	65%	2 years
Chemical fertilizer credit	65%	2 years
Livestock production credit	54%	2 years
Egg poultry (parent stock & daily chick purchase)	54%	18 months
Agricultural irrigation credit	65%	2 years
Farmer consumer credit	75%	3 months
Investment credits		
Livestock investment credit	54%	7 years
Dairy cattle purchasing (2 years granted)	54%	8 years
Land acquisition credit	65%	7 years
Crop investment credit	65%	20 years
Farm manure	65%	3 years
Agricultural irrigation credit	65%	20 years
Tractor credits	71%	7 years
Harvester credits	71%	7 years
Other equipment credits	65%	7 years
Agro-industry credits (incl. Seed)	75%	20 years

Source: Agricultural Bank of Turkey

In the DOKAP region, total agricultural credit amount extended by TCZB in 1998 was TL15,240 billion as shown in Table 43.

Table 43 Agricultural Credits Extended by TCZB in DOKAP, 1998

Unit: billion TL

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Operational Credits									
Crop prod. (regular)	401	224	2	1,056	82	104	2	1,871	91,232
Crop prod. (special)	0	1		1				2	30,506*
Livestock prod.	2,263	3,050	1,450	1,971	205	2,122	454	11,514	183,904
Chemical fertilizer	105	91		893	467	60		1,616	17,850
Farmer consumption									972
subtotal	2,769	3,366	1,451	3,920	754	2,287	455	15,003	324,464
Investment Credits									
Crop (regular)		1		6				7	2,359
Crop (special loan)		9				6		15	
Livestock investment	7	47	52	15	4	16	31	172	28,155
Agr. vehicles & equip.		30	10	2			2	43	41,634
subtotal	7	87	62	23	4	22	33	237	72,148
Total	2,776	3,453	1,513	3,943	759	2,308	489	15,240	396,612

Remarks: *: Special agricultural credit for Turkey is the total of operational and investment credits.

Source: Agricultural Bank of Turkey

Operational credit, particularly livestock production credit amounted to TL11,514 billion, accounting for 75.5% of the whole credit. Only in Ordu and Rize, the share of credits for crop production and chemical fertilizer is significantly high, probably for hazelnut and tea production.

Agricultural credit cooperatives (TKK)

Agricultural credit cooperatives (TKK) are under the guidance of TCZB who finances their entire loan portfolio. Operations of TKK are controlled by MARA. The TKK system consists of a Central Union which formulates overall policies of TKK activities, 17 regional directorates and 2,524 primary cooperatives with 1.57 million members. TKK dealt with 76% of the total credit amount of TCZB in 1998.

There are 171 TKKs in the DOKAP region: 12 in Artvin, 46 in Giresun, six in Gumushane, 47 in Ordu, eight in Rize, 41 in Trabzon and 11 in Bayburt. The number of cooperative members in DOKAP totals 132,039 as of January 1999, ranging from 46,944 in Ordu to merely 3,801 in Bayburt.

Orkoy Fund

The Orkoy Fund, under MOF, extends credit to the forest villages which are situated inside and/or adjacent to the forest areas. The Orkoy Fund provides short-, medium and long-term loans up to 20 years with an interest of one-third of the current TCZB rate to farmers and farmers' cooperatives. Part of Orkoy fund is provided through the state budget and the rest comes from the profit earned on the sale of forest products in MOF. The Fund's on-lending portfolio and credit disbursement are fixed for every provincial Orkoy office in any given year.

Farmers who are not eligible for credit from other sources receive credit from Orkoy on the basis of joint liability.

CHAPTER 3 AGRICULTURAL AND FORESTRY DEVELOPMENT

3.1 Institutions for Agricultural Development

3.1.1 Central government agencies

- (1) State Planning Organization (SPO); Directorate General of Economic Sectors and Coordination; Agriculture and Food Directorate

Under the new organizational setup in SPO, Directorate of Agriculture and Food was created four months ago. The department is divided into seven divisions: crop production, animal husbandry, forestry, fisheries, food industries, agricultural policies, and land and water resources. There are 13 staff in the department.

Main task of the department (or SPO) is to prepare five-year development plan as well as annual program under the plan. In preparation of the five-year development plan, the department invites all agriculture-related agencies in both public and private, as well as NGOs to form a committee. The committee prepares a special report on the development plan and submits it to the parliament about one and a half years before the implementation of the next five-year development plan.

Up to the sixth five-year development plan, the plan has put emphasis on physical development, but the current seventh five-year development plan pursues policy-oriented plan.

- (2) Ministry of Agriculture and Rural Affairs (MARA)

MARA is the major ministry linking government services with farming households. It has the following four general directorates, which deliver various agricultural services in rural areas and villages.

General Directorate of Agricultural Production and Development is responsible for formulation, approval and implementation of all agricultural and rural development projects, financed both externally and internally.

General Directorate of Organization and Support is responsible for establishing farmers' organizations (cooperatives and cooperative unions), training of farmers and agricultural extension.

General Directorate of Agricultural Research is responsible for research on crops, livestock, food and feeds, and encompasses all agricultural research institutes under MARA.

General Directorate of Protection and Control is responsible for animal and plant diseases, pest control, and quality control of food and feeds.

The field programs of MARA are implemented by County Directorates of Agriculture (CDAs) through Provincial Directorate of Agriculture (PDA), headed by a Provincial Director, who has the authority from the Minister of MARA. The PDA office comprises seven sections of: 1) projects and statistics, 2) animal health, 3) farmers training and extension, 4) plant protection, 5) quality control, 6) support, and 7) administration and finance.

All the counties of the DOKAP region have CDAs; there are seven in Artvin, 15 in Giresun, five in Gumushane, 18 in Ordu, 11 in Rize, 17 in Trabzon and two in Bayburt. All the provincial and county offices suffer from lack of staff in terms of both quality and quantity.

(3) MOF (Ministry of Forestry)

The Ministry of Forestry takes charge of preservation, exploitation and afforestation of forest land and rehabilitation of large areas of rangelands in forest areas and through Orkoy Fund. It finances various income-generating and other agricultural activities in villages in the forest areas. MOF has four main service general directorates as below:

General Directorate of Forestry (OGM) is responsible for cadastral surveys, quality determination and cutting and evaluation of all kinds of wood and non-wood products.

General Directorate of Afforestation and Erosion Control (AGM) is responsible for production and planting of all seeds and seedlings.

General Directorate of National Parks and Wildlife (MPGM) is responsible for the protection of national parks and similar areas, wildlife hunting and water resources in forest areas.

General Directorate of Forest Village Relations (ORKOY) aims to help social, cultural and economic development of villagers who live in and border forests (forest villages).

MOF has three organizations in regional, provincial and county levels, but the organizational structure differs from one general directorate to another.

(4) GDRS (General Directorate of Rural Services)

GDRS is responsible for rural infrastructure such as construction of rural roads, small scale irrigation and livestock watering ponds, provision of village water supply and sewerage and electricity supply, undertaking soil conservation and erosion control in non-forest water basins, and land consolidation and soil improvement in farm land.

Field operations are carried out through regional directorates with provincial directorates. There is no county level organization. While the provincial directorate in Ordu reports to the Samsun regional directorate, the other six provincial directorates report to the Trabzon regional directorate.

3.1.2 Other agencies

(1) TZOB

The Turkish Chamber of Agriculture was established in 1957 by law. The chamber has three major functions: (i) defend the rights of agriculturists, playing as a pressure group, (ii) sell inputs to farmers, and (iii) register all farmers' assets.

By law, a county having at least 14 villages has to have a chamber of agriculture. There are some 500 chambers nationwide with one to six staff in each office according to the scale of agricultural activities.

The Union has some fifty staff in the office. The funds for its operation comes mainly from membership fee collected by the chambers, and commission from the sale of agricultural products. Small amount also comes from the government through the Ministry of Agriculture and Rural Affairs, and from the Agricultural Bank.

(2) Fiskobirlik (Association for hazelnut marketing cooperatives; FKB)

FKB is responsible for marketing hazelnuts, representing 70 hazelnut producers' cooperatives, total of which have more than 200,000 members.

The headquarters of FKB is in Giresun, and it has a modern factory to process inshelled nut into bleached roasted hazelnut, puree, flour, etc., with a processing capacity of 100 ton/day.

FKB also has 60 procurement centers where farmers bring their products. While buying hazelnuts from farmers, it also provides input credit to farmers.

3.2 Plans and Programs

3.2.1 Central Government Project

The Ordu-Giresun Rural Development Project, financed by IFAD is the only agriculture-related project lead by the Government in the DOKAP region. The study was conducted in 1995.

The project aims to assist poor villagers in the two provinces in improving their living standard through sustainable utilization of natural resources. The expected number of villages to benefit is 320, and some 44,000 households.

In order to attain the aims, the project encompasses wide range of activities with three broad strategies as follows:

- (1) Increase household incomes
 - Increase livestock production by improving feed resources;
 - Support crop production, especially hazelnut; and
 - Support alternative income generating activities, in particular bee keeping.
- (2) Increase incomes in forestry households
 - Increased production of wood in both state and private forestry; and
 - Improve range land grazing.
- (3) Improve living standard
 - Development of village level access (mainly feeder roads);
 - Rehabilitation and limited construction of small scale irrigation systems; and
 - Development of village domestic water system.

The project took a beneficiary driven participative project planning approach at the village level, reconsidering the top-down planning and poor coordination of services from different agencies.

After thorough appraisal of the study by an IFAD mission and negotiation with GOT, the project implementation started with infrastructure development including irrigation and feeder roads in 1999. As of February 2000, the project is implemented in 25 villages. The project supplies seed and seedlings for cherry, walnut, chestnut, and fodder crops. The project also provides credit to acquire milking cows, sheep, and beehives.

The Ministry of Agriculture has two other Integrated Rural Development Projects. One covers the provinces of Gumushane, Bayburt, and Rize. The other covers the provinces of Tokat and Trabzon. These two projects will be implemented if funding can be secured.

3.2.2 Provincial Government projects

Green house horticulture development

All provinces in the DOKAP region has started promotion of green house construction for intensive agriculture in view of limited land availability. Under green house, with higher temperature, crops can be planted earlier and will grow faster, enabling two crops a year.

The number of green houses so far constructed as of 1998, in the region is: 107 in Artvin, 600 in Giresun, 115 in Gumushane, 3,200 in Ordu, 157 in Rize, 500 in Trabzon and 23 in Bayburt. Size of green house differs from province to province, ranging from 90 m² to 312 m².

Provincial directorate of agriculture will extend technical assistance as well as financial assistance using Provincial Special Administration or social foundation.

Crop diversification

In order to overcome mono-culture of tea and hazelnut, crop diversification efforts have been made in coastal provinces. Prospective crops include kiwi fruit, grape (var. kokurism), Trabzon dates, cherry, mandarine, strawberry, raspberry, blackberry, blueberry, walnut, and chestnut.

In inland provinces of Gumushane and Bayburt, potatoes, sugarbeets, corn, beans, etc., are expected to be cultivated more with the increase in irrigated agricultural area.

Livestock development

PDA's of Gumushane and Bayburt are planning to develop livestock more through the expansion of feed base using irrigated area to be increased. PDA's are also trying to introduce a silage production system to solve forage shortage problems in winter. An experiment on corn production for silage has been started with promising results.

Backyard dairy development

In order to support small farmers including forest villagers, backyard milk production has been promoted. In Rize, for example, a total of 57 Jersey cows have

newly been introduced in the province. Procurement costs are covered by four year credit with no interest by social foundation. They are producing 14 liters per day, selling at TL300,000 per liter in the market. Feed forages are trucked from Erzurum.

Apiculture development

Although the DOKAP region has been known as a honey producing area, PDAs want to promote apiculture further.

Mushroom development

Naturally-grown mushrooms are abundant in forest areas. Although habit of eating mushrooms in urban area is not so popular (some 10% of the populace in Trabzon eat mushroom, according to PDA), PDA wants to promote mushroom production through the introduction of cultured mushroom production technologies and advertisement. Currently there are 12 small cultured mushroom growers in Trabzon.

Chestnut production through grafting

The provincial directorate of forestry (PDF) in Artvin initiated five-year chestnut production development project in 1998 to help forest villagers and ordinary farmers increase income. The project covers 21,000 ha of forest area where chestnuts are grown naturally in Arhavi, Hopa, Borcka and Murgul counties. The number of chestnut trees grown in the area is estimated at 2.1 million (100 trees/ha). Quality chestnut shoots are grafted on naturally grown chestnuts stock, to ensure fast growth of the shoots and early harvest.

PDF first selected a model village, where enthusiastic farmers exist, and invited forest villagers and ordinary farmers to learn grafting technique. After the demonstration, PDF provided farmers with 16,000 units of one-year chestnut shoots of variety Osman Oglu, which is known for its big and sweet nuts, obtained from the Simav county of the Kutahya province.

In the first year, 8,000 naturally grown chestnut trees were grafted (two shoots on one tree). From the second year, forest villagers/farmers are expected to continue grafting other chestnut trees using the new shoots from the previous year's shoots by themselves. Usually from one shoot, five new shoots will be obtained. Harvest is expected to start three years after the grafting.

Nuts will be utilized for sweetened preserve (Kestane sekeri or chestnut syrup), cookies, pilaf, etc. Chestnut logs will be used for furniture as well as ship building.

Walnut production

PDA in Artvin has started to produce grafted walnut seedlings in order to promote walnut production. Three counties of Ardahan, Sivas and Yusufeli have been identified as potential areas.

Rosehip production

A rosehip factory has been under operation in the suburbs of Gumushane. It is jointly operated by Chamber of Commerce in Gumushane and 11 local businessmen, with a capacity of 2,000 ton/year. The main products are rosehip tea, juice and concentrates. Other products include apricot and blackberry marmalade. Raw materials are mainly provided locally (some 60%) by farmers.

As various kinds of rosehip strains are grown naturally, standardization of quality is a problem. Recent research on rosehip varieties by the Erzurum University proved that the best quality rosehip strain (in terms of water content, fruit size, and mineral and vitamin content) was grown in Gumushane. A seedling station will soon be established by PDA for multiplication of seedlings of quality strain. Gumushane brand rosehip is expected to earn fame.

Fruit and herb production

Thanks to the warm micro climate along the Harsit river, PDA of Gumushane is trying to promote fruit production such as strawberry, apple, apricot, etc. Various kinds of berries like blackberry and mulberry for making preserves (jam and jelly) may also be prospective.

Herbal plants are also grown on high plateau areas in Gumushane, and they have long been utilized for medicine among local people.

CHAPTER 4 STRATEGY FOR AGRICULTURAL AND FORESTRY DEVELOPMENT

4.1 Agriculture

(1) Constraints

Agriculture in the DOKAP region, including crop production and livestock, is well established with two major crops of tea and hazelnut in coastal areas having dominant shares in respective markets and livestock-cereals-forage production system mainly in inland areas. Being established, however, this sector tends to be stagnant, and needs to overcome various constraints in order to support the DOKAP regional development. Major constraints are 1) harsh natural conditions, 2) heavy dependence on the State sector, 3) lack of entrepreneurship and organized farming, 4) limited land availability and land tenure, 5) inadequate support infrastructure, and 6) structural weakness of livestock subsector, as described below.

Harsh natural conditions

High mountain ranges with steep slopes and limited flatlands restrict agricultural activities. As mechanization is difficult under these conditions, crop cultivation depends largely on man power and economy of scale is generally not pursued.

Dry climate in inland areas with an annual precipitation ranging in 400 to 600 mm limits crops that can be cultivated under rained conditions. Low temperature is another constraint limiting crop species in most inland areas with high elevation.

Annual rainfall in Rize and parts of other coastal provinces amounts to over 2,000 mm with some 170 cloudy days annually. Large amount of rainfall leaches nutrients and makes soils acidic, which lowers crop productivity. Lack of sunshine also adversely affects crop performance. Monoculture of tea is attributed to this climate and soil condition.

Heavy dependence on State sector

Two political crops, tea and hazelnut, dominate in coastal areas. Recent tendency of overproduction is partly attributed to heavy subsidies in purchasing the products by the State at high price. While continued subsidies apply pressure on public sector finance, farmers tend to lose entrepreneurship, totally depending on these crops.

Except for hazelnut, tea, sugar beet and tobacco, which are all purchased directly or indirectly by the State or State companies, other crops and livestock products have not established effective market channels. This problem is particularly acute for

perishable vegetables, milk and meat without market development efforts by farmers.

Lack of entrepreneurship and organized farming

To realize efficient crop production system, economy of scale should be pursued through land consolidation and mechanization wherever possible. Despite the large flatlands available in Gumushane and Bayburt, however, farmers cultivate their own lands for various crops without organizing themselves for more efficient production. Marketing is constrained also by lack of organized marketing as well as lack of entrepreneurship.

Limited land availability and land tenure

Limited land availability in coastal areas restricts expansion of agricultural production.

Delay in cadastre surveys due to insufficient technical staff and equipment, harsh topography, many rainy days, and long winter season results in unclear or unestablished land tenure, constraining efficient agricultural activities. As boundaries of forest areas are not established, farmers have been encroaching on forest areas to expand their limited farming area and to exploit forest resources to augment their income.

Inadequate support infrastructure

Both soft and hard infrastructure supports are inadequate. Irrigated area covers 70,901 ha or only 14% of the potential irrigable area. Ongoing projects have been delayed by years due to budget constraints. The extension workers are inadequately assigned and also insufficient to deliver new technologies to farmers. There is little linkage between extension and research. Means of transportation constrains extension to reach remote villages. Reliance on established crops and production systems constrains R&D activities.

Credit facilities are well-established through TCZB and TKKs. It is, however, difficult for farmers to apply for credits due to rather high interest rates as compared with expected profits from farm products.

Structural weakness of livestock subsector

Competitiveness of livestock production is low due to the use of less productive local breed, high production cost for fodder and insufficient supply of feed during winter. Forage production suffers from the lack of adequate machinery. In Gumushane and Bayburt, for example, forage harvest, especially alfalfa, is kept in

the field for a long period of time, as hay cutting and bailing machines have not been introduced, resulting in decay of forage by occasional rainfall.

Another constraint in livestock production is disease. Animals are usually kept in barns which are generally dark, moist, and insufficiently ventilated. Under such conditions, animals often get sick, and it takes time for them to recover, resulting in the delay of growth. The most common disease is foot and mouth disease.

(2) Objectives

In line with the development objectives for the DOKAP region, objectives for agricultural development are defined, encompassing the economic, social and environmental aspects, as follows:

- 1) to contribute to regional socio-economy through promoting intensified and diversified production and entrepreneurship to widen employment opportunities, increase income levels of farmers, and meet demand for both local consumption and raw material for processing, and
- 2) to promote rational and sustainable land use through appropriate agricultural land use practices and management.

(3) Strategy

Although the share of agriculture in the GRDP will necessarily decrease as the DOKAP region develops, this sector will contribute significantly to the DOKAP regional development in some important aspects. Agriculture is expected to generate sufficient employment opportunities to minimize out-migration from rural areas and to increase income levels through enhancing productivity. The sector should also contribute to expanding raw material base for agro-processing industries and developing agro-related services. To meet these expectations, the agricultural sector of the DOKAP region needs to overcome the constraints described above. Basic strategy for agriculture is established with five broad components: 1) diversification and intensification, 2) entrepreneurial development, 3) land tenure improvement, 4) R&D enhancement, and 5) effective extension.

Diversification and intensification

Agricultural production in the DOKAP region has been dominated largely by several major crops led by tea and hazelnut in coastal provinces, and cereal and forage crops in the inland provinces to support livestock. Although tea and hazelnut are well-adapted to natural conditions in coastal areas, over-production poses a serious problem. In inland provinces, considerable area expansion is expected for

crop production upon completion of ongoing irrigation projects. Under such conditions, diversification of crops should be pursued.

Crop diversification should be promoted based on competitive advantages in terms of land suitability and marketing. High value crops like kiwi fruit, flowers, fruits, and vegetables may be promoted in coastal provinces, while new cropping systems under irrigation should be introduced in the inland provinces. Specialty products should also be promoted in potential areas, which will eventually develop into “one village-one product movement”.

Considering the limited availability of agricultural land, intensive agriculture should be pursued in the coastal provinces. Greenhouse horticulture and integrated farming combining crops and backyard livestock/poultry may be promoted further.

The inland provinces will introduce mechanization to pursue large scale modern agriculture together with improved livestock systems after the completion of irrigation projects. New crops such as corn and soybean may be introduced as well as silage production, and a rotational cropping system will be established to avoid disease occurrence and sustain productivity.

Entrepreneurship development

Farmers should be organized into sales or marketing cooperatives for more efficient marketing. Such efforts should be supported by market information system and post-harvest facilities for effective market development.

Farmers should be trained on business planning and financial management. Based on the training, they will prepare a project proposal and submit it to an agricultural credit cooperative for purchase of vehicles or construction of post-harvest facilities. Through the training, credit application and business operation with their own facilities, they are expected to become entrepreneurs.

Land tenure improvement

This strategy applies to all the agricultural areas, but serious attention should be paid to the forest villages. Being isolated and having small farm lots, most forest villagers live on subsistence agriculture. Without clear land tenure, they often go into the surrounding forests to utilize forest resources including wood for energy and housing and a grass for raising animals. They also cut trees to expand their farmlands. Without assurance of sustainability of such activities, many forest villagers have migrated to urban areas, leaving deteriorated forest areas behind. The cadastre survey should be completed for these areas and land tenure established for

those areas occupied by forest villagers depending on land suitability. Use rights for non-wood forest products should also be clarified.

R&D enhancement

R&D in the DOKAP region should focus on the following:

- Market research on tea export in order to diversify market channel,
- Silage production technology for feeding animals in winter,
- Integrated livestock development encompassing breed improvement, feed improvement, disease control and better managed sheds,
- Farming systems under irrigation,
- Greenhouse horticulture for maximum profits,
- Agro-forestry systems in forest villages for income generation,
- Processing chestnut, mulberry, and walnut,
- Rosehip production technology for increased production,
- Production of raspberry, blackberry, blueberry, citrus and others as alternative crops for hazelnut,
- Herb products development,
- Production of new bee breeds, and
- Effective veterinary services.

Effective extension with farmers participation

To complement and augment the capacity of formal extension, farmers should be utilized as an arm of extension. Farmers of outstanding performance in various fields should be found and trained in new technology. Group farmer training should be conducted by subject, using the trained farmers' fields as experimental and demonstration farms.

Subsector strategies

More specific strategies in the agricultural sector are presented by subsector in Table 44.

Table 44 Crops and Livestock Subsectors Strategies (1/2)

Subsectors	Prospects	Strategies	Priority areas
Crops			
Hazelnut	Dominant share in world market High quality oil	<ul style="list-style-type: none"> • Production control through law enforcement • Product development (processed product) 	<ul style="list-style-type: none"> • Giresun, Ordu, Trabzon
Tea	High value tea production (first harvest tea, organic tea, etc.)	<ul style="list-style-type: none"> • Product development • Market research 	<ul style="list-style-type: none"> • Rize, Trabzon, Artvin

Table 44 Crops and Livestock Subsectors Strategies (2/2)

Subsectors	Prospects	Strategies	Priority areas
Cereals (wheat, barley, maize, rye, oat, etc.)	Increase in production/productivity to contribute to activation of local economy	<ul style="list-style-type: none"> • Establishment of production plan based on demand for domestic consumption, livestock and feed industry • Establishment of crop rotation system together with other field crops (potatoes, sugarbeet, beans, etc.) • Land consolidation for large scale farming • Organizing producers' cooperative 	<ul style="list-style-type: none"> • Irrigated field in Gumushane and Bayburt • Mechanization
Forage crops	High demand on feed for animals	<ul style="list-style-type: none"> • Silage production through maize and soybean production • Mechanization • Range improvement 	<ul style="list-style-type: none"> • Irrigated fields in Gumushane and Bayburt
Vegetables	High demand for fresh vegetable Steady demand for daily consumption	<ul style="list-style-type: none"> • Further promotion of greenhouse horticulture (tomatoes, cucumbers, lettuces, green peppers, strawberry, flowers, etc.) • Multiple cropping to maximize profit • Establishment of market channel • Vinyl mulch for early planting of temperate vegetables (cabbage, lettuce, spinach, etc.) 	<ul style="list-style-type: none"> • Throughout DOKAP • Irrigated fields Gumushane
Cutflowers & ornamental plants	Growing demand High value	<ul style="list-style-type: none"> • Organizing farmers • Planned production • Contract farming 	<ul style="list-style-type: none"> • Coastal provinces
Fruits	Favorable climate for temperate fruits (apple, cherry, peach, pear, kiwi, etc.) Various berries for processing (blueberry, raspberry, blackberry, mulberry)	<ul style="list-style-type: none"> • Pursue economy of scale • Organizing producers • Cold storage • Product development • Links with tourism 	<ul style="list-style-type: none"> • Coastal provinces • Ordu, Giresun, Gumushane, Rize, Trabzon
Specialty products	One village-one product movement High value product Tourism	<ul style="list-style-type: none"> • Increase in production of quality rosehip varieties (quality control) • Herbal plants production (inventory, research) • Chestnut, walnut, mulberry (processing) • Mushroom (inventory, processing) 	<ul style="list-style-type: none"> • Gumushane, inland high plateau • Coastal provinces
<u>Livestock and poultry</u>			
Livestock (dairy and meat)	Large scale production	<ul style="list-style-type: none"> • Improvement of production system (barn) • Veterinary services (eradication of foot-mouth diseases) • Expansion of feed base (silage) • Organizing farmers • Meat/dairy processing factory 	<ul style="list-style-type: none"> • Gumushane and Bayburt
Dairy	Backyard livestock	<ul style="list-style-type: none"> • Organizing farmers • Efficient milk collection system • Pasture land improvement 	<ul style="list-style-type: none"> • Coastal provinces
Poultry	Local chicken production	<ul style="list-style-type: none"> • Intensive production system using concentrated feed 	<ul style="list-style-type: none"> • Trabzon
Honey	High quality brand honey	<ul style="list-style-type: none"> • Quality control • Brand honey production • New breed development 	<ul style="list-style-type: none"> • Throughout DOKAP

Source: JICA Study Team

4.2 Forestry

(1) Constraints

The DOKAP region in general has been blessed with forest resources thanks to large precipitation. The forest area shares some 30% of the land area, more than national average of 21%. People have been utilizing these abundant forest resources in various ways such as energy source for heating and cooking, raw materials for housing, roofing, furniture making, ship building, etc., and tourism. Forest also has been functioning as buffer for rainfall, preventing flash flood and landslide. While the exploitation continues, however, there is a fear of exhaustion of resources unless proper management practices are made. Major constraints to hamper the sound forest management are: (1) limited private forest development, (2) forest degradation and reduced management activities, and (3) spread of a harmful insect pest, as described below.

Limited private forest development

According to the Forest Law No.4785 of 1945, all forests and forestlands belong to the State. Although silviculture and/or afforestation activities by the private sector are allowed on private lands, the maximum size is limited to less than 3 ha, which is not considered as forest (Forest Law No.6831). The modification of the law to allow private forest activities up to 3 ha, has apparently not been widely informed, so many people still hesitate to plant trees in their properties.

Land conversion from forest to other uses has been allowed if the area is proved to have lost their forest character scientifically and technically prior to the date of 31 December 1981, by the Forest Law No.6831. It is however very difficult to identify those areas under this situation because land tenure has not been clear due to the delay of cadastre survey.

Forest degradation and slowed management activities

The DOKAP share of degraded area in the total coppice forest, which is mainly utilized for cooking and heating energy, is as high as 94%, much larger than national average of 74%.

While logging activities continued in the productive high forest areas, afforestation for degraded forest areas and silviculture like natural/artificial regeneration, thinning, etc., have been slowed down, which will bring about further forest degradation.

Spread of harmful insect

In the DOKAP region, particularly, spruce forests have suffered from the infestation of harmful bark beetle, Dendroctonus micans. Chemical control of it having proved ineffective, a predator insect (Rhizophagus grandis) has been bred in laboratories and put in infested trees every year. The results, however, have not come out.

(2) Objectives

Forestry development objectives are also set as follows:

- 1) to contribute to regional socio-economy through diversified and optimum utilization of multi-functional forest resources, and
- 2) to promote sustainable development through rational utilization and management of forest resources.

(3) Strategies

Forestry has been playing an important role to sustain the life of people in the DOKAP region in terms of economy, social aspect and environment. The function of forest should be maintained further in order to assure sustainable development in the region. Strategy for forestry is established with five broad components: 1) promotion of private forest development, 2) strengthening of forest management activities, 3) R&D enhancement, and 4) land tenure improvement.

Promotion of private forest development

In order to encourage private sector to participate in forestry activities, the following measures should be taken:

- Enhancement of public information on the Forest Law No.6831 allowing private forestry activities,
- Modification of the Forest Law No.6831 to remove the limitation of forest plantation size,
- Supply of seedlings of fast growing trees,
- Extension of silvicultural technology, and
- Provision of credits for forest planting.

Strengthening of forest management activities

As the forest policy clearly states the importance of proper management of the forests as well as utilization, and of reforestation and afforestation activities, the forest management activities should be more emphasized through the following:

- Education of local people on the role of forest,

- Rehabilitation of degraded coppice forest with local people's participation,
- Designation of coppice forest area adjacent to forest villages as community forests giving them the same use rights as forests as well as responsibility of management
- More close coordination of planning and budget allocation between logging and management activities, and
- Strengthening of control measures against the infestation of Dendroctonus micans.

R&D enhancement

R&D activities should be enhanced further in the DOKAP region, focusing on the following:

- Effective control methods for Dendroctonus micans,
- Genetic improvement of indigenous as well as exotic fast growing tree species,
- Introduction of new exotic tree species including bamboo, paulownia, etc.
- Agro-forestry technology for sloping land,
- Utilization and management of non-wood forest products (mushroom, resin, dye, etc.), and
- Processing and marketing of chestnut and walnut.

Land tenure improvement

The same strategies as the one in agricultural strategy should be taken.

4.3 Regional Development Framework in Agricultural Sector

Agricultural sector in the DOKAP region is expected to grow at a more or less constant rate of 2.0% per annum throughout the plan period. While overall growth will be steady, its activities will be more diversified. In coastal provinces, more fruit trees of various kinds will be planted according to the marketing and land suitability, as alternative crops for hazelnut and tea. Production of high value crops like cutflower and vegetables will also be increased using greenhouse and irrigation. On the other hand, in inland provinces, livestock production will be promoted through increased production of forage crops under irrigation.

As a result, the GVA in agriculture sector will increase from TL768 billion in 1996 to TL1,236 billion in 2020, as shown in Table 45. GVA estimates in the years 2000, 2005 and 2010 are also shown in Table 45 by subsectors and several important commodities.

Table 45 Projection of GVA in Agricultural Sector in DOKAP

	GVA (million TL at 1987 constant price)					Annual growth rate (%)			
	1996	2000	2005	2010	2020	1996-00	2000-05	2005-10	2010-20
Crops	347,809	373,536	408,386	446,488	533,688	1.8	1.8	1.8	1.8
Wheat	7,405	9,001	11,488	14,316	21,191	5.0	5.0	4.5	4.0
Barley	3,287	3,995	5,099	6,355	9,406	5.0	5.0	4.5	4.0
Maize	10,773	13,601	18,201	23,788	38,748	6.0	6.0	5.5	5.0
Potatoes	30,407	36,960	47,171	58,784	87,015	5.0	5.0	4.5	4.0
Hazelnut	127,225	124,700	121,003	116,827	108,902	-0.5	-0.6	-0.7	-0.7
Tea	67,153	65,292	62,722	59,950	54,218	-0.7	-0.8	-0.9	-1.0
Hay and straw	57,900	62,673	69,196	74,544	82,343	2.0	2.0	2.0	1.5
Others	43,661	57,315	73,506	91,926	131,867	7.0	5.1	4.6	3.7
Livestock	285,690	315,348	356,788	403,672	516,735	2.5	2.5	2.5	2.5
Cattle	113,310	122,650	135,416	149,510	182,252	2.0	2.0	2.0	2.0
Sheep	28,421	31,371	35,494	40,158	51,406	2.5	2.5	2.5	2.5
Cow's milk	83,707	94,213	109,219	126,614	170,159	2.5	2.5	2.5	2.5
Cattle's meat	14,278	16,703	20,322	24,725	36,599	3.0	3.0	3.0	3.0
Honey	24,485	26,503	29,262	32,307	37,570	4.0	4.0	4.0	4.0
Others	21,489	23,907	27,076	30,357	38,749	2.0	2.0	2.0	1.5
Agricultural craft	48,955	54,126	60,796	67,633	81,432	2.5	2.4	2.2	1.9
Forestry	40,253	41,557	43,246	45,003	48,736	0.8	0.8	0.8	0.8
Fishery	45,668	47,147	49,063	51,057	55,292	0.8	0.8	0.8	0.8
Total	768,375	831,714	918,279	1,013,854	1,235,883	2.0	2.0	2.0	2.0

Source: JICA Study Team

4.4 Development Scenario with Phasing

Given the existing conditions of the DOKAP region in relation to agriculture and forestry, the agricultural development will be pursued to attain the development objectives defined under the strategy established respectively in Sections 4.1 and 4.2.

A sequence of activities to develop and events to take place over the planning period are described here by phase as the agricultural development scenario for the DOKAP region. The planning period is divided into three phases: Phase 1 for 2001-2005, Phase 2 for 2006-2010, and Phase 3 after 2011. Expected performance of the DOKAP region in each phase is described below.

(1) Phase 1: 2001 - 2005

Hazelnut and tea, dominantly planted in the coastal provinces, will gradually decrease in production to solve the problem of over-supply. Those producers who cultivate those crops in unfavorable areas such as higher altitudes vulnerable to frost, will be encouraged to convert to other crops like apple, cherry, kiwi, apricot, blueberry, raspberry, blackberry, chestnut, walnut, etc., depending on the land suitability and marketing.

Greenhouse construction will continue in suitable areas in coastal provinces, to increase production of high value crops such as vegetables and flowers. With higher level of input as well as irrigation, two crops a year will be possible, and the productivity will drastically increase. Marketing of the products will be done jointly by organized farmers.

Backyard dairy production will be enhanced to certain extent near cities where marketing is not difficult. Local chicken production will likewise be increased.

Crop production in inland provinces will be increased in general, through area expansion and yield increase with irrigation development. Forage crops like maize, barley, alfalfa, Hungarian cow vetch, etc., will mainly be cultivated to expand feed base for livestock production. Silage production will be increased through mechanization. Other crops to be cultivated include potatoes, sugar beets, beans, etc. Research on crop rotation systems under irrigation will be carried out, and the results will be extended to farmers in order to establish an efficient and sustainable production system.

Ongoing irrigation projects in inland provinces will be completed, while existing irrigation systems will be properly maintained. Planned small-scale projects will be prioritized for implementation.

Livestock in inland provinces will be developed more through the introduction of new breeds and improved feed supply. Animal sheds will be improved to promote air circulation. Rangeland will also be improved through fertilizer application, re-establishment of pastures, and proper grazing interval. Dairy production will increase to support processing industry.

Land tenure will be established in and around forest villages through cadastre survey to prevent further forest deterioration. Use rights of non-wood forest products will also be clarified.

Forest management practices like natural/artificial regeneration and thinning, as well as afforestation will be enforced by MOF, while coppice forest areas near forest villages will be maintained by forest villagers. Private forest activities will start to increase. Dendroctonus micans, a harmful insect to spruce trees, will be effectively controlled by release of a predator insect, Rhizophagus grandis.

Development of specialty products will start in several rural areas to encourage local people to enhance their economic activities in combination with tourism development, as well as to recover social cohesiveness in the area.

(2) Phase 2: 2006 – 2010

Crop diversification from hazelnut and tea will continue. Several fruit trees including kiwi will start production.

Greenhouses will continue to be constructed for increasing high value crop production. Some special crops may be cultivated for export to neighboring countries. Flower production will also be increased corresponding to the growing demand with the increase in income level of urban people.

Small irrigation projects will be implemented mainly in Gumushane and Bayburt to help increase crop production. Crop production will increase with the expansion of irrigated area. Production of forage crops as well as food crops will continue to increase. Crop rotation system will be established through continuous research. New crops like asparagus and lettuce may be introduced through market research. Land consolidation will be partly made for large scale mechanized agriculture.

Silage production will continue to expand to support livestock activities in inland provinces. Together with rangeland improvement efforts, problem on feed shortages in livestock will be solved by this time. Through efficient veterinary services as well as shed improvement, infectious diseases including foot-mouth disease will be controlled.

Livestock waste will be utilized for biogas production and organic fertilizer to minimize environmental impact.

Forest will be managed jointly by MOF and local communities. Coppice forest will be rehabilitated to supply fire wood to forest villagers. Use right of non-wood forest products will be clarified and forest villagers will enjoy harvesting them. Small scale wood industry may be developed in forest villages to produce wood crafts to support tourism industry. Private forests will be expanded further to supply raw materials for processing.

Some specialty products will become famous with tourism development, and one village – one product concept (See Chapter 5) will be spread in other areas.

(3) Phase 3: 2011 -

Hazelnut and tea production will be confined to suitable areas in terms of suitability on both land and climate. Crop diversification will continue further, and crops to be planted may be determined based on the marketing condition of existing ones.

Greenhouse development will reach maximum capacity for high value crops including vegetables and flowers for both domestic and export markets. Farmers

will be organized into marketing cooperatives to market their products to foreign countries.

Small irrigation development in inland provinces will continue for increased productivity. Land consolidation will also be expanded for realizing economy of scale through mechanization. Cultivated crops will be more diversified to high value crops like vegetables introducing vinyl mulch.

Livestock will further develop, supported by the increase in forage as well as silage production. Dairy products and meat production will increase to support the processing industry. Animal wastes and/or industrial wastes such as bone, blood, and offal, will be recycled into fertilizer, oils, pet food, etc., to minimize environmental load as well as maximize utilization of resources.

Forest area will be properly maintained by joint efforts of MOF and local people. Production and maintenance activities will be well-balanced to ensure sustainable use of forest resources. Private forests will expand further, consisting mainly of fast growing trees, and log production will start.

One village – one product approach will spread throughout the DOKAP region with further tourism development. Villages will compete and at the same time cooperate with each other to produce more attractive products.

CHAPTER 5 PROJECTS AND PROGRAMS

Based on the strategies and development scenarios, a total of five projects/programs have been formulated. They are:

- 1) Irrigation Development Acceleration,
- 2) Irrigated Crop Cycles Research Program,
- 3) Livestock and Poultry Development,
- 4) Greenhouse Development Program, and
- 5) One Village-One Product Model Area Development.

Implementation phasing, location, prime implementing agency and estimated costs for each of the projects/programs are shown in Table 46.

Table 46 Proposed Projects/Programs

No.	Project/Program	Dev't Phase	Location	Implementator	Project cost
2.1	Irrigation Development Acceleration	Throughout the plan period	Gumushane and Bayburt	DSI, GDRS and PDAs	US\$157 x 10 ⁶
2.2	Irrigated Crop Research Program	Phase 1 and 2	Gumushane and Bayburt	GDRS, GDAR and PDAs	US\$1.9 x 10 ⁶
2.3	Livestock and Poultry Development	Phase 1 and 2	Gumushane and Bayburt for Livestock; All the provinces for poultry	GDAR and PDAs	
2.5	Greenhouse Development Program	Phase 1 and 2	Whole DOKAP region	PDAs and TCZB	US\$2.93 x 10 ⁶
2.20	One Village-One Products Model Area Development	Phase 1 and 2	Whole DOKAP region; Gumushane along the upstream of Harsit river as a model	PDA and MOT	US\$100,000

Source: JICA Study Team

Profiles of these Projects/Programs are presented in a separate volume (Project Report). Only a brief explanation for each of them is given here.

Irrigation Development Acceleration

Large scale irrigation development is planned and partly implemented in the upstream stretches of the Coruh and Kelkit rivers. Successful irrigation development will be instrumental in transforming the spatial structure of the DOKAP region. It will not only increase income levels of rural people but also expand the local economic base to support urbanization in the inland.

The project will ensure that land productivity will be enhanced by irrigation development. This will involve not only proper crop selection in view of marketing as well as land suitability, but also adequate use and management of land and water resources and input use. The project will provide land consolidation, drainage

improvement, extension in crop cycles, on-farm water management and input use, and agricultural credit.

Irrigated Crop Cycles Research Program

Agricultural production in the DOKAP region has been dominated by several major crops led by tea and hazelnuts in the coastal provinces, and cereals and forage crops in the inland provinces. Irrigation development in Bayburt and Gumushane provides opportunities to diversify crops as well as to increase yields of more conventional crops. A key issue is how to attain the best crop mix in view of land suitability and marketing.

The program is to conduct research on crop cycles under irrigation, combining both conventional crops and other crops to be newly introduced or strengthened.

Livestock and Poultry Development

Competitiveness of the livestock subsector in the DOKAP region is low due to the use of less productive local breeds, high production costs of fodder, and insufficient feed supply during winter. As the irrigated area expands, production of fodder is expected to increase, including alfalfa for hay and maize for silage. This will present an opportunity to improve livestock production systems in the region.

The project will provide support services to introduce improved livestock production systems in Bayburt and Gumushane. It may encompass the following components:

- (1) Improvement of barns and associated facilities,
- (2) Effective veterinary services (e.g. for eradication of foot-mouth disease),
- (3) Expansion of feed production, and
- (4) Organizing farmers for procurement of input and marketing.

Establishment of meat/dairy processing will also be supported by the project.

The project will also support backyard poultry by small farmers throughout the region. More intensive production systems should be established with local breed and concentrate feed.

Greenhouse Development Program

While crop diversification is required to overcome the mono-culture, agriculture in Black Sea coastal areas is constrained by limited land availability. The average agricultural land holding is only 1.8 ha in Rize and 2.1 ha in Trabzon, while Bayburt has a much larger average with 7.4 ha. Agricultural land use needs to be intensified

in these areas. One viable way is to produce horticultural crops in greenhouses, taking advantage of the proximity to growing urban markets.

The project is a credit scheme to promote the production of vegetables, cut flowers, ornamental plants, and other high value crops in greenhouses. Investment credit will be provided for construction of greenhouses and related facilities.

One Village-One Product Model Area Development

Gumushane has potential to expand the production of various fruits such as apricot, apple, walnut, mulberry, and strawberry. Also, the production of specialty products may be expanded and diversified such as rosehip syrup and its products, exotic vegetables such as mushrooms, asparagus and possibly horse radish, marble products, carpets, confectionary combining local products, and various wood products.

Some of these products fit well to the one village-one product model. In particular, more fruit trees of a few different kinds should be planted along the Harsit river not only to increase the production but also to enhance the tourism value of this access route to various tourism sites. Each rural settlement may specialize in one fruit to compete with others. Some settlements may specialize in other products, and new specialty products may be created by combining some of them. The project will provide subsidies for specialty production, seedlings and technical extension for fruit production, and guidance.

2. Fishery

CHAPTER 1 INTRODUCTION

1.1 Scope of the Study

This paper describes the fishery sector in the DOKAP region as it relates to the DOKAP Master Plan. It analyses the existing conditions of the fishery sector including inland and marine capture fisheries, and freshwater and marine aquaculture in the DOKAP region in relation to its constraints and issues that hamper development. It also covers the identification of development prospects and conceptualization and formulation of project ideas for implementation by the State and the private sector.

1.2 Study Approach and Source of Data

The fishery sector study was conducted by field visits to all the provinces and by conducting interviews of fisheries officials in provincial directorates, trout fish aquaculturists, fishermen, sea cage operators, managers of processing plants and fish meal plants, and researchers at the Central Fisheries Research Institute in Trabzon, and Fisheries Faculty of Black Sea Technical University (KTU). In Ankara, discussions were conducted with relevant directorates in the Ministry of Agriculture and Rural Affairs, and also with the director of the EastFish (a FAO sponsored organization based in Ankara) for East European Countries. Data and information were collected during the interviews and also obtained from some documents of official agencies.

CHAPTER 2 EXISTING FISHERY PRODUCTION OF TURKEY

The coastline of Turkey is about 8,400 km long, of which the Black Sea accounts for about 1,695 km. The population of Turkey was about 65 million in 1997. The total fish production volume was 500,260 tons in 1997. Imported fishery products amounted to 41,359 tons with a value of about \$52 million in 1997, while exports accounted for approximately 35,791 tons at a value of \$128 million. Per capita available supply was about 7.5 kg/year (See Appendix 1).

2.1 Structure of Fisheries

The structure of the fisheries industry in Turkey is composed of marine capture fisheries, freshwater capture fisheries, marine aquaculture and freshwater aquaculture. The total fishery production volume in 1997 was 500,260 tons, which consisted of 404,350 tons (81%) for marine capture fisheries, 50,460 tons for freshwater capture fisheries, and 45,450 tons for aquaculture.

The annual production volume of the marine capture fisheries fluctuates, as can be seen in Table 1. It fluctuated from 623,404 tons in 1988 to 317,425 tons in 1991, increased to 542,268 tons in 1994 and decreased to 404,350 tons in 1997. These variations are influenced mainly by the catch variations in Black Sea, which is the major cause of variations in the overall availability of fish (See Appendix 2). The production in 1998 was predicated to be less than that of 1997 production.

Table 1 Fish Production of Turkey (1988-1997)

Unit: tons

Year	Capture Fisheries			Aquaculture			Total
	Marine	Freshwater	Subtotal	Marine	Freshwater	Subtotal	
1988	623,404	48,500	671,904	135	3,965	4,100	676,004
1989	409,929	42,833	452,762	850	3,504	4,354	457,116
1990	342,017	37,315	379,332	1,545	4,237	5,782	385,114
1991	317,425	39,401	356,826	3,325	4,510	7,835	364,661
1992	404,766	40,370	445,136	2,688	6,522	9,210	454,346
1993	501,431	41,575	543,006	5,046	7,392	12,438	555,444
1994	542,268	42,838	585,106	8,733	7,265	15,998	601,104
1995	582,606	44,983	627,589	8,484	13,113	21,597	649,186
1996	474,243	42,202	516,445	15,241	17,960	33,201	549,646
1997	404,350	50,460	454,810	18,150	27,300	45,450	500,260

Source: Fisheries Statistics, State Institute of Statistics (SIS)

Freshwater catch dropped from 48,500 tons in 1988 to 42,202 tons in 1996, and increased to 50,460 tons in 1997, and also shows a fluctuating trend. Freshwater

catch is comprised mainly of carp, gray mullet, and crayfish. Conversely, aquaculture production increased from 4,100 tons in 1988 to 45,450 tons in 1997 (Table 2).

Table 2 Freshwater Fish Catch by Type in Turkey (1994-1997)

Unit: tons

Fish	1994	1995	1996	1997	share
1. Grey mullet	12,387	12,430	13,255	21,000	41.6%
2. Common carp	15,900	17,081	15,631	16,000	31.7%
3. Sand smelt	899	909	562	1,600	3.2%
4. Pikeperch	2,952	3,104	2,832	1,500	3.0%
5. Catfish	859	866	905	1,200	2.4%
6. Trout	554	594	395	200	0.4%
7. Others	9,287	9,999	8,622	8,960	17.8%
Total	42,838	44,983	42,202	50,460	100.0%

Source: Fisheries Statistics, SIS

Aquaculture is almost entirely limited to the production of rainbow trout in fresh water. It has steadily expanded through commercialization of coastal water fish farming and has become an important activity for increasing both domestic fish supplies and export earnings. There are 881 licensed farms in Turkey with production capacity of 67,825 tons, and their total output in 1997 was 67% or 45,450 tons (details in Table 3 and 4).

Table 3 Aquaculture Production by Type in Turkey (1994-1997)

Unit: tons

	1994	1995	1996	1997	share
Freshwaters					
1. Carp	288	424	780	800	1.8%
2. Trout	6,977	12,689	17,180	26,500	58.3%
Marine waters					
1. Trout	*	*	1,330	2,000	4.4%
2. Salmon	434	654	193	50	0.1%
3. Sea bream	6,070	4,847	6,320	7,500	16.5%
4. Sea bass	2,229	2,773	5,210	6,300	13.9%
5. Others		220	2,188	2,300	5.1%
Total	15,998	21,607	33,201	45,450	100.0%

Remarks: * Trout production in marine water is included in the inland waters production.

Source: Fisheries Statistics, SIS

Table 4 Number of Aquaculture Farms, Capacity and Production in Turkey (1997)

Species	Licensed Farms	Farm Capacity (tons)	Production in 1997 (tons)
1. Trout	629	38,120	28,500
2. Sea bass & sea bream	141	11,975	13,300
3. Carp	97	10,710	800
4. Mussel	8	4,750	2,000
5. Shrimp	3	470	300
6. Salmon	2	1,600	50
7. Turbot	1	200	-
Total	881	67,825	44,950

Source: MARA

2.2 Domestic Marketing of Fishery Products

A schematic view of the domestic marketing chain is shown in Figure 1.

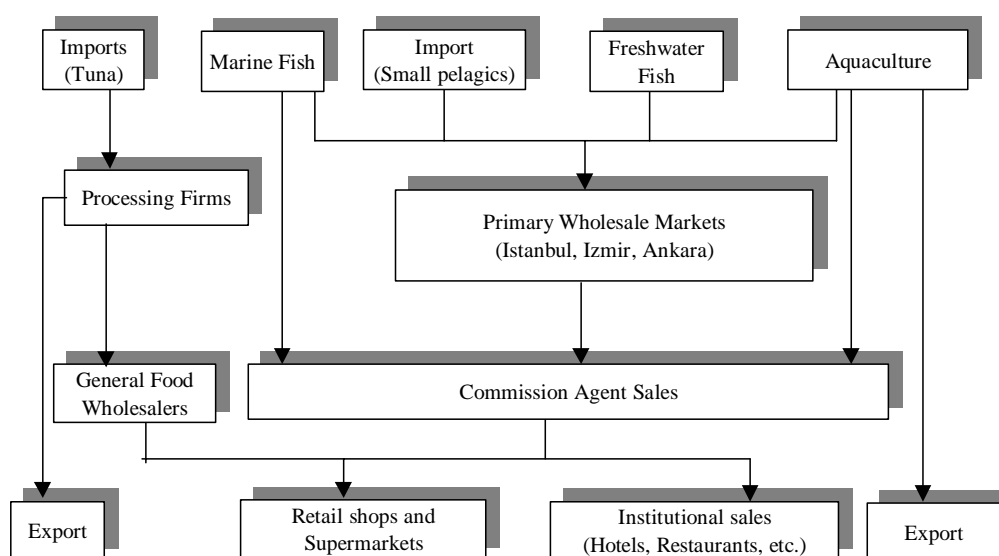


Figure 1 A Schematic View of the Domestic Marketing and Distribution Channel

The sales of marine products by regions are shown in Table 5.

Table 5 Type of Sales of Marine Products by Region (1997)

Region	Total Marine Production	Type of Sales						Self-Consumption	Other Uses
		Total Sales	Fish meal / oil factories	Co-operatives	Whole-sale	Canning Factories	Direct to Consumers		
East Black Sea	196,348	193,834	21,000	1,124	163,570	5,660	2,480	1,670	844
West Black Sea	80,703	76,200	-	-	69,997	6,043	160	912	3,591
Marmara Sea	59,787	54,167	-	569	52,038	-	1,560	1,483	4,137
Aegean Sea	43,821	42,252	-	10,812	23,826	803	6,811	955	614
Mediterranean Sea	23,691	21,972	-	3,889	16,815	-	1,268	557	1,162
Total	404,350	388,425	21,000	16,394	326,246	12,506	12,279	5,577	10,348
Share (%)	100%	96%	5%	4%	84%	3%	3%	1%	3%
Share (%)		100%							

Remarks: Other uses also refer to sales to processing companies.

Source: Fisheries Statistics, SIS

The coastal regions are in general well supplied with harbors and landing areas, which are easily accessible by roads, and this permits fish to be landed at any convenient point for transportation by trucks to the most profitable market. Trucks may be owned or controlled by commission agents or wholesalers or even by fishermen themselves. Most of the large-scale fishermen maintain contact with their agents in the markets via mobile phones to identify the most profitable selling opportunities.

As indicated in Table 5, 4% of the total marine production of 404,350 tons in 1997 was disposed to other uses including self-consumption and the remaining 96% (388,425 tons) were handled according to type of sales. Of the total catch, 84% is sold wholesale. A substantial proportion of the east Black Sea anchovy catch is sold for fish meal and oil manufacture. Other channels are of little significance in terms of their share of the national catch handled, although they may be important in certain regions. For example, cooperatives accounted for 25% of sales in the Aegean region, while direct quayside sales to consumers accounted for 16%. Some sales of mollusks for processing and export are made directly to processors and they are included in the other uses category in Table 5.

Table 6 Quantity and Value of Export of Fish Products, 1993-1997
(Quantity in tons and value in \$1000)

	1993		1994		1995		1996		1997	
	Q'ty	Value	Q'ty	Value	Q'ty	Value	Q'ty	Value	Q'ty	Value
Fresh-chilled	2,881	11,669	3,862	12,816	4,045	11,829	4,642	18,184	6,307	25,004
Frozen	791	2,329	1,256	3,226	1,185	2,800	684	1,976	1,115	2,667
Fillet	582	3,218	1,010	4,437	1,075	6,097	1,038	4,747	1,890	8,469
Salted/dried/smoked	119	3,128	179	4,437	154	775	251	1,753	291	1,831
Shellfish	798	4,129	1,106	5,932	620	3,745	812	6,122	1,558	7,733
Mollusks	8,435	18,356	7,179	21,465	6,920	23,985	5,349	22,313	7,210	22,280
Canned fish	4,042	1,180	6,910	20,287	9,874	31,828	12,889	39,490	14,187	45,642
Canned mollusk	2,243	9,980	1,892	8,646	1,833	9,804	2,424	12,972	3,233	14,151
Total	19,891	53,989	23,394	81,246	25,706	90,863	28,089	107,557	35,791	127,777

Source: Under Secretariat of Foreign Trade of Prime Ministry

(1) Wholesale markets

The bulk of fresh fish or more than 80% of the fresh fish catch is sold in wholesale markets. Primary wholesalers are located in Istanbul, Izmir, Samsun and Trabzon. Istanbul has the largest wholesale market with more traders than in other markets. It has a diverse selection of fish including imported fish. Ankara has a large market handling both secondary and primary wholesale trading.

Samsun and Trabzon are the smallest. All of them are organized and each market is owned and managed by the respective municipal authorities.

Fishermen are the main sellers in the wholesale markets, either directly or through commission agents. Commission rates average 10% and the market fee ranges between 1 and 5%. Imported fish is also sold. Buyers may be retailers, caterers, processors, exporters, wholesalers, and even consumers. Most of the fish sold in wholesale markets is the cheaper bulk supplies of small pelagic fish such as anchovy, horse mackerel, and sardine. Almost all of the more expensive fish bypasses the markets and is sold directly to retailers or to restaurants to avoid incurring market charges and taxes.

(2) Sales to fish meal/oil factories

Fish meal factories are an alternative outlet for anchovy in the Black Sea region. The quantity of anchovy going into fish meal production fluctuates between approximately 20% to 50% depending on the availability of the fish.

Anchovy is a delicate fish, which deteriorates rapidly. Under Turkish fish handling conditions, the fish must be consumed within 36 to 48 hours after harvesting. Fish meal factories buy directly from the boat and hence sales to the factories incur no marketing cost and involve no risk. Prices offered by the factories are unfavorable relative to the wholesale markets, where the marketing costs are included where anchovy is delivered to distant markets. The marketing costs are comprised of the costs for boxes, labor, market charges, and commissions.

For anchovy landed in the Black Sea region, the fish will either be pumped in bulk to a vehicle for transport to the fish meal plant, or transferred to boxes for distribution and sale for human consumption.

(3) Cooperatives

Quantity of fish sold through cooperatives is small, not more than 4% of the production volume. Fishermen and traders seem to prefer not to deal in cooperative marketing due to the fact that cooperatives have no long-term future, have inexperienced and inadequately trained officials, and furthermore, some cooperatives charge fishermen a rate of 15% on the selling price (10% for taxes and fees and 5% for the cooperative). Wholesalers are willing to purchase fish without formality and offer fishermen informal credit to cover their capital

requirements. Some cooperatives are important in the marketing of freshwater fish and they are granted exclusive fishing rights for fish caught in lagoons.

(4) Canning/processing

Sales to the canning industry account for only about 3% of the marine capture. The canning industry relies on imported tuna, and canning is only one form of fish processing in Turkey. Other forms of processing such as cooking and freezing of fish, mollusks and crustacean can be included in the wholesale category.

(5) Direct sales to consumers and own-consumption

Direct sales to consumers are around 3% of the production volume. Direct sales of this kind are particularly important in the tourist areas. The fishermen's own consumption takes up 1% of the production volume.

(6) Marketing channels for freshwater and cultured fish

Freshwater fish from inland capture fisheries is generally marketed the same way as marine fish, although typically the distance over which freshwater fish is marketed is shorter since much is consumed locally. However, carp, pikeperch, eels, and crayfish are marketed on a wider scale. These fish are marketed either by the fishermen themselves or by their cooperatives, mainly to wholesale markets. There are currently 270 cooperatives with a membership of over 14,259 fishermen, and about 40% of these cooperatives represent freshwater fisheries and are involved in production and marketing activities.

The marketing of most of the cultured fish is destined for export markets with the exception of trout and carp, which are sold in the domestic market. Cultured fish marketed in the domestic market follow the similar channels as sea fish. Fish farmers or commission agents transport the fish to major markets such as Istanbul, Izmir and Ankara. Some farmers have contracts with particular wholesalers and others deal directly with retailers in the large cities.

(7) Marketing channels for imported fish

Imported fish is comprised of fish for use in the canning industry as well as fish for direct consumption by the domestic market. Fish for domestic consumption consists almost exclusively of frozen mackerel from Norway imported by traders in Istanbul. The market for imported frozen Norwegian mackerel grew rapidly as the domestic catch of small pelagic fish dropped. Imported frozen mackerel joins the domestic marketing chain at the wholesale level, especially in the

Istanbul wholesale market where major importers are located, and they follow the usual path to the retail markets via secondary wholesaling in markets such as Ankara.

2.3 Exports and Import of Fishery Products

Turkey has a relatively small but active export trade in fisheries products (See Table 6). Exports contribute less than 1% of the total national export revenue but they are of considerable regional importance. It increased by 80% from 19,891 tons in 1993 to 35,791 tons of fish products amounting to about \$128 million in 1997. The main export products were 14,187 tons (40%) of canned fish, 18,080 tons (50%) of fresh, frozen and fillet fish together with mollusks. EU is the major export market, accounting for more than 80% of the exports. Turkish exports are influenced by the import policies of importing countries. For Turkey these are primarily in EU, and hence trade relations with EU are important.

Conversely, the imported fishery products have also steadily increased since 1993, from 33,647 tons to 41,359 tons in 1997 at a value of about \$52 million (See Table 7). The major imported fish is frozen tuna that is the raw material used by canneries, and it amounted to about 88% (36,191 tons).

Table 7 Quantity and Value of Import of Fish Products, 1993-1997

(Quantity in tons and value in \$1000)

	1993		1994		1995		1996		1997	
	Q'ty	Value	Q'ty	Value	Q'ty	Value	Q'ty	Value	Q'ty	Value
Fresh-chilled	42	105	3	9	38	129	20	106	185	165
Frozen	31,228	19,020	24,120	21,172	28,191	28,776	26,945	27,898	36,191	44,038
Fillet	382	555	147	227	825	1,369	1,318	1,883	1,418	2,178
Salted/dried/smoked	141	502	53	157	462	921	353	792	673	1,407
Shellfish	53	241	6	43	136	1,021	110	449	100	362
Mollusks	1,728	2,095	1,366	2,327	986	2,142	899	1,898	1,259	2,040
Canned fish	40	248	68	246	234	587	224	639	1,259	562
Canned mollusk	33	95	270	903	280	1,155	276	1,054	274	995
Total	33,647	22,861	26,033	25,084	31,152	36,100	30,145	34,719	41,359	51,747

Source: Under Secretariat of Foreign Trade of Prime Ministry

CHAPTER 3 FISHERIES OF THE BLACK SEA REGION

3.1 Physical Characteristics Related to Fisheries

The Black Sea is located in a semi-arid climatic zone, and it is surrounded by six countries in Europe and Asia, namely Turkey, Romania, Bulgaria, Russia, Ukraine and Georgia. The length of the Black Sea coastline is approximately 1,700 km stretching from west to east and its width from north to south varies from 600 km to 250 km (between Crimea and Anatolia). The surface area of the Black Sea is 422,189 km² or 459,054 km² when combined with the Sea of Azov.

The Turkish coastline of the Black Sea extends about 1,695 km, which constitutes about 20% of the total coastline of Turkey. High mountains parallel the beaches and are located near the sea. There are not many curves or bays along the coastline. Rocky cliffs exist in many places resulting from wave erosion. Famous bays are in Sinop, Samsun, Amasra, Ereğli, Trabzon, and Vakfıkebir. Man-made harbors have been constructed, since there are only a few bays along this long coastline. There are eight major ports along the Black Sea coast of Turkey, namely, Bartın, Ereğli, Giresun, Hopa, Kocaeli, Samsun, Trabzon and Zonguldak. These ports are utilized mainly for domestic and fuel oil transportation, together with limited transport of coal, minerals, animals, construction materials, vegetables and fruits.

There are 15 provinces along the Black Sea coast of Turkey; and its total coastal zone area is 103,061 km². The region may be divided into three parts: specifically, the Eastern Black Sea region (starting from the boundary of Georgia to the city of Ordu), the Central Black Sea region (midway between the cities of Ordu and Samsun) and the Western Black Sea region (from the city of Sinop to the Marmara regional boundary). The DOKAP, which is comprised of five provinces (Ordu, Giresun, Trabzon, Rize, and Artvin), lies in the Eastern Black Sea region.

3.2 Marine Capture Fisheries

The Black Sea region is the major source of marine sea fish and marine invertebrates (crustaceans, mollusks, etc.), and determines the overall availability of marine fisheries products in Turkey. Generally, it contributes to more than two-thirds of Turkey's production volume. In 1997, it accounted for about 70% or 277,051 tons of the production volume, although it was even higher in 1995 at about 80% or 460,752 tons (See Appendix 3). Between the West and the East Black Sea regions, the eastern part from the Sinop province to Artvin contributes

to about 50% of Turkey's marine fisheries products. The composition of the marine fish catch is shown in Appendix 3. Small pelagic fish (anchovy and horse mackerel), grey mullet and whiting make up the bulk of the catch. The marine capture fisheries production in the Black Sea is dominated by the catch of anchovy as indicated below. Therefore, any change in the catch of anchovy has an impact on the overall fish supply.

Table 8 Catch of Anchovy in Turkey

Unit: tons

	1990	1991	1992	1993	1994	1995	1996	1997
Turkey (Marine)	342,017	317,425	404,766	502,031	542,268	582,610	474,243	404,300
Anchovy	74,035	90,637	174,626	277,130	294,418	387,574	290,680	241,000
Share of anchovy (%)	21.6	28.6	43.2	45.2	54.3	66.5	61.3	59.6

Source: Fisheries Statistics, State Institute of Statistics (SIS), Prime Ministry

In recent years the stocks of anchovy and other fish in the waters of Georgia, Ukraine and Russia are not harvested adequately due to their depreciated and not well-maintained fishing vessels. This has an advantage to Turkish fishermen who have large fishing vessels. These fishermen undertake contracts with the firms of these countries with the approval of the Directorate of Protection and Control in MARA. The contracts specify fish species, quota, fishing season, and fishing area. The harvested fish is controlled at the Turkish customs. An interview of a fisherman in Trabzon who owns 12 fishing boats, indicated that he harvested about 7,000 tons of Anchovy in 1998/99 and about 10,000 tons in 1996/97 in 45 days of fishing. He had a contract with a Russian firm and was paid \$2.00 per box of 20kg of anchovy and \$1,090/1,000 boxes of 20kg each to the Turkish custom.

3.3 Inland Capture Fisheries and Aquaculture

A summary of inland capture production and aquaculture production of DOKAP in 1997 is shown in Table 9. The total national production volume was 95,910 tons, of which DOKAP contributed to about 5% or 5,009 tons, consisting of 4,711 tons from aquaculture and 298 tons from the inland capture fisheries.

Table 9 Production of Inland Capture Fisheries and Aquaculture in DOKAP (1997)

Units: tons

Provinces	Aquaculture Production				Total	Inland Capture Production	TOTAL
	Inland	Marine waters					
	Trout	Trout	Sea bass	Others			
Artvin	500	-	-	-	500	15	515
Giresun	480	-	-	-	480	30	510
Gumushane	120	-	-	-	120	32	152
Ordu	500	1,250	183	-	1,933	104	2,037
Rize	480	413	-	-	893	-	893
Trabzon	750	-	-	-	750	60	810
Bayburt	35	-	-	-	35	57	92
DOKAP	2,865	1,663	183	0	4,711	298	5,009
Turkey	26,500	2,000	6,300	10,650	45,450	50,460	95,910
Share of DOKAP	11%	83%	3%	0%	10%	1%	5%

Source: Fisheries Statistics, SIS.

The inland capture fisheries production of DOKAP accounts for a mere 1% of the national production of 50,460 tons, and the species is mainly trout. The common carp, which is widely dispersed throughout Turkey, is not a popular fish in the Black Sea region.

Aquaculture production accounts for 4,711 tons (10%) of the total cultured or farmed fish in Turkey (45,450 tons). For trout, the most important farmed fish in the DOKAP region, 2,865 tons were from freshwater farms and 1,663 tons from floating cages, accounted for 96% of the DOKAP aquaculture production and 16% (28,500 tons) of Turkey's trout production. The other fish is sea bass, which is mainly farmed in Ordu province. In DOKAP, Ordu province leads in aquaculture production with 1,933 tons (41%), followed by Rize with 893 tons (19%), Trabzon with 750 tons (16%), and Artvin and Giresun with 480 to 500 tons, Bayburt and Gumushane provinces accounted for only about 35 tons and 120 tons, respectively. Aquaculture production figures are collected by MARA and presumably relate only to licensed farms. Therefore, actual aquaculture production may be significantly greater and the extent to which the aquaculture production data is understated is unknown. It can also be assumed that the levels of production in capture fisheries may be understated.

3.4 Fishermen, Fishing Boats and Fish Landing Sites

(1) Fishermen

There are about 50,000 fishermen in Turkey, of who about 22% are licensed fishermen. Of the 50,000 fishermen in Turkey, about 8,685 (17%) are in the East Black Sea area. There are about 300 fishermen cooperatives in Turkey, of which

33 are located in the middle and eastern part of the Black Sea area with a total number of 2,079 members (See Tables 10 and 11).

Table 10 Number of Cooperatives and Membership in Eastern & Middle Black Sea

Provinces	Fishermen Cooperatives	Number of Members
Sinop	2	636
Samsun	8	346
Ordu	5	360
Giresun	4	136
Trabzon	10	410
Rize	3	157
Artvin	1	34
Total	33	2,079

Table 11 Number of Fishing Boats and Fishermen in the Black Sea and Turkey

	Fishermen	Number and Type of Fishing Boats				Total
		PS	T	CB	SB	
East Black Sea	8,685	150	52	63	2,389	2,654
West Black Sea	2,511	98	214	18	1,059	1,389
Turkey*	50,000	533	477	701	8,029	9,740

Remarks: PS-Purse seine, T-Trawl, PS-T-Purse seine-Trawl, CB-Carrier Boats, SB-Small boats

* About 22 percent of the fishermen are licensed.

Source: 1) Fisheries Statistics, SIS
2) MARA

(2) Fishing boats and fish landing sites

Turkey has no ocean going fishing fleet, and basically there are four types of coastal fishing boats, namely trawlers, purse seiners, carrier boats, and small boats. In 1997 there were 9,740 fishing boats in Turkey, of which 41% or 4,043 boats were located in Black Sea. Of the 9,740 fishing boats, 28% or 2,753 boats were located in the DOKAP region. A breakdown of these 2,753 fishing boats shows 108 purse seiners, 19 trawlers, 74-purse seine-trawler, 36 carrier boats and 2,516 small boats. Of all the boats, 90% are small boats of 5 to 10 meters (See Tables 12 & 13).

Table 12 Number and Type of Fishing Boats in DOKAP

Province	PS	T	PS-T	CB	SB	Total
Ordu	33	14	11	13	373	444
Giresun	16	-	8	1	605	630
Trabzon	43	5	55	11	1,001	1,115
Rize	16	-	-	11	383	410
Artvin	-	-	-	-	154	154
DOKAP	108	19	74	36	2,516	2,753
Turkey	533	477		701	8,029	9,740
Share	20%	19%		5%	31%	28%

Remarks: PS-Purse seine, T-Trawl, PS-T-Purse seine-Trawl, CB-Carrier Boats, SB-Small boats

Source: Trabzon Fisheries Research Center

Table 13 Length and Type of Fishing Boats in DOKAP

Boat size (m)	PS	T	PS-T	CB	SB	Total
0.0-4.9					340	340
5.0-9.9	15	6	2	3	2,094	2,120
10.0-14.9	20	3	9	5	82	119
15.0-19.9	16	8	20	20	-	64
20.0-24.9	28	1	20	7	-	56
25.0-29.9	18	1	17	1	-	37
30.0-34.9	4	-	1	-	-	5
35.0-39.9	5	-	2	-	-	7
40.0-49.9	2	-	3	-	-	5
>50.0						
	108	19	74	36	2,516	2,753

Remarks: PS-Purse seine, T-Trawl, PS-T-Purse seine-Trawl, CB-Carrier Boats, SB-Small boats

Source: Trabzon Fisheries Research Center

The five maritime provinces in DOKAP have a total of 120 fish landing sites as shown in the Table 14. They consist of 14 fishing harbours, 50 landing sites with breakwater (fishermen shelters), and 56 beach landing sites.

Table 14 Type and Number of Fish Landing Sites in DOKAP

Province	Harbour	BW	BL
Ordu	2	9	9
Giresun	3	7	18
Trabzon	5	12	11
Rize	3	19	13
Artvin	1	3	5
	14	50	56

Remarks: BW-landing sites with breakwater

BL-Beach landing sites

Source: Trabzon Fisheries Research Center

(3) Fish processing facilities

The fish processing industry is oriented towards foreign markets and some quantities for domestic market. It is composed of frozen mollusks (sea snail) and fish, canned fish, and fish meal and fish oil.

In the Black Sea region, there are reportedly 13 fishmeal factories, of which only a few are operational (See Table 15).

Table 15 Number and Capacity of Fish Meal Plants in the Black Sea (1995)

	Name of Firm - Location	Province	Capacity (tons/day)	Production (Tons/season)	Operational capacity (%)
1	Karbasan-Pazar	Rize	225	4,500	19%
2	Karsusan-Yorma	Trabzon	600	17,000	27%
3	Koptur-Carsibasi	Trabzon	150	5,500	35%
4	Bulko-Bulancak	Giresun	100	4,449	42%
5	Sursan I - Yakakent	Samsun	800	15,800	19%
6	Sursan II - Yakakent	Samsun	600	19,000	30%
7	Can Kardesler - Yakakent	Samsun	650	13,000	19%
9	Dalyan - Yakakent	Samsun	300	3,000	10%
10	Sutas -Yakakent	Samsun	300	2,500	8%
11	Baysun - Yakakent	Samsun	500	15,240	29%
12	Sibal - Gebze	Sinop	500	6,000	11%
13	Baliksın - Gebze	Sinop	600	6,000	10%
			5,325	111,989	

Remarks: It is assumed that the plants operate at full capacity for 3.5 months during the season.

Source: Trabzon Fisheries Research Center

In DOKAP, there are four factories with a total daily capacity of about 1,075 tons, and currently only two are known to be operational. The fish meal industry in general is diminishing, leaving significant excess capacity. Hence, the animal feed industry's demand for fish meal is met by imports.

There are two processing factories in Fatsa (Ordu province). One is an EBK (the State Meat and Fish Corporation) factory processing trout fillet, canning of anchovy, etc. This factory is state-owned, and it gets its supply of trout for processing from the western part of Turkey. The other is an Italian-Turkish joint venture firm canning of fish and shellfish and bottling anchovies in oil mainly for the Italian market. The firm imports frozen anchovy from Italy during lean season for operation throughout the year.

Regulations related to export and import of fisheries products are implemented by the General Directorate of Protection and Control in MARA. EU is the most important market for Turkey; approximately 80% of the exports are to EU countries. EU countries are demanding high quality conditions for the products. As a result of strict control by EU veterinary commission, the export of fresh and processed mollusks and crustaceans, and also fresh fish from Turkey was prohibited in February 1998. MARA undertook a strict surveillance and control of the processing plants to quality control and HACCP. By January 1999, the prohibitions on processed and fresh fish were lifted but is still continuing for mollusks.

3.5 Aquaculture Conditions and Facilities

(1) Fresh water rainbow trout farming

The DOKAP region has rivers and streams with a perennial water flow and many smaller fresh water streams. The water temperature varies from 8-18°C and it is suitable for rainbow trout (*Salmo gairdneri*), which is the most suitable fish for culture, since this species tolerates different temperatures, captivity, salinity, and population density.

According to data provided by the provincial MARA offices, the DOKAP region has 284 trout farms with a total capacity of 3,564 tons a year and their total production in 1998 was 2,324 tons (See Table 16). Many of the farms are small with an annual output of only a few tons.

Table 16 Projected Production of Freshwater Trout Using Existing Production Capacity and Newly Constructed Capacity in DOKAP

Year	Existing Production Capacity (tons/year)	Annual Production (tons/year)	Un-utilized Capacity (tons/year)	Un-utilized Production Capacity brought into Production (tons/year)	Accumulated Production Using Un-utilized Production Capacity (tons/year)	Accumulated Production of Existing Production capacity (tons/year)	Construction of New Production Capacity - Accumulated Capacity (tons/year)	Total Production (tons/year)
	A	B	C = A-B	D	E	F = B + E	G	H = F + G
1998	3,564	2,324	1,240	-	-	2,324	-	2,324
1999		2,324	-	-	-	2,324	-	2,324
2000		2,324	-	-	-	2,324	-	2,324
2001		2,324	1,228	12	12	2,336	-	2,336
2002		2,324	1,210	18	30	2,354	-	2,354
2003		2,324	1,184	26	56	2,380	-	2,380
2004		2,324	1,144	40	96	2,420	180	2,600
2005		2,324	1,086	58	154	2,478	180	2,658
2006		2,324	1,001	85	239	2,563	360	2,923
2007		2,324	875	126	365	2,689	360	3,049
2008		2,324	688	187	552	2,876	540	3,416
2009		2,324	411	277	829	3,153	540	3,693
2010		2,324	0	411	1240	3,564	720	4,284
				1240		3,564		

Remarks: 1) It is assumed that the un-utilized production capacity (1240 tons/year) will increase gradually from 1% in the year 2001 to 33% in 2010.
2) It is assumed that construction of new production capacity will be at 5% of the existing capacity in the years 2004, 2006, 2008 and 2010.

The production characteristics of these farms are similar to those elsewhere in Turkey. Under the conditions in Turkey, it takes 10 to 16 months to grow rainbow trout from the egg to a marketable size of 250-300g.

Most of the trout farms, even the small operations, hold their own broodstock, operate their own hatcheries, and use established technology. A few may buy fry/fingerlings from other hatcheries. Incubation of eggs and rearing of fry

normally uses spring water supplies, which remain cold and free of silt. Most farms rear fry and fingerlings in small concrete raceways, and some farms use circular tanks made of concrete, fiberglass or plastic. Feeding is entirely with commercially made dry pellet feeds.

For grow-out to market size (250-300g), the farms use concrete ponds and raceways of various sizes and shapes. There is no standard design. Water supplies are from springs, or water taken directly from the streams. Pellet diets are normally fed by hand, and conventional manual grading and handling practices are employed.

All of the products from small trout farms are sold locally. Direct sales to retail or catering outlets and farm gate sales to consumers are important, especially for the smaller producers or family-run trout farms which operate their own restaurant. Trout of large farm producers is distributed via the normal fish trading channels that are the fish wholesale markets in Istanbul, Izmir or Ankara to fish shops, market stalls, restaurants and hotels.

(2) Sea cage (floating cage) culture

Fish culture of trout and Atlantic salmon (*Salmo salar*) in sea cages started around 1990. Initially, the culture of salmon was more predominant than trout, but later it fell by more than half due to technical and market limitations. The sea cages in the DOKAP region, especially in Ordu and Trabzon provinces, are mainly utilized for rainbow trout. Although rainbow trout is considered to be a freshwater species, fish over about 50g can adapt to life in the sea. The growth rate is better in seawater than in freshwater due to the more suitable winter temperatures of the sea. The salinity of Black Sea is ideally suited to the growth of rainbow trout, and trials have shown that trout growth in Black Sea can be good, with 50-100g fingerlings reaching 1.5 to 2 kg in 8 to 9 months. However, the surface water temperature of Black Sea becomes critically high during summer for rainbow trout, which does not tolerate temperatures above 20°C. When the temperature reaches 18-20°C, diseases develop, and the culture season has to be halted to avoid massive losses. Mass mortalities occur and most farms are forced to harvest all their fish before summer.

Currently, there are a few floating cage farms producing less than 2,000 tons of fish. Existing trout farms supply the fingerlings. Feeds are the same dry pellet diets used in freshwater trout farms and some farms make their own moist-pellet feeds using fish meal and other ingredients.

(3) Black sea trout culture project

The Black Sea basin is home to several species of anadromous fish, which grow in the sea but must return to rivers to reproduce. The Black Sea trout (*Salmo trutta labrax*) is one of them and is believed to be a unique subspecies living only in the Black Sea catchment. During the past decades, the stocks of sea trout reproducing in the Turkish Black Sea rivers have become seriously depleted. Recognizing that the valuable natural resource was in decline and perhaps in danger of extinction, a stock rehabilitation program was initiated. The objective and rationale of the project is to realize the sustainability of Black Sea trout, and to find the potentiality for culture in sea cages. The fingerlings produced in this project will be released into sea for stock rehabilitation, used for demonstration in sea cage culture, and given to interested sea cage farmers. The project was planned to be conducted in two stages. The first stage consisted of the study of the biological and ecological characteristics of the Black Sea trout in the natural condition and it was completed using the facilities and manpower of the Trabzon Fisheries Research Institute. The second stage consists of culture and propagation of fingerlings for release and culture. This requires prototype hatchery, equipment, buildings and facilities on land. The proposed location of the building and facilities is Senyuva Koyu in Rize province. The proposed output capacity of the project is one million eggs a year and 500,000 fingerlings/year. The expenditure of the first stage of the project was \$17,000. The proposed cost of the second stage is about TL182 billion. Some cost are to be covered by the private sector. This project is under MARA, Directorate of Rural Affairs, Directorate of Aquaculture Products, Rize Provincial Agricultural Directorate, and Trabzon Fisheries Research Center.

(4) Black Sea turbot research project

The Black Sea turbot (*Pseta maxima*) research project is currently being undertaken with the support of JICA under the “Development Project for Fish Production in Black Sea”. It is a five-year project, which started in 1997 and based at the Trabzon Fisheries Research Institute. The project has six Japanese staff members (a coordinator, team leader and four research scientists) working with seven Turkish scientists. The objective is to conduct research and develop mass production technique of turbot fingerlings that could be used in stock enhancement and development of on-growing techniques. Eventually, if successful, the hatchery and on-growing techniques will be provided to private

entrepreneurs to expand commercial turbot hatcheries and commercial scale growing of turbot.

3.6 Fish Marketing

The fish marketing channel in the DOKAP region is similar to that explained in Section 2.2 and a schematic view of the marketing channel in the region is shown in Figure 2. Fish marketing is almost exclusively managed by the private sector and it functions efficiently. The state EBK is not involved in the marketing of fish in the DOKAP region. The basic problem facing the fish marketing is an inadequate level of fish supply to meet the expanding demand, which limits consumer satisfaction in terms of choice and price.

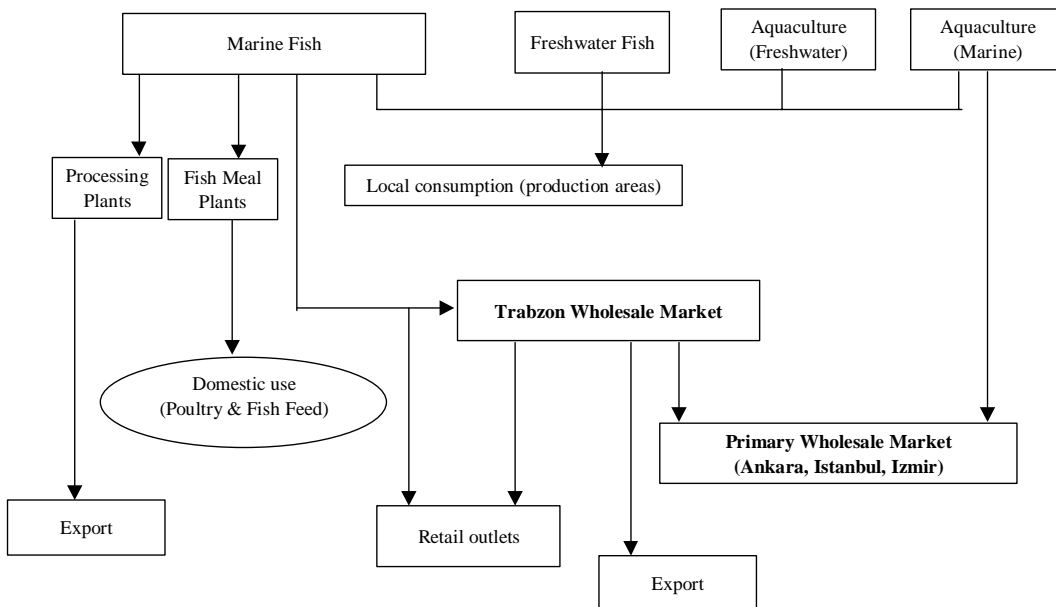


Figure 2 Fish Marketing and Distribution Channel in DOKAP

The fishermen use any port or landing sites, have the catch transported by truck, and can also access any market they choose, depending on the price. Wholesale markets, such as the Trabzon wholesale market in the production area and the Ankara wholesale market in the consumption area, continue to handle the bulk of cheaper fish. More expensive fish is sold outside the markets to avoid marketing charges and taxes. For example, in 1998 about 40% of the fish handled at the Ankara wholesale market were anchovy from the Black Sea region. Marine farmed fish bypasses the Trabzon wholesale market and is directly transported to

primary wholesale markets in Istanbul and Izmir and to restaurants, while the farmed trout are locally consumed.

3.7 Issues in the DOKAP Fishery Sector

(1) Marine fishery

The fish landings from capture fisheries of Black Sea contribute to about 70% of the total fish production share in Turkey. In recent years, the fish landings are declining due to ecological degradation and over-fishing of Black Sea. The fishery resources of Black Sea are transboundary in nature and its present status is not clear. There is a lack of reliable data on the exploited fish population in the Turkish part of Black Sea as well as in the neighboring countries.

The major share of the fish landings depends heavily on anchovy, a shoaling and migratory pelagic fish, which grows to a length of 20cm and can live to five years. Anchovies spend the summer months in the north and central areas of Black Sea where they spawn, and migrate south to the Turkish coast in early winter. Aggregations of anchovy are found in Turkish waters from November until early March. The seasonal migration patterns are subject to the oceanographic variables of temperature, salinity and availability of food (plankton).

The total landing volume of the Black Sea anchovy which was around 500,000 tons in the mid-1980s declined to less than 100,000 tons in 1990. It was followed by gradual recovery to 388,000 tons in 1995. The reasons for the decline are attributed to direct predation on the fish eggs and larvae and/or competition for food by an introduced species of jellyfish of the genus *Mnemiopsis*, and the cause of mass mortality due to presence of H₂S-rich benthic water strata. It is believed that the jellyfish was introduced from the Atlantic Ocean by oil-tanker ballast.

Other commercial species such as sprat, whiting, horse mackerel and turbot have been overexploited. Over-capitalization, leading to increase in the number of vessels and introduction of new fishing technology, has led to the problem of over fishing. Interviewed fishermen also indicated a decline in quantity and size of fish in their catches.

The fishing communities tend to lack awareness on the role of conservation and protection of fishery resources. Management of fisheries is vital to the sustainable use of existing resources. The Directorate of Protection and Control of MARA is enforcing regulation of restricted gear and equipment, and closed seasons and areas. However, it is unable to effectively carry out its monitoring,

surveillance and control activities due to problems of manpower, equipment and facilities.

(2) Sea (floating) cage culture

Fish culture (trout and salmon) in floating sea cages started around 1990, mainly targeting the export market. Initially, the production of salmon was greater than trout, but it fell by more than half in 1991 and its development has been hampered by technical and market limitations. The limitations are as explained below.

The Black Sea coastline almost entirely lacks the natural indentation, bays or coves that provide sheltered sites for mooring conventional floating cages, while the few available sheltered sites and natural enclosed bays are relatively shallow and therefore unsuitable because of the temperature profile.

The present design of sea cages is not suited to the environmental conditions of the winter. The wave frequency and period are particularly severe in Black Sea during winters, and wave heights are known to reach as high as six metres. Even the largest and better-engineered cages used in the salmon industry elsewhere have not survived these winter conditions.

Hence, sea cage farmers in Black Sea have deployed large, robust and expensive cages close to the shores and even within the breakwaters. In spite of these cages, many have been known to suffer damage and fish losses during the winter months.

Further environmental problems occur during summer especially for Black Sea fish farms, when the surface water temperature becomes critically high for rainbow trout, which does not tolerate temperatures above 20°C. In the case of trout, when the temperature reaches 18-20°C, diseases develop and the culture season has to be halted to avoid massive losses. Farms are forced to harvest all their fish before summer. This results in an early summer glut and a fall in prices, as the peak supply period does not coincide with the peak in demand, which occurs later in the summer. Some fish farmers transfer the fish back into cooler freshwater for the summer. This does not appear to be an economically viable solution, especially in view of the long distance between the coast and freshwater trout farms. Besides, the trout is susceptible to stress and disease during the transfer.

Other environmental issues stem from industrial pollution from coastal enterprises and local contamination from land reclamation schemes using domestic and industrial waste. Some enterprises use the river system for discharging wastes that find their way to the coastal areas.

The existing floating cages that have been set up close to shores in relatively shallow areas, such as bays and behind breakwaters, are subjected to these environmental issues.

The culture of large-size rainbow trout in sea cages originally targeted off-season delivery to the European market where fresh large-sized (3-4 kg) fish were in demand. The large-size rainbow trout, however, are in competition with the Atlantic salmon. Turkish producers have to compete heavily with the well-established salmon industries of Norway, Scotland and Chile. As a result, Black Sea trout producers have to rely on domestic sales, which have been hindered by the fact that large trout is a relatively unknown product on the Turkish market.

(3) Freshwater trout culture

The culture of freshwater trout has grown rapidly and it is also gaining importance in the DOKAP region. However, these farms are not producing to full capacity. It appears that technical and market limitations have prevented the optimum (effective) utilization of existing capacity. Moreover, there is no shortage of sites suitable for trout farming in the region as most of the best waters are in the eastern part of the Black Sea region. However, various constraints and issues related to technical and institutional aspects hamper its development. The constraints and issues are inadequate planning in site selection, insufficient supply of fry, individual marketing (producers are not organized to cooperate in market development), high feed costs, low quality feed, no assistance for disease diagnosis, prevention and control, inadequate extension service by the state, etc.

CHAPTER 4 DEVELOPMENT PROSPECTS AND TARGETS

4.1 Marine Fishery

The five coastal provinces of the DOKAP region have adequate number and capacity of fishing harbours and shelters (breakwaters) to accommodate the different size of fishing boats. However, in view of the declining sea catch from the Black Sea due to overcapitalization in fishing vessels and technology in the past, and degradation of the marine environment, the development prospects are relatively limited. However, the improvement and establishment of shelters for fishermen and facilities for safekeeping of fishing nets, gear and engines, and repair of nets, etc., are necessary. For the long-term sustainability of the fishery sector, there is an urgent need to conserve and manage the limited fishery resources. Since the fishery resources are transboundary in nature, an action in cooperative resource management by countries sharing the Black Sea is required. Measures recommended are control, a reduced fishing fleet size and fish catch, strict observation of closed seasons and areas, and restrictions of fishing gear (mesh size) and equipment (ban on trawl), etc.

The development targets are rather limited in marine fishery in view of the declining fisheries resources in the Black Sea coast. It would be necessary to target the fisheries stocks in the neighboring countries, which are not adequately harvested, through fisheries agreements. This requires the introduction of offshore fishing vessels, and it should be carried out cautiously to avoid overcapitalization as occurred in the past.

4.2 Aquaculture

In view of the limited development prospects in the marine fishing sector, aquaculture has been viewed as a strategically important in meeting the future fish demand due to the limited production potential of capture fisheries. Aquaculture development has also been emphasized in the national development plan. Despite some constraints, there are development prospects in the fish culture (aquaculture) sector, particularly in the cultivation of trout, sea bass, and turbot, which may compensate for the decline in the local marine landings.

(1) Freshwater trout culture

Culture of trout in freshwater is well established in the DOKAP region, and its production increase is not limited. There are still considerable potential to

increase the production of trout farms. There is no shortage of skilled manpower as well as suitable sites, as most of the best waters of Turkey are located in the eastern part of Black Sea. Therefore, the existing trout farms in the region should be encouraged to gradually increase their output in tandem with market development.

The development targets are to use the existing un-utilized production capacity of trout (1,240 tons/year), and to construct new ponds (720 tons/year) in selected areas by the year 2010. Thereby, the total production will increase from the current 2,324 tons/year to 4,284 tons/year in 2010. This will require the establishment of at least two hatcheries, feed manufacture facilities, and other facilities for wider market development.

(2) Sea cage culture

Despite the technical and environmental constraints in sea culture (mariculture), there still exists some scope for development in this sector. There is difficulty in finding sufficient land needed to develop pond type farms, due to the nearby high mountains that parallel the coast. Any suitable sites available for fish culture compete with tourist industry. Therefore, sea cages offer the possibility for fish culturing as an alternative. Various strategies that could be adopted by fish farmers to overcome the existing problems in sea culture need to be investigated. The current locations of cages close to the coast in shallow areas should be moved to offshore areas with sufficient water circulation in summer months.

The development targets are to introduce improved design of offshore sea cages and to demonstrate their viability with a view to identifying and extending the appropriate techniques to entrepreneurs for commercial scale production. Besides trout, species such as sea bass, salmon, black sea trout, and others should be considered.

CHAPTER 5 DEVELOPMENT STRATEGY AND MEASURES

5.1 Marine Fishery Strategy

The development strategies in the marine fishery are as follows:

- The Directorate of Protection and Control needs to be strengthened through training and improving the technical competence and provision of equipment and facilities in order to carry out effectively the monitoring, surveillance and enforcement of the fishing regulations.
- The number of fish meal/oil plants need to be reduced, the use the small pelagic fish (anchovy) directly for human consumption need to be increased and the quantity of fish going to fish meal plant progressively reduced. It is cheaper to import fish meal for domestic feed manufacture. Domestic fish meal is sold at \$700/ton, while imported fish meal is \$400/ton.
- Fisheries agreements should be made to target the under-exploited fisheries stocks in the neighbouring countries.

5.2 Aquaculture Strategy

(1) Freshwater trout farming

In order to further develop and expand freshwater trout farming, the strategies are as follows:

- Establishment of a hatchery to ensure regular and quality supply of fingerlings,
- Establishment of fish feed manufacture to ensure an ample supply of quality feed at reasonable prices,
- Technical support in selection of sites, design of ponds, diagnosis of disease and its prevention and control,
- Promotion of aggressive marketing of farmed fish by establishing marketing facilities such as chill storage,
- Encouraging cooperatives formation to undertake a collaborative approach to marketing in order to develop organized marketing and increase demand, as many of the existing small producers tend to show little sign of expanding the market, and
- Encouraging collaborative marketing that will initiate a commitment to marketing through collaborative activities of producers, including the introduction of quality control and a code of practice as well as brand

development, which will increase the market demand and consumer confidence.

(2) Sea cage culture

The development strategies are deployment of large, robust and well-designed cages to withstand the harsh conditions of Black Sea. It is necessary to acquire the technology from overseas and to operate demonstration units with the cooperation of interested fish farmers. Various strategies that could be adopted by fish farmers to overcome the existing problems need to be investigated by the Central Fisheries Research Institute and the Marine Science Faculty of KTU. A World Bank survey conducted around 1992/3 has identified possible sites for cage culture of trout and salmon including land-based facilities, and it is necessary to consider these potential sites.

The stock rehabilitation program of Black Sea trout (*Salmo trutta labrax*) which is being initiated in Rize by the Central Fisheries Research Institute should be encouraged for the production of fingerlings for release in the wild and sea cage culture.

The turbot production project, currently undertaken with the support of JICA under the “Development Project for Fish Production in Black Sea”, is another development strategy for aquaculture. The World Bank survey has identified potential land based sites for turbot culture.

5.3 Proposed Projects

In view of the prevailing conditions in the DOKAP region in both the marine and inland fisheries, the culture of fish in both marine and inland waters, has substantial potential to supply fish in the region. Projects proposed are (1) Freshwater Aquaculture Support Program that will assist in the development of freshwater fish farming and its marketing, (2) Floating Cage Aquaculture Development Program which will develop more viable schemes with improved design and strong floating cages for mariculture, and (3) Innovative Mariculture Experiment Program that will broaden the options for the Black Sea fisheries with future oriented experiments. Profiles of the proposed projects are found in the Project Report.

Appendix 1 Available Supply and Per Capita Consumption of Fishery Products in Turkey

Year	Production		Exports		Processed (fish meal & oil)		Not-processed or consumed		Domestic Available Supply		Imports		Total Available Supply		Population		Per capita consumption kg
	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	Tons	%	thousand	g	

a																	

b																	

c																	

d																	

e = a-(b+c+d)																	

f																	

e+f																	

(e+f)/g																	
1988	676,004	100%	20,025	3%	162,040	24%	28,888	4%	465,051	69%	3,952	69%	469,003	53,715	8.73		
1989	457,116	100%	25,957	6%	84,826	19%	7,531	2%	338,802	74%	5,682	74%	344,484	54,893	6.28		
1990	385,114	100%	23,065	6%	24,045	6%	9,162	2%	328,842	85%	16,500	85%	345,342	56,095	6.16		
1991	364,661	100%	14,394	4%	58,856	16%	7,295	2%	284,116	78%	24,037	78%	308,153	57,326	5.38		
1992	454,346	100%	12,744	3%	29,598	7%	8,047	2%	403,957	89%	36,260	89%	440,217	58,584	7.51		
1993	556,044	100%	13,649	2%	98,231	18%	10,580	2%	433,584	78%	33,573	78%	467,157	59,869	7.80		
1994	601,104	100%	14,635	2%	106,695	18%	5,198	1%	474,576	79%	25,695	79%	500,271	61,183	8.18		
1995	649,200	100%	14,000	2%	51,200	8%	4,929	1%	579,071	89%	30,639	89%	609,710	62,526	9.75		
1996	549,646	100%	12,785	2%	17,842	3%	8,103	1%	510,916	93%	29,648	93%	540,564	63,898	8.46		
1997	500,260	100%	18,402	4%	21,000	4%	10,348	2%	450,510	90%	39,829	90%	490,339	65,300	7.51		

Remarks : a = Production includes sea fish, crustaceans, mollusks, freshwater fish and aquaculture.

b = Includes unprocessed fishery products.

f = includes fresh, chilled, smoked, frozen, salted, canned and other types of fish.

Appendix 2 Marine Capture Fisheries Production in Turkey (1980-1997)

Year	MARINE WATERS										FRESHWATERS			TOTAL
	Fish										Culture	Capture	Total	
	Medit.	Aegean	Marmara	West Black Sea	East Black Sea	Others*	Total							
1980	7,876	18,176	30,365	44,919	290,860	-	392,196	-	-	-	-	-	392,196	
1981	1,277	18,231	40,649	74,019	289,228	-	423,404	-	-	-	-	-	423,404	
1982	10,613	14,267	41,970	86,470	311,411	-	464,731	-	-	-	-	-	464,731	
1983	14,763	17,063	43,313	100,997	335,390	-	511,526	-	-	-	-	-	511,526	
1984	10,507	21,820	34,707	146,223	295,412	-	508,669	-	-	-	-	-	508,669	
1985	10,693	22,218	35,333	147,757	303,910	-	519,911	-	-	-	-	-	519,911	
1986	14,061	22,024	50,377	140,979	297,940	-	525,381	3,075	-	-	3,075	-	528,456	
1987	13,074	22,665	56,190	151,853	318,915	-	562,697	3,303	-	-	3,303	-	566,000	
1988	15,005	31,505	53,791	127,913	352,487	-	580,701	4,100	-	-	4,100	-	584,801	
1989	23,061	37,647	36,892	85,040	179,130	48,159	409,929	4,354	42,833	-	47,187	-	457,116	
1990	23,498	31,731	42,064	94,352	105,478	44,894	342,017	5,782	37,315	-	43,097	-	385,114	
1991	24,945	43,940	38,505	67,479	115,177	27,379	317,425	7,835	39,401	-	47,236	-	364,661	
1992	41,914	55,801	36,630	46,577	185,138	38,706	404,766	9,210	40,370	-	49,580	-	454,346	
1993	42,289	60,162	47,733	76,360	225,979	48,908	501,431	12,438	41,575	-	54,013	-	555,444	
1994	35,387	58,110	39,820	57,601	300,417	50,933	542,268	15,998	42,838	-	58,836	-	601,104	
1995	27,792	51,995	35,288	146,916	295,143	25,472	582,606	21,607	44,983	-	66,590	-	649,196	
1996	21,794	40,493	42,097	121,157	226,456	22,246	474,243	33,201	42,202	-	75,403	-	549,646	
1997	21,894	41,735	52,885	71,855	193,696	22,285	404,350	45,450	50,460	-	95,910	-	500,260	
Share of 1997 (Marine)	5%	10%	13%	18%	48%	6%	100%							
Share of 1997 (Total)	4%	8%	11%	14%	39%	4%		9%	10%		19%		100%	

Remarks : * refers to crustaceans, mollusks, etc.

Source: Fisheries Statistics, SIS

Appendix 3 Marine Fisheries Products of the Black Sea Region

	1995				1996				1997						
	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total
	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)
1. Marine fish	295.143	146.916	442.059	115.079	557.138	226.456	121.157	347.613	104.384	451.997	193.696	71.855	265.551	116.514	382.065
2. Crustacean, mollusk	2.007	16.686	18.693	6.779	25.472	2.603	9.345	11.948	10.298	22.246	2.652	8.848	11.500	10.785	22.285
Total	297.150	163.602	460.752	121.858	582.610	229.059	130.502	359.561	114.682	474.243	196.348	80.703	277.051	127.299	404.350
Share (%)	51%	28%	79%	21%	100%	48%	28%	76%	24%	100%	49%	20%	69%	31%	100%

1. Marine fish by species	1995				1996				1997						
	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total
	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)
Hake	623	91	714	9,002	9,716	576	230	806	10,712	11,518	101	120	221	14,779	15,000
Red mullet	520	545	1,065	2,841	3,906	1,981	268	2,249	1,687	3,936	785	388	1,173	1,827	3,000
Caca		1,570	1,570	69	1,639	0	937	937	671	1,608	0	468	468	32	500
Anchovy	270.080	103.702	373.782	13.792	387.574	191.849	81.390	273.239	17.441	290.680	170.500	43.280	213.780	27.220	241.000
Horse mackerel	4,125	6,383	10,508	752	11,260	4,800	6,582	11,382	1,118	12,500	3,762	4,322	8,084	1,416	9,500
Scad	322	4,979	5,301	2,130	7,431	360	4,351	4,711	2,848	7,559	1,233	1,780	3,013	2,087	5,100
Turbot	844	2,006	2,850	105	2,955	510	1,414	1,924	115	2,039	134	777	911	69	980
Grey mullet	5,118	2,661	7,779	9,931	17,710	5,166	7,735	12,901	10,407	23,308	5,458	3,222	8,680	11,820	20,500
Chub mackerel	691	907	1,598	15,812	17,410	209	836	1,045	9,399	10,444	0	2,203	2,203	8,647	10,850
Blue fish	166	3,381	3,547	1,919	5,466	27	2,180	2,207	1,910	4,117	101	1,514	1,615	1,435	3,050
Whiting	7,773	9,789	17,562	532	18,094	15,995	4,331	20,326	1,124	21,450	6,253	6,472	12,725	2,775	15,500
Bonito	859	5,708	6,567	1,813	8,380	1,274	5,249	6,523	3,213	9,736	3,358	2,450	5,808	1,592	7,400
Pilchard		481	481	33,331	33,812	0	949	949	18,023	18,972	0	275	275	20,225	20,500
Striped red			0	0	0	1,981	1,189	3,170	792	3,962	1,023	844	1,867	1,083	2,950
Other fishes	4,022	4,713	8,735	85,109	93,844	1,728	3,516	5,244	24,924	30,168	988	3,740	4,728	21,507	26,235
Total	295.143	146.916	442.059	115.079	557.138	226.456	121.157	347.613	104.384	451.997	193.696	71.855	265.551	116.514	382.065
Share (%)	53%	26%	79%	21%	100%	50%	27%	77%	23%	100%	51%	19%	70%	30%	100%

2. Crustacean, mollusk (by species)	1995				1996				1997						
	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total	East Black Sea	West Black Sea	Black sea (Total)	Other Region	Total
	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)	Share (%)
Cockle	0	11,540	11,540	324	11,864	0	7,647	7,647	3,278	10,925	0	6,094	6,094	1,056	7,150
Common jelly fish	108	102	210	277	487	226	200	426	478	904	44	243	287	613	900
Sea snail	1,172	26	1,198	0	1,198	2,202	245	2,447	0	2,447	1,616	404	2,020	0	2,020
Mussel	727	5,014	5,741	301	6,042	175	1,225	1,400	2,100	3,500	952	2,000	2,952	3,498	6,450
Others	0	4	4	5,877	5,889	0	28	28	4,442	4,470	40	107	147	5,618	5,765
Total	2,007	16,686	18,693	6,779	25,472	2,603	9,345	11,948	10,298	22,246	2,652	8,848	11,500	10,785	22,285
Share (%)	8%	66%	73%	27%	100%	12%	42%	54%	46%	100%	12%	40%	52%	48%	100%

Source: Fisheries Statistics, SIS

Appendix 4 Estimated Profit/Loss of Freshwater Trout Farming

	Unit: Million TL										
	2000 Year 0	2001 Year 1	2002 Year 2	2003 Year 3	2004 Year 4	2005 Year 5	2006 Year 6	2007 Year 7	2008 Year 8	2009 Year 9	2010 Year 10
Sales											
Trout produced (tons)	2,324	2,336	2,354	2,380	2,600	2,658	2,923	3,049	3,416	3,693	4,284
Sales value@1.100 million TL/ton	2,556,400	2,569,600	2,589,400	2,618,000	2,860,000	2,923,800	3,215,300	3,353,900	3,757,600	4,062,300	4,712,400
Production Cost (million TL)											
Feed@485 million/1000kg	1,127,140	1,132,960	1,141,690	1,154,300	1,261,000	1,289,130	1,417,655	1,478,765	1,656,760	1,791,105	2,077,740
Frys @50 millionTL/5.000 fry	581,000	584,000	588,500	595,000	650,000	664,500	730,750	762,250	854,000	923,250	1,071,000
Other expenses	151,060	151,840	153,010	154,700	169,000	172,770	189,995	198,185	222,040	240,045	278,460
Total Production Cost	1,859,200	1,868,800	1,883,200	1,904,000	2,080,000	2,126,400	2,338,400	2,439,200	2,732,800	2,954,400	3,427,200
Profit/loss	697,200	700,800	706,200	714,000	780,000	797,400	876,900	914,700	1,024,800	1,107,900	1,285,200

Remarks: 1) The price is constant Turkish Lira (TL) as of May/June 1999 (Survey period in Phase 1).

2) Farmgate price of culture trout is 1.1 million TL/kg.

3) Fish feed price is 300,000TL/kg.

4) Fish fry price is 10,000TL/fry.

5) Feed conversion ratio is 1.7:1.

3. Industry

CHAPTER 1 INTRODUCTION

This report presents a detailed study of the industrial sector in the DOKAP region. It provides analysis of the existing conditions, development potential and targets, and the main issues that need to be addressed in formulating policies and programs for the industrial development of the region.

The report starts with a diagnosis of the existing situation of industrial development in the region. Due to data problems, a fairly long description of the actual level of industrialization and the structure of the existing industries is presented. The latter includes analysis of size distribution of industrial units as well as location within the region.

The analysis of the existing situation also covers the available support services for the industry. This is presented within the new policy framework, which relies on the private sector for investment in industry while the Government's role is to create the enabling environment for rapid development.

The first part of this report concludes with an analysis of constraints faced by the regional industry. These are analyzed not only to explain the relatively little industrialization in the region, but also to assess the objective conditions under which industrial enterprises may have to operate in the future. This discussion is complemented by an analysis of the development potential in the region in Chapter 3.

The last two chapters present industrial development strategies that may be pursued and the likely subsectors or product groups that will develop with appropriate support from the Government. The analysis starts with a fairly comprehensive review of the possible development projects identified by different analysts. This list is then narrowed in stages in the light of development objectives and industry characteristics.

Specific projects to be implemented by the Government agencies and promising areas of private sector investments are identified. In-depth analysis of the proposed programs and most promising private sector activities is presented in a separate volume.

CHAPTER 2 CURRENT STATE OF INDUSTRY

2.1 Industrial Output and Employment

2.1.1 GDP measures

The most up-to-date data available for GDP by sector are the 1997 data of the State Institute of Statistics. GDP and its sectoral shares in 1997 are given in Appendix 1 and Appendix 2, respectively. The changes in industrial production in the region for the period 1987-1997 is given in Appendix 3. The industrial production in the region has grown by 2.7% per annum since 1987, about half of the national growth rate.

Time series data given in Appendix 3 show that all of the growth in industry in the region has originated from mining. Manufacturing and utilities have been very stagnant, registering practically no growth.

The detailed data given in Appendix 1 and Appendix 2 show that manufacturing industries provided 24.7% of GDP in Turkey in 1997, but only 12.4% in the DOKAP region.

2.1.2 Employment

The database for assessing the size and structure of industry is very diverse and needs to be analyzed carefully. Different levels of industrialization and industry characteristics are reported by different data sources.

Two major sources of cross-section data used for assessment of employment are the 1990 Census of Population and the 1992 General Survey of Enterprises. The last population census was undertaken in 1997 but this was a special survey and information on socio-economic characteristics of population was not collected by this survey. The most recent survey that includes employment information is the 1990 Census, and the data compiled from this census are given in Appendix 4.

The 1990 Census reports the largest number of workers in the manufacturing sector compared with all other data sources. It reported 82,426 workers in the manufacturing sector in the DOKAP region in 1990. Employment in mining and utilities is small. The total employment in industry was 87,142 during the same year. Given the stagnant level of population, employment and industries in the region, the level of manufacturing employment is unlikely to have changed significantly since 1990. Therefore, the 1990 census figures are likely also to represent the actual situation in more recent years.

The other comprehensive source of manufacturing data is the Survey of Enterprises. The last of those was undertaken in 1992. According to this survey, there were 39,695 workers in manufacturing in the DOKAP region in 1992 (Appendix 5).

Annual surveys of manufacturing enterprises are undertaken by SIS, but these surveys have limited coverage as they exclude enterprises employing less than 10 workers. The latest such survey data are available for 1996 (Appendix 6). It reports that there were 23,175 workers in enterprises employing more than 10 workers.

The reason for very big differences in employment figures between the population census and the Survey of Enterprises is that the time series enterprise survey data cover only a fraction of the existing employment.

Enterprise level information is also available from various government agencies and trade associations. The tax authority and social security administration maintain up to date information on enterprises and employment. A list of all enterprises and their labor force is also maintained by the Ministry of Labor.

Every province has a union of trade associations. These trade associations tend to be organized around product lines such as association of wood workers, blacksmiths, and tailors. Information available in these associations was collected by the study team to build an alternative database for manufacturing in the DOKAP region. Information was also collected from the Chambers of Trade and Industry, Association of Tradesmen, Provincial Directorates of Ministry of Labor, Tax Registration Offices, and Social Security (SSK) Registration. The most comprehensive coverage was found to be in the records of Social Security. The SSK data, together with the data collected by the study team are presented in Appendix 7.

Information on all relatively large enterprises is available from the Chambers of Industry. Records of these are fairly reliable. Smaller enterprises in the formal sector are covered by the SIS surveys.

Small and micro enterprises tend to register with the trade associations, because this is a requirement of access to the credit extended on concessionary terms. All of these have a registered work place and keep legal books. It is likely that the only record of informal sector is the occupational data provided in the population census.

The four available employment figures reported by different sources are presented below for comparison purposes at subsector level.

Table 1 Comparison of Employment Reported by Different Sources

Manufacturing Industry	Field Survey ('99)	SSK ('97)	SIS Ind. Survey ('92)	SIS Pop Census ('90)
31. Food, drink and tobacco	44,023	35,990	24,577	35,472
32. Textile, clothing and leather	3,236	1,666	2,499	20,698
33. Timber and timber products	6,388	3,461	3,850	9,568
34. Paper, and paper products	1,018	736	782	1,551
35. Chemistry	1,158	931	311	952
36. Stone & soil related industry	2,715	1,853	1,486	1,824
37. Metal industry	178	244	614	1,979
38. Metal products, machine & eqpt.	4,309	3,698	2,809	7,228
39. Other man industries	221	2,931	55	1,974
TOTAL	63,246	51,510	39,695	82,426

Source : Compiled from various tables given in this report

There are two possible causes of the difference between the relatively large number reported in the census and those of the alternative sources. First, the census seems to register the general fields of qualification rather than actual employment status of an individual. Thus, all underemployed and some of the unemployed people are registered among the manufacturing workers. Second, the census reports micro enterprises and informal sector employment. The alternative sources only cover those with a registered workplace. The difference between the two (those working at home or with unregistered workplaces) is very large. Part of the difference may also be due to under-reporting of the number of employees by some formal sector enterprises.

From a synthesis of all available data, the total manufacturing employment in the DOKAP region that could thus be identified was 63,246 workers in 1999. This is significantly larger than the number reported in the 1992 SIS Survey, but still can not account for total manufacturing employment (82,426) reported in the 1990 Population Census.

The subsectors where there are very large differences between registered and total employment is indicative of industry structure. Most of the informal sector employment seems to be in textiles and apparel. Products of wood follow this. Most enterprises involved in food processing seem to be officially registered.

Comparisons with the national averages, based on the 1990 census results, show that there is very little manufacturing employment in the DOKAP region relative to the national averages. In Turkey, 11.9% of labor force was employed in manufacturing. In the region, this was 5.9% (Appendix 4). The share of DOKAP

in national manufacturing employment was 2% compared with its population share of 5.3%.

2.1.3 Industry structure

There are two key characteristics of manufacturing industry in the DOKAP region. First, existing industries in the region are heavily concentrated in food processing - mainly tea and hazelnuts (Appendices 7 and 8). Second, almost all manufacturing enterprises are small; only few firms employ more than 100 workers.

Two indices of industrial concentration are calculated for the manufacturing sector. The first is based on field survey data collected by the Study Team and 1990 SIS Population Census, and the other uses only the census data (Appendix 8). Although there is a 9-year time gap between the two data sources, the picture that emerges from the field studies generally confirms the pattern indicated by the SIS data. Food processing is very dominant in all sources.

Two other key subsectors are wood/ furniture, and metal processing. Regardless of the data source, there is a large concentration in food processing in the DOKAP region. This concentration is three to five times the average observed in Turkey.

Indices of concentration also reveal subsectors where the region is relatively underdeveloped. There is practically no industry in clay/sand products such as bricks, tiles, sanitary ware, and pots and pans. Consumer plastics and machinery production are also relatively weak. Electronics and scientific equipment manufacturing industries that require high-tech and skilled manpower do not exist at all.

2.1.4 Labor productivity

Comparable data for DOKAP and Turkey are provided in the 1992 Survey. Based on these data, labor productivity in the DOKAP region is only 38% of the productivity in Turkey as shown in Table 2.

Table 2 Value Added per Worker for Enterprises with more than 10 workers

(Unit: million TL in 1992 prices)

	Overall Manufacturing	Food Processing	Non-food Manufacturing
DOKAP	95,232	84,880	135,350
TURKEY	251,724	234,361	255,733

Food processing seems to be particularly inefficient in the region, though this inefficiency is true of other sectors as well. The particularly low productivity in food processing is critical due to the dominance of this subsector in the region.

A field survey by the Study Team shows that (Appendix 8) nearly 70% of all manufacturing employment in the DOKAP region was in food processing. The combination of this dominance of food processing and its relatively low labor productivity is the cause of low productivity in overall manufacturing.

It is known that there are large differences in labor productivity between small and large enterprises. This could not be tested in this study due to lack of data on the DOKAP region.

The level of industrialization, measured by both the proportion of labor force in manufacturing and by the share of manufacturing GDP, is half of the national average. Productivity of existing industries is also very low - about one-third of the national average.

2.2 Provincial Distribution and Location

2.2.1 Provincial distribution

Industry is largely concentrated in Ordu and Trabzon. These two provinces have more than half of manufacturing employment of the region (Appendix 4). Rize also has a significant share of industry in the region. In Rize, manufacturing basically consists of tea processing. The level of manufacturing value added in Rize fluctuates widely depending on tea prices. The changes in manufacturing value added in Rize indicate a steady decline in the level of industrialization in that province (Appendix 3).

Ordu has the most diverse manufacturing base among all provinces in the region in terms of subsector representation. There are enterprises in all subsectors of manufacturing in Ordu while other provinces seem to have specialized in certain subsectors.

In Giresun, hazelnut processing is the base of manufacturing. One major difference between the findings of the Study Team and SIS statistics, reported in Appendices 5 and 6, is about Giresun. The findings of the Study Team, reported in Appendix 7, indicate a fairly diversified manufacturing base in Giresun. This diversity is as rich as the ones observed in Trabzon and Ordu provinces.

Artvin is specialized in lumber products. There is practically no industry in Bayburt and Gumushane.

2.2.2 Location by type of industry

In Turkey, the Government assisted programs provide two types of industrial land/plots. Organized Industrial Zones (OIZ's) are large tracts of land fully equipped with all physical infrastructure. An organization of industrialists acquires, plans, and develops this land for its members. The Government assists by providing long-term, low-interest credit. The Government assistance is confined to the development of the industrial plots only with no further assistance for construction of factory buildings. There are restrictions on the resale of plots acquired with this government assistance. The minimum size of plots is generally over 1,000m² and they tend to be used by large factories, employing over 20 workers.

The other Government supported program builds workplaces in Small Industry Districts (SID's). As in OIZ's, the initiative is taken by an organization of the members. A large plot of land is acquired, generally within the urban built up area, and standard workplaces are built for the individual members. The Government finances up to 90% of the total costs of land acquisition, development, and building of standard workshops. The beneficiaries are generally small industrialists employing less than 10 workers: in many cases just the owner with a few assistants (a journeyman and few apprentices). These districts tend to specialize in product lines such as furniture manufacturers, blacksmiths, metal workers, etc.

Large industries that have special infrastructure requirements, i.e. a relatively large plot for efficient operations, reliable water and power, or special treatment of their effluent tend to locate in OIZ's. Specially noisy and noxious industries may also be required to locate in these estates. Other large industries tend to develop their own lots in suitable free standing plots.

Smaller industries, which are not suitable for locations in mixed land use areas in cities, tend to locate in SID's. Some service industries, such as car repair, are also allowed to locate in these districts, though this was not the original intention of the program. It occurred as the Governments tended to overbuild these districts for political reasons and needed to relax the eligibility requirements to get some demand. Other smaller firms and all micro enterprises that cannot afford specialized work places will spread throughout the built up areas.

2.2.3 Demand and supply of industrial plots

(1) Number of enterprises by size group

The first group comprises those enterprises employing more than 10 workers. The number of people working in such enterprises was reported to be 23,175 in the 1996 SIS Survey of Industries.

When estimating the requirements for industrial plots in OIZ's, food-processing enterprises should be excluded from this group; tea-processing plants locate near primary production. Other prominent food processing categories (bakeries, cake shops, etc.) have no adverse impact on their immediate surroundings and are allowed to operate in mixed land use areas. Hazelnut shelling facilities are similar in their environmental impact and can be located in scattered locations near sources of labor. Excluding food processing, manufacturing enterprises (with more than 10 workers) employed 3,672 workers in the DOKAP region in 1996 (Appendix 6). This represents the ceiling for the manufacturing employment to be located in OIZ's in the region at present time.

The second group of employment in the DOKAP region is what may be termed "micro-enterprises". These have formal registration, tend to be members of professional associations rather than the Chamber of Industry, and employ less than 10 workers.

The size of employment in these enterprises is calculated as the difference between employment in all enterprises (Appendix 5) and those employing more than 10 workers (Appendix 6). Excluding food industry, there were 11,446 employees in such enterprises in 1992. This figure is assumed not to have changed during 1992-1996.

The third group, which can be named as "informal" sector are those who do not have a registered workplace and do not keep records. The difference between all manufacturing employment from the 1990 population Census (Appendix 4) and the employment with formal registration from the 1992 Industry Survey (Appendix 5) may be used as an indicator of the informal sector. This is the largest group with an estimated employment of 42,731 workers in 1992.

Based on 1996 employment estimates above, 3,672 employees of the first group and 11,446 employees in the second group need to be accommodated in industrial estates or districts. The availability of the industrial plots and workplaces seem to far exceed the estimated requirements for the present conditions.

(2) Available land in Organized Industrial Zones (OIZ)

The first Organized Industrial Zone established in the region was the one in Trabzon in 1992. In 1999, some production occurred only on half of the industrial plots. In other plots, the buildings are either not built or the standard buildings that were built remain vacant. At full development, this zone is estimated to accommodate 7,400 workers. This is about double the number of workers estimated for the whole of DOKAP at present.

Total employment in Trabzon in enterprises employing more than 10 workers in 1996 was 4,760 workers (Appendix 6). Considering that only some of these enterprises would be eligible to locate in these estates, there seems to be considerable excess of industrial land in Trabzon even if all enterprises were to locate in the zone. One cause of this large supply of industrial plots, compared with the actual manufacturing requirement, is the heavy subsidization by the Government.

There are plans to construct two additional Industrial Estates in Trabzon province: one planned for Vakfikebir and the other in Besikduzu. These two are at different stages of development.

The second operating OIZ in the DOKAP region is in Ordu. It has 82 industrial plots, of which 22 are in production and factory buildings are being built on the further 28 plots. The largest of the industrial plants in Ordu are located on stand-alone plots outside the existing industrial estate.

All other urban centers in the region except Artvin, have plans to build organized industrial zones as well. Information on known characteristics of these estates is summarized below.

Table 3 Organized Industrial Zones (OIZ) in DOKAP

	Area (Ha.)	Number of parcels	Total estimated employment at Full development
Trabzon (Arsin)	100.0	109	6,600
Trabzon-Vakfikebir	100.0	At expropriation stage	n.a.
Ordu – provincial center	60.0	71	4,500
Ordu (Ünye)	100.0	At the planning stage	n.a.
Ordu (Fatsa)	100.0	At the planning stage	n.a.
Giresun - provincial center	70.0	48	3,900
Rize – Center	n.a.	Site selection	n.a.
Bayburt – Center	500.0	At the initial stage of planning	n.a.
Gümüşhane	75.0	At the initial stage of planning	n.a.

Source: Ministry of Industry, and the Study Team

n.a.: Not available

The total manufacturing capacity of all the existing and planned OIZ's is around 50,000 workers. By comparison, there were 23,175 workers in all enterprises employing more than 10 workers in the DOKAP region in 1996. There is considerably more than enough industrial land available in Organized Industrial Zones in the region.

(3) Small industry districts (SID's)

There are 40 SID's in various stages of development in the DOKAP region. A list of these with their capacities and the present status is given below.

The number of workplaces in 31 SID's, where the size is already determined, is 4,462 workplaces. Assuming four workers per workshop, the planned districts would accommodate close to 18,000 workers. This is three times the amount of all employment in the region in enterprises employing 1 - 10 workers. Thus, there are many more work places in small industry districts than there is demand.

Table 4 Small Industry Districts in DOKAP

	SID	No of Work Places	Work Places in Operation
ORDU	Center	350	350
	Center – Ata	194	50
	Fatsa	300	294
	Fatsa – 2 nd stage	100	At planning stage
	Ünye	266	266
RIZE	Center	214	214
	Çayeli	122	112
	Ardesen	100	Under Construction
	Pazar	50	At planning stage
GİRESUN	Center	209	209
	Bulancak	265	157
	Sebinkarahisar	123	-
	Görele	150	At planning stage
ARTVIN	Center	102	Under Construction
	Hopa	143	Under Construction
TRABZON	Center	262	262
	Center – Fatih	119	119
	Center – Marangozlar	176	152
	Of	111	96
	Sürmene	126	Under Construction
	Akçaabat	54	Under Construction
G.HANE	Center	120	115
	Kelkit	212	150
BAYBURT	Center	180	Under Construction

Source: JICA Study Team

(4) Causes of oversupply of industrial plots

Development of OIZ's and SID's help to improve the environmental quality of urban areas by locating industries in areas away from the residences and offices.

Investment costs are reduced for the industrialists by providing ready sites or workshops at heavily subsidized prices. These specialized areas are also designed to agglomerate related industries to facilitate their business/process related interactions, eventually cutting their production costs.

The main element of subsidy is financing terms. In OIZ's, the procurement of land and land development are heavily subsidized. At present the Ministry of Industry finances 90 to 99% of total costs for the zones. There is a grace period of five years and the repayment period is 15 years. Until the beginning of 1997, the interest rate was 12% in priority areas and 15% in others. Since then, the interest rate has been raised to 25% in DOKAP provinces. Considering that the average inflation over the last 20 years has been over 80%, there is a huge subsidy in these financing terms. In line with the projected inflation of 25% in 2000, the interest rate in DOKAP provinces is reduced to 10%.

There are other incentives for locating in OIZ's. Investments in these are eligible for the full range of incentives, which are available only in the least developed areas. These are discussed in Section 2.3.

In the case of Small Industry Districts, the Ministry of Industry finances 50 to 70% of the total investment. The grace period is one year, with repayment in 11 years. The interest rate is the same as that of the estates. Unlike the estates, in the case of districts, the Government finances the construction costs of individual shops as well.

Such generous incentives have resulted in speculative investments in industrial areas over the years, and eventually the supply of industrial plots has exceeded the requirements. Although the eligibility criteria for these plots are clearly defined, concern with the facilities remaining idle has led to relaxation of eligibility criteria.

The demand for industrial plots can be limited even at the existing levels of subsidization if criteria for eligibility are maintained. A strict application of these criteria would have prevented speculative demand and would have excluded enterprises that need not to locate in these estates and districts.

One possible strategy for meeting the future demand, without developing new projects, is to encourage the sale of existing work places to truly eligible enterprises. One adverse effect of this is that the premises may not be truly suitable for the requirements of new owners. In some cases, the initial owners already build buildings and the new owner may have different space requirements.

There may also be need for additional capacity in new locations where new industries are developing.

2.3 Industrial Support Measures

2.3.1 Incentives

An array of investment, production and export related incentives are available for supporting the development of manufacturing enterprises. Additional incentives are provided to support small and medium-sized industries (SMI's). All manufacturing enterprises in the region are within the category officially classified as SMI, and are therefore eligible for all incentives. Investment and export incentives have been scaled down as a result of GATT agreements and presently are confined to those allowed under the WTO rules.

The incentive structure is basically designed to encourage the establishment of new enterprises. Limited support, however, is also provided to encourage further growth of existing enterprises.

The present incentive structure operates under three laws and Government decrees. Each of these provides varying levels of incentives depending on locational and sector priority. The provincial coverage of each set of incentives is summarized below. The incentives provided under each set are also briefly presented.

Table 5 Incentive Categories and Eligible Provinces

	Artvin	Bayburt	Giresun	G.Hane	Ordu	Rize	Trabzon
1. Primary Priority Region for Development	x	x	x	x	x	x	x
2. State of Emergency Regions (Law 4325)		x		x	x		
3. Urgent Support Program		x	x	x		x	

The oldest set of incentives was provided under item (1) above and they are provided to all the DOKAP provinces. The relatively new set of incentives has varying provincial coverage. The two least developed provinces (Bayburt and Gumushane) in the region are eligible for all incentives.

The eligibility for the incentives in category (1) depends on receiving an Investment Incentive Certificate. This is issued by the Undersecretariat of Treasury for relatively large investments. Smaller firms receive the same incentives under a special scheme established for small enterprises. This is

administered by Halk Bank. The following incentives are provided under this scheme.

(1) Investment related incentives

Fund-based loans: These are low interest, long-maturity loans. The demand for these loans far exceeds the available resources and they are rationed.

Investment tax exemptions: Imported machinery is exempt from import tariffs, and locally procured machinery is exempt from VAT.

Tax incentives: SMI investments and all investments with an investment incentive certificate are given tax credits – generally up to 100% of the fixed capital investment. Generally, these can be carried forward for up to five years. Only the relatively profitable investments are able to generate sufficient profits to fully utilize this incentive.

Special land provisions: Small industries are provided with workshops in Small Industry Districts. These workshops are supplied with all required infrastructure. A similar arrangement is available for large industries that locate in Organized Industrial Estates. In OIZ's, however, public support is confined to provision of land with suitable infrastructure.

(2) Incentives for acquiring industrial plots and workshops

Support for production infrastructure and operating assistance is provided to reduce production costs. The primary mechanism for infrastructure assistance is through Small Industry Districts and Organized Industrial Zones.

Under the existing conditions of inflation and nominal interest rates, up to 30% of the outstanding loans extended for industrial plots and workshops are written off every year. The owners of plots in OIZ's and SID's are thus required to pay back, over a 20-year period, no more than 10 to 20% of the real costs. Even then, actual repayment is a small fraction of amounts due. The loan repayment is periodically deferred without interest when the accumulated arrears are particularly large.

(3) Other incentives

The standard incentives provided under item (1) are designed to reduce investment costs by granting various tax exemptions and reducing the credit costs. The other two measures primarily aim to complete the unfinished projects and to provide the completed projects with operating capital.

The other two sets of incentives include, in addition to those provided under item (1), the following incentives: i) exemption from personal and corporate income

tax; ii) deferred payment of payroll tax for two years; iii) exemption from certain duties during operation period; iv) exemption from social security charge levied on the employer; and v) cost free land allocation.

Further support is provided under item (3). This includes special emergency financing and reduction in electricity charges.

2.3.2 Effectiveness of incentives

In Turkey, the incentive system was started within the Ministry of Industry, with modest aims. It primarily targeted technology upgrading at its initial phase. Over time, both the sectoral and locational coverage has expanded. In parallel, the administration of the system was moved first to SPO and then to Undersecretariat of Treasury.

The system, particularly of investment incentives, has become the most critical determinant of private investments over the last 20 years. The system has become indispensable as the national fiscal performance deteriorated. Over time, it has lost most of its sectoral and locational selectivity to cover all investments in Turkey as the macro fiscal performance further deteriorated and investments became impossible under normal market conditions. As a result, political pressure has built up to expand the coverage of incentives. At present, 52 out of 81 provinces of Turkey are declared as first priority areas.

Industrial Estates have become another cause of reduced selectivity in incentives. Investments in Estates are eligible for all incentives regardless of their provincial location. Within the DOKAP region, the system has benefited the two provinces that have operating Industrial Estates.

2.3.3 Other support measures

In addition to the measures discussed above, SMI's are also eligible for a range of export and technology related support. Most technology related support is provided by KOSGEB. Export related incentives include support for market surveys, participation in exhibits and trade fairs abroad, and training assistance. Finally, government support is available for certification for quality and improvement of environmental conditions.

(1) Financial support

Low-interest, long-maturity directed credits are available for registered industries from Halk Bank. The interest rates for these credits are considerably lower than other available credits. After the recent agreements with IMF this may not be true any more. Halk Bank also offers venture capital and leasing options for SMIs.

KOSGEB does not provide direct financial support to SMIs, but subsidizes a variety of expenditures made by SMIs, ranging from business visits to training.

(2) Organizational and marketing support

Services provided by KOSGEB have been re-structured to better respond to the needs of enterprises in different regions. With this new organization, KOSGEB aims to bring together the individual supports of the State Treasury Department, the Ministry of Industry, Ministry of Foreign Affairs, and Turkish Scientific and Technology Council- TÜBİTAK.

The organizational support provided by KOSGEB includes Internet access, e-trade capabilities, legislative and administrative information provision for exporters, and international tender announcements.

Shared workshops are one of the fruitfully utilized services provided by KOSGEB. Two separate institutions of KOSGEB are devoted to improve entrepreneurship, and to develop export activities. Product standardization and quality certification services are also available by KOSGEB.

The Export Development Center, IGEME, is dedicated to serve exporters. IGEME publications address the export related problems in detail, and its sector reports provide information on world-wide developments in different sectors.

(3) Technology and training support

Technology support is available from KOSGEB and Technology Development Foundation of Turkey (TTGV). KOSGEB provides laboratories and office space for R&D projects at very little cost, also contributing up to 50% of R&D expenditure. Industrial design and prototype development and technical training are also provided by KOSGEB

2.4 Constraints to Development

There are very few firms in the DOKAP region and these firms have not grown in recent years. New firms have not entered into the market. Researchers have

inquired into the causes of this stagnant structure. Their interviews with the entrepreneurs reveal a number of constraints to industrial growth as below.

The most commonly cited problems faced by the local firms are lack of support services; limited availability of inputs; poor state of physical infrastructure; difficulties in dealing with the regulators; and financing. This is in conformity with the actual conditions observed by the Study Team and constraints usually identified with the growth of small firms. Further inquiries revealed that the local technological capability was also very limited, and skill levels were very low.

2.4.1 Weak agricultural supply base

The most significant constraint to the development of industry in the region is the monoculture in agriculture. Tea and hazelnuts dominate agriculture in the region.

The production of these two dominant crops in the region does not require much input. Their linkages with the supplying industries are very limited, except manufacturers of few hand tools. This limits the opportunities for the development of the machinery sector. Processing of these products that dominates the DOKAP manufacturing sector employs labor intensive techniques.

There is little, if any, room for further processing of tea and hazelnuts. Tea processing is quite modern and there is no need for further investment. The possible exception is building one packaging plant in the region.

In hazelnuts, the markets for processed products are very small. Exports of all nuts are already in the form of shelled nuts. The great bulk of shelled hazelnuts are used in chocolate manufacture as whole nuts. A small proportion of exported hazelnuts is processed to a limited extent into roasted, chipped, or flaked hazelnuts.

Processing hazelnuts into other products is not rational under competitive market conditions and is motivated only in special cases. The first case is under the government policy of supply management. Turkey is the largest hazelnut exporter in the world. It defends the world price by supply management and this includes removing part of output from the market by processing or encouraging consumption that would not occur otherwise: i.e. free supply to institutions such as army, hospitals and schools, and heavily subsidized supply to processors for oil and other products.

Another case is to process broken and other substandard products. These are processed into a variety of purees, jams, and marmalades. It would not be

financially rational to produce these products from standard, export quality, whole nuts.

The export levy on the exports of whole nuts may also have encouraged the local processing. Processed products are exempt from this tax regardless of the level of processing. In the past, limited processing was undertaken to avoid the export tax even when such processing resulted in negative value added.

2.4.2 Mining and mineral resources

The region is not well endowed with mineral resources. There are very few mineral resources that can be profitably exploited. The most prominent mining resource in the region is the copper mine in Artvin. There are zinc, iron, clay, kaolin, limestone, and granite resources in Ordu which are exploited. In addition to the Murgul mine, the Tasbasi lead mine is in production. Small copper, zinc and lead mines are also being exploited in Rize, Trabzon and Gümüşhane. There are chromium resources in Kop (Bayburt). The known reserves are small and will be depleted soon.

There are a few marble and stone quarries that are successfully exploited in the region, particularly in Bayburt. These could be further expanded. The potential for mining and processing of granite and marble is noted to be particularly large.

2.4.3 Small regional market

The region has 5.3% of the Turkish population. Its share of consumer goods is even smaller due to the low purchasing power. Access to the national market is constrained by long distance and inefficient transport infrastructure. This small market constrains the growth of consumer-goods industries.

2.4.4 Weak industrial base

The weak industrial base itself is the biggest constraint. Agglomeration in a region facilitates the circulation of information, the transfer and creation of competencies and thus an industrial atmosphere. The agglomeration eases material relations: i.e. exchange of tools or raw materials. Alliances can be established for sharing large orders. Common service units tend to develop when the size of the local market exceeds a critical threshold.

2.4.5 Socio-cultural constraints

Generally speaking, there is reluctance towards manufacturing investment in Turkey, and the region cannot be isolated from this fact. A few factors account for this.

(1) Preferences for savings

Financing problems appear to be a reflection of low levels of profits and insufficient retained earnings. High levels of inflation compound these problems, which keep increasing the nominal amount of working capital that the firms must maintain.

The high inflation of the last two decades has led to high deposit rates on deposits. At the same time, the public sector borrowing requirements of over 10% of GDP have crowded out the private borrowers. Investors and entrepreneurs tend to prefer the safe earnings with bonds and deposit accounts, instead of taking risks of industrial investments. This has been a major obstacle for industrial finance. The problem recently has been so severe that the “income other than operations” of even the well-developed manufacturing firms are sometimes contributing up to 70% of their total income.

(2) Lack of business skills

In order for potential entrepreneurs to judge whether to actually invest in any business, they need to evaluate the risks of the business compared to non-risky investment in money markets. At this point, the entrepreneurs usually lack the personal skills and perspective to evaluate the business requirements. Marketing information is difficult to reach, if available. Financial and managerial consultancy services are insufficient and expensive. As a result, the potential entrepreneurs are generally discouraged from investing in manufacturing.

(3) Notorious quality record of domestic products

High inflation tends to distort input procurement and production procedures. As soon as the revenue is collected, raw material stocks have to be replenished, otherwise the availability and price of the manufacturing inputs may not be guaranteed. This results in high inventory or otherwise high production costs, or combination of both.

In order to stay price-competitive in the market with such increased input costs, labour costs need to be curtailed. This tends to force more work to be done with

fewer workers, who are possibly not registered employees, and the quality starts degrading. The result is notorious quality recognition of locally manufactured goods in the consumers' eyes and even further reluctance of the potential and existing investors toward manufacturing industries.

This is a structural problem, where low product quality and low profitability form a vicious cycle. Large organizations can manage to cope with these problems, but small industries are forced to remain small in this vicious cycle.

(4) Individualistic attitude

Partnership could be an effective form to develop larger business by merging small businesses. A prerequisite to partnership formation is the ability to evaluate the business environment and consequences of alternative actions. In Turkey, potential partners are not willing to share a vision nor to muster managerial skills necessary for the evaluation. This results in dissolution of joint business potentials into small individually owned businesses. Similarly, a successfully managed family owned business tends to break down into several small ones to be inherited by children after their father's death. This individualistic mentality in business culture is widely recognized as a hindrance to business development in Turkey, shared by the DOKAP region as well.

(5) Trading versus manufacturing

In trade businesses, the situation is little more attractive. To start a trading activity, entrepreneurs can usually receive start-up support from their clients, like financial contribution to initial costs, consignment-based product delivery, etc. Furthermore, trading business generally requires less skills and investment than a manufacturing business.

Over the decades, these factors have created in the society a negative attitude towards manufacturing businesses. Trading is recognized as more secure and better-yield activity than manufacturing. This socio-cultural attitude may be even more severe in the DOKAP region, as the region has long been a net importer of manufactured products.

If, in spite of all the difficulties, a manufacturing business is actually started, it has to survive the high inflation and high corporate taxes.

The underdeveloped status in the region is characterized by three vicious cycles that have emerged over the decades, which aggravate each other's negative impacts, as depicted in the schema below. This interdependent nature of the

chronic problems implies that, by addressing the problems individually, it is almost impossible to break out of these vicious cycles and promote the industrialization any faster than it is proceeding now. The existing problem phenomena will have to be addressed as a whole, with a well-organized concurrent set of mutually supporting programs. Those programs must target the fundamental causes of the problems.

Nothing can be done to remove the natural constraints, but some measures can be taken to reduce their effects. Institutional and cultural constraints can be dealt with directly.

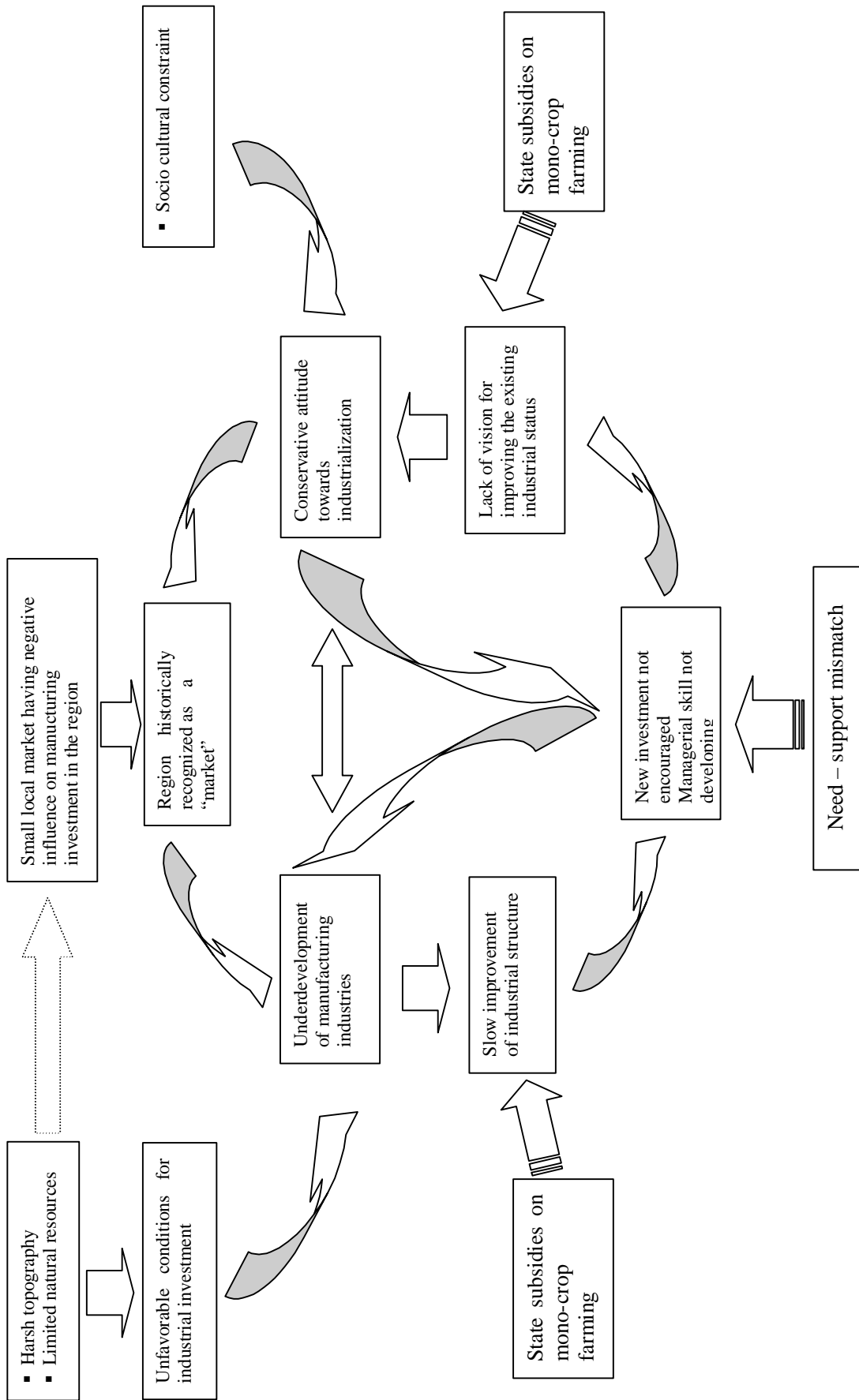


Figure 1 Interdependence of Factors Constraining Industrial Growth

CHAPTER 3 DEVELOPMENT POTENTIAL AND TRENDS

3.1 Market Prospects

Development of market economy in the former Soviet Union since 1990 provides unique opportunities for Turkey's economic development. Perspectives of the Euro-Asian and Caucasian regions may be stated as follows. CIS countries will continue to pursue political and economic independence. On the way to market economy, their biggest constraints are the lack of legislative and administrative arrangements, and skilled manpower. It is expected to take more than 10 years for them to make these arrangements, and particularly Turkic nations are expecting the Turkish Republic to assume an important role in this transition.

Major projects in infrastructure, telecommunication, energy and trade development are expected to be formulated among the BSEC countries within a few years. A further ten (10) years seem to be required for realization of such projects which requires foreign investment and know-how. The recently concluded agreements on natural gas pipeline projects between Turkey, Azerbaijan, and Russia Federation, are expected to boost the economic relations between these countries.

Border and suitcase trading has already started. Gradually, international trade barriers will be removed reflecting the ongoing initiatives for free trade arrangements. Formal trade legislation is being modified. Existing political instabilities in the Caucasian region is not expected to continue for a long time. There is an international consensus on resolving the conflicts in the region.

Under these circumstances, Turkey's own development is strongly dependent on her capability to capture shares in the developing potential markets. Considering its geographical location, the DOKAP region can take advantage of the developing markets in the CIS and the Caucasian countries, provided comprehensive planning is done in advance and required actions are taken promptly.

The possible target markets for the DOKAP region, and justification arguments for the selection are summarized in Table 6.

Table 6 Evaluation on the Potential Markets for DOKAP Manufacturing Industries

Market	Competitive Advantage	Justifying Arguments of Competitiveness	Remarks
DOKAP Regional Markets	The same as the other developed regions in Turkey.	<ul style="list-style-type: none"> • Strong advantage for industries with links to supplying industries- strong backward linkages. 	<ul style="list-style-type: none"> • For a speedy increase in GRDP, non-regional markets must be aimed at first. Local competence will be developed naturally.
National Markets	Strong with a few products. Generally low	<ul style="list-style-type: none"> • Same reasons as the ones of EU countries. 	
CIS Countries	Best if geographic closeness is taken advantage of improving the sea and land transportation capabilities.	<ul style="list-style-type: none"> • Shortest access to these markets • Historical and social relationships to the CIS countries exist • In the CIS countries the overall market development is in the early stages, and this is a big opportunity for Turkey, particularly for DOKAP region to develop and hold on to a stable market share in those countries. 	<ul style="list-style-type: none"> • The markets in the CIS countries can be, and must be strategically developed together with industrialization of DOKAP. • Current political instability in the Caucasian region will not be allowed to continue for a long time by international community.
Eastern European Countries	Less than other developed regions in Turkey	<ul style="list-style-type: none"> • Sea-transportation seems to be advantageous to the markets. • However, other regions in the Country, which have more powerful manufacturing industry, have already established trading ties to the markets. 	<ul style="list-style-type: none"> • The region stands as supplementary exporting market for the DOKAP industry.
EU Countries	Strong with hazelnut products. Generally very low	<ul style="list-style-type: none"> • Other regions in the Country have already established trading ties to the markets. • There will be almost no possibility for the region to compete with the other regions except some products. 	<ul style="list-style-type: none"> • The DOKAP region puts the markets out of consideration, but positions the markets as information sources on the manufacturing industry.
Far-East & South-East Asian Markets	Practically none	<ul style="list-style-type: none"> • Those countries themselves struggle with underdevelopment problem 	<ul style="list-style-type: none"> • They are competitors of DOKAP region in CIS markets.
Middle-Eastern Markets	Practically none	<ul style="list-style-type: none"> • Oil-rich consumers demand high-end products. Market largely occupied by developed countries 	<ul style="list-style-type: none"> • World-wide exposure in markets where DOKAP will compete

In today's global economy, any product can find buyers anywhere in the world as long as it is competitively available in the markets. Relatively weak organizations, however, may not have enough competition power against those strong suppliers. Therefore, it is more realistic for the growing industries to focus on target markets and put concentrated efforts on them.

Considering the limited production capabilities at present, CIS markets seem to be the ones in which the existing and near-future manufacturing industries are more likely to have a competitive advantage.

This selection, however, does not mean that marketing activities should be limited only to the CIS countries. The region's ultimate objective must be to serve the world markets. On the other hand, unrealistically set targets in the planning period may undermine the development efforts.

It should also be noted that the geographic closeness of the CIS markets has been considered as one of the important criteria for selection. In order to take real advantage of this closeness, both sea and land transportation infrastructure of the region has to be improved. The major highway construction has already been started and by the time the Master Plan takes a start, highway construction is assumed to reach a recognizable level.

In the Master Plan, a set of programs are suggested for development of trade activities. Those programs are assumed to be activated in parallel with the industrial development programs.

3.2 Availability of Skilled Manpower

The outmigration from the region has traditionally concentrated in skilled labor. These workers have acquired further skills on the job and have acquired a reputation as successful entrepreneurs.

KTU has built on these characteristics of the regional population and has established many vocational schools in the region. Even in the province of Gumushane, where there is no industry at present, vocational training is provided to close to 2,000 students at any one time. This skilled manpower is one of the major assets of the region that should be utilized.

3.3 Opportunities Created by DOKAP Master Plan

The implementation of the DOKAP Master Plan is expected to increase the income levels and to support the natural increase of population in the region.

These would have a combined impact of substantially increasing the size of the regional market.

The growing regional market will create opportunities for the expansion of consumer goods industries. The growth in population, in particular, will have a positive impact on the construction industry and consumer durables.

3.4 Development Potential by Subsector

Subsectors where development potential is identified are based partially on detailed studies, and also on observations of the existing structure in the DOKAP region.

Many Turkish agencies have studied the potential areas of investment. These studies look at available raw materials, proximity to potential markets, scale and skill requirements. Potential products that may be manufactured in the region, with varying levels of ease, are summarized in Appendix 9.

The identified areas of potential development are, in general, common to all provinces. There is limited differentiation within the region, with some concentration of promising areas of agro-processing in the inland provinces.

One promising area in agro-processing is livestock products. There is limited crop production and, therefore, limited room for processing fruits and vegetables. The two exceptions are tea and hazelnut. For these two crops, however, there seem to be excess capacity in processing.

The major growth subsectors in Turkey over the last decade were textiles and apparel. Yet, no potential is noted for these product groups in the region. The DOKAP region has not participated in the export led growth of these products over the last decade. However, the analysis of incentives used in the region within 1995-1999 reveals the emergence of some such activities in the region.

Three subsectors of manufacturing are noted to be promising areas of investment in all provinces in the region. These are a) metal products b) products of wood, and c) plastics. Again, a conspicuous absence is products of clay/sand and prefabricated construction materials.

In metal processing, the region is prominent in production of firearms. Traditionally, the region has also produced knives and agricultural implements made of metal. There are projects in the region to build on this and produce surgical equipment. The region is also well known in the Country for production of gold/silver jewelry, and traditional copper products.

There seems to be no machinery input in tea and hazelnut production. Investment in agricultural machinery production may not be feasible. Two other fields of investment that have not received sufficient attention are ship building and consumer electronics. Ship building can capitalize on existing small ship building activities and expected increase in maritime transportation in Black Sea. Consumer electronics may benefit from both the increasing income levels in the region and emerging export prospects to the CIS countries, depending on types of products.

3.5 Recent Development Trends

In order to see the natural progress of industrialization of the region, a variety of indicators was studied, one of them being the electricity consumption per population. The others are the incentives granted to the region and the Halkbank credits.

3.5.1 Electricity consumption by provinces

A qualitative relation between the shares of electricity consumption and the population of the provinces are given in Table 7. Increasing share of electricity consumption while the population declines can be interpreted as an increase in income level and increase in industrial activities in a province. The dependence of the region on the changes in the prices of the two main agricultural commodities is reflected in the table. In periods when hazelnut prices are favorable, the whole region is positively affected. This seems to be the case in the period 1983-90 and Giresun has benefited.

Giresun and Artvin have had stagnant economies in recent years. In contrast, other cities in the region had some intensification in production despite continuing loss of population shares. This indicates that relative income levels in most provinces in the region have improved in recent years.

Table 7 Changes in Share of Population and Electricity Consumption in DOKAP Provinces

Provinces which have	1983-1990	1990-1996
Increased their share of population and energy consumption	None	None
Reduced share of population increased share of electricity	Giresun	Ordu, Trabzon, Gumushane, Rize
Increased share of population	-	-
Reduced both shares	Artvin, Ordu, Trabzon, Gumushane, Rize	Artvin, Giresun

Source: TÜSIAD, Türkiye'nin Fırsat Penceresi

3.5.2 Investment incentives granted in DOKAP

Private sector investments receiving various incentives during 1995-1999, as described in subsection 2.3.1, are studied in detail to have an idea about the private sector's investments activity and composition of the new investments. The region's share of investment amounts with incentives and their provincial distribution by subsector are given in Appendices 11 and 12, respectively. The data are based on incentive certificates issued. Data are not available on those that were actually undertaken. It is, however, generally considered to be a good indicator of the direction of private investment interest.

(1) Share of DOKAP

Breakdown of all incentives granted to the region in 1995-1999 is given in Appendix 11, in comparison with the respective country totals. Shares of the regional investments receiving all the incentives are 2.05%, 1.75%, and 0.90% in terms of the number of projects, employment and investment amounts, respectively. These are all insignificant.

Sectoral concentration indices given in the right-most column of the table in Appendix 11 indicate those sectors in which the regional activity is higher than the national average.

(2) Time series analysis

Changes in distribution of nation-wide and regional incentives over years were studied to investigate possible trends. It was found that total investments in Turkey steadily declined over the last five years, while the number of projects and employment figures fluctuated during the same period. A definite decline can also be observed in manufacturing incentives in all three parameters. There is no identifiable pattern in individual sector data.

In regional incentives, however, a consistent increase in yearly total number of projects is observed until 1999. Employment and investment amount proceed at comparable levels until both suddenly increased in 1998. This sudden change is caused by the significant energy and transportation investments in the region within that year. The steady decrease in the nation-wide manufacturing investments is not observed in the region.

(3) Regional distribution

In Appendix 12, provincial distribution of incentives is shown. In this table, energy investments are not included in calculations, as most of these cover more than one province and their arbitrary attribution may distort the provincial pattern.

Order of magnitude differences in number, employment, and investment figures can be observed in provincial distribution. In this regard, the distribution can be characterized in three categories. Ordu and Trabzon fall in the highest ranking category with their striking investment levels and diversity of subsectors. Least developed in-land provinces, Bayburt and Gumushane, are receiving the lowest shares. Artvin, Rize and Giresun lie somewhere in between with comparable shares. The picture showing the provincial distribution of incentives is the same as the one as depicted in 1997 (Appendix 1). Recent investment activities display no relative change in the existing provincial distribution of industries.

There is no recognizable investment in agriculture and mining. As for services, Trabzon leads in both sectoral diversity and the level of activity, basically driven by transportation subsector.

In Artvin, dam constructions account for the high investment levels. Dam constructions are misleadingly grouped under services sector in the original data, and retained untouched in order to keep the comparability with the national data for which the sectoral details are not available.

(4) Manufacturing industry incentives.

The relative share of regional manufacturing investments within the nation-wide manufacturing industry is given in Appendix 12, where energy incentives are included. Although their shares in the national total are quite insignificant, manufacturing industries are adding up to more than half of the total regional investments, implying a strong intention towards industrialization.

Clay and soil-based manufacturing industries

The impact of major infrastructural activities in the region can be observed in the cement manufacturing and cement-related industries. Cement production activity displays a remarkable boost. This subsector is dominated by regional producers. Significant amount of incentives has been received by one company for modernization, extension and storing, packaging and docking facilities in Rize seaport.

A new production investment is received by a non-regional company, for a new plant in Trabzon in 1998. It reflects the response of the private sector to increasing demand for cement due to large infrastructural constructions.

Aggregate and ready-concrete production facilities are somewhat evenly distributed. Concrete products are basically pavement and border stones, and concrete pipes. There are no incentives used for sophisticated concrete elements, like pre-stressed beams, etc.

Lime production activity is noted but not comparable to that of cement. Ceramics inventives go into sanitary products, sinks, and tables. A little is used for kitchenware. Brick production investments are observed to spread into the least developed provinces of Bayburt, Gumushane, and Artvin, a promising phenomenon.

Glass processing is concentrated in two cities, heavily in Trabzon and then Ordu. One major investment in Trabzon is for plate glass coating, ornamentation and end products. Others are double-insulation glass manufacturing. A little goes for automobile glasses. There is no incentive used for glass production.

Food processing

Incentive data reveal the still dominating nature of food processing industries in the region, and 45% of those are in hazelnut processing. In this sector, 31 out of 40 projects are new investments. A great majority of employment is to be created by new investments in scattered small businesses.

The total capital investment for nine extension and modernization projects account for 17% of all investments. Small investments are observed, ranging from \$40,000 to half a million. The only large capacity public plant, FISKOBIRLIK, has received a very insignificant amount for modernization.

Food processing investments represent the second largest category of capital investments following those in the cement sector. These investments are fairly evenly distributed in the region. Equal amounts of investment are observed in hazelnut processing in Giresun and Ordu, followed by Trabzon. Average amount of investment per project is higher in Giresun, and equal in the other cities.

Tea processing does not seem to attract investors any more. Five out of eight projects are for extension of existing facilities; only 30% of total investment amount is granted for new investments.

Basic food industries which comprise wheat milling, bread, dairy products and crystal sugar processing, are in the second place by all measures. The sector is

heavily concentrated in Giresun followed by Ordu. One recognizable project is noted in Giresun.

Two noticeable projects were granted in Gumushane and Trabzon in fruit juice confectionaries, respectively. A small but outstanding investment in canned/conserved food is made in Artvin. There are projects for crop packaging, soft drinks, and spring and mineral water bottling. A great majority of investments in this subsector goes into completely new projects, indicating the subsector is newly introduced.

(3) Apparel and leather

Giresun and Ordu accommodate cotton and wool fibre production projects, granted in 1997 and 1998. These two projects are supposedly completed recently, and upon completion of these raw material production plants, fabric manufacturing may be expected to boom in the near future. A noticeable amount invested for fabrics is in Trabzon.

Apparel facilities are concentrated in Ordu and Trabzon. Small amounts granted for small facilities like sock-making, are in other cities.

Six out of 17 projects which account for 72% of total investments seem to be undertaken by Istanbul companies. All of the incentives are granted for completely new facilities, and a great majority was granted in 1998. These observations disclose the fact that the region does not have the production skills for this sector, and apparel subsector is being newly introduced into the region. Further development may be expected in this emerging sector, which seemingly creates the highest employment per dollars invested.

Only one incentive is used for shoe-making in Giresun, displaying a labor-intensive character.

Wood processing

Local entrepreneurs, producing industrial wood, inlaid floor, school desks, and doors manage all small sawmills. Considerable large investments in this and other related sectors are seemingly led by a particular company.

Plywood, chipped and medium density fiberwood (MDF) investments are concentrated in Giresun and Ordu. Quite an appreciable attempt in laminated chipped panel manufacturing is made by KOYKOBIRLIK, the Village Development Cooperation's Union in Giresun. This group used an incentive in 1995 for acquiring an additional industrial plot, and received investment

incentives in 1996 for procuring imported machinery for the new line of production, covering 35% of total investments.

There are only two projects in furniture manufacturing in 1996, the recognizable one being in Trabzon. The overall state of wood processing industry does not give an impression that the industry is developing as naturally expected in a resourceful region like DOKAP.

Paper and pulp

The incentive granted to Giresun is for SEKA quality improvement program in the existing plant, and that piece of data seems to be misleading as far as employment created is concerned.

The major investment in this sector is noted in a new impregnated paper production plant in Ordu in 1998. This project suggests future development potential in the paper industry.

Chemicals

One large-scale investment project in Ordu was granted incentives in 1995. This plant is to produce ammonia, formaldehyde, and resin (input material for ply/chipped processing and glue).

The rest of the projects in the chemistry subsector are composed of PVC plumbing parts and fittings, plastic hose, and PVC door and window frames, and tire re-threading plant.

Basic metal processing

Unfortunately, there is a very little activity in these products, which are generally the driving force for regional industrialization. A small, labor intensive project to be implemented in Ordu has received a certificate. A relatively large one in Trabzon is for sterilized cast iron production. Other incentives are granted for copper bar and block aluminum production.

Metal products and machinery

One project is in Trabzon, granted for manufacturing of residential waste collection trucks. Another one in Bayburt is to manufacture fittings and valves. A small one in Trabzon is to produce forged steel parts. Among machinery production, there are tea processing machines, tractor cabins and accessories, LPG tanks, and printing machinery templates.

Although the total amount invested for these projects is relatively small, the development effort, specially the one in Bayburt which is one of the least developed industrial base, is quite promising.

A project is noted in Trabzon in industrial refrigeration technology. A new one is for electric armatures and wires. A newly introduced subsector to the region is vehicle part production. Noticeable investment amounts were granted in 1997 and 1999 to the same company.

CHAPTER 4 DEVELOPMENT TARGETS AND STRATEGY

4.1 Targets

The ultimate target of the DOKAP Master Plan is to raise the development level of the region at least to that of national average within the next 20 years. Alternative development scenarios have been discussed in the Master Plan. The discussions have revealed that the fastest development can be achieved with relatively fast development of manufacturing industries together with the service sector.

Projections of the future employment and GRDP measures can be used to set quantifiable targets for the manufacturing industries. Industrial employment in the region in the year 2020 is expected to reach about 300,000. Considering the current level of about 100,000, this target implies creation of approximately 200,000 new jobs in the next 20 years, about 10,000 per annum.

The manufacturing industries share of the GRDP in 2020 is expected to increase to 20% level from the current level of 12%. Therefore, the strategic goal for manufacturing industrial development can be re-phrased as follows:

- To increase the GRDP and employment level as much as possible, in a balanced manner, by introducing and supporting selected set of manufacturing industries; and
- To upgrade and/or establish appropriate technical and managerial skills during the planning period so that the regional industries can pursue their self-sustained development afterwards.

Realization of such an ambitious target would require strong programs to promote industry in the region. In order to set effective strategies and realistic development programs, the exact nature of the region's underdevelopment phenomena has to be well understood.

4.2 Strategy

4.2.1 Roles of public and private sectors in the development

National development policies followed by different administrations over the last two decades emphasize the export-oriented growth in manufacturing and trade, driven by the private sector. Privatization of publicly owned enterprises has been pursued consistently, and legislative and administrative arrangements are being made in order to encourage direct foreign investments.

In parallel with the national policies, the private sector is assigned as the driving force for industrialization in the Master Plan. The public sector will facilitate and promote industrial development basically by providing the required infrastructure and services such as market information, skill development, and product standardization and quality assurance.

Given the magnitude of the projected growth, it is unlikely that the required resources are available within the region. Therefore, along with these indirect supports, direct public support measures including directed credits and reduced regulatory burdens are also required to achieve relatively rapid growth in manufacturing industries.

The Master Plan is designed and strategies are set primarily for the benefit of small to medium sized industries. Large enterprises will also take advantage of these promotional measures.

4.2.2 Development strategy

Based on these guidelines, industrial development strategy for the DOKAP region consists of the following.

- Existing industries will be supported and encouraged for further growth. Export-oriented manufacturing will be promoted throughout the planning period. Export capabilities of the existing industries will be increased immediately. New industries to be introduced to the region will be selected from among those having the best export potential.
- In order to stabilize the industrial growth, strategically important manufacturing subsectors will be introduced.
- To ensure the self-sustained development of the regional industries after the planning period, as much effort will be made as possible to develop the region's own production skills and technologies.

In the next chapter, the selection of industries is discussed, based on the marketability of products and production capabilities of the region.

4.3 Development Model

4.3.1 Impetus

The main fear of potential entrepreneurs is the unforeseeable future of a new business, because of macroeconomic instability and dynamic market conditions. If the viability of a new business can somehow be guaranteed, entrepreneurs can be

encouraged and private savings can be directed to industrial investments. Such a confidence can only be built under the leadership of a nation-wide reputable and known successful organization, like a well-known manufacturing company, or a State agency. The State policy, however, is against such an approach. Therefore the best possible choice for this role is a new administration based on local governments as proposed by the Master Plan (Volume VII: Institutional Development).

The model proposed below resembles the “venture capital” model. In venture capital, owners of an untested technology/product are supported by a venture capitalist. During the early stages of market development of a new product, the risks and possible return are both very high. In this early stage, the venture capitalist invests on this high-risk business, takes the big return on investment if the business is successful, and after a certain period offers its shares to the public.

In the following model, the risk is not due to a new product or technology, but it is the viability of the business itself. The model aims to reduce the business risk to overcome reluctant attitudes of potential entrepreneurs. This may be realized through the partnership between the public and the private sectors with specific roles as detailed below.

4.3.2 Purpose

The purpose of this model is:

- To establish a few pilot manufacturing enterprises which will be taken as a successful example by other potential entrepreneurs,
- To create and support cooperative consciousness among the entrepreneurs, which will break the individualistic attitudes and encourage partnership that brings about competitive power,
- To create and accumulate region-specific managerial and technical know-how, and spread it through the region, and
- To announce and promote the region’s development potential to all potential entrepreneurs nation-wide and also internationally.

4.3.3 Participants and roles

In this project, the following are expected to participate with assigned roles.

- The Government will be the strategist and the facilitator.
- The DOKAP Regional Administration will be the leader, coordinator, and also one of the main investors.

- KOSGEB (BSTC) will provide technical support.
- SMIs or potential entrepreneur/investors will be owners and line-managers.

4.3.4 Processes and tasks

(1) Product and technology selection

The Government agent, together with the Black Sea Technology Center (to be established) will carry out an extensive market research in the “world markets” and identify a set of products, market scales, and potential buyers. They will also make a comprehensive feasibility study to determine costs, technology requirements, and delivery deadlines, etc. Based on these, a detailed project plan will be prepared.

The whole idea behind this approach is to create a successfully managed enterprise as a model. The detailed project plan should be committed by a private enterprise of consortium, which will receive full support of relevant government agencies and other institutes involved in the plan preparation. In other words, those agencies and institutes should also commit to the success of this model enterprise. If there happens to be any doubt or hesitation on the part of participants, this project should be cancelled in the planning stage. Otherwise, the following procedure should follow.

(2) Establishment of joint venture enterprise

The project will be, so to speak, internally sold to those potential entrepreneurs, who will be totally convinced on the viability of the project. Those who want to participate will establish a pilot enterprise.

Investment fund will be raised among all the shareholders. The DOKAP Regional Administration will be a shareholder. Small entrepreneurs/investors have to bring in their capital shares in order for them to feel the ownership and the risks of the business. One possible indirect support of the Government at this stage is “purchase guarantee”. This guarantee, however, must not be a subsidy at all. It can be a purchase guarantee for certain products at their market values, restricted to a certain period of time and with certain amount of products.

Another possibility is to sign a purchasing contract with the actual buyer(s) of the product(s) before establishing the model enterprise. In fact, nobody can give better purchase guarantee than the buyer itself, provided the legal enforcements are included in the contracts. Buyers can be thought of the actual investors as well. In

case of foreign investments, legislative arrangements may have to be made by the Government.

Management of the enterprise will be supervised by the DOKAP Administration. Top managerial tasks will be left to professionals who have proven track records in management of similar businesses. In order to ensure an effective management, this task may be outsourced to a managing company. Strategic management decisions will be taken by the board of directors, which will comprise the representatives of all parties involved. Line managerial activities will be held by shareholders in rotation, and will be reported in details. This is important, because the purpose of the project is to develop the managerial skills of the members.

This model/project itself can not be taken as a self-sustaining one. In order to be successful, the model will have to be supported concurrently with a set of by-projects which are discussed in the Project Report.

Even if the Government is not a direct investor in this model, it still has the responsibilities of leading and facilitating. Specifically, these responsibilities are determining the strategic direction and the industries to be supported, and providing the physical infrastructure in the region. Further responsibility of the Government is to make legislative and administrative arrangements for foreign credits and foreign investments directed to Turkey.

4.4 Development Process

The DOKAP Master Plan proposes three phases of development. Accordingly, the phases of industrial development can be defined as follows:

1. Preparation and initiation phase, 2001-2005
2. Build-up phase, 2006-2010
3. Driving phase, 2011 onwards

In the first phase of the development, not much contribution can be expected from the manufacturing industries to the regional development. Substantial support is required in this stage in order to proceed successfully in the later phases. In the build-up period the industrialization in the region is expected to accelerate, provided the required support is given in the first phase.

A significant contribution of the manufacturing industries to the regional GDP must be expected only in the third phase of the planned period. In this phase and onward, industries start playing a major role in the region's self-sustained development.

As the whole idea of manufacturing something is to sell the product, only the sellable products are to be manufactured in market economy. Marketing is a vital component of industrial development. For DOKAP, export driven manufacturing is proposed for the fastest development of regional GDP.

Realizing the fact that the business capabilities of the region for manufacturing and marketing are not strong enough to create and develop new markets in the CIS countries at the moment, the manufacturing industry will not take any strong initiative in the CIS market for the coming 10 to 15 years. During the period, the manufacturing industry will have to respond promptly to the market demand, make the best possible effort to accumulate knowhow on the exporting business and develop the region's own production skills and technology. When sufficient efforts are not made by both the Government and the private sector in collaboration, it is very difficult to expect a satisfactory industrial development within the planned period.

After the year 2011, manufacturing industry in the region will have to convert its approach to a "pro-active" one, which is to reveal consumers unrecognized needs and take the initiative to supply those needs to the market. The region's own production skills and technology which are expected to reach a certain level by that time will make this approach possible.

Compliance with international standards is a pre-requisite. The industry can not keep the international markets with products which are produced on local standards.

In the course of development, the region will have to develop gradually its own production skills and technology, namely, the ones that can be digested, confidently handled and applied to create new types of products, and can be further developed/modified through the region's own research and development. Project No 2.9 is proposed for this purpose.

The characteristics of the process by planning phase are summarized in Table 8.

**Table 8 Characteristics of Development Processes and Expected Effects
from Industrial Development**

Phases of Development	2000 - 2010	2011 – 2021
1. Degree/necessity of public supports	High but gradually decrease	None
2. Managerial leadership for manufacturing industries.	Main: Public side Sub : Private side	Main: Private side Sub : Public side
3. Volume or value of exports of the manufacturing industry	Gradually increase	Increase in a rapid and stable manner
4. Progress of region's own production skills and technology ¹	Gradual and selected (introductory stage of the technology)	Fast and diverse (self-sustaining development stage)
5. Expected changes in the newly introduced subsectors due to dynamic market changes ²	Not expected	Highly expected
6. Stability of market share	Unstable – growing	Stable
7. Degree of self-development of manufacturing industry	Low Support required	High Self – developing
8. Degree of the manufacturing industrial interrelation	Low	High
9. Introduction of investment into the region from other regions	Low	High – very high
10. Increase in employment opportunities and income	Gradual increase	Rapid and stable increase
11. Contribution of industrial development to the ultimate objectives of the regional development ³	Relative retardation of industries ceases	Industries become the driving force for the regional development

4.5 Supporting Programs and Projects

In order for the development model to be successfully implemented, the model has to be supported by a concurrent set of programs. In the Master Plan, a set of breakthrough project/programs covering all aspects of the development plan are suggested. The breakthrough projects/programs outlined in the following pages of this section were devised for manufacturing industries.

¹ The export capability of the region has to be improved immediately, however, in the first two phases of the development the exports will be limited with the existing products. Therefore, mid-term of the planning period, not much contribution can be expected from exports.

² When selecting the subsectors to be introduced to the region, those sectors /products which will not require technologic changes have to be selected so that during the build-up phase, the industries will be exposed to minimal changes.

³ At present, the share of manufacturing value added in the region is decreasing. Upon taking the required precautions and initiating the industrial development programs, this weakening progress is expected to cease within the first two stages of the development. The real contribution of industrial development is to be observed in the last phase of the planning period.

The projects, once applied concurrently, are designed to provide solutions for all the problems of small enterprises, which are described above. The contents of the programs named above are already being pursued by a variety of institutions as explained in Section 2.3. What is basically needed is to re-structure the administration and to harmonize the efforts in order to increase the efficiency.

The marketing activities are of primary importance for both existing and future manufacturing industries in the region. There are infrastructure and trade-related programs proposed in the Master Plan and relevant sector reports which are indirectly supporting the industrialization. It should be kept in mind that, in order to achieve the ultimate goal of regional development, the whole set of programs must be processed in harmony; otherwise individual impacts of the programs may not be fully realized.

4.6 Market Development Strategy

The best strategy that can be followed by the region is to pursue its industrial development while developing its own markets. This mutually inductive strategy requires quite comprehensive market information.

For the success of this strategy, the DOKAP region must initiate a supply-side approach immediately; all possible new markets for the existing product lines will have to be searched, the existing export potential has to be capitalized and a stable market share has to be created as soon as possible. In doing so, the development of local industries will be accelerated.

At the same time, a demand-side approach will have to be adopted as well. In order to remain competitive in the long run, the market trends have to be monitored closely and the regional industries must prepare themselves for the future needs of the markets. The Integrated Marketing Center, discussed in Volume VIII, is vitally important to achieve this goal.

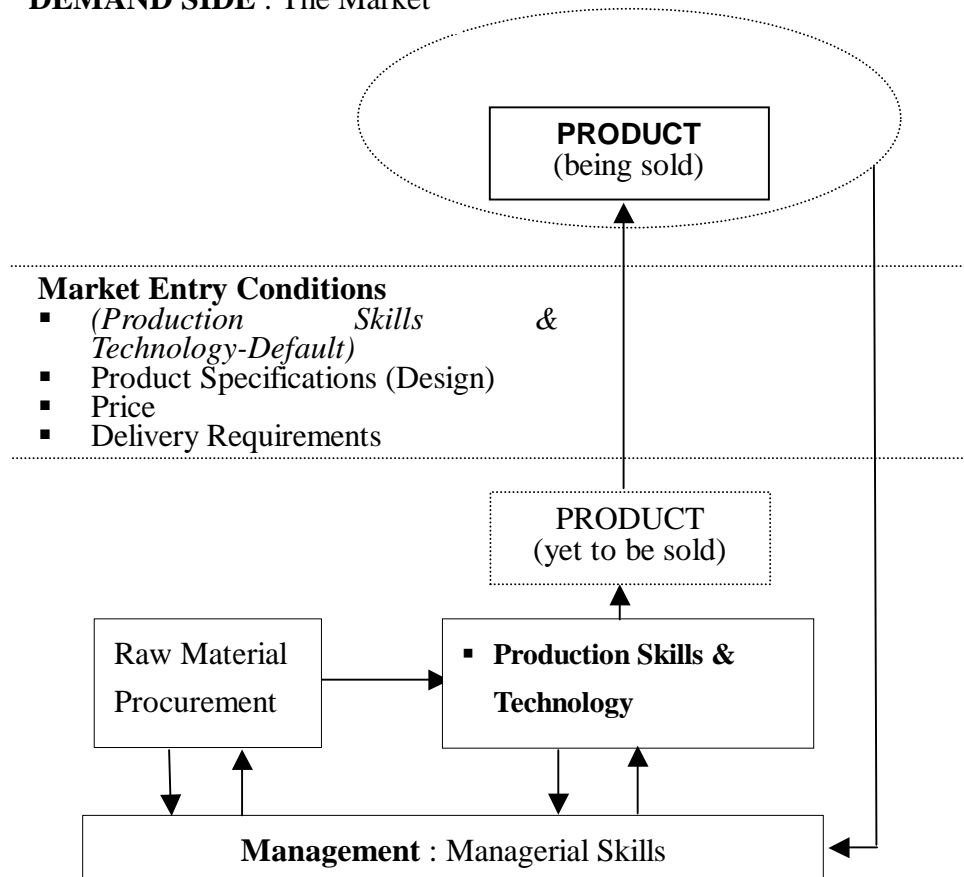
CHAPTER 5 INDUSTRIES TO BE SUPPORTED

5.1 Selection Guidelines

5.1.1 Market-product-industry relationships

An industry, its product, and the market for the product form a triplet that must be considered all at once in selecting an industry to promote. The inter-relationship between these entities is depicted in the following schematic.

DEMAND SIDE : The Market



SUPPLY SIDE : The Manufacturing Industry

Figure 2 Interrelationship between Market and Manufacturing Industry

For the clarity of the arguments to follow hereafter, the terminology used in the figure is described below.

Production skill is a specific knowhow which can be gained through training.

Production technology comprises both machinery and skills to use them. The production skills and technology are classified as follows. Low grade skills are those required to operate a system in which manipulations can be manualized.

High grade skills are those which can produce unique products by using standard machinery and equipment, or the skills required to operate complicated systems in which operations can not be manualized.

Low production technology is a combination of the low grade skills and production system. High production technology is a combination of the low grade skills and the non manualized production system, or systems whose manipulation method cannot be or, is difficult to be, explained in manuals, or production systems which produce very delicate and specific products.

“Design” has a two-fold meaning: one is the design of the appearance of a product, and the other is its functionality. Using this terminology, the figure can be explained as follows. On the supply side, an enterprise turns raw materials into manufactured products, by using certain production skills and technology, through a set of processes and activities. The management controls all production activities performed in the manufacturing facilities. All the components involved in a manufacturing cycle can also be called a “production scheme”.

In order to be salable, or in other words to be “competitive” in a market, the product has to satisfy certain market-specific requirements, which are “market entry conditions”. These are product specifications or design, price, and delivery terms and conditions.

Needles to say, price is the decisive factor for low income consumers, while the comparative importance on the price and design factors is reversed for high income consumers. Thus, deciding income class of consumers in target market is a very important issue in devising marketing tactics, and in turn has a great influence on the production facilities to be installed.

Relative importance of style and functionality design also changes depending on product and consumers’ economic power. Punctual delivery is especially important in the field of supplying raw materials for manufacturing industry. This factor does not influence the product’s competition power directly, but is definitely a supporting factor for it. Those products satisfying market-specific entry conditions can compete with similar products in that market and earn a market share.

Depending on the objective, the market-product-industry picture can be viewed from two opposite standpoints. Supply side approach implies that when the objective is to find an appropriate market for a given product, the supplier searches for markets in which the product with its existing specifications can be competitive. In this approach, extensions in the production facilities may be required but usually the production scheme is not altered significantly.

In the demand-side approach, the objective is to establish a new production line, or to make significant changes in the existing production scheme. The picture is viewed from the opposite side. First the market entry conditions are analyzed for the new products in mind. Given a certain product, the required technology and skills must exist in the first place in order to manufacture the product to the specifications. Relative importance of the other factors varies for different markets.

A detailed feasibility study is carried out for a certain production technology. If it is judged that the product can be produced feasibly, the required investments are made. In the first approach the selection of a market is the result, where as in the second one, the investigation of market requirements and the selection of the market are the starting point. However, a detailed market survey is required in order to make sound decisions in both approaches.

5.1.2 Effects of dynamic markets

Any market is dynamic in nature, namely, product specifications and consumption levels change over time. This is caused by many factors: changing income levels of consumers, availability of new technologies, and the like. These changes in the market bring about changes in the market entry conditions: i.e conditions in competition power of the product. Importance of entry conditions changes relative to each other, determined by the demand side.

In order to survive in dynamic markets, suppliers have to monitor the market and adopt themselves to the changing market conditions in time, so they can sustain their market shares and also identify emerging product requirements.

Three different reactions are possible for suppliers against dynamic market conditions. First, suppliers may ignore, or may not realize the changing demand of consumers. In that case they gradually lose their market shares. Second, suppliers may ignore the changes in a certain product requirements. They may accept to lose the market for that particular product, but may have identified another opportunity in other product line and concentrate on those. This approach usually

requires some enhancement / modifications in the existing production scheme. Third, the other possible behaviour for the supply side is to arrange the production scheme in accordance with the emerging demand in the market. In order to do this, a very close monitoring of the market is needed. This is the typical attitude of those technically superior market leaders who actually create demand for new-technology products and set the market conditions. However, such technological superiority is not a pre-requisite for this type of behavior.

In any case, surviving dynamic market conditions will require modifications on the existing production skills and technologies to some extent. Therefore, the initial selection of technology is an important issue to be taken into account. In order to stay competitive in the market, the production skills and technologies used have to be fully digested by suppliers.

5.1.3 Production skills and technology

(1) Current global trends

The latest trend observed globally is to use product-specific technologies, meaning that low grade production skills are built into the production machinery. Such machinery is expensive, difficult to operate, and reject employment of low-skill manpower. Such technologies are quite effective particularly in large scale production. The technology, however, becomes so specific to a particular product that any changes in the product specifications usually require new machinery. New assemblies bring about managerial difficulties and increase production costs. In consequence, manufacturer may not be able to stabilize itself in the market, and market share starts decreasing. They may even run out of business.

Strong industries can cope with such technology-dependent complications, but for weak industries it can be a real burden. Therefore, it is more logical to invest in “generic” type of versatile production technologies at the beginning, and to improve the production skills in order to make best use of the available technology.

Consequently, DOKAP industries must avoid product-specific technologies as much as possible. Otherwise the industries will be obliged to invest continuously in new machinery, which will not be beneficial for newly developing enterprises. Instead, the region should, in the beginning, select widely applicable basic production technologies strengthened with high-grade production skills. Once the technology is digested and the skills are improved, the DOKAP industries can be

flexible to produce new products without being forced to change, or with little change /modifications of, existing technology. With this approach, the region can cope with the dynamic changes in the market, without being forced to re-invest in the technology.

For the basic metal processing, and metal casting skills and technology, such production skills and technology that represent international state-of-art must be strategically introduced. These subsectors are the most upstream subsectors which make possible the development of metal-related downstream subsectors.

5.2 Selection of Industries

5.2.1 Selection method

The method used in this report for selecting the appropriate manufacturing subsectors to be introduced/supported is as follows.

Step 1

First, a long list of probable manufacturing subsectors was generated (Appendix 13). On that list, the product, manufacturing and marketing characteristics of the subsectors are reflected from both demand and supply side perspectives. The viability of the subsectors in the region are discussed against the regional production and marketing capabilities. In this discussion, the CIS markets are assumed as the main target market, keeping in mind the regions technologic, productions and managerial skills.

Step 2

From this long list, a set of best possible candidate subsectors were selected for further evaluation. These pre-selected set of industries and products are given in the “short list” (Appendix 14).

Step 3

The pre-selected set of industries were further discussed based on the following criteria. That is, identified for the final list are those sectors which are:

- already existing in the region (Appendix 15),
- reportedly viable in the region (Appendix 9),
- displaying recognizable activity within the last five years with incentives (Appendix 11), and
- strategically important for regional development.

These industries/products are listed in Appendix 16 along with the selection criteria.

5.2.2 Long list: industry characteristics in general

A set of possible industries to be supported/introduced into the DOKAP region is given in Appendix 13. General market entry conditions and production scheme characteristics of the industries are also given in the table. A precise assessment on the tabulated items is almost impossible due to enormous varieties of products of the subsectors listed. Nonetheless, features of the subsector are described in order to make a high level comparison and selection of appropriate industries.

The table reflects only the static interrelationship of the components as viewed from the “demand side”. The market dynamics are not reflected in the table. In order to select appropriate industries systematically from the given set, a detailed marketing survey is necessary. Such a survey, however, is not available at the moment and is beyond the scope of this report.

5.2.3 Short list: probable subsectors to be supported

From the largest possible set of industries given in Appendix 13, the most suitable candidates for the region are selected and listed in Appendix 14. This forms an intermediate list for the final selection.

In the short list, the subsectors were selected based on the following criteria:

- Subsectors which aim at increasing exports of the manufactured goods,
- Subsectors which aim at utilizing the natural resources endowed in the region for local consumption,
- Subsectors to be strategically introduced and fostered in the DOKAP region, and
- Subsectors which aim mainly at stabilizing the manufacturing industry in the DOKAP region through exports.

The grouping is made from both demand and supply-side perspectives.

5.2.4 Final list of industries to be promoted in the Region

The final list of the subsectors are listed in Appendix 16, along with selection criteria and proposed development phasing.

The criterion named as “region’s status” is a composite qualitative index basically indicating the region’s conditions and readiness for accommodating a particular subsector. An “X” mark in that column means the regional background conditions are in favor of development/introduction/extension of a particular subsector, based on some or all of the following.

- The industry already exists in the region to some extent;
- Further development potential is reported by local authorities or is identified by the analysis of incentive certificates; and
- Raw material availability, as perceived by the Study Team.

Little information is available on the size of markets. The market scale was ranked as small, medium, and large, based on the absolute market scale basically in CIS countries, and region’s competitive power in particular subsectors. It should be kept in mind that detailed marketing survey is needed in order to set introduction/support priorities for the selected industries.

5.3 Factor Intensity in Selected Industries

5.3.1 Labor intensive industries

In general, the labor-intensive industry utilizes significant amount of manpower with low-grade skills, regardless of amount of capital investment. Candidates that comply with the following conditions can be classified in this group. These industries can be established without coexistence of any up and downstream subsectors within the region.

- Subsector industry which can produce finished consumption goods using mainly manpower e.g. apparel,
- Production subprocess units which use various types of inputs, but treatment of the inputs can not be mechanized. e.g. assembly of cars and electric equipment.

Manufacturing subsectors which are worth considering for the region are apparel, electric appliance assembly, and car assembly.

The strong intention of local governments to introduce labor intensive industries in the region is quite sensible. Labor intensive industries will of course lead to local development, but will not serve much for the ultimate purpose of broad-based regional development. Therefore, the provinces have to consider first the overall development of manufacturing industry in the region and then the accommodation of the labor intensive industries.

5.3.2 Small scale production units

The concept of small-scale production should not be mixed with labor intensive ones. There are roughly two fields where the small production unit can exist in DOKAP region:

- (1) products where special or high grade production skills and technology are required for production; these are metal processing products, and cast metal products; and
- (2) fields where the production activity can be divided into subprocesses, or the activity can be divided vertically, typical products are synthetic resin products, and apparel.

Development of these subsectors must be supported regardless of the scale of enterprises and production capacity, because they play important roles in the broad-based industrialization in the region.

Appendix 1 GDP in DOKAP Region in 1997

	Artvin	Bayburt	Giresun	G. Hane	Ordu	Rize	Trabzon	DOKAP	TURKEY
1. Agriculture	58,929	13,290	127,342	30,582	243,784	73,743	156,651	704,321	14,927,152
a. Agriculture and livestock production	43,285	13,139	117,531	27,783	231,167	62,142	132,518	627,565	13,893,628
b. Forestry	14,739	49	5,742	2,576	5,676	1,843	4,015	34,640	729,636
c. Fishery	905	102	4,069	223	6,941	9,758	20,118	42,116	313,888
2. Industry	153,488	2,774	54,423	4,292	110,868	63,979	163,522	553,346	32,835,383
a. Mining and quarrying	124,000	295	8,773	2,054	785	-	1,776	137,683	1,638,928
b. Manufacturing	21,319	1,943	34,988	1,086	103,302	59,511	152,587	374,736	27,838,819
c. Electricity, gas, water	8,169	536	10,662	1,152	6,781	4,468	9,159	40,927	3,357,636
3. Construction	12,343	3,763	37,677	3,899	53,466	29,759	60,249	201,156	6,511,043
4. Trade	57,495	10,246	63,754	12,761	116,370	92,822	216,225	569,673	25,024,396
a. Wholesale and retail trade	36,628	8,820	53,408	11,555	101,683	50,193	180,173	442,460	21,108,885
b. Hotel, restaurants services	20,867	1,426	10,346	1,206	14,687	42,629	36,052	127,213	3,915,511
5. Transportation and communication	72,141	13,166	89,217	36,649	104,937	96,673	151,516	564,299	14,485,052
6. Financial institutions	3,350	1,374	10,817	2,012	5,633	4,966	17,966	46,118	2,572,915
7. Ownership of dwelling	8,224	4,565	30,654	7,014	33,985	27,318	38,027	149,787	5,474,616
8. Business and personal services	2,404	260	5,985	534	10,931	3,701	15,437	39,252	2,564,436
9. (Less) imputed bank service charges	2,075	1,132	11,602	1,977	3,745	3,428	12,329	36,288	2,112,809
10. SECTORAL TOTAL (1-9)	366,299	48,306	408,267	95,766	676,229	389,533	807,264	2,791,664	102,282,184
11. Government services	18,492	6,436	27,893	11,043	37,998	21,013	62,685	185,560	4,472,887
12. Private non-profit Organizations	36	-	620	-	258	618	2,458	3,990	390,055
13. TOTAL (10+11+12)	384,827	54,742	436,780	106,809	714,485	411,164	872,407	2,981,214	107,145,126
14. Import Duties	1,553	23	11,477	873	18,912	17,982	13,973	64,793	5,486,077
TOTAL GDP	386,380	54,765	448,257	107,682	733,397	429,146	886,380	3,046,007	112,631,203

Source : SIS Publication, Gross Domestic Product by Provinces, 1997

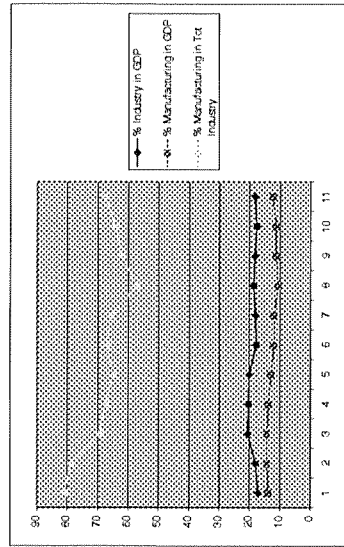
Appendix 2 GDP Shares in DOKAP Region in 1997

	Artvin	Bayburt	Giresun	G.Hane	Ordu	Rize	Trabzon	DOKAP	TURKEY
1. Agriculture	15.25	24.27	28.41	28.40	33.24	17.18	17.67	23.12	13.25
a. Agriculture and livestock production	11.20	23.99	26.22	25.80	31.52	14.48	14.95	20.60	12.33
b. Forestry	3.81	0.09	1.28	2.39	0.77	0.43	0.45	1.14	0.65
c. Fishery	0.23	0.19	0.91	0.21	0.95	2.27	2.27	1.38	0.28
2. Industry	39.72	5.07	12.14	3.99	15.12	14.91	18.45	18.17	29.15
a. Mining and quarrying	32.09	0.54	1.96	1.91	0.11	-	0.20	4.52	1.46
b. Manufacturing	5.52	3.55	7.81	1.01	14.09	13.87	17.21	12.30	24.72
c. Electricity, gas, water	2.11	0.98	2.38	1.07	0.92	1.04	1.03	1.34	2.98
3. Construction	3.19	6.87	8.41	3.62	7.29	6.93	6.80	6.60	5.78
4. Trade	14.88	18.71	14.22	11.85	15.87	21.63	24.39	18.70	22.22
a. Wholesale and retail trade	9.48	16.11	11.91	10.73	13.86	11.70	20.33	14.53	18.74
b. Hotel, restaurants services	5.40	2.60	2.31	1.12	2.00	9.93	4.07	4.18	3.48
5. Transportation and communication	18.67	24.04	19.90	34.03	14.31	22.53	17.09	18.53	12.86
6. Financial institutions	0.87	2.51	2.41	1.87	0.77	1.16	2.03	1.51	2.28
7. Ownership of dwelling	2.13	8.34	6.84	6.51	4.63	6.37	4.29	4.92	4.86
8. Business and personal services	0.62	0.47	1.34	0.50	1.49	0.86	1.74	1.29	2.28
9. (Less) imputed bank service charges	0.54	2.07	2.59	1.84	0.51	0.80	1.39	1.19	1.88
10. SECTORAL TOTAL (1-9)	94.80	88.21	91.08	88.93	92.21	90.77	91.07	91.65	90.81
11. Government services	4.79	11.75	6.22	10.26	5.18	4.90	7.07	6.09	3.97
12. Private non-profit Organizations	0.01	-	0.14	-	0.04	0.14	0.28	0.13	0.35
13. TOTAL (10+11+12)	99.60	99.96	97.44	99.19	97.42	95.81	98.42	97.87	95.13
14. Import Duties	0.40	0.04	2.56	0.81	2.58	4.19	1.58	2.13	4.87
TOTAL	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source : SIS Publication, Gross Domestic Product by Provinces, 1997

Appendix 3 Changes in Industrial Production in DOKAP during 1987-1996 (GDP in 1987 producer's prices - Million TL)

	87	88	89	90	91	92	93	94	95	96	97
Artvin											
Total GDP	282,448	283,318	306,171	325,210	350,038	333,300	355,835	405,555	402,909	411,055	386,380
Inds Total	74,702	81,605	130,208	131,999	143,303	141,243	191,736	178,819	175,568	153,488	153,488
Mining	38,036	44,497	89,269	108,977	138,328	113,930	109,004	165,091	153,335	149,335	124,000
Manufacturing	34,259	35,117	39,085	20,700	18,729	25,968	27,617	22,474	19,997	21,780	21,319
Electric	2,407	1,991	1,854	2,322	3,876	3,405	4,822	4,171	5,092	4,453	8,169
Bayburt											
Total GDP	-	-	-	-	49,772	54,103	51,336	52,008	51,728	54,765	54,765
Inds Total	-	-	-	-	4,788	5,432	5,034	2,237	2,582	2,774	2,774
Mining	-	-	-	-	-	-	12	171	159	309	295
Manufacturing	-	-	-	-	1,422	1,549	1,629	1,426	1,733	1,943	1,943
Electric	-	-	-	-	3,366	3,871	3,437	4,49	540	540	536
Giresun											
Total GDP	341,724	355,022	374,767	354,661	366,172	436,076	385,192	405,842	414,844	436,695	448,258
Inds Total	45,297	44,054	43,253	53,563	56,204	45,324	45,248	46,691	50,142	44,534	54,423
Mining	5,038	5,148	5,817	7,040	3,245	2,629	4,336	6,717	6,254	6,201	8,773
Manufacturing	29,102	25,824	26,847	37,053	46,133	31,249	30,013	30,975	31,119	29,017	34,988
Electric	11,157	13,082	10,589	9,490	6,826	11,446	10,899	8,999	12,769	9,316	10,662
Gümüşhane											
Total GDP	141,808	132,593	123,801	97,278	96,390	99,301	99,656	98,429	99,004	105,669	107,662
Inds Total	6,046	5,606	5,398	2,727	3,368	4,922	5,044	7,528	3,197	3,346	4,292
Mining	3,296	2,560	2,145	33	232	2	1,559	1,452	1,437	2,054	2,054
Manufacturing	1,260	1,282	1,356	750	810	893	820	937	988	1,086	1,086
Electric	1,490	1,744	1,897	1,944	2,604	3,880	4,149	5,149	808	921	1,152
Ordu											
Total GDP	441,619	508,335	535,036	566,988	594,541	635,633	600,348	626,996	656,979	732,541	733,397
Inds Total	45,058	57,930	78,622	75,116	73,659	83,220	85,721	73,913	87,194	108,704	110,868
Mining	197	166	753	431	759	295	275	546	508	827	785
Manufacturing	40,845	52,763	72,162	68,725	65,486	75,325	78,235	67,299	83,616	102,888	103,302
Electric	4,016	5,001	5,707	5,960	7,614	7,600	7,211	6,068	3,070	4,979	6,781
Rize											
Total GDP	441,434	442,369	390,653	411,768	439,372	418,330	409,776	429,717	423,288	469,456	429,146
Inds Total	96,421	96,615	90,243	82,863	73,191	71,404	67,088	66,140	54,418	60,980	63,979
Mining	90,771	90,237	83,533	76,539	66,200	64,476	57,860	58,318	50,744	56,494	59,511
Manufacturing	5,650	6,378	6,710	6,324	6,991	6,928	9,228	7,822	3,674	4,486	4,468
Trabzon											
Total GDP	783,770	747,236	767,162	781,090	758,632	846,782	830,093	781,327	812,553	818,767	886,380
Inds Total	143,364	154,074	163,030	168,441	141,922	146,088	143,843	131,358	142,578	136,719	163,522
Mining	390	5,114	23,270	16,431	495	77	772	1,502	1,398	1,546	1,776
Manufacturing	136,548	141,075	131,955	144,458	132,723	134,470	128,564	116,521	133,783	127,931	152,587
Electric	6,426	7,885	8,405	7,552	8,704	11,541	14,507	13,335	7,397	7,242	9,159
DOKAP Total	2,412,803	2,448,873	2,497,590	2,546,975	2,545,145	2,819,194	2,735,013	2,799,202	2,861,185	3,025,911	3,046,008
Industry Total	410,888	439,864	510,754	514,729	509,477	499,049	493,619	522,400	518,585	532,433	553,346
Mining Total	46,957	57,505	121,254	132,912	142,827	117,163	114,401	175,586	163,501	159,655	137,683
Manufacturing Total	332,795	346,288	354,338	348,225	330,035	333,720	324,731	297,833	321,825	340,841	374,736
Electric Total	31,146	36,081	35,162	33,592	36,615	48,166	54,487	48,981	33,259	31,937	40,927
% Industry in GDP	17	18	20	20	20	18	18	19	18	18	18
% Manufacturing in GDP	14	14	14	13	13	12	12	11	11	11	12
% Manufacturing in Tot Industry	81	79	69	66	65	67	66	57	62	64	63
Years	87	88	89	90	91	92	93	94	95	96	97



Appendix 4 Sectoral Distribution of Employment in DOKAP and TURKEY (1990)

	DOKAP										TURKEY								
	Artvin		Bayburt		Giresun		G.Hane		Ordu		Rize		Trabzon		DOKAP		TURKEY		
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	TOTAL
1. Agriculture	78,729	38,350	171,512	59,394	301,522	113,663	256,714	400,806	619,078	1,019,884	72.6	5,647,330	6,900,466	12,547,796	53.7				
2.1 Mining	415	14	481	125	239	57	279	1,602	8	1,610	0.1	129,210	1,613	130,823	0.6				
2.2 Manufacturing Industry	5,893	1,194	12,656	2,091	20,815	16,078	22,519	62,487	19,939	82,426	5.9	2,221,371	560,346	2,781,717	11.9				
Food, drink and tobacco	2,287	231	4,077	287	6,519	13,903	8,168	29,992	5,490	35,472	2.5	309,126	49,970	359,096	1.5				
Textile, clothing and leather	816	392	3,688	947	7,785	1,060	6,010	7,412	13,286	20,698	1.5	628,878	421,407	1,050,285	4.5				
Timber and timber products	920	216	1,902	378	2,836	123	3,193	9,354	214	9,568	0.7	310,561	7,825	318,386	1.4				
Paper, paper products and printing	33	13	928	40	165	68	304	1,453	98	1,551	0.1	75,761	9,334	85,095	0.4				
Chemistry	43	7	115	20	277	57	433	872	80	952	0.1	120,875	16,090	136,965	0.6				
Industry related to stone and soil	24	48	154	70	618	116	794	1,795	89	1,824	0.1	126,139	10,996	137,135	0.6				
Metal industry	1,495	21	94	21	86	36	226	1,935	44	1,979	0.1	94,582	2,578	97,160	0.4				
Metal products, machine & eqpt	229	213	1,272	260	1,941	665	2,648	7,070	158	7,228	0.5	475,507	28,682	504,189	2.2				
Other manufacturing	46	53	426	68	588	50	743	1,494	480	1,974	0.1	79,942	13,464	93,406	0.4				
2.3 Electricity, gas	240	47	575	239	586	276	1,143	2,945	161	3,106	0.2	74,651	5,673	80,324	0.3				
3. Construction	3,251	2,916	9,206	3,945	13,565	5,343	14,771	52,583	414	52,997	3.8	1,173,524	10,718	1,184,242	5.1				
4. Trade, tourism	2,986	1,861	10,249	2,487	16,380	7,118	19,081	57,326	2,836	60,162	4.3	1,716,276	138,030	1,854,306	7.9				
5. Transportation, communication	3,202	938	5,502	2,130	8,110	3,720	11,311	33,857	1,056	34,913	2.5	736,768	38,659	775,427	3.3				
6. Finance	891	415	2,739	624	3,164	1,446	4,978	11,169	3,088	14,257	1.0	387,863	153,879	541,742	2.3				
11. Public services	13,021	5,073	22,068	8,186	28,782	13,038	40,576	108,414	22,330	130,744	9.3	2,765,400	578,633	3,344,033	14.3				
Undefined	856	71	1,083	259	924	289	1,738	4,329	891	5,220	0.4	121,086	20,397	141,483	0.6				
TOTAL	109,484	50,879	236,071	79,480	394,087	161,028	373,110	735,518	669,801	1,405,319	100.0	14,973,479	8,408,414	23,381,893	100.0				

Source : SIS, 1990 Census of Population

Appendix 5 Manufacturing Employment in DOKAP by Subsectors in 1992

a) All Manufacturing Enterprises	Artvin	Bayburt	Giresun	G Hane	Ordu	Rize	Trabzon	DOKAP	TURKEY
Manufacturing Industry	2,954	341	4,811	442	6,415	14,475	10,257	39,695	1,530,745
Food, drink and tobacco	140	61	2,700	140	3,445	13,023	5,068	24,577	258,777
Textile, clothing and leather	92	53	301	51	470	258	1,274	2,499	440,046
Timber and timber products	591	61	539	92	871	462	1,234	3,850	137,036
Paper, paper products and printing	23	7	534	14	62	31	111	782	54,252
Chemistry industry	7		54		19	46	185	311	114,055
Industry related to stone and soil	13		58	72	473	107	763	1,486	92,193
Metal industry	365						249	614	77,501
Metal products, machine and equipment	123	57	327	73	636	335	1,258	2,809	342,731
Other manufacturing industries			5		8	12	30	55	14,154

Source : Unpublished SIS data based on 1992 survey : General Industry and Work Places Survey

Appendix 6 Manufacturing Employment in Enterprises employing more than 10 workers: 1996

b) Enterprises with 10 workers or more	Artvin	Bayburt	Giresun	G Hane	Ordu	Rize	Trabzon	DOKAP	TURKEY
Manufacturing Industry	1,717		3,555	188	3,893	9,262	4,760	23,175	1,036,829
Food, drink and tobacco	1,264		2,401	32	3,078	9,070	3,658	19,503	172,135
Textile, clothing and leather									355,295
Timber and timber products	395		444		425	135		955	23,335
Paper, paper products and printing					52		120	444	36,131
Chemistry				107	325		428	279	98,471
Industry related to stone and soil							181	753	68,141
Metal industry								181	58,162
Metal products, machine and equipment							291	291	218,379
Other manufacturing industries									6,780

Source : Unpublished SIS data from Annual Survey of Manufacturing Enterprises

Appendix 7 Manufacturing Employment and Enterprises in DOKAP in 1999

3 - MANUFACTURING SUBSECTORS	FIELD SURVEY		SSK DATA(1997)	
	# Work Place	# Worker	# Work Place	# Worker
31 Food, drink and tobacco	1,740	44,023	1,659	35,990
32 Textile, clothing and leather	1,186	3,236	443	1,666
33 Forestry product and furniture	1,533	6,388	935	3,461
34 Paper, paper products and printing	99	1,018	117	736
35 Chemistry, Petroleum, Coal, Rubber & Plastic	91	1,158	102	931
36 Industry related to stone and soil	162	2,715	259	1,853
37 Metal industry	4	178	13	244
38 Metal products, machine & equipment, vehicles	896	4,309	1,195	3,698
39 Other manufacturing industries	79	221	691	2,931
TOTAL	5,790	63,246	5,414	51,510

	ARTVIN				BAYBURT				GIRESUN			
	FIELD SURVEY		SSK (1997)		FIELD SURVEY		SSK (1997)		FIELD SURVEY		SSK (1997)	
	# Work Place	# Worker	# Work Place	# Worker	# Work Place	# Worker	# Work Place	# Worker	# Work Place	# Worker	# Work Place	# Worker
31	135	3743	54	2935	84	835	28	75	274	5518	293	4,043
32	138	276	7	7	52	123	3	9	150	337	43	233
33	297	917	29	388	115	345	5	6	287	1441	162	676
34	9	27	6	10	2	6	0	0	14	456	18	385
35	0	0	4	57	3	22	0	0	24	140	19	44
36	0	0	17	41	15	97	3	46	39	180	35	119
37	0	0	1	4	0	0	0	0	1	20	1	4
38	106	1494	26	61	92	250	4	7	191	50	220	676
39	0	0	54	311	5	10	6	37	1	2	18	45
	685	6457	198	3814	368	1688	49	180	981	8144	809	6225

	GUMUSHANE				ORDU				RIZE			
	FIELD SURVEY		SSK (1997)		FIELD SURVEY		SSK (1997)		FIELD SURVEY		SSK (1997)	
	# Work Place	# Worker	# Work Place	# Worker	# Work Place	# Worker	# Work Place	# Worker	# Work Place	# Worker	# Work Place	# Worker
31	92	218	48	175	139	5617	387	4480	382	20152	351	17,276
32	20	219	3	157	236	721	73	194	46	35	47	87
33	23	68	13	32	355	1898	224	777	98	458	96	307
34	7	8	3	4	10	30	28	109	6	18	16	24
35	0	0	4	95	16	221	15	140	9	37	10	303
36	5	42	3	32	30	697	47	482	12	50	39	243
37	0	0	0	0	2	70	2	63		70	2	4
38	15	44	11	97	129	402	365	799	24	284	205	554
39	36	69	11	46			55	119		0	9	13
	198	668	96	638	917	9656	1196	7163	577	21104	775	18811

	TRABZON			
	FIELD SURVEY		SSK (1997)	
	# Work Place	# Worker	# Work Place	# Worker
31	634	7940	498	7006
32	544	1525	267	979
33	358	1261	406	1275
34	51	483	46	204
35	39	738	50	292
36	61	1649	115	890
37	1	18	7	169
38	339	1785	364	1504
39	37	140	538	2360
	2064	15539	2291	14679

Source: Field survey data

Field survey was conducted by KOSGEB for JICA Study Team

Appendix 8 Manufacturing Concentration by Subsector

3 - MANUFACTURING SUBSECTORS	DOKAP FIELD SURVEY (1999)		TURKEY SIS (1990)		Concentration Index*
	Total Employment	% of Region	Total Employment	% of Region	
	44,023	69.61	359,096	12.91	
31 Food, drink and tobacco	3,236	5.12	1,050,285	37.76	0.14
32 Textile, clothing and leather	6,388	10.10	318,386	11.45	0.88
33 Forestry product and furniture	1,018	1.61	85,095	3.06	0.53
34 Paper, paper products and printing	1,158	1.83	136,965	4.92	0.37
35 Chemistry, Petroleum, Coal, Rubber & Plastic	2,715	4.29	137,135	4.93	0.87
36 Industry related to stone and soil	178	0.28	97,160	3.49	0.08
37 Metal industry	4,309	6.81	504,189	18.13	0.38
38 Metal products, machine & equipment, vehicles	221	0.35	93,406	3.36	0.10
39 Other manufacturing industries					
TOTAL	63,246	100.00	2,781,717	100.00	1.00

Source: SIS Population Census 1990 and Field Survey Data

3 - MANUFACTURING SUBSECTORS	DOKAP SIS (1990)		TURKEY SIS (1990)		Concentration Index*
	Total Employment	% of Region	Total Employment	% of Region	
	35,472	43.66	359,096	12.91	
20,698	25.48	1,050,285	37.76	0.67	
9,568	11.78	318,386	11.45	1.03	
1,551	1.91	85,095	3.06	0.62	
952	1.17	136,965	4.92	0.24	
1,824	2.25	137,135	4.93	0.46	
1,979	2.44	97,160	3.49	0.70	
7,228	8.90	504,189	18.13	0.49	
1,974	2.43	93,406	3.36	0.72	
TOTAL	81,246	100.00	2,781,717	100.00	1.00

Source: SIS Population Census 1990

*: Defined as the ratio between the shares in the DOKAP region and in Turkey

Appendix 9 Probable Fields of Investment in DOKAP Region

	Artvin	Bayburt	Giresun	G.Hane	Ordu	Rize	Trabzon
Agricultural, Forestry & Fishery							
1			A				A
2		B	A	B			
3		A	A				
4	B	B		C		A	A
5	A	A	A	B	A	A	A
6		A-B	B	A		B	A
7		A	B	B	A	A	
8				B			
9		B	B	B		B	B
10		B	B				
11						B	
Wood Processing							
12	A						B
13				B		B	
14						A	
15					B	B	B
16						A	
Food Processing							
17						B	
18						B	
19							A
20			B			B	B
21						B	A
22						A	B
23			B				A
24	B			B			
25		B					A
26	B	B					
27				B			
28			B				
29		A	A				
Textiles							
30			B				C
31			B				
32		B	B	B			
Chemicals							
33							C
34		B				B	
35			B			B	
36			B				
37		B					
38		B		B			B
39		B	B			B	B
Earth Based Manufacturing							
40							B
41							C
42				B			
43							B
44						B	
45							B
46				B			
47			C				
48			C				
Metal Processing							
49							B
50							A
51				B			
52				B			
53							A
Others							
54							B

Source : Compiled from various reports and interviews with local officials

Investments that pose least problems are classified as A; those that can be undertaken only subject to the improvement of basic conditions are classified as "C".

**Appendix 10 Changes in Share of Population and Electricity Consumption
in DOKAP Provinces**

Provinces which have	1983-1990	1990-1996
Increased their share of population and Energy consumption	None	None
Reduced share of population increased share of electricity	Giresun	Ordu, Trabzon, Gümüşhane, Rize
Increase share of population	-	-
Reduction in both shares	Artvin, Ordu, Trabzon, Gümüşhane, Rize	Artvin, Giresun

Source: TUSIAD, Turkiyenin Firsat Penceresi

Appendix 11 Sectoral Distribution of Investment Incentives Granted within 1995-1999 .

	NATIONAL TOTALS		REGIONAL TOTALS		NATIONAL DISTRIBUTION		REGION'S SHARE		REGIONAL DISTRIBUTION		CONCENTRATION Coeff	
	\$ Investment	Employment # Project	\$ Investment	Employment # Project	% \$	% Proj.	% \$	% Proj.	% \$	% Proj.	% \$	% Proj.
1 AGRICULTURE	1,315,704,467	24,919	18,132,448	555	0.88	1.77	1.38	2.23	1.35	2.25	1.54	1.27
Crop	113,821,303	89	0	0	0.08	0.25	0.00	0.00	0.00	0.00	0.00	0.00
Animal Husbandry	1,135,974,557	19,602	9,261,489	319	0.76	1.39	0.82	1.63	0.69	1.29	0.91	0.93
Aqua Products	65,908,607	1,784	8,870,959	236	0.04	0.13	13.46	13.23	0.66	0.95	15.00	7.55
2 MINING	1,573,300,425	41,317	13,484,484	273	1.05	2.93	0.86	0.66	1.01	1.70	0.95	0.58
Extraction	628,804,023	26,794	5,990,113	77	0.42	1.90	0.95	0.29	0.45	0.31	1.06	0.16
Process	252,231,306	4,570	3,068,640	71	0.17	0.32	1.22	1.55	0.23	0.29	1.36	0.89
Extract & Process	637,126,152	9,001	3,137,636	90	0.43	0.64	0.49	1.00	0.23	0.36	0.55	0.57
Enrichment	55,138,964	952	1,288,095	35	0.04	0.07	2.34	3.68	0.10	0.14	2.60	2.10
3 MANUFACTURING	103,471,401,024	911,209	579,884,867	13,871	69.22	64.63	0.56	1.52	43.22	56.12	0.62	0.87
31 Food & Beverages	6,843,581,657	107,061	135,280,020	4,640	4.58	7.59	1.98	4.33	10.08	18.77	2.20	2.47
32 Fabric & Apparel	59,529,202,730	509,104	95,615,810	3,077	39.82	36.11	0.16	0.60	7.13	12.45	0.18	0.34
320 Fabric	58,752,424,205	490,970	95,280,136	2,965	39.30	34.82	0.16	0.61	7.10	12.08	0.18	0.35
324 Leather	776,778,525	18,134	335,674	92	0.52	1.29	0.04	0.51	0.03	0.37	0.05	0.29
33 Wood Processing	1,217,809,540	22,999	18,561,228	658	1.77	0.81	1.52	2.86	1.38	2.66	1.70	1.63
34 Paper	1,818,967,189	9,353	3,397,612	756	2.12	1.66	0.19	0.80	0.25	3.06	0.45	0.59
35 Petrochemistry	8,104,637,890	48,559	48,143,756	445	5.42	3.44	0.59	0.92	3.59	1.80	0.66	0.52
351 Chemistry	5,990,864,538	25,808	33,196,826	121	4.01	1.83	0.55	0.47	2.47	0.49	0.62	0.27
355 Rubber	2,113,753,352	22,751	14,946,930	324	2.71	1.61	0.71	1.42	1.11	1.31	0.79	0.81
36 Earth Based	8,426,975,676	61,083	244,157,719	53	5.64	4.33	0.30	4.55	18.20	11.25	3.23	2.60
361 Ceramics	2,471,231,050	11,111	7,513,394	2,781	3.15	0.79	0.52	3.43	0.56	1.54	0.68	1.96
362 Glass	809,625,567	8,740	11,286,034	476	0.54	0.62	1.39	5.45	0.84	1.93	1.55	3.11
3691 Clay	977,307,171	15,196	3,112,090	294	0.65	1.08	0.32	1.93	0.23	1.19	0.35	1.10
3692 Cement & Lime	3,934,377,001	20,716	207,406,822	1,395	2.83	1.47	2.35	6.73	15.46	5.64	8.37	3.84
3699 Construction	234,434,887	5,320	14,839,379	245	0.16	0.38	0.27	4.42	1.11	0.85	7.05	2.52
37 Main Metal	3,851,481,116	19,181	4,569,309	435	2.58	1.36	0.12	2.32	0.34	1.80	0.13	1.32
371 Iron-Steel	2,745,902,939	11,850	2,569,939	240	1.84	0.84	0.09	2.03	0.19	0.97	0.45	0.10
372 Other Metals	1,105,578,177	7,331	1,999,370	205	0.74	0.52	0.18	2.80	0.15	0.83	0.20	1.60
38 Metal Processing	11,245,023,999	112,546	27,190,966	1,004	7.52	7.98	0.24	0.89	2.03	4.06	0.27	0.51
381 Metallic Goods	3,025,553,346	34,996	13,641,457	564	2.02	2.48	0.45	1.67	1.02	2.36	0.50	0.95
382 Machinery	1,202,183,042	23,916	7,594,325	235	0.80	1.70	0.63	0.98	0.57	0.95	1.13	0.70
383 Electric Machines	1,168,887,724	8,439	988,839	73	0.78	0.60	0.08	0.87	0.07	0.30	0.09	0.49
384 Vehicle	5,074,619,515	34,785	4,966,345	112	3.39	2.47	0.10	0.32	0.37	0.45	0.11	0.18
385 Measurement	351,913,664	5,440	0	0	0.24	0.39	0.00	0.00	0.00	0.00	0.00	0.00
3854 Electronics	421,866,708	4,970	0	0	0.28	0.35	0.47	0.00	0.00	0.00	0.00	0.00
39 Other Manufacturing	2,433,721,227	21,323	2,988,447	155	1.63	1.51	0.12	0.73	0.22	0.63	0.14	0.41
4 ENERGY	5,444,816,337	3,236	229,861,825	56	3.64	0.23	4.22	1.73	17.13	0.23	4.70	0.99
5 SERVICES	31,682,671,390	429,154	500,355,532	9,961	25.21	30.44	1.33	2.32	37.29	40.30	1.48	1.32
Transportation	21,654,736,056	149,531	410,518,711	7,398	14.49	10.61	1.90	4.95	30.60	29.93	2.11	2.82
Tourism	4,484,276,099	82,773	27,614,411	850	3.00	5.87	0.62	1.03	2.06	3.44	0.69	0.59
Trading	2,421,327,150	76,675	12,612,987	160	1.62	5.44	0.52	0.21	0.94	0.65	0.58	0.12
Education	1,067,914,409	21,253	11,746,722	422	0.71	1.51	1.10	1.99	0.88	1.71	1.23	1.13
Health	2,822,600,833	40,162	9,360,921	405	1.89	2.85	0.33	1.01	0.70	1.64	0.37	0.58
Others	5,231,816,843	58,760	28,501,780	726	3.50	4.17	0.54	1.24	2.12	2.94	0.61	0.70
GENERAL TOTALS	149,487,893,643	1,409,835	1,341,719,156	24,716	100.00	100.00	0.90	1.75	100.00	100.00	1.00	1.00

Source : Undersecretariat of Treasury

Appendix 12 Provincial Distribution of Investment Incentives in DOKAP in 1995-1999 (Energy excluded).

	ARTVIN		BAYBURT		GIBESUN		GÜRLUŞHANE		ORDU		RIZE		TRAPEZON		DOKAP		% of DOKAP	
	\$ Amount	Emp #	\$ Amount	Emp #	\$ Amount	Emp #	\$ Amount	Emp #	\$ Amount	Emp #	\$ Amount	Emp #	\$ Amount	Emp #	\$ Amount	Emp #	%	% of DOKAP
1 AGRICULTURE	776,383	20	1,883,140	100	4,873,513	137	4,151,045	45	2,612,894	73	853,290	40	2,981,823	140	18,132,448	555	1.63	6.28
Crop																		
Animal/Husbandry			1,883,140	100	4,873,513	131	4,151,045	45	2,612,894	73	378,650	20	2,981,823	140	9,261,489	319	0.63	100.11
Aquaculture																		
Food Products																		
2 MINING	3,662,993	17	2,888,147	40	935,347	0	2,427,012	45	2,151,514	159	889,415	12	0	0	13,484,484	273	10	1.21
Extraction	3,662,993	17	2,888,147	40	935,347	0	2,427,012	45	2,151,514	159	889,415	12	0	0	13,484,484	273	10	1.21
Process																		
3 MANUFACTURING	7,162,561	627	2,618,560	304	65,171,746	2,817	39,322,751	507	276,834,762	2,039	55,604,648	1,287	133,168,779	3,290	579,384,867	13,871	49.26	51.02
Food & Beverage	2,042,023	322	0	0	35,823,944	1,095	7,894,671	112	34,598,372	1,919	6,914,523	219	30,693,985	1,079	182,800,020	4,660	12.17	7.16
Alcoholic Beverages																		
Meat																		
Dairy																		
Other																		
Textile																		
Chemical																		
Metals																		
Other																		
4 ENERGY	140,857,015	1,065	24,851,398	299	48,802,237	1,268	11,800,708	462	56,854,750	2,021	64,454,225	1,925	152,625,139	2,921	500,555,532	9,961	0.09	0.00
Electricity	139,356,488	895	24,851,398	299	48,802,237	1,268	11,800,708	462	56,854,750	2,021	64,454,225	1,925	152,625,139	2,921	500,555,532	9,961	0.09	0.00
Gas																		
5 SERVICES	1,393,568,488	895	24,851,398	299	48,802,237	1,268	11,800,708	462	56,854,750	2,021	64,454,225	1,925	152,625,139	2,921	500,555,532	9,961	0.09	0.00
Transport																		
Information																		
Finance																		
Other																		
TOTAL	152,458,888	1,729	32,171,345	743	119,782,843	4,222	57,701,576	1,059	339,214,000	7,292	121,811,578	3,264	288,716,881	6,251	1,111,857,331	24,860	100.00	100.00

Source : Unpublished data, Undersecretariat Treasury

Appendix 13 Product-Marketing-Manufacturing Characteristics of Selected Industries (1/7)
(The long list of Manufacturing Industries considered for DOKAP Region)

PRODUCTION MATERIALS

1 Products	2 Related Subsectors	3 Usage Purpose	4 Product Type	5 Market Entry Conditions		7 Relative Price Against Volume or Weight	8 Relative scale of the market	9 Production Efficiency	10 Divisibility of Production Scheme		12 Basic Inputs to the subsector	13 Remarks
				Technology	Price / Design				Process	Activity		
Cement	Cement Production	Cement Products	Raw Material	Low	Price	Low	Large	High	Impossible	Impossible	Capital Intensive	<ul style="list-style-type: none"> Potentially large market scale in CIS However, they will develop the subsector too.
Plywood	Wood Processing	Construction Material	Intermediate Goods	Low	Price	Low	Middle	High	Impossible	Impossible	Capital Intensive (Capital)	<ul style="list-style-type: none"> Product-specific technology, not expected to change Easily available raw material in DOKAP, it can develop fast. Can accelerate development of finished good subsectors.
Fuel	Petroleum Refinery		Substantial Input	High (Complicated)	N/A	Low	Large	High	Impossible	Impossible	Capital Intensive (Fluge)	<ul style="list-style-type: none"> Product-specific technology Scale of the market is potentially large, however, the subsector will be surely fostered in the market.
Inorganic Chemical Product	Inorganic Chemicals	Chemical Treatment	Substantial Input		Price	Low	Small	High	Impossible	Impossible	Capital & Labour Intensive	<ul style="list-style-type: none"> This subsector is indispensable but not promising, due to small scale of the market CIS countries and the low margin of the products.
Organic Chemical Products	Petro-chemical Coal chemical	(various)	Intermediate Goods	High (complicated)		Low and High	Large	High	Impossible	Impossible	Capital Intensive (Huge capital)	<ul style="list-style-type: none"> Product-specific technology Helps develop the down-stream sectors in DOKAP region. However, over-supply of the products in the global market is expected for the next 10 years

Appendix 13 Product-Marketing-Manufacturing Characteristics of Selected Industries (2/7)
(The long list of Manufacturing Industries considered for DOKAP Region)

PRODUCTION MATERIALS CONT'D

1 Products	2 Related Subsectors	3 Usage Purpose	4 Product Type	5 Market Entry Conditions		7 Relative Price Against Volume or Weight	8 Relative scale of the market	9 Production Efficiency	10 Divisibility of Production Scheme		12 Fundamental Inputs to the subsector	13 Remarks
				Technology 5 A	Price / Design				Process 10 B	Activity 11 C		
Chemical Fertilizer	Chemical Fertilizer	Agriculture	Substantial Input	Low (in compound sub-prices)	Price	Low	Large	High	Possible	Impossible	Relatively Capital Intensive	<ul style="list-style-type: none"> Process divisible into nitrogenous fertilizer and compound of the three elements of the fertilizer. Not feasible if scale-economy is not reached Seemingly large market scale in CIS countries.
Agricultural Chemicals	Agricultural Chemicals	Agriculture	Substantial Input		Price	Low and High	Large	High	Possible	Impossible	Relatively Capital Intensive	<ul style="list-style-type: none"> Process can be divided into production of the original raw materials (Non-Organic Chemical Products) and compound of the materials. The latter sub-process may be profitable in the DOKAP region. Potential market scale seems very large in the CIS
Synthetic resin Products	Synthetic resin Products	(Various)	Intermediate Goods	Low in thermal sub-process	Price	Low	Large	High	Possible	Impossible	Relatively Capital Intensive	<ul style="list-style-type: none"> Process can be divided into production of the original raw materials (Organic Chemical Products) and thermal process of the raw materials. The latter sub-process may be possible to be introduced in the DOKAP region.

Appendix 13 Product-Marketing-Manufacturing Characteristics of Selected Industries (3/7)
(The long list of Manufacturing Industries considered for DOKAP Region)

CONSTRUCTION GOODS

1 Products	2 Related Subsectors	3 Usage Purpose	4 Product Type	5 Market Entry Conditions		7 Relative Price Against Volume or Weight	8 Relative scale of the market	9 Production Efficiency	10 Divisibility of Production Scheme		12 Fundamental Inputs to the subsector	13 Remarks
				Technology 5 A	Price / Design				Process 10 B	Activity 11 C		
Cement Products	Cement Products	Construction Material	Parts	Low	Price	Low	Large	Low	Impossible	Impossible	Relatively Labour Intensive	<ul style="list-style-type: none"> Potentially large market scale in CIS continues are going to expand vigorously their infrastructures. However, they will develop the subsector too.
Glass Products	Plate glass	Construction Material	Low	Price	Price	Low	Large	High	Impossible	Impossible	Capital intensive (Relatively large)	<ul style="list-style-type: none"> Product-specific technology Large market scale in the CIS countries. Detailed feasibility required for DOKAP region
	Special glass Products	Parts	Raw Material	High	Design (Function)	Middle	Small	Low	Impossible	Impossible	Labour intensive	<ul style="list-style-type: none"> Skilled labor plays very important role. Not a self-standing subsector. Requires upper stream subsectors to be developed.
Metal product	Metal Processing	Parts, Construction Material	Parts	Low and High in Precision parts	Price, and Design (Function)	Low and High	Large	Low and Middle	Impossible	Impossible	Labour and/or capital intensive	<ul style="list-style-type: none"> Potentially large market scale in CIS for variety of products. DOKAP region has been in a preliminary position to provide the precision parts. A locomotive sector for various other subsectors.
	Casting	Parts, Construction Material	Parts	Low and High (in precision parts)	Price	Low and High	Large	Low and Middle	Impossible	Impossible	Relatively labour intensive	<ul style="list-style-type: none"> The market has some characteristics as the ones the metal process products. A locomotive subsector. Casting skill & technology enlarges application fields of the metal products as a whole.

Appendix 13 Product-Marketing-Manufacturing Characteristics of Selected Industries (4/7)
(The long list of Manufacturing Industries considered for DOKAP Region)

CONSUMPTION GOODS

Cereals	Milling	Food	Raw Material	Low	Price	Low	Large	High	Impossible	Possible	Relatively capital intensive	<ul style="list-style-type: none"> • Large potential market scale in the CIS countries. However, the sector will grow in CIS too.
Edible oil	Edible oil process	Cooking	Raw Material	Low	Price	Middle	Large	High	Impossible	Impossible	Capital intensive	<ul style="list-style-type: none"> • Product-specific technology. • Large potential market in the CIS countries, judged on worldwide demand that increases 2-3% per annum. • Expected crop diversification in the DOKAP region will support introduction of this subsector.
Beverage	Beverage		Finished products	Low	Price	Low	Large	Middle	Impossible	Impossible	Relative capital intensive	<ul style="list-style-type: none"> • Seemingly large market scale CIS countries • However, the DOKAP region will be able to export the beverage made with fruit specialized to the region.
Paper products	Paper products	Daily use	Finished products	Low	Price	Low	Large	High	Impossible	Impossible	Capital intensive	<ul style="list-style-type: none"> • Seemingly large market scale CIS countries • DOKAP region may be the most suitable position for production due to the advantage in the transportation cost. • However, the affluent treatment must be perfect.
Printed matters	Printing		Finished products	Low	Price, Design	Low	Middle	Low	Impossible	Impossible	Labour and capital intensive	<ul style="list-style-type: none"> • Market specific nature of the products requires very specific marketing information.
Apparel	Apparel	Daily use	Finished products	Low and High	Price and Design	Low and High	Middle	Low and Middle	Impossible	Possible	Labour intensive	<ul style="list-style-type: none"> • Low priced apparel market in the CIS countries have already been occupied by South-East Asian countries. • Correct identification and prompt action on the demand is vitally important for success. High managerial risks involved to get into and stay competitive CIS market.
Leather products	Leather products	Apparel, furniture	Raw / Finished products	Low and High	Price and Design	Middle	Small	Low	Impossible	Possible	Labour intensive	<ul style="list-style-type: none"> • CIS countries has equal conditions for production. Quality and fashion products may be supplied to a little extent. • High level of tannery and the affluent treatment required.

Appendix 13 Product-Marketing-Manufacturing Characteristics of Selected Industries (5/7)
(The long list of Manufacturing Industries considered for DOKAP Region)

DURABLE GOODS

1 Products	2 Related Subsectors	3 Usage Purpose	4 Product Type	7 Market Entry Conditions		8 Relative scale of the market	9 Production Efficiency	12 Fundamental Inputs to the subsector		13 Remarks
				5 A Technology	6 Price / Design			10 B Process	11 C Activity	
Vehicles	Car Manufacture Industry		Finished products	High	Price and design	Large	High	Possible	Capital & labour intensive (Huge)	<ul style="list-style-type: none"> The industry comprises a full range of car components production and a full car assembly. The demand is huge, however, establishment of the industry in DOKAP region seems almost impossible in 10-15 years.
	Car component production	Finished vehicle	Parts	Low and High	Price and Design	Large	High	Possible	Capital & labour intensive	<ul style="list-style-type: none"> The sub-sector needs full support of the metal products, electric appliance, etc. Therefore, introduction of the this sub-sector accelerates many other sub-sector. Varying grades of production skills and technology are required to produce different products. The sectors suitable to the regional level should be introduced.
	Car assembly	Finished vehicle		Low			High	Impossible	Capital and labour intensive	<ul style="list-style-type: none"> Product-specific technology and Huge capital investment requires a guaranteed scale of production. The region does not seem to accommodate this subsector in the next 10-15 years, unless forcefully introduced for strategic reasons.
Furniture	Furniture		Finished goods	Middle (in skills)	Price and Design (Appearance) (Function)	Small	Low	Possible	Labour intensive	<ul style="list-style-type: none"> Culture in the CIS countries may work favourably to establishment of the subsector in the DOKAP region. High quality control and good design are essential for the products. A group of products should be considered rather than individual products.
Kitchen facilities	Kitchen equipment	Kitchen system	Parts	Low	Price and Design (Appearance) (Function)	Small	Low	Impossible	labour intensive	<ul style="list-style-type: none"> The kitchen system consists of metal products and electric equipment. High quality control and good design are essential for the products. A group of products should be considered rather than individual products. Culture in the CIS countries may work favourably to establishment of the subsector in the DOKAP region.

Appendix 13 Product-Marketing-Manufacturing Characteristics of Selected Industries (6/7)
(The long list of Manufacturing Industries considered for DOKAP Region)

Electric appliance	Electric appliance	Finished goods	Low and High	Price and Design (Appearance) (Function)	Low and High	Large	High	Possible	Impossible	Capital and labour intensive	<ul style="list-style-type: none"> The subsector comprises a full electric appliance components and the assembly subsectors. The demand is huge, however, establishment of the subsector in the DOKAP region seems almost impossible in 10-15 years.
Electric appliance component Production	Finished products	Parts	Low and High	Price and design (Function)	Low and High	Large	High	Possible	Impossible	Capital and labour intensive	<ul style="list-style-type: none"> The subsector needs full supports of the upper stream subsectors. Therefore, introduction of the subsector gives a huge influence on the subsectors. Many grades of production skills and technology are required for different parts. Relatively low grade of production skills and technology may be suitable to the region
Electric appliance assembly	Finished products		Low	Price and Design (function)	Low and High	Large	Low and Middle	Impossible	Impossible	Capital and labour intensive	<ul style="list-style-type: none"> Product-specific technology and Huge capital investment requires a guaranteed scale of production. The region does not seem to accommodate this subsector in the next 10-15 years, unless forcefully introduced for strategic reasons.

CAPITAL GOODS

Machinery (Capital Goods)	Machinery	Finished Products	High (in skills and Technology)	Price	High	Small	Low	Impossible	Impossible	Capital and labour intensive	<ul style="list-style-type: none"> The subsector requires full supports of the upper stream subsectors and the subsector itself. The products of the subsector are in variety from small and simple ones to large and sophisticated ones. Accordingly, it is recommendable for the subsector to start at producing the former ones, taking into consideration the synthetic level of the manufacturing industry in the DOKAP region.
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Explanation on the items:

Items 1 thru 4 are self-explanatory.

Item 5: Production skills and technology level required for production. This factor is the default entry conditions to market. If the technology and skills are not available, the subsector should not be considered at all.

Low and High levels may coexist in a certain product. Changing demand on product specifications usually forces the skill&technology to change from low to high state.

Item 6: "Price" and/or "Design".

These factors are also elements of the market entry conditions. In general, for low purchasing power the price has higher priority than design.

Appendix 13 Product-Marketing-Manufacturing Characteristics of Selected Industries (7/7) (The long list of Manufacturing Industries considered for DOKAP Region)

There exist two concepts on the design: "Design on appearance" of product and "Design functionality and efficiency". Generally speaking, style design overrides the functionality in apparel, however in furniture and kitchen facilities for instance, the latter is more important.

Item 7: Relative price against the volume or weight of product.

This index reflects a qualitative estimate of transportation cost of products to actual marketplace. Granted with its geographical location, DOKAP region has a competitive advantage on entering the CIS markets than the other regions of Turkey.
Along with the Item 5 and Item 6 factors, prices of raw materials of the products is implicitly reflected in this relative price index.

Item 8: Relative scale of the market of the Subsector.

Categorized as "Small", "Middle" and "Large", this measure represents relative sub-market weight of goods in an overall market of a country.

Item 9: Production efficiency of the subsector.

In general, production efficiency of labour intensive subsectors and small scale producers is lower than the ones of capital intensive subsectors and large scale producers.

Item 10: Possibility of dividing whole production processes of the subsector into separate and independent subprocess sectors, and

Item 11: Possibility of dividing production activity at a subprocess into productions by multiple production units.

Item 12: Fundamental inputs to the subsector.

Characteristics of the subsector reviewed from the fundamental inputs viewpoint are expressed by words "Capital intensive" or "Labour intensive".

Item 13: Remarks.

Important informations which can not be picked up from the above mentioned items are entered as remarks. These information are also utilized in selecting suitable manufacturing subsectors to introduce and/or foster in the DOKAP region.

Appendix 14 Manufacturing Subsectors Considered to be Introduced and/or Supported in the DOKAP Region (Short List) (1/3)

1. Subsectors which aim increasing exports of the manufactured goods.

Subsector	Reasons of the Recommendation	Remarks
Food Processing Possible Products: <ul style="list-style-type: none"> ▪ Edible oil ▪ Canned Food ▪ Pasta ▪ Fruit Juices ▪ Dairy Products ▪ Meat Products 	<ul style="list-style-type: none"> ▪ Large Market scale is expected due to change in the life style and dietary habits in CIS. ▪ Required production technology & Skills are not as sophisticated, suitable for the regions level. ▪ The products has to be relatively low priced in the markets. Regions geographical position can be advantageous for pricing. ▪ This sub-sector encourages the diversification in mono-crop agriculture in the region, thus have an indirect contribution to the agricultural development of the region as well. 	<ul style="list-style-type: none"> ▪ In order to increase the competition power of this subsector, the raise of raw material within the regional border must be maximized to the land suitability. ▪ The key factors to acquire and expand a market share are the seasonal prices and stability of distribution of the goods, along with quality. ▪ The region itself is a market for the end products.
Wood processing <ul style="list-style-type: none"> ▪ Plywood, Chipwood ▪ Wood Furniture ▪ Paper 	<ul style="list-style-type: none"> • Large market for quality products can be expected not only in the CIS but other neighbouring countries. • Required production technology & Skills are not as sophisticated, the region already has some level of technology and skills, so the sub-sector can be easily developed. • Sub-sector is labor intensive, particularly in furniture. Behind the development of this subsector, taking and advantageous position in the market is intended. • Relatively cheap raw material input is possible through import from CIS countries, expected rehabilitations on the transportation infrastructure will facilitate exporting to CIS countries. 	<ul style="list-style-type: none"> • Except the paper production, the sector in general is very environment-friendly. Perfect affluent treatment is required for paper production. • System products(a set of related products) must be considered as opposed to individual products, for a vigorous market development
Textile, <ul style="list-style-type: none"> ▪ Fabric ▪ Leather 	<ul style="list-style-type: none"> • Large potential market scale and severe competition in the market. • The sub-sector already exists in the region, and must not be abandoned because of its labor intensive nature. • Raw material can be supplied both from the region and from the central Asian countries. 	<ul style="list-style-type: none"> • Close monitoring and prompt reaction to demand, and well organized distribution channels are vitally important for success. Managerial risks involved requires close supervision and preventive measures. • In order to get competitive and take a stable market share, provision of discriminated products is a pre-requisite.
Earth-Based Products <ul style="list-style-type: none"> ▪ Cement & Cement Products ▪ Construction Elements ▪ Glass Products 	<ul style="list-style-type: none"> • Already large and growing market in the CIS Countries. Construction materials are the very first priorities in their economic and spatial development. • Almost all the products required to be low-priced in those markets, therefore regions geographic position can be advantageous for the development of this sector. 	<ul style="list-style-type: none"> • A noticeable action in cement production is already observed recently in the region (Incentive Analysis) . The possibility of introduction & further development must be evaluated in the development plan. • Plate glass production is capital intensive. Detailed market survey and feasibility study is necessary.

Appendix 14 Manufacturing Subsectors Considered to be Introduced and/or Supported in the DOKAP Region (Short List) (2/3)

<p>Inorganic Chemicals</p> <ul style="list-style-type: none"> ▪ Hygienic Products ▪ Agricultural Products 	<ul style="list-style-type: none"> • Large potential market in CIS countries for both cleaning materials and agricultural goods. • This loose-foot industry does not have raw material concern in the region. However, transportation facilities have direct effect on the price-competitiveness of the industry. 	<ul style="list-style-type: none"> • The product range of the industry is quite large, from low to hi-end, which supply different market needs. In the early stages, the industry has to focus on the daily necessities.
<p>Organic Chemicals</p> <ul style="list-style-type: none"> ▪ PVS Products ▪ Synthetic Resin 	<ul style="list-style-type: none"> • Large potential market in CIS countries. The products are used for construction, as well as various daily use. • Low Priced goods can be competitive in the market. Region's geographic position is advantageous for this market requirement. 	<ul style="list-style-type: none"> • This Subsector comprise of chemical processing and formation of the final products. These two processing does not need to be integrated. Chemical processing is capital intensive and there is an oversupply on the chemical products. • Foot-loose formation processes however, can be started as scale industries in the region in various locations.
<p>Transport Equipment</p> <ul style="list-style-type: none"> ▪ Cargo Vehicles 	<ul style="list-style-type: none"> • Considering the income levels in the CIS countries, in the medium term a large market scale can not be expected. Cargo vehicles market is larger. • Introduction of this sector to the region will give great impetus to development of upper stream subsectors in the region. • Geographic location of the region is also a big advantage. 	<ul style="list-style-type: none"> • The sub-sector is a capital intensive one, and initial investment requires very well prepared market research. • The sector also requires a strong after sale support in repairs and maintenance. These services enhances the international competitive power of the assembled vehicles.
<p>Machinery & Equipment</p> <ul style="list-style-type: none"> ▪ Electric appliance assembly 	<ul style="list-style-type: none"> • In the middle & long term, a large market scale can be expected in the CIS and other neighbouring countries, in parallel with increasing income level and electrification. • If successfully introduced, this sub-sector will bring about a big stimulus on development of the upper and down- stream sub-sectors. 	<ul style="list-style-type: none"> • The same comments as above.

2. Subsectors that aim utilization of the natural resources endowed in the region for the local consumption.

<p>Leather products</p>	<ul style="list-style-type: none"> • This sector is of importance in giving extra added value to raw material raised in the region and from other regions in the country. 	<ul style="list-style-type: none"> • The following factors have to be taken into account; <ol style="list-style-type: none"> 1. Development stage of livestock industry in the region 2. Production possibility of the high quality products and fashionable products in the region.
<p>Construction material</p> <ul style="list-style-type: none"> ▪ Marble & Granite 	<ul style="list-style-type: none"> • To utilize the natural resources in the region as much as possible and to create employment opportunity. • There is already investment incentive granted for the sector. • • 	<ul style="list-style-type: none"> • To promote export of these products, it is essential to consider more value added system products, like kitchen benches etc, floor tiles etc. rather than semi-processed and/or individual products. • The main potential market can be expected in the countries other than the CIS countries.

Appendix 14 Manufacturing Subsectors Considered to be Introduced and/or Supported in the DOKAP Region (Short List) (3/3)

3. Subsector to be strategically introduced and fostered in the DOKAP region

<p>Processed Metal products</p>	<ul style="list-style-type: none"> • Large potential market can be expected in the CIS countries. • The subsector provides an expansion and development bases for the down-stream manufacturing subsectors, e.g. electric appliance components; car components and factory facilities etc. Therefore these subsectors are essential for the development of industries in the DOKAP region. 	<ul style="list-style-type: none"> • In order to establish the DOKAP regions own technology and skills, it is recommended that the region start with mastering metal processing sub-sectors. • Business circumstances of this subsector must be vigorously pursued, and strong Public supports are expected for development of this sector.
<p>Cast metal products</p>	<ul style="list-style-type: none"> • Same reasons as the ones of the metal products are added • Cast metal products find wide applications in the industry. 	<ul style="list-style-type: none"> • Same comment on the metal products.

4. Subsectors which aim at mainly stabilizing the manufacturing industry in the DOKAP region, in priority order.

<p>Machinery & Equipment</p> <ul style="list-style-type: none"> ▪ Agriculture Machinery ▪ Construction Machinery ▪ Electric Appliances ▪ Car components 	<ul style="list-style-type: none"> • There is already a large and developing market in the CIS Countries for agricultural and production machinery. Market for the other products are sure to develop. Taking advantage of already existing markets and supporting these foot-loose industries will stabilize the development of manufacturing industries in the region which in turn contribute to keeping a stable market share in CIS countries. • Production processes can be subdivided, making easily possible the introduction and support of small and medium scale industries in various district within the region, provided the technology and skills required are available. 	<ul style="list-style-type: none"> • Severe competition of developed countries manufacturers ca be expected. This implies vigorous selection of products, prompt reaction to service requirement.
<p>Transport Equipment</p> <ul style="list-style-type: none"> ▪ Ship Building 	<ul style="list-style-type: none"> • Large potential market not only in CIS but in world markets. • If the sector succeeds in the region, it helps acquiring a steady market share in Black Sea countries, furthermore it help development of downstream processed and cast metal production and various other subsectors and stabilizes the industrialization in DOKAP region. 	<ul style="list-style-type: none"> ▪ The same comments as above.
<p>Precision Equipment</p> <ul style="list-style-type: none"> ▪ Electronic Products and Precision Equipment 	<ul style="list-style-type: none"> • Large potential market can be expected in the mid- to long term in the CIS and all other countries. • If these sectors introduced successfully, the end products can acquire a large market share in CIS countries and these sectors contribute greatly to the development of regional skills and technology. 	<ul style="list-style-type: none"> ▪ The same comments as above.

Appendix 15 Main Manufacturing Subsector Industries Operating in the DOKAP Region - As of May 1998 -

Subsector	Main Market	Production Process Adopted	Characteristics Of the Production Process	Raw material Input from:	Control of Management taken by	Remarks
Hazelnut Processing	Foreign	Whole Production Process	Capital Intensive	The Region	The Region	<ul style="list-style-type: none"> • Except hazelnut oil, market is almost saturated on the existing distribution channel. • The business may be expanded by increasing oil production and diversifying distribution channel over the world.
Tea Processing	Domestic	Whole Production Processes	Labour Intensive	The Region	The Region	<ul style="list-style-type: none"> ▪ The domestic market has almost saturated. Increase in export may be possible only with hi-quality products.
Plywood	Domestic	Whole Production Processes	Capital Intensive	The Region	The Region	<ul style="list-style-type: none"> • Legislation limits the domestic raw material, raw material can be imported from CIS. • However, there are possibly of the production in other areas within the region, if the raise of raw material is possible, and export to CIS countries.
Textile	Foreign	Design and Final Processes	Labour Intensive	Other Region in the Country	The Region and Other Region in the Country	<ul style="list-style-type: none"> • Good design, accurate sewing, and reasonable prices are key points for expansion of the market. • Competition in the foreign and domestic markets will surely become severer due to increase in the export from developing countries and import tariff reduction in the country.
Armament	Domestic	Precision Process	Capital Intensive	Other Region in the Country	The Region	<ul style="list-style-type: none"> • The market is saturated.. • Available technology and skills can be utilized for metal processing . • The subsector industry is heavily supported by the public side.
Ship Building	Domestic	Assembly	Labour Intensive	Other Region in the Country	Other Region in the Country	<ul style="list-style-type: none"> • The potential market is quite big if the product range is successfully diversified of the product (now, fishing small ship). • The diversification requires upgrading the facilities and technology. So it seems very difficult for the region to take hegemony of the sub-sector industry.

Appendix 16 Final selection of Subsectors to be Supported, Selection Criteria and Recommended Development Phase for Support (1/2)

	Selection Criteria				Timing			Remarks
	Region's Situation	Market Scale	Strategic Importance	Stabilizing Industry	1	2	3	
Food Processing								
Pulse Packaging	X				X			Favourable conditions for expansion
Concentrated Feed	X	S-M			X			Favourable conditions for development
Wheat Flour / Maize Processing	X	S			X			
Edible Oil		M-L				X		Seemingly large market in CIS
Beverages	X	S-M			X			Bottling & Canning is recommended. Seemingly large market in CIS
Dairy Products	X				X			Favourable conditions for development
Pasta And Biscuits		M-L				X		Seemingly large market in CIS
Jam & Confectioneries		M-L				X		Seemingly large market in CIS
Wood Processing								
Timber	X				X			Expansion proportionate to acquisition of raw materials in the region.
Inlaid Floor	X				X			As timber
Chipwood / MDF boards	X	M-L			X			Seemingly large market in CIS. Favourable conditions for development
Wood Impregnating		M-L			X			Ditto
Pulp & Paper		S-M				X		Seemingly large market in CIS and Turkey. Perfect effluent treatment.
Kitchen Closets		S-M				X		If succeeded, huge market in CIS and Turkey.
Furniture	X				X			Favourable conditions for expansion. High quality control and good design is a must.
Textiles								
Hand-made carpets	X	S			X			Favourable conditions for expansion. The skills to be preserved for culture.
Apparel	X	S			X			Favourable conditions for expansion, if market is promptly reacted.
Leather Products								
Shoes		S			x			
Soil & Caly Based Products								
Marble for house use	X	S-M			X			Large market for kitchen benches. Competition of coated chipwood is increasing
Granite constr. and decoration		S-M			X			Demand for high-end products in developed countries.
Cement & Cement Products	X	M-L			X			Seemingly large market scale in CIS countries. They will develop too.
Glass Products (Plate Glass)		S-M				X		Seemingly large market scale in CIS countries
Non-organic Chemicals								
Detergent, Soap, Cleaning		M-L			X			Seemingly large market scale in CIS countries
Fertilizers		M-L				X		Seemingly large market scale in CIS countries
Agricultural Chemicals		M-L				X		Seemingly large market scale in CIS countries

Appendix 16 Final selection of Subsectors to be Supported, Selection Criteria and Recommended Development Phase for Support (2/2)

	Selection Criteria			Timing			Remarks
	Region's Situation	Market Scale	Strategic Importance	Stabilizing Industry	1	2	
Organic Chemicals							
PVC Based Products		M-L			X		Favourable conditions for development. Large market scale.
Petroleum Refinery		M-L				X	Same comments as cement & cement products.
Basic Metal Processing							
Processed Metal Products	X		X		X		Strategically important sector. Favourable conditions for development
Cast Metal Products			X				Same comments above
Machinery							
Processing, Agricultural & construction machinery		L		X			Large market. Severe competition in the market. Helps develop other sectors.
Electric Appliances Components		L		X			Same comments above
Electric Appliances Assembly		L		X			Same comments above
Transport Equipment							
Fishing Boats	X	S			X		Detailed market survey required.
Car Components		L		X			Same comments as machinery & equipment
Car Assembly		L		X			Same comments as electric appliances
Precision Equipment							
Electric Products		L		X			Large market but competition expected. Products must be carefully selected
Precision Equipment	X	M-L		X			Subsequent to metal processing. Large market will develop.
Others							
Printed Material		S		X			Largely depends on the needs in CIS countries.

NOTES:

In estimating the market scale as Small, Medium And Large(S,M,L) , the absolute market size and the competition power of the regional industries are kept in mind.

4. Tourism

CHAPTER 1 TURKISH TOURISM OVERVIEW

1.1 Turkish Tourism in Recent Five Years

Tourism in Turkey has recorded a healthy growth in the recent five years from the year 1994 to 1998, expanding 1.5 times in terms of foreign visitor arrivals. A remarkable two-digit growth was registered successively from 1995 through 1997. This highlights the development of a continuously evolving and progressively strengthening tourism industry, working hand in hand with the Ministry of Tourism (MOT) initiatives.

Table 1.1 Foreign Visitor Arrivals in Turkey

(Unit: 1,000 persons)

Year	1994	1995	1996	1997	1998	Annual Average Growth (%) 1994-98
Foreign Visitor Arrivals	6,671	7,727	8,615	9,689	9,753	10.0
Growth over Previous Year (%)	2.6	15.8	11.5	12.5	0.7	

Source: MOT

OECD Europe has been, and continues to be, the greatest source of tourism in Turkey, accounting in 1998 for 5.5 million arrivals or 56% of the total visitor arrivals. Germany is the single most important market for Turkey, particularly since 1995, accounting in 1998 for 2.2 million arrivals or 23% of the total.

Other Europe consisting of Eastern European countries occupies the second most important region, accounting in 1998 for 2.5 million arrivals or 25% of the total visitor arrivals. C.I.S. countries dominate the share of Other Europe arrivals and account in 1998 for 1.3 million arrivals or 11% of the total.

Table 1.2 Foreign Visitor Arrivals in Turkey by Region

(Unit : 1,000 persons)

Year	1994	1995	1996	1997	1998	98 / 97 (%)	Annual Average Growth (%)
Regions							
OECD Europe	2,856	3,912	4,707	5,461	5,476	11.5	11.5
OECD Others	410	448	492	559	649	16.1	11.9
OECD Total	3,266	4,360	5,199	6,020	6,125	1.7	11.6
Other Europe	2,334	2,110	2,220	2,473	2,486	0.6	1.8
Africa	101	136	120	130	127	- 2.0	
Asia	912	1,064	1,008	991	939	- 5.3	
America	50	48	54	60	62	6.0	
Others	8	9	14	15	14	- 6.7	

Note : OECD Others include USA, Canada, Japan, Australia and New Zealand.

Source : MOT

1.2 Turkey in East Mediterranean Tourism

Modern tourism is a fiercely competitive market. Tourist destination countries throughout the world are vying for patronage of the major source markets of OECD. Turkey has been one of the three major players in the East Mediterranean tourism, with the other two being Greece and Egypt. All three countries share common tourist characteristics:

- They abound in a variety of tourism resources (archaeology, history, culture, scenic wonders, traditional lifestyle, etc.);
- They abound in shorelines suitable for beach/marine-related holiday (more recently for Egypt);
- They rely heavily on the tourist flow from OECD Europe; and
- They try to diversify traditional line of tourism products to include such new products as activity tourism, urban tourism, etc.

Greece has long been the most favored destination of the region. In 1997, however, Turkey succeeded in overtaking Greece and was presumed to be on the top of the list in 1998 as well, thanks primarily to the aggressive effort to sell quality and value of Turkish holidays. The Turkish success is helped partly by complacency on the part of Greek tourism industry, typically poor quality of tourist attractions and rather poor service delivery in recent years.

Table 1.3 Foreign Tourist Arrivals in Turkey, Greece and Egypt

(Unit : 1,000 persons)

Year	1994	1995	1996	1997	1998	98 / 97 (%)	Annual Average Growth (%)
Turkey	6,671	7,727	8,615	9,689	9,753	0.7	8.5
Greece	10,713	10,130	9,233	9,585	n.a.	-.-	-.-
Egypt	2,582	3,133	3,896	3,925	3,454	- 12.0	6.6

Note : For Turkey and Egypt, visitor arrivals at the frontier, while for Greece tourist arrival at the frontier.

Source : World Tourism Organization and national tourist offices.

CHAPTER 2 TOURISM IN THE DOKAP REGION

2.1 Tourism in DOKAP Region in Recent Five Years

The number of foreign arrivals registered at licensed accommodations (MOT and municipality licensed) in the DOKAP region has eventually increased on a moderate annual average of 5.6% in the five-year term from 1994 to 1998, though there were some large fluctuations in intermediate years, particularly in 1997. However, the DOKAP region's share in whole Turkey shrunk from 5.0% in 1994 to 3.7% in 1998 because of the larger growth registered in the national total arrivals. The large fluctuation in intermediate years is attributed to the shift of CIS "luggage trade" arrivals (peaked in 1993) to other competitive destinations in Turkey (e.g., Istanbul) and overseas (e.g., Syria, Gulf countries, etc.), where quality and value-for-money goods are on offer. Domestic arrivals to the region have increased on an annual average of 13.1% from 1994 to 1998, and its share in whole Turkey also increased from 2.6% in 1994 to 4.1% in 1998.

The total of foreign and domestic arrivals to the region has increased at an annual average of 10.3% from 1994 to 1998. However, the region's share in whole Turkey shrunk slightly from 4.5% in 1994 to 4.0% in 1998, since the national total arrivals with much larger volume have expanded at a quasi-parallel rate of 9.7% per annum.

Province-wise in 1998, Trabzon holds a commanding share of 41.7% in the regional total arrivals, as anticipated, to claim its credit as the commercial and tourist hub of the DOKAP region. Rize, the second tourist center in the region follows Trabzon with a share of 20.7%, then followed by Artvin with 14.2%, Ordu with 12.8% and Giresun with 8.3%. Gumushane and Bayburt, handicapped by hinterland topography and isolation from the regional tourist centers of Trabzon and Rize, hold very minimal shares of 1.8% and 0.7%, respectively.

Table 2.1 Number of Guests and Number of Nights at Licensed Accommodations by MOT/Municipalities

			1993	1994	1995	1996	1997	1998	Average Nights('98)
Artvin	No. of Guests	F	19,121	47,821	96,261	56,144	55,249	34,641	
		D	33,748	106,054	268,661	163,230	150,873	128,756	
		Total	52,869	153,875	364,922	219,374	206,122	163,397	
	No. of Nights	F	28,937	81,989	127,129	71,436	116,244	100,043	2.9
		D	44,315	150,011	319,486	200,164	185,229	186,544	1.4
		Total	73,252	232,000	446,615	271,600	301,473	286,587	1.8
Giresun	No. of Guests	F	3,421	14,037	1,559	2,453	1,678	2,304	
		D	87,552	98,226	82,381	100,359	120,993	93,280	
		Total	90,973	112,263	83,940	102,812	122,671	95,584	
	No. of Nights	F	6,019	19,579	19,788	8,193	2,986	4,289	1.9
		D	106,598	138,411	92,222	111,224	152,212	118,784	1.3
		Total	112,617	157,990	112,010	119,417	155,198	123,073	1.3
Gumshane	No. of Guests	F	443	103	405	9	359	201	
		D	16,477	20,019	30,492	32,479	53,007	19,930	
		Total	16,920	20,122	30,897	32,488	53,366	20,131	
	No. of Nights	F	507	619	893	58	458	202	1.0
		D	18,461	23,746	42,442	41,063	66,609	26,707	1.3
		Total	18,968	24,365	43,335	41,121	67,067	26,909	1.3
Ordu	No. of Guests	F	6,228	4,183	6,767	17,014	15,419	11,213	
		D	57,542	72,953	124,581	131,175	126,805	136,178	
		Total	63,770	77,136	131,348	148,189	142,224	147,391	
	No. of Nights	F	8,949	7,953	11,722	25,868	26,406	21,694	1.9
		D	72,156	93,424	147,139	161,581	157,660	177,468	1.3
		Total	81,105	101,377	158,861	187,449	184,066	199,162	1.4
Rize	No. of Guests	F	219,983	140,004	37,571	46,274	40,436	108,736	
		D	125,684	94,858	47,173	75,284	96,141	129,345	
		Total	345,667	234,862	84,744	121,558	136,577	238,081	
	No. of Nights	F	255,357	189,786	40,605	75,724	59,996	137,883	1.3
		D	156,979	112,271	51,849	123,432	108,592	164,155	1.3
		Total	412,336	302,057	92,454	199,156	168,588	302,038	1.3
Trabzon	No. of Guests	F	31,407	81,227	111,679	153,443	49,040	211,334	
		D	92,930	216,174	387,155	240,159	202,580	269,087	
		Total	124,337	297,401	498,834	393,602	251,620	480,421	
	No. of Nights	F	44,849	117,110	155,058	194,041	70,958	265,150	1.3
		D	114,434	298,427	466,428	301,857	251,188	360,988	1.3
		Total	159,283	415,537	621,486	495,898	322,146	626,138	1.3
Bayburt	No. of Guests	F	195	75	158	177	157	56	
		D	9,982	8,740	15,334	14,881	14,771	7,565	
		Total	10,177	8,815	15,492	15,058	14,928	7,621	
	No. of Nights	F	411	75	163	179	158	57	1.0
		D	17,924	12,150	19,676	19,790	20,208	10,801	1.4
		Total	18,335	12,225	19,839	19,969	20,366	10,858	1.4
DOKAP Total	No. of Guests	F	280,798	287,450	254,400	275,514	162,338	368,485	
		D	423,915	617,024	955,777	757,567	765,170	784,141	
		Total	704,713	904,474	1,210,177	1,033,081	927,508	1,152,626	
	No. of Nights	F	345,029	417,111	355,358	375,499	277,206	529,318	1.4
		D	530,867	828,440	1,139,242	959,111	941,698	1,045,447	1.3
		Total	875,896	1,245,551	1,494,600	1,334,610	1,218,904	1,574,765	1.4
Turkey	No. of Guests	F	6,201,052	5,762,215	6,949,070	9,943,025	12,615,827	9,904,755	
		D	11,956,310	14,060,823	18,404,938	19,600,060	20,251,244	18,837,721	
		Total	18,157,362	19,823,038	25,354,008	29,543,085	32,867,071	28,742,476	
	No. of Nights	F	22,730,132	21,429,565	26,261,954	36,055,785	46,773,913	37,617,417	3.8
		D	20,963,255	23,884,655	31,545,831	31,667,969	33,540,021	33,935,349	1.8
		Total	43,693,387	45,314,220	57,807,785	67,723,754	80,313,934	71,552,766	2.5
Percentage (%)	No. of Guests	F	4.5	5.0	3.7	2.8	1.3	3.7	
		D	3.5	4.4	5.2	3.9	3.8	4.2	
		Total	3.9	4.6	4.8	3.5	2.8	4.0	
	No. of Nights	F	1.5	1.9	1.4	1.0	0.6	1.4	
		D	2.5	3.5	3.6	3.0	2.8	3.1	
		Total	2.0	2.7	2.6	2.0	1.5	2.2	

F- Foreign D- Domestic

Source: MOT

2.2 Tourism Resources in DOKAP Region

More promising tourism resources in the DOKAP region have been identified as listed in Table 2.2. Listed resources are mainly picked up from the MOT brochure “Black Sea Region” 1998 edition. Resources chosen are those shown in the brochure either in bold letter or featured in photographs. The list is further supplemented by those resources (first degree) identified in the inventories of Ministry of Culture and General Directorate of National Parks and Wildlife.

The most resource-rich province is Trabzon, with 14 identified resources, while Rize and Ordu follow Trabzon with 12 resources respectively. Bayburt occupies the end of the list with only four resources.

Resources shown in bold letter are those regularly included in tour itineraries of foreign tourists and those considered holding an international appeal. Again Trabzon province is most favored with eight resources, followed by Rize with five resources. None of the resources in the other five provinces are featured in the foreign tour itineraries, except for one in Artvin (Coruh river rafting), underlining the fact that these provinces are least recognized in the international tourist market.

2.3 Tourist Facilities and Services

The number of licensed accommodation establishments (MOT and municipalities) in the DOKAP region has decreased from 475 in 1994 to 388 in 1998, an annual average decrease of 4.8%, and from 19,351 in 1994 to 16,071 in 1998 in terms of available beds, an annual average decrease of 4.5%. The region’s share in whole Turkey accordingly shrunk from 4.7% in 1994 to 3.9% in 1998 in the number of establishments, while the share for available beds has shrunk from 3.1% in 1994 to 2.5% in 1998.

To cope with an increased demand, particularly for up-market accommodation, a few new establishments in the 5- and 4-star category have opened in recent years (e.g., Grand Zorlu in Trabzon, Dedeman in Rize, Sumela in Macka), creating a new opportunity for urban/conference/seminar tourism development in the region.

Restaurants are generally considered adequate in providing a variety of choices and menus at a reasonable price level, with good sanitary conditions. Travel agents, tourist guides and tourist coaches are also adequate in providing standardized level of tourist services to satisfy the needs of international tourists.

2.4 Tourism Support Infrastructure

Trabzon currently serves as the only gateway for air arrivals into the region. Passenger service facilities are generally adequate to service the current level of traffic. For anticipated increase in traffic in the future, flight scheduling may need some improvement over the current practice that serves either very early morning or late afternoon/evening hours to/from Trabzon.

Roads leading to the major tourist sites in the region are generally satisfactory, along with the good road conditions found throughout the country, with standardized tourist direction signs (yellow format) posted at appropriate junctions. Ongoing road expansion for the Trabzon–Rize tourist corridor will effectively shorten travelling time, contributing to strengthen the link between the two most important tourist areas in the region.

Table 2.2 Inventory of Tourism Resources in the DOKAP Region

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt
Archeology/ History	*Ishan / Barhal, Yusufeli	*Giresun Kale *Giresun Is. (Amazones) *Tirebolu Kale *Andoz Kale *Espiye Kale *Sebinhisar Kale *Kaya Kilise *Bedrama Kale	*Imerd Monstry.	*Fatsa Kale *Yesilgecit Kale *Faldaca Kale *Arikmusa Yerl. *Ericok Tepe *Kalekoy Kale *Ikizce Kale	*Zil Castle *Bala Kale *Rize Kale	*Sumera *Aya Sofia *Boztepe *Ataturk Mansyon *Ortahisar	*Bayburt Kale *Aksar Mound *Aydin Tepe (underground city) *Sehit Osman Mound
Culture/ Folklife	*Kafkasor Fest. (bullfights)	*Aksu Art Fest *Bal Festiv.	*Rosehip Syrup *Kadirga Fest.	*Hazelnut Fest. *Hazelnut Fact.	*Tea Plantation *Anzer (honey)	*Akcabat *Uzungol	*Ehran Weaving *Dede Korkut Festivities
Plateau Experiences	*Kocabey *Velikoy *Savsat	*Bektas *Kumbet *Kulakkaya	*Zigana	*Cambasi *Kelifalan	*Ayder *Ayder (spa)	*Hamsikoy *Hidirnebi	
Nature/Scenery /Flora & Fauna	*Hatilla N.P. *Karagol-Sahar a N.P.		*Karaca Cave *Artabel Lakes, Torul *Tomara Fall *Ulukoy, Kurtun	*Kurul Rock	*Kackar Mts. *Camlihemsin	*Altindere N.P. *Uzungol *Akcabat *Arakli	*Ammonikito Rosso Fossils *Sirakayalar Falls
Sports/ Soft adventure	*Coruh River (rafting)	*Snow and grass skating	*Zigana (skiing)		*Kackar Mts. (climb/trek) *Firtina (canoe) *Ikizdere (hang- glider)		
Total of Identified Resources	8	8	9	12	12	14	4
Resource included in the tour of foreign tourists	1	0	0	0	5	8	0

Source: Ministry of Tourism Brochure "Black Sea Region" 1998 edition.
General Directorate of National Parks & Wildlife "National Parks and Protected Areas in DOKAP Region."
Ministry of Culture "Inventory of Cultural and Natural Assets" 1999.

Table 2.3 Licensed Accommodations by MOT/Municipalities

		1994	1995	1996	1997	1998
Artvin	Establishments	113	113	113	80	79
	Beds	3,896	3,896	3,896	2,663	2,604
Giresun	Establishments	43	43	43	28	28
	Beds	1,459	1,501	1,475	1,148	1,100
Gumshane	Establishments	24	23	23	6	6
	Beds	839	758	758	240	240
Ordu	Establishments	52	52	53	44	45
	Beds	1,857	1,869	1,915	1,612	1,676
Rize	Establishments	85	86	82	69	70
	Beds	4,082	4,220	4,386	3,715	3,772
Trabzon	Establishments	150	151	153	154	155
	Beds	6,915	6,955	7,160	7,091	7,134
Bayburt	Establishments	8	8	8	5	5
	Beds	303	303	303	175	175
DOKAP Total	Establishments	475	476	475	386	388
	Beds	19,351	19,502	19,893	16,644	16,701
Turkey	Establishments	10,132	10,196	10,269	9,914	9,929
	Beds	621,251	642,578	657,639	665,680	658,766
Percentage (%)	Establishments	4.7	4.7	4.6	3.9	3.9
	Beds	3.1	3.0	3.0	2.5	2.5

Source: MOT

CHAPTER 3 POSITION OF DOKAP REGION IN TURKISH TOURISM

3.1 DOKAP Region among Other Established Tourist Regions in Turkey

MOT divides Turkey into seven tourist regions: Marmara (with its tourist service center in Istanbul), Aegean (Izmir), Mediterranean (Antalya), Central Anatolia (Ankara), Eastern Anatolia (dispersed centers of Erzurum, Malatya and Van), Southeast Anatolia (Diyarbakir) and Black Sea.

The Black Sea Region covers both East and West Black Sea provinces, and Trabzon serves as an urban tourist service center for the East Black Sea Region, while Samsun serves similar functions for the West Black Sea Region.

Traditionally, Mediterranean, Aegean, Marmara and Central Anatolia, being endowed with abundant world-class tourism resources, are the four most popular tourist regions among both foreign and domestic visitors.

Compared with the four established tourist regions, the DOKAP region is handicapped by:

- scarcity of monumental world-class tourism resource to highlight the region's tourist image and recognition,
- distance and isolation from the established tourist regions which serve as tourist hub/distribution center for both international and domestic tourists,
- poor access hampered by difficult terrain (East Black Sea mountain ranges), and
- lack of suitable shorelines and unfavorable climatic conditions (high rainfall and short summer) for development of mass-market beach holiday tourism.

These handicaps oblige the DOKAP region to remain one of the less-recognized, less-promoted, and consequently less-visited tourist regions in Turkey, parallel with the East and Southeast Anatolia regions.

Table 3.1 examines the position of the DOKAP region in Turkish tourism landscape. Weakness and strength of the DOKAP region can be summarized as follows.

Weakness

- Not suitable for general-interest and mass tourist market,
- Not suitable for beach holiday tourism,
- Not suitable for urban tourism (with the current level of facilities/service provision), and
- Weaker appeal than the established tourist regions (particularly Aegean,

Mediterranean, Marmara and Central Anatolia) in terms of culture tourism.

Strength

- Unique topography (lush greenery, pristine river valley, alpine mountain ranges),
- Unique folk lifestyle and tradition (Yayla way of life, customs and festivals), and
- Suitable for alternative tourism (nature tourism, Yayla tourism, agro-tourism, activity tourism, soft adventure, etc.).

Table 3.1 Position of DOKAP Region in Turkish Tourism

	Desti-nation Type	Recognition in World Market	Stand-Alone Desti-nation	Product Representation of Resources						
				Culture	Beach Holidays	Scenic Wonders	Congress Urban-lif e	Nature/Activity	Health/Spa	Themed Attraction
DOKAP (Trabzon)	Culture/ Nature Tourism	Limited for Culture/ Nature Tourists	No	Weak	Very Weak	Fair	Weak	Fair	Fair	Weak
Marmara (Istanbul)	All-Purpose Tourism	Established for General Tourists	Yes	Very Strong	Weak	Strong	Very Strong	Fair	Fair	Strong
Aegean (Izmir)	All-Purpose Tourism	Established for General Tourists	Yes	Very Strong	Very Strong	Strong	Strong	Fair	Strong	Strong
Mediterranean (Antalya)	All-Purpose Tourism	Established for General Tourists	Yes	Very Strong	Very Strong	Strong	Strong	Fair	Strong	Strong
Central Anatolia (Ankara)	All-Purpose Tourism	Established for General Tourists	Yes/ No	Strong	Nil	Strong	Strong	Fair	Strong	Strong
East Anatolia (Malatya, Van, Erzurum)	Culture Tourism	Limited for Culture Tourists	No	Weak	Nil	Fair	Weak	Fair	Weak	Weak
Southeast Anatolia (Diyarbakir)	Culture Tourism	Limited for Culture Tourists	No	Weak	Nil	Fair	Weak	Weak	Weak	Weak

Source: JICA Study Team

3.2 Typical Tour Patterns featuring the DOKAP Region

Package tour patterns have been examined in the five major package tourist markets: namely, Germany, France, USA and Japan as representative international tourist markets, and the Turkish domestic market. Figures 3.2-1, 3.2-2 and 3.2-3 show the results of the examination. The exercise reveals some interesting trends.

(1) International markets

- All four packages belong to the category of “culture tourism” featuring historical/cultural site visits. This is highly contrasting to the majority of Turkish tour packages on sale in the market, which heavily focus on “sea, sand,

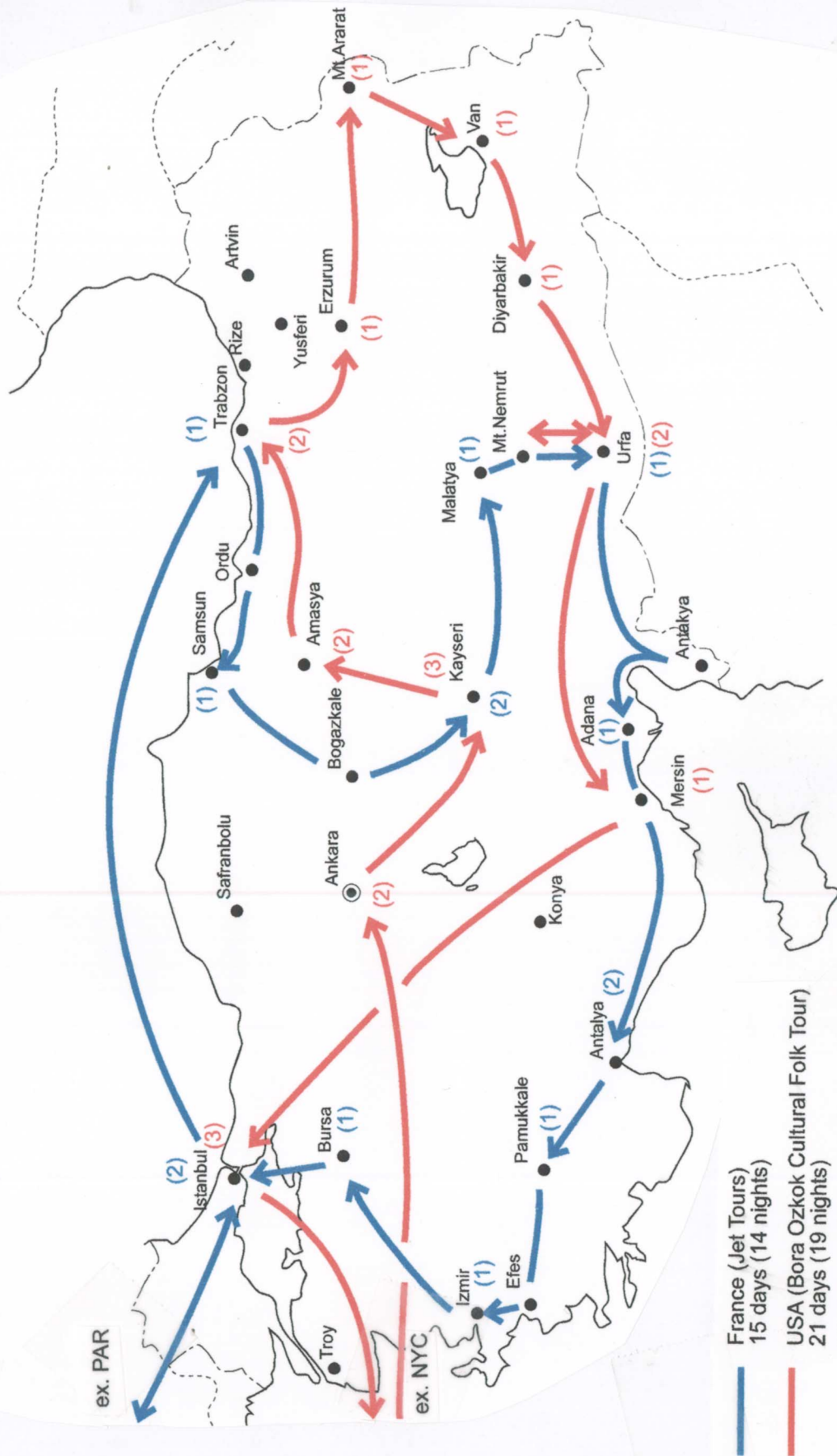
and sun” or “beach holiday tourism”, especially in European OECD markets. This also reflects the constraint of the DOKAP region tourism that it is not endowed with suitable beaches and favorable climate for beach activities (high rainfall, lack of sun, short summer, etc.).

- All package tour operators, except for Jet Tour (France) are SIT (special interest tour) operators dealing mostly with the niche segment of the respective source country markets of Germany, USA, and Japan.
- Jet Tour is an Air France-affiliate operator and organizes tour packages aimed for much larger market of general interest. The visit to the DOKAP region (Trabzon and Samsun for a total of two nights) is featured to add variety to some two-dozen other packages on offer mostly featuring the traditional Aegean/Mediterranean beach holidays.
- The German package goes beyond the culture circuit and features a half-day trekking, an element of nature/activity tourism in the Kackar Mountains (near Rize). This is an active response on the part of tour operators to the favorite national recreation of “wanderung” (nature walk/trek).
- MOT is trying to promote “Yayla” (high plateau) Tourism as a most promising tourism product of the DOKAP region. As far as the international market is concerned, however, the MOT’s effort is so far not rewarded with not one of the foreign tour packages featuring Yayla tourism.
- Because of the harsh terrain of the region (the coastal highway is the only trunk artery of communication, with hills/mountains rising immediately behind it), all tourist activities are centered on the coastal tourist corridor of Trabzon and Rize, with short inland tours to Sumela and Uzungol. Only exception is again the German tour package, with visits to inland Artvin and Yusefeli. No tour packages venture into the inland provinces of Gumushane and Bayburt.

(2) Domestic market

- Highly contrasting to the “culture circuit” packages of international markets, the tour packages for domestic market highlight “Yayla-centered” experiences and tourism, endorsing the MOT initiative to develop Yayla tourism. Yaylas featured include Zigana and Uzungol (Trabzon Province).
- Tour itineraries in the DOKAP region follow the same pattern with those for international markets because of the coastal tourist corridor being the only available transport link.
- Even the domestic package does not venture into inland provinces of Gumushane and Bayburt, except for a short side visit to newly-opened Karaca Cave (Gumushane Province) from Zigana Yayla on a 9-day Tour.

Figure 3.2-1 Typical Tour Patterns (Culture Circuit) of Major Source Markets



France (Jet Tours)
15 days (14 nights)

USA (Bora Ozkok Cultural Folk Tour)
21 days (19 nights)

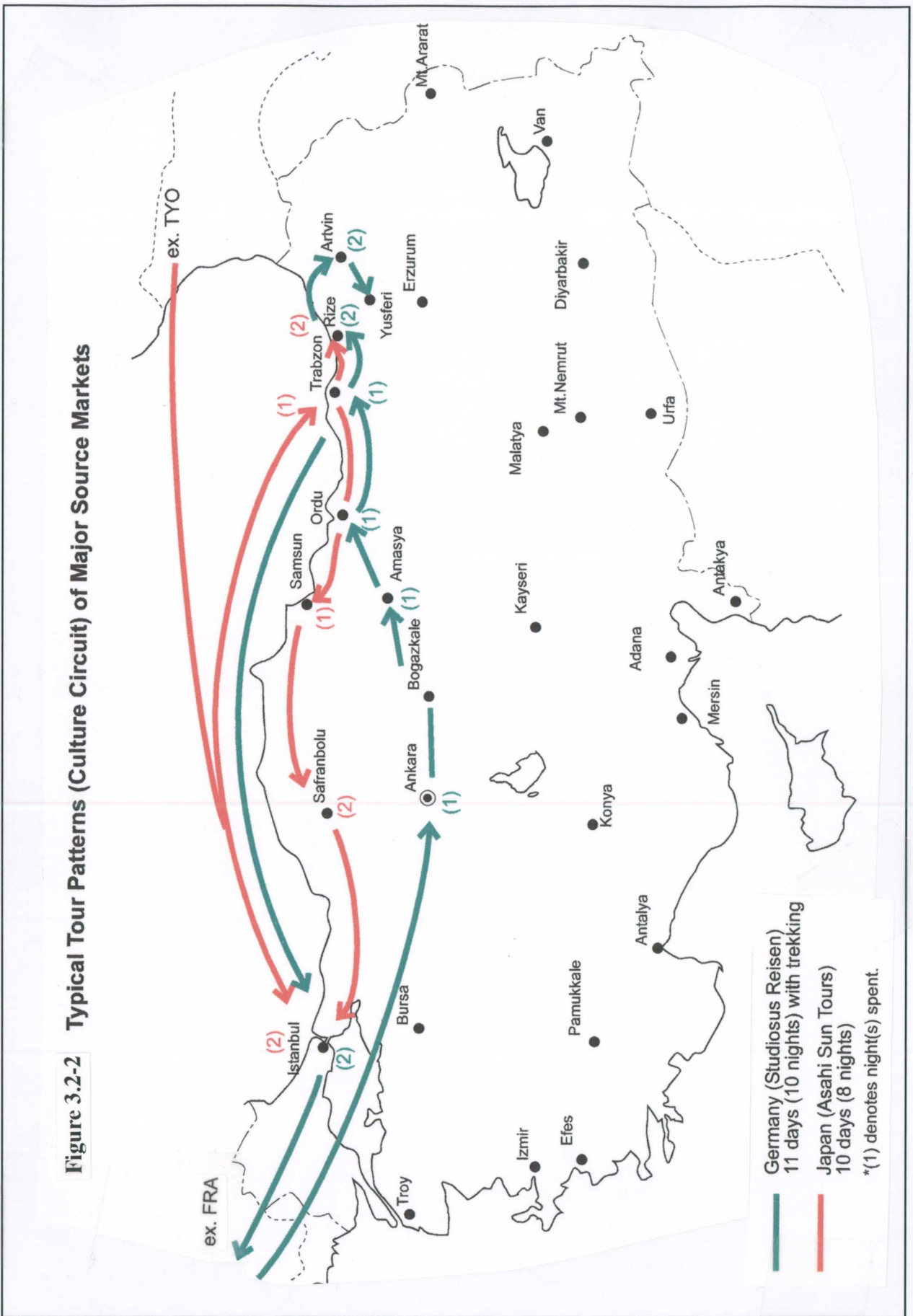
*(1) denotes night(s) spent.

The Study on the Regional Development Plan for the Eastern Black Sea Region in the Republic of Turkey

Japan International Cooperation Agency

Figure 3.2-1

Typical Tour Patterns (Culture Circuit) of Major Source Markets



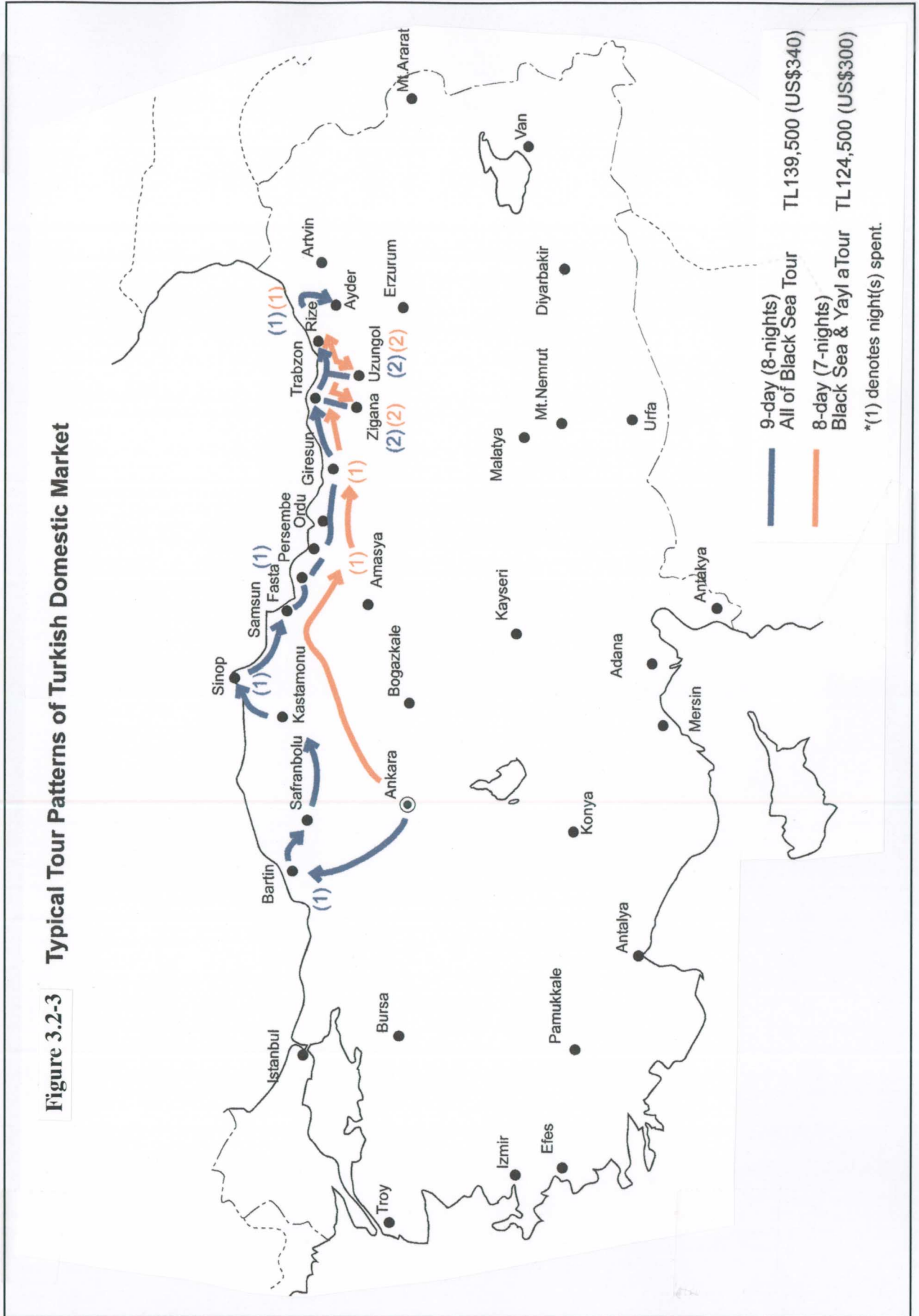
The Study on the Regional Development Plan for the Eastern Black Sea Region in the Republic of Turkey

Japan International Cooperation Agency

Figure 3.2-2

Typical Tour Patterns (Culture Circuit) of Major Source Markets

Figure 3.2-3 Typical Tour Patterns of Turkish Domestic Market



The Study on the Regional Development Plan for the Eastern Black Sea Region in the Republic of Turkey

Japan International Cooperation Agency

Figure 3.2-3
Typical Tour Patterns of Turkish Domestic Market

CHAPTER 4 DOKAP TOURISM DEVELOPMENT

4.1 Issues

For the successful development of DOKAP region tourism, there are several important issues to be addressed immediately. In summary, they are:

- Site presentation and visitor facilitation below the national average and well below the internationally accepted standard,
- Impractical and sometimes out-of-focus tourist information / promotion materials (provincial issue), lacking professional supervision and expertise,
- Lack of practical site-specific information materials (only available MOT regional brochures focuses on overseas promotional use, and contains little practical site information),
- Absence of coordination / cooperation among the provinces to enhance exposure of the DOKAP region and sell it collectively as one tourist destination,
- Lack of initiatives to learn from the experiences of other major tourist regions, and
- Resultant very weak destination image of the region in the domestic market as well as international markets.

The poor level of site presentation and visitor facilities currently available in the DOKAP region is exemplified in the following photo analysis with accompanying notes, typically at prime DOKAP tourist sites as:

- Sumela Monastery,
- Uzungol,
- Aya Sofia, and
- Ataturk Pavilion.

They are compared with some good model examples in other major tourist regions in Turkey (Bergama, Efes, Konya, Safranbolu, and Antalya). These issues call for concerted actions immediately on the part of all related government agencies (central, provincial, municipal), local communities and the private sector so that a mistake similar to the experience of Pamukkale in Denizli should not be replicated (protective / corrective measures introduced just too late to stop deterioration of the tourist value of the site).

Photo 4.1 **Sumela Monastery**

Sumela Monastery, prime DOKAP attraction – below average visitor facility standard



Culture Ministry ticket booth. Most signs in Turkish. Free handout information pamphlet not available, except for booklets and postcards for sale.



Parking Lot at the end of paved road. Toilet and PTT provided. No segregated areas for large coaches and smaller vehicles, nor line marking.



Street lighting and powerline, obstructing tourist and photographic vista of Sumela.



Though admittedly extensive restoration/improvement work is ongoing, this is the one and only sign containing some tourist information.



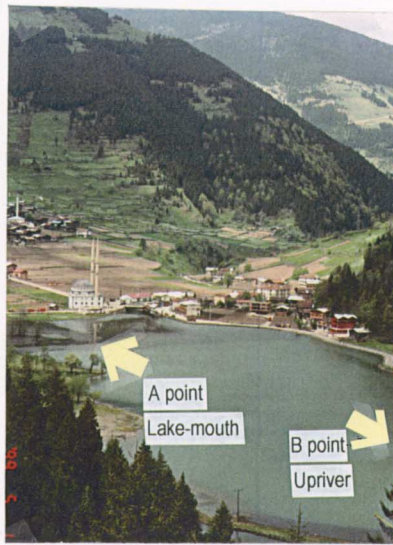
Street lighting and powerline should have been provided on the other side of the road, so as not to obstruct the highlight of Sumela tourist vista.

Photo 4.2 Uzungol

Uzungol – prime DOKAP tourism resource threatened



Typical scene of Uzungol with mirror-like lakewater, featured in MOT brochures/posters.



Close-up view of B point from the panorama terrace.



Mushrooming tourist facilities almost all located upstream of the Lake, with no apparent provision of proper sewage treatment facilities.



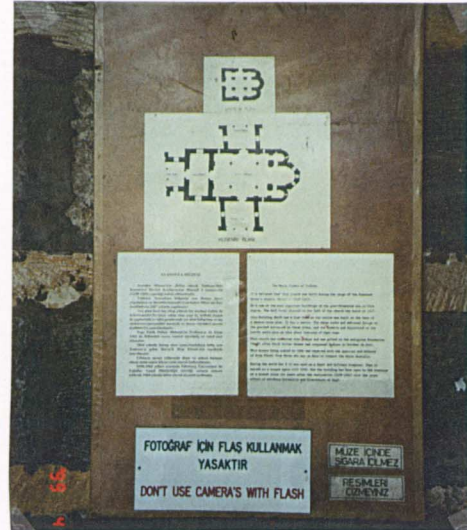
Silt cum garbage cum algae accumulated along Lakeshore. Serious threat for environmental pollution as well as tourist value of Uzungol.

Photo 4.3 Tourist Signs - DOKAP

Tourist Signs – DOKAP



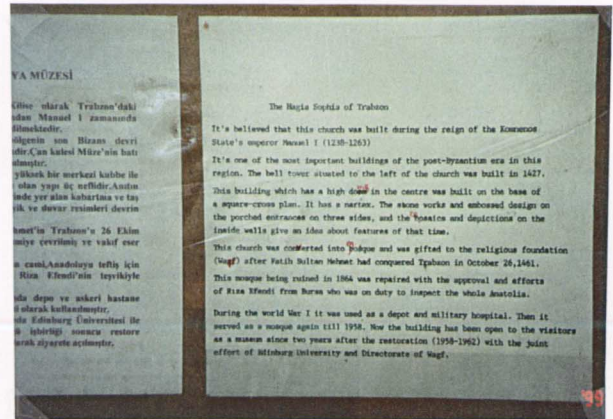
Aya Sofia, Trabzon
Aya Sofia Museum, Trabzon, a must-see sight always included in international tourist itinerary.



The only information panel (provisional one) with general description of the site and site layout. Poor presentation and inferior standard.



Metal sign board, giving minimal information in Turkish/English. All signs are too small, often rusting as is this one, and in most cases hung too high, making them almost illegible.



Description in English contains several misspelling, and are corrected by visitor/tourist (e.g., "dome" misspelt as "doom", "converted" as "concerted", etc.).



Ataturk Pavilion, Trabzon
Ticket booth. No free handout information available, except for postcards and books for sale.



All the notices, signs and information panels/labels both inside/outside of the Pavilion are in Turkish only. Foreign visitors are NOT always escorted by a guide these days.

Photo 4.4 Tourist Signs - DOKAP

Tourist Signs – DOKAP



Karaca Cave Gumushane Tourist direction sign on Highway 885.

Good example in other tourist sites



Efes Tourist direction sign in Selcuk. Note the use of two languages (Turkish and English) and the distance (1-meaning 1 km) to the site.



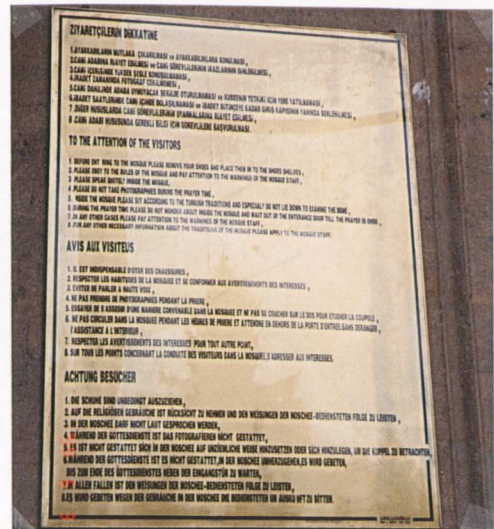
Entrance/ticket booth at Karaca Cave (Closed). No information posted on operating days/hours. Even nearby teagarden owner does not know when it opens.



Bergama Ticket booth of Bergama Museum. Visiting hours and fee written in two languages. Cautionary notice on antiquity on the right written in four languages.



Visitor information sign only in Turkish.



Konya Visitor information sign at Selimiye Camii in four Languages (Turkish, English, French and German).

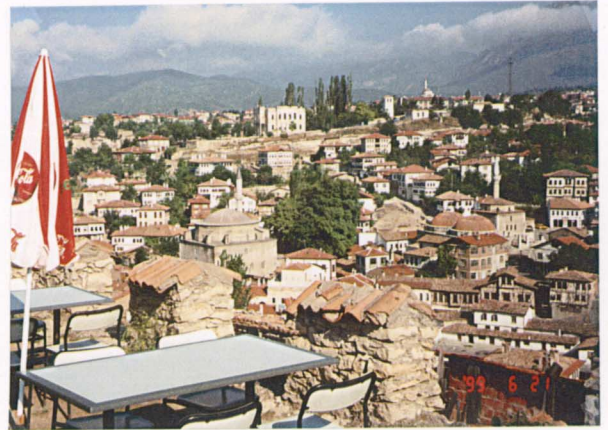
Photo 4.5 **Panorama Terrace - DOKAP**

Panorama Terrace – DOKAP



Boztepe, Trabzon Prime panorama point for Trabzon, occupied by cay bahcesi, leased out to a private operator. No map/ signboard to identify major landmarks seen below.

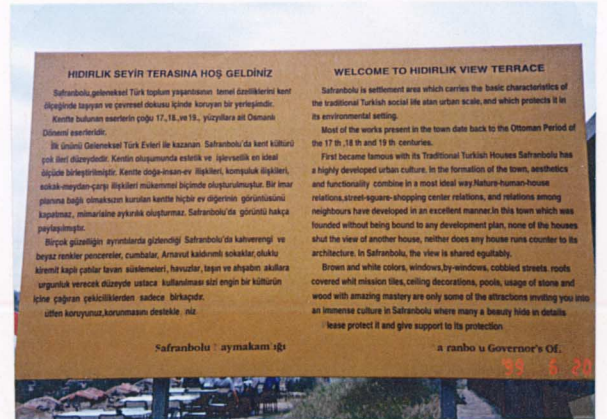
Good examples in other tourist sites



Safranbolu Tourist terrace to command a typical Safranbolu panorama. The site is also leased out for a cay bahcesi.



Uzungol Panorama point for typical Uzungol view often featured in tourist poster/brochure. Need proper facility provision (panorama terrace, signs, benches, parking, etc.).



Signboard to welcome tourists to Safranbolu, posted at the tourist terrace, written in two languages, Turkish and English.



Access road to the panorama point. Need immediate improvement (surfacing, drainage, landscaping, etc.).



Bergama Panorama terrace to command a dramatic vista of the whole ruins and Bergama towncenter. Note the provision of esthetic fence for tourist protection.

Photo 4.6 **Tourist Signs - Bergama**

Tourist Signs – Bergama

Good examples in other tourist sites



An introductory information board on the large complex of archaeological ruins in 3 languages (Turkish, German, English), with visual help of photograph/drawings.



One of a series of interpretative information boards, posted to a particular ruin (Trajan Sanctuary, Bergama), with drawings of layout/reconstruction.



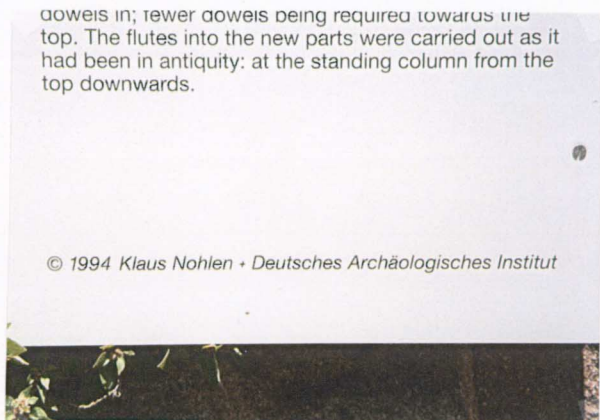
One of a series of interpretative information boards, posted at each monumental ruin (Asklepion, Bergama). Written in 3 languages.



Details of the panel. Take note of the small red mark on the upper lefthand corner of the layout drawing, which shows where the sign is posted/visitor is now standing.



Note the use of two drawings (one showing reconstructed one and the other of its layout) so that visitors will have a better understanding of the site.



Provision of "interpretative information boards" made possible through German technical assistance

Photo 4.7 **Museum Display - Antalya**

Museum Display – Antalya Good examples in other tourist sites



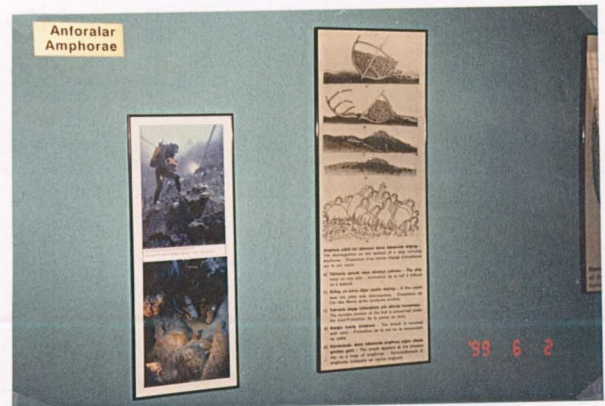
One corner of the Gallery of Gods, Antalya Museum, with the displays matching the international standard. The Museum received the European Museum of the Year Award in 1988.



Another view of the part of the gallery with excavated Mosaic floor pieces.



Room for Amphorae (two-handled Greek/Roman jars), with esthetic display of uncovered amphorae and two explanatory panels.



Close-up of the panels. The photos show how the jars are uncovered from the seabed, and the illustrated panel explains how the jars become rested underwater after the shipwreck (written in 3 languages - Turkish, English, and French).



Introductory panels for the exhibits from Perge ruins. Brief introduction in Turkish/English, an aerial photo of the site, and its detailed layout plan with indices.



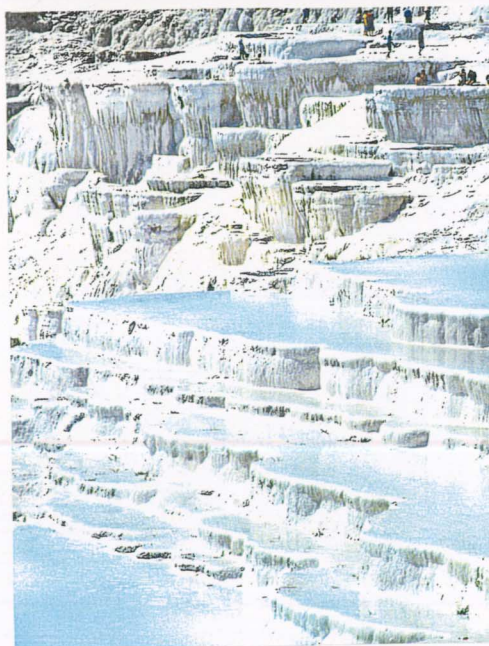
Exhibits of handicraft works, with photos showing the process of craftsmen's work.

Photo 4.8 Pamukkale

Pamukkale – A bad example of uncontrolled development



Tourist sign, prohibiting the entry to the travertine pools. Protective measures, introduced just too late to stop deterioration of the pools.



Typical tourist picture of Pamukkale, featured in MOT brochures/posters.



The former site of one motel(right-hand side terrace), one of the major causes for Pamukkale deterioration.



Typical Pamukkale scene, still featured in the tourist guides/maps on sale.



Sorry sight of the Pamukkale today(June 1999), with No blue hot-spring water in the pools, as advertised in tourist guidebooks/brochures/posters.

4.2 Development Strategy and Proposed Projects / Programs

The basic position of the DOKAP region in the Turkish tourism landscape will not change in the foreseeable future as analyzed in Section 3.1, unable to rival the four established, mass-market oriented tourist regions of Marmara, Aegean, Mediterranean, and Central Anatolia.

The DOKAP tourism, therefore, should not concentrate only on the theme of alternative tourism based on nature or rural high plateau way of life (Yayla tourism), as is often mis-conceived and mis-advocated. It should rather aim to attract all segments of potential tourist markets; whether domestic or international; from larger groups to individuals in tour size; from general-interest culture circuit, urban tourism of seminar / conference to niche market, special interest parties of nature seekers, soft adventure, sports activities or hard mountain climbing, by offering a broader range of tourist attractions and products covering all potentials and possibilities that the DOKAP region is endowed with.

Development strategy for the DOKAP tourism is formulated from three perspectives of product, market, and promotion.

(1) Product development

- To upgrade quality of presentation of the existing resources in order to raise their tourist value and ensure all visitors a satisfactory site experience,
- To introduce a new line of tourism products that appeals to a larger market segment and diversify the range of products offered, and
- To increase, as a result, the region's tourist appeal and attractiveness in both domestic and international markets.

(2) Market development

- To encourage intra-regional tourism through inter-provincial collaboration in order to consolidate regional awareness toward the value of tourism,
- To strengthen inter-regional tourism through intensified approaches to major domestic urban centers and tourist distribution hubs, and
- To initiate direct international market approach through professional partnership from outside the region.

(3) Promotion deployment

- To introduce measures to facilitate and promote intra-regional tourism through inter-provincial coordination,
- To initiate professional partnership with influential tourism bodies (airlines, tour operators, organizers, associations) in major urban centers and tourist

distribution hubs in order to maximize return for deployed promotional effort, and

- To increase, as a result, the region's profile and exposure as an attractive and favorable tourist destination in both domestic and international markets.

Based on these three guidelines, two broad concepts for tourism development project and programs are proposed:

- 1) DOKAP Brand Tourism Product Development, and
- 2) DOKAP Tourism Professional Partnership Program.

Profiles of these programs are found in Project Report (separate volume). Details of subprojects contained in these programs are given in Chapter 5.

DOKAP Brand Tourism Products Development (Project No 10.3)

Despite various historical/cultural sites and diverse landscape, the DOKAP region has a scarcity of monumental world-class resources to highlight the region's tourist image and recognition. Presentation and visitor facilitation of the few sites currently visited are well below the national standard, not to mention the internationally accepted norm, and hardly satisfy the expectation of today's international tourists.

This project aims at enhancing tourist appeal and attractiveness of the DOKAP region as a whole by providing the identified tourist areas in the region with such modern tourist facilities, amenities and collaterals conforming to the international norm as:

- improvement of access road and landscaping,
- visitor facility improvement (parking, visitor center, site-specific tourist signs, tourist trails / footpath, panorama lookout, etc.),
- preparation of site-specific map / pamphlet, and
- inclusion of additionally identified attractions/sites.

The project consists of tentative seven subprojects focused on existing and potential tourism areas identified in the region, namely:

- Uzungol area (Trabzon Province)
- Ayder/Kackar area (Rize Province)
- Sumela-Altindere area (Trabzon Province)
- Zigana/Hamsikoy area (Provinces of Trabzon and Gumushane)

- Greater Trabzon area (Trabzon Province)
- Kafkasor area (Artvin Province)
- Kelifalan area (Ordu Province)

DOKAP Tourism Professional Partnership (Project No 10.4)

The DOKAP region has a variety of tourism resources, although international-class resources are rather limited. To utilize these resources effectively, collaborative marketing holds a key, combining resources in different provinces to form attractive and viable tourism circuits. Some circuits will be linked with other major tourism areas for inter-regional tourism.

The DOKAP tourism should also make direct access to international market through professional partnership from outside the region. Such partnership should be initiated with influential tourism bodies in major urban centers and tourism hubs such as airlines, tour operators, conference organizers, and business associations. In particular, those originally from the region should be invited to initiate the partnership. This will contribute also to enhancing awareness for the value of tourism in the region and further to regional integration or social cohesiveness.

4.3 Evolution of Spatial Tourism Structure of DOKAP

By implementing proposed projects and programs in accordance with the scheduled phases of regional development plan, spatial tourism structure of the DOKAP region will evolve:

- from the present Trabzon-centered structure with a thin chain of isolated and scattered tourist sites and attractions,
- to a more tourist-enticing Trabzon–Rize corridor-linked structure with a network of new sites, attractions and tour circuits,
- and eventually
- to a three-tourism-cluster structure of Trabzon, Rize and Coruh waters, even with potential sea linkage extending to the northeastern BSEC countries (Georgia and Russian Caucasia regions).

Indeed, as Kafkasor (Caucasia) Yayla Festival in Artvin Province typically symbolizes, identity of the easternmost DOKAP region’s culture, tradition and way of life has much in common with the neighboring Georgia across the border

and further to the Russian Caucasia regions. Tourist perception of the DOKAP region as a whole will be strengthened by an emphasis of this precious common cultural heritage (subject no doubt to the eventual return of political stability and economic recovery in the Russian Caucasia regions).

The two tourism umbrella projects consisting of several area specific subprojects will be further complemented by not a few important projects proposed in other sectors of the Study, such as:

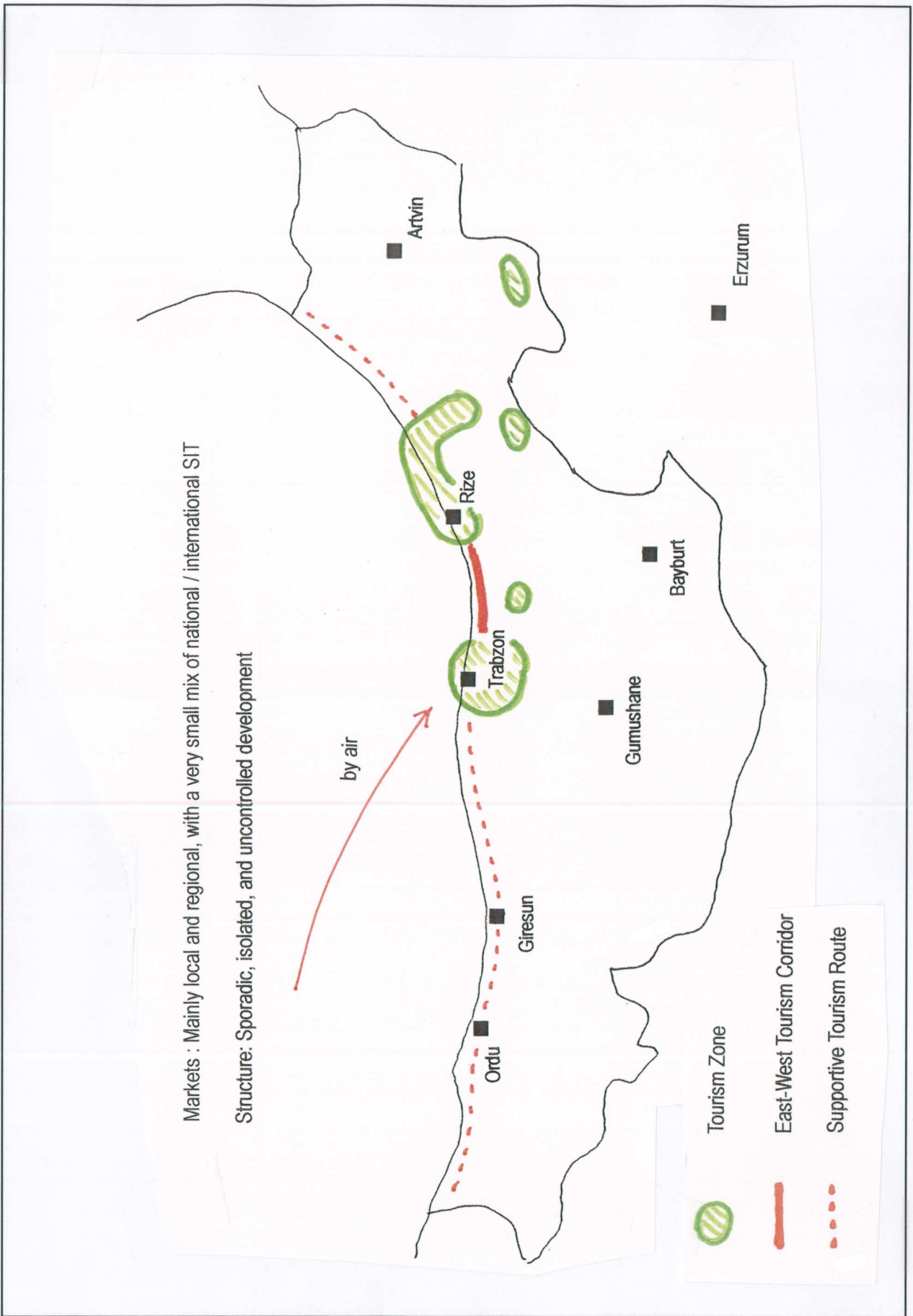
<u>Sector</u>	<u>Project No./Title</u>	<u>Contribution to Tourism</u>
Water Resource	3.1 Multipurpose Dams	Recreational tourism in the local communities (Coruh and Kelkit rivers)
Rural Economy	5.3 One Village One Product	Village/Yayla tourism
Rural Economy	5.5 Rural Tourism Promotion	Village/Yayla tourism
Dokap Identity	10.2 DOKAP Trade Fair	Conference/Urban tourism in Trabzon

All these projects will not only contribute to development of the proposed sectors in their own right, they will also help consolidate DOKAP tourism as a whole and strengthen its identity and exposure as well.

Evolution of spatial tourism structure and target tourist market development can be summarized as shown in Table 4.1, and the conceptual images of spatial tourism structure according to the scheduled development phases are presented in Figures 4.9 through 4.12.

Table 4.1 Evolution of Spatial Tourism Structure in the DOKAP Region

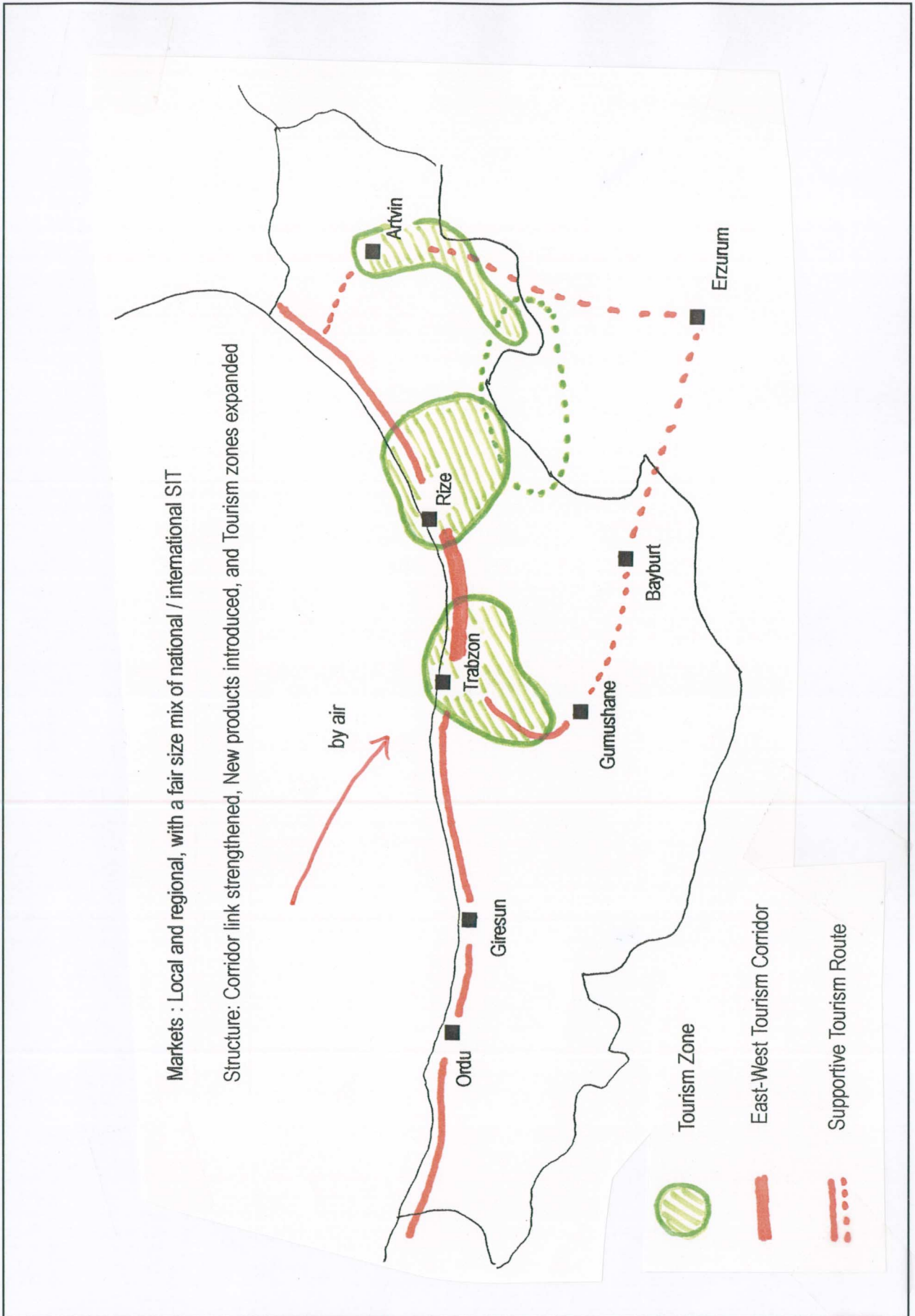
	Now	to 2005	to 2010	2011 and beyond
Tourism Structure	<p>Development characterized by :</p> <ul style="list-style-type: none"> *sporadic *isolated *uncontrolled 	<ul style="list-style-type: none"> *corridor link strengthened *initial new products introduced *3 tourism zones expanded (Trabzon, Rize, Artvin/Coruh) 	<ul style="list-style-type: none"> *supportive tourism route established (Artvin-Erzurum-Bayburt-Gumushane) *3 tourism clusters established (Trabzon, Rize, Artvin/Coruh Dams) *product line diversified 	<ul style="list-style-type: none"> *3 tourism clusters expanded *linkage with Erzurum zone strengthened *across-Black Sea sea traffic introduced
Target Market	<p>Mainly</p> <ul style="list-style-type: none"> *local *DOKAP regional <p>Niche market in:</p> <ul style="list-style-type: none"> *Turkish inter-regional *international SIT 	<p>Mainly</p> <ul style="list-style-type: none"> *local *DOKAP regional <p>Growth in:</p> <ul style="list-style-type: none"> *Turkish inter-regional *international SIT 	<ul style="list-style-type: none"> *local *DOKAP regional <p>Fair-size market established in:</p> <ul style="list-style-type: none"> *Turkish inter-regional *international SIT as well as a portion of general-interest tourists 	<ul style="list-style-type: none"> *local *DOKAP regional <p>Market expanded in:</p> <ul style="list-style-type: none"> *Turkish inter-regional *international SIT/general-interest tourists *introduction of CIS/Black Sea coastal countries



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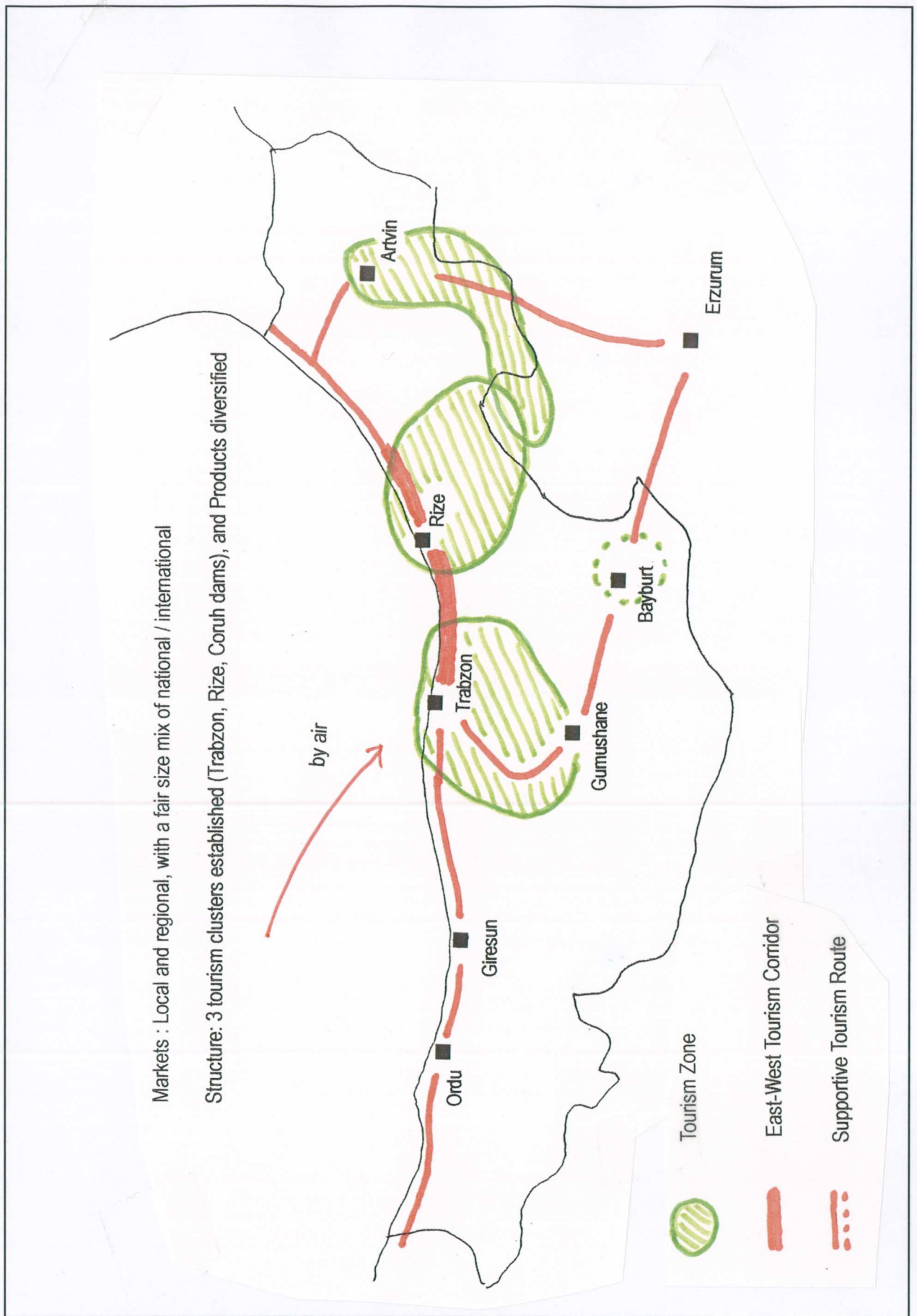
Figure 4.1
Spatial Tourism Structure, Now



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Figure 4.2
Spatial Tourism Structure, 2005

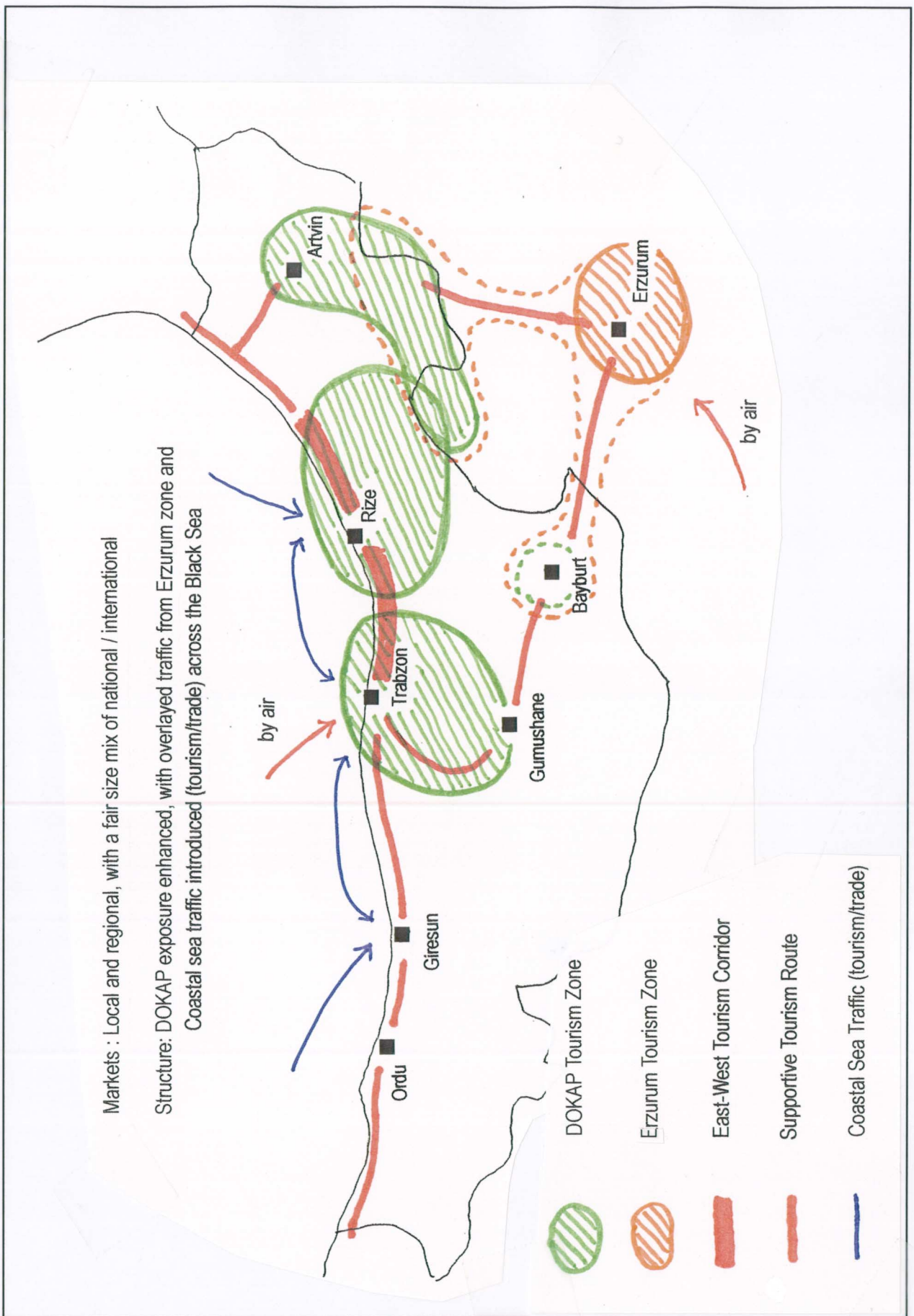


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Figure 4.3

Spatial Tourism Structure, 2010



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Figure 4.4
Spatial Tourism Structure, 2011 and Beyond

CHAPTER 5 DETAILS OF SUB-PROJECTS AND PROGRAMS

DOKAP Brand Tourism Product Development Project consists of seven sub-projects in the seven potential tourism areas in the short term (up to 2005). Details of each subproject are given here. When implemented, these subprojects will, together with four other tourism-related projects from various other sectors (as noted in Section 4.3), collectively help enhance the tourist appeal and image of the DOKAP region and eventually contribute to visitor arrival increase to the region.

Brief descriptions of the subproject components are provided in order to illustrate where and how the DOKAP tourism resources can be improved in terms of tourist support infrastructure, visitor facilitation, presentation, tourism product development, etc. in order to satisfy the expectation of today's tourists. Figures 5.1 summarizes development concept of sub-project 5.1 for Uzungol area and sub-project 5.2 for Ayder-Kackar area.

MOT has designated 20 locations in the DOKAP region as tourism center in May 1991 (two in Artvin, three in Giresun, one in Gumushane, five in Ordu, two in Rize, six in Trabzon, one in Bayburt), and the detailed development guidelines have since been declared for the following seven tourism centers.

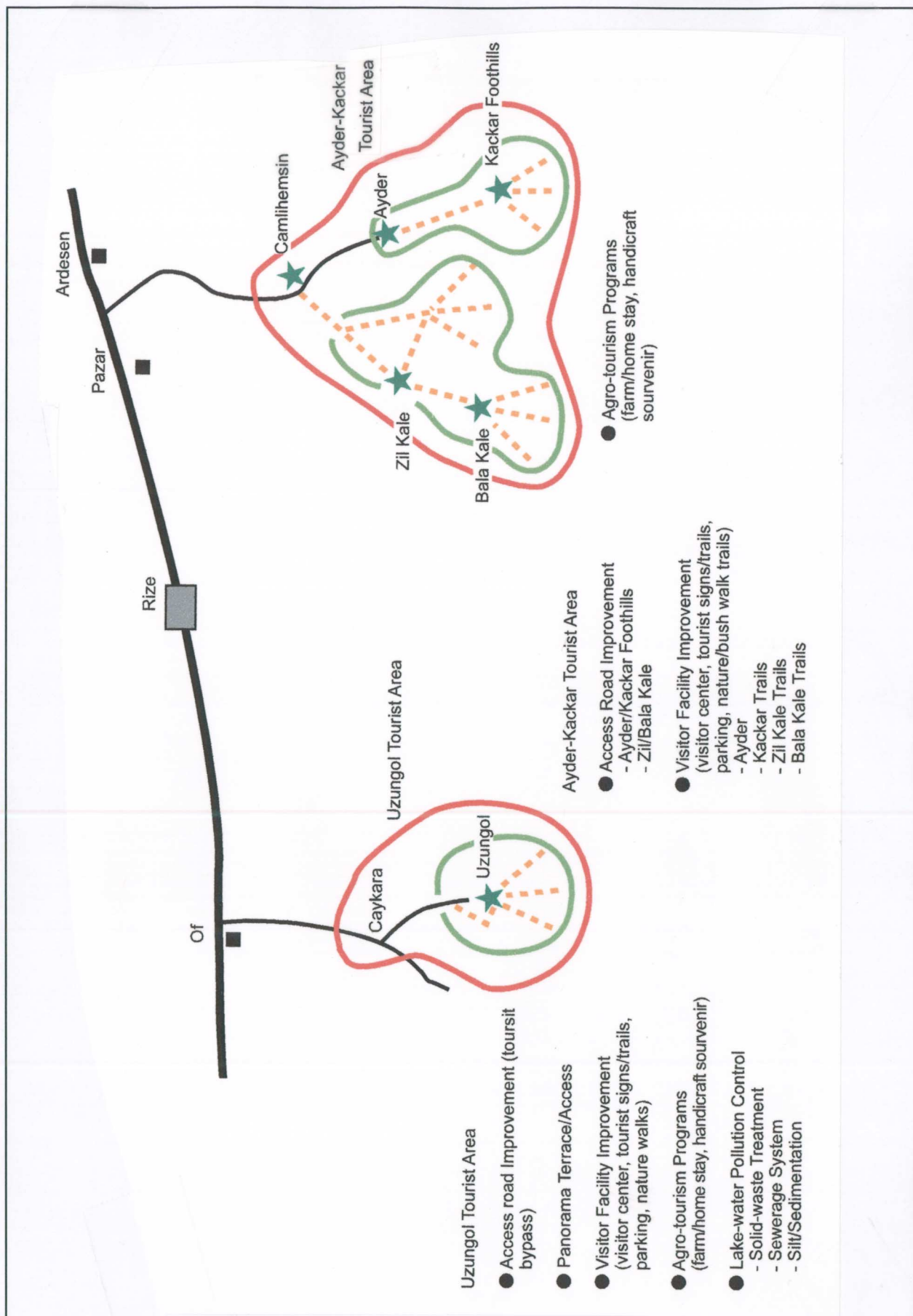
- Kafkasor, Artvin for Yayla tourism
- Kackar, Artvin for Yayla / mountain tourism
- Zigana, Gumushane for ski tourism
- Kelifalan, Ordu for Yayla tourism
- Ayder, Rize for Yayla tourism
- Uzungol, Trabzon for Yayla tourism
- Kop Dagi, Bayburt for ski tourism

Seven subprojects proposed by this Study will follow the development guidelines as declared by MOT where applicable.

Program 5.8: DOKAP Tourism Professional Partnership Program totally differs in its nature from those subprojects proposed for the seven chosen tourist areas, since the program involves the whole region of seven provinces and deals with knowledge-oriented program (know-how, material, technique, approach of promotion, contact, etc.) rather than infrastructure / facility-oriented projects.

Out of the seven subprojects dealing with chosen tourism areas, (5.1) Uzungol and (5.2) Ayder-Kackar are of the highest priority, followed by (5.3) Sumela-Altindere,

(5.4) Zigana-Hamsikoy, (5.5) Greater Trabzon, (5.6) Kafkasor and (5.7) Kelifalan as of the secondary priority.



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Figure 5.1

Development Concept of Uzungol Tourist Area, Ayder-Kackar Foothill Tourist Area

5.1 Uzungol Tourism Area (Trabzon Province)

(1) Rationale

- to enhance Uzungol's natural and folkloric appeal to the level to satisfy international tourists, and
- to introduce environmental improvement measures to ensure sustainability of Uzungol tourism.

(2) Projects/Programs

- access road improvement (tourist bypass to conserve attractive last stretch of Uzungol approach along cascading waters),
- panorama terrace / access road improvement,
- visitor facility improvement (visitor center, tourist signs / trails, parking, nature / bush walk trails) at Uzungol and nearby hills / villages (multiple locations),
- agro-tourism programs (traditional farmhouse restoration, farm/home stay, handicraft souvenir development, local festival), and
- lake-water pollution control (solid-waste treatment, sewerage system, silt/sedimentation control, etc.).

5.2 Ayder-Kackar Tourism Area (Rize Province)

(1) Rationale

- to enhance Ayder's natural and folkloric appeal to the level to satisfy international tourists, and
- to expand market potentials from a niche to a larger soft adventure market base.

(2) Projects/Programs

- access road improvement (Ayder / Kackar foothills, Camlihemsin / Zil Kale / Bala Kale),
- visitor facility improvement (visitor center, tourist signs / trails, parking, nature / bush walk trails) in Ayder, Kackar foothills trails, Zil Kale trails, and Bala Kale trails (multiple locations),
- pilot project of "Black Sea Heritage Village" showcasing heritages and traditions of the DOKAP region, and
- agro-tourism programs (traditional farmhouse restoration, farm / home stay, handicraft souvenir development, local festival).

5.3 Sumela-Altindere Tourism Area (Trabzon Province)

(1) (1)Rationale

- to introduce measures to alleviate tourist congestion in Sumela Monastery (peak season and weekends), and
- to diversify Sumela's tourist appeal and incorporate nature tourism potential of Altindere National Park.

(2) Projects/Programs

- access road improvement (lane expansion / segregated traffic),
- introduction of chair-lift / cable car (Sumela Monastery / Altindere National Park), and
- visitor facility improvement (visitor center, tourist signs / trails, parking, nature / bush walk trails) in Sumela Monastery and Altindere National Park (multiple locations).

5.4 Zigana-Hamsikoy Tourism Area (Provinces of Gumushane and Trabzon)

(1) Rationale

- to develop an additional optional tour circuit for Trabzon, the tourist hub of the region and to alleviate current tourist concentration to Sumela Monastery, and
- to open a neglected rural area to the benefit of tourism by incorporating newly identified resources.

(2) Projects/Programs

- access improvement of Zigana Pass road (old silk route),
- access road improvement to Vazelon Monastery,
- visitor facility improvement (visitor center, tourist signs / trails, parking) at Zigana Yayla, Hamikoy Village (center of old silk route), Vazelon Monastery, and Karaca Cave (newly opened resources in Gumushane province), and
- agro-tourism programs (traditional farmhouse restoration, farm / home stay, handicraft souvenir development, local festival on the theme of "Old Silk Route").

5.5 Greater Trabzon Tourism Area (Trabzon Province)

(1) Rationale

- to improve and renovate the old quarters of Trabzon (cobble streets,

Tabakhane bridge, and Ortahisar) to open a new opportunity for urban tourism of Trabzon, and

- to develop an additional optional tour circuit around Trabzon, enhancing overall tourist appeal of Trabzon tourist hub.

(2) Projects/Programs

- renovation of the old quarters in Trabzon (cobble streets, Tabkhane bridge, and Ortahisar),
- introduction of tourist walks and control of motorized traffic, where necessary in Trabzon,
- visitor facility improvement (visitor center, tourist map, site-specific information sheet, tourist signs and parking) in Trabzon, and
- renovation of selected old houses in Akcaabat and provision of necessary visitor interpretative services (map, site-specific information sheet, signs, tourist walks, etc.) in Akcaabat.

5.6 Kafkasor Tourism Area (Artvin Province)

(1) Rationale

- to enhance Kafkasor's natural, rural and folkloric appeal to showcase DOKAP yayla tourism, and
- to prepare Kafkasor as the core of newly introduced Artvin tourism circuit.

(2) Projects/Programs

- access road improvement to Kafkasor Yayla,
- sophistication program for Kafkasor Yayla Festival with input of professional expertise (e.g., guidance / advice from national dance theater),
- visitor facility improvement (visitor center, tourist signs / trails, parking, nature walk trails) in / around Kafkasor Yayla (multiple locations), and
- agro-tourism programs (traditional farmhouse restoration, farm/home stay, handi-craft souvenir development).

5.7 Kelifalan Tourism Area (Ordu Province)

(1) Rationale

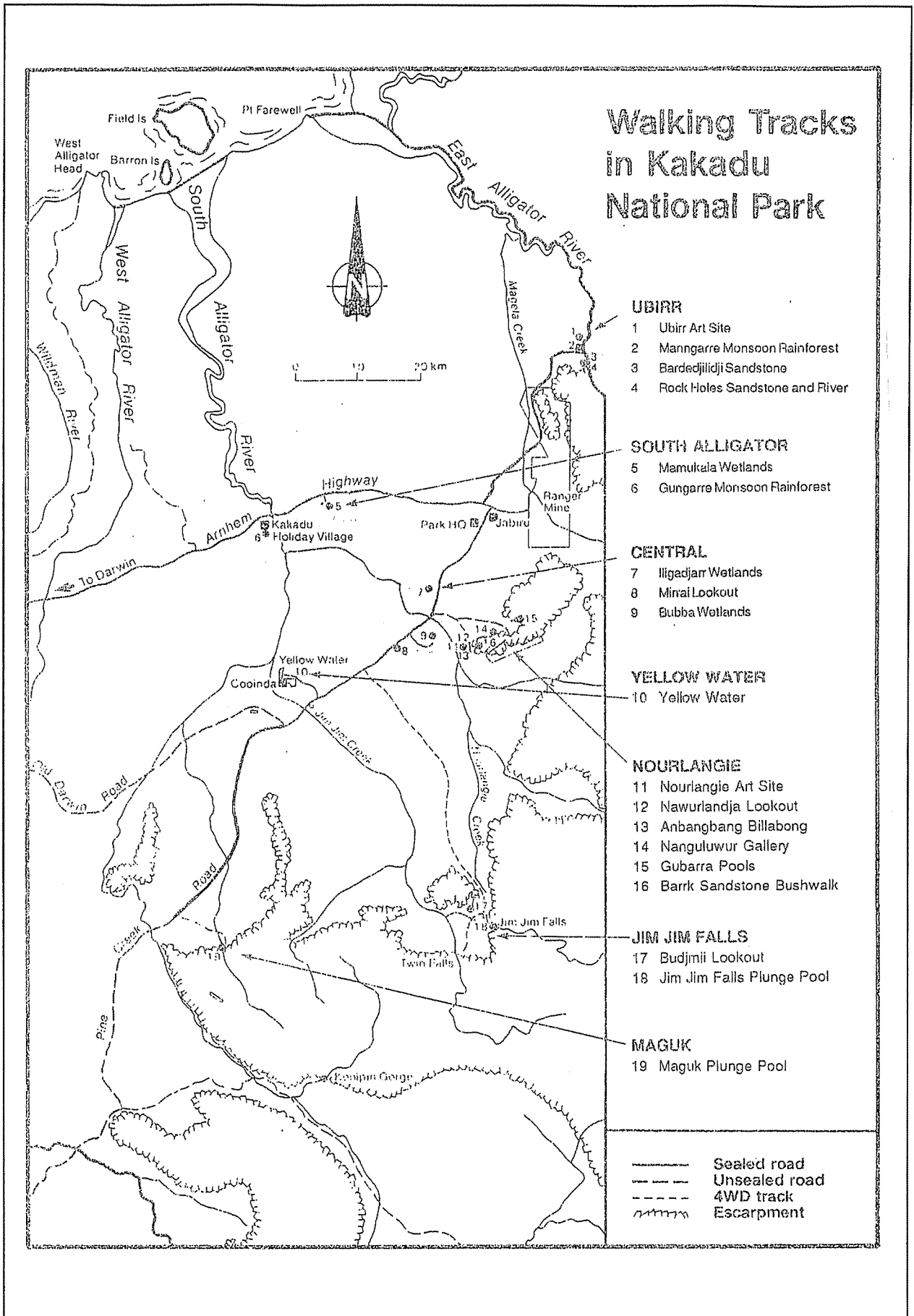
- to enhance Kelifalan's natural, rural and folkloric appeal to showcase DOKAP yayla tourism, and
- to prepare Kelifalan as the core of newly introduced Ordu tourism circuit.

(2) Projects/Programs

- access road improvement to Kelifalan Yayla,
- visitor facility improvement (visitor center, tourist signs / trails, parking, nature walk trails) in / around Kelifalan Yayla (multiple locations), and
- agro-tourism programs (traditional farmhouse restoration, farm / home stay, handi-craft souvenir development).

Model examples in other countries are presented in Figures 5.2 through 5.7 in order to provide a more concrete idea on such items of the components as:

- selection / designation of nature / bush walk trails in a nature park,
- site-specific orientation information sheet,
- interpretative information sheet on the tourist attractions found within a particular site,
- concise orientation map and guide, and
- three typical types of guide / information signboards.



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Figure 5.2

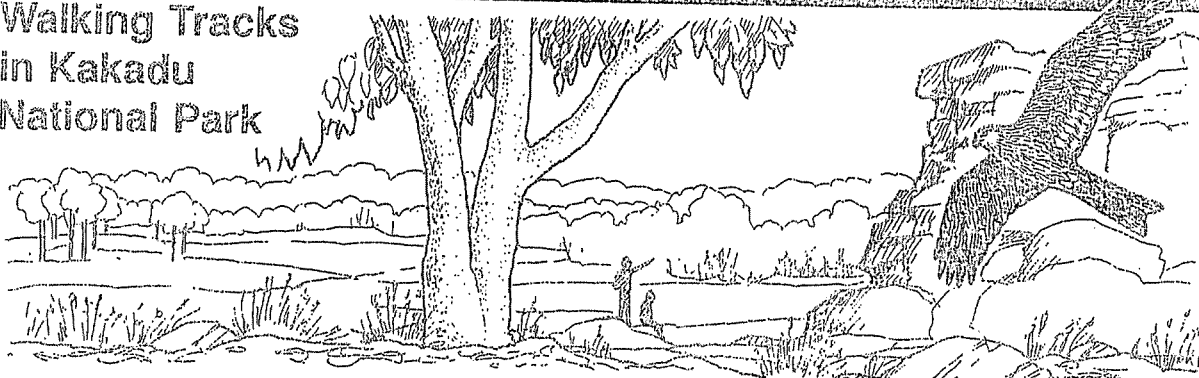
Selection/Designation of Nature Walk Trails in
a National Park

Park Notes

Australian Nature
Conservation Agency



Walking Tracks in Kakadu National Park



In Kakadu National Park there are marked walking tracks to suit everyone. The tracks are of various lengths and grades, and pass through woodlands, grassy floodplains, wetlands, monsoon rainforests and sandstone country. They will introduce you to both the natural wonders of Kakadu and the rich cultural heritage of Aboriginal art.

ABOUT THE WALKS

1. **Ubirr Art Site:** memorable for both the Aboriginal art and the sweeping views from Ubirr lookout.
• 1 km circular walk; 1 hr; easy; dry season
2. **Manggarre Monsoon Rainforest:** explore the forest from the ground and from a raised observation platform.
• 1.5 km circular walk; 1 hr; easy; dry season
3. **Bardedjilicji Sandstone:** outcrops like stacks of pancakes have weathered into pillars and caves.
• 2.5 km circular walk; 90 mins to 2 hrs; easy; dry season
4. **Rock Holes Sandstone and River:** a longer walk in sandstone country and along the East Alligator River.
• 8 km circular walk; 4 hrs; moderate; dry season.
5. **Mamukala Wetlands:** In the late dry season, thousands of magpie geese congregate at Mamukala.
• 200 m, 1 km or 3 km walks; up to 2 hrs; easy; all year.
6. **Gungarre Monsoon Rainforest:** a varied walk through rainforest, woodland and beside a waterhole.
• 3.6km circular walk; 90 mins; flat & easy, all year
7. **Iligadjarr Wetlands:** find out the Aboriginal uses of plants and animals of the wetlands and floodplains.
• 4km circular walk; 2 hrs; flat & easy; dry season
8. **Mirrai Lookout:** the lookout on top of Mirrai offers 360° deg. views of the central part of Kakadu.
• 1.8 km return, rising 120m; 90 mins; steep; all year
9. **Bubba Wetlands:** stroll around wetland fringes, stopping at shaded seats to watch the waterbirds.
• 5 km circular walk; 2 hrs; flat and easy; dry season.
10. **Yellow Water:** boardwalks and paths lead from Yellow Waters to Home Billabong.
• 1.5 km return; 1 hr; flat and easy; dry season.

11. **Nourlangie Art Site:** outstanding Aboriginal art sites are located around the base of Nourlangie Rock.
• 1.5 km circular walk; 1 hr; easy to moderate; all year.
12. **Nawurlandja Lookout:** climb a long sloping rock platform for a fine view of the Nourlangie area.
• 600 m return; 1 hr; a gradual climb; all year.
13. **Anbangbang Billabong:** a peaceful billabong close to Nourlangie Rock, with several picnic spots.
• 2.5 km circular walk; 1 hr; flat and easy; dry season.
14. **Nanguluwur Gallery:** ramble through woodlands to a peaceful and impressive Aboriginal art gallery.
• 4 km return; 2 hrs; easy; dry season.
15. **Gubarra Pools:** walk near large sandstone outliers to cool, clear pools in a shady monsoon forest.
• 6 km return; 3 hrs; moderate; dry season.
16. **Barrk Sandstone Bushwalk:** rugged full day walk into the sandstone country on top of Nourlangie Rock.
• 12 km circular walk; 6 to 8 hrs; difficult; all year.
17. **Budjmii Lookout:** grand views of escarpment cliffs from the top of a rocky outcrop.
• 1 km return; 45 mins; moderate; dry season.
18. **Jim Jim Falls Plunge Pool:** Jim Jim Creek plunges into a deep pool surrounded by spectacular sheer cliffs.
• 1 km return; 1 hr; moderate; dry season.
19. **Maguk Plunge Pool:** at the base of a small waterfall is a plunge pool with pleasant, sandy banks.
• 2 km return, 90 mins; moderately easy; dry season.

FOR YOUR COMFORT AND SAFETY

On all walks, wear a hat and carry 1 litre of water for every hour you intend to walk. It is wise to walk in the cooler hours of the morning or late afternoon.

It is safer to keep to marked tracks. If you do get lost, do not wander. Find some shade and wait to be found.

People wanting to do longer walks need to obtain contour maps and inform the Park Manager of their proposed route, at least a week before beginning the walk, so that approval and permits can be arranged.

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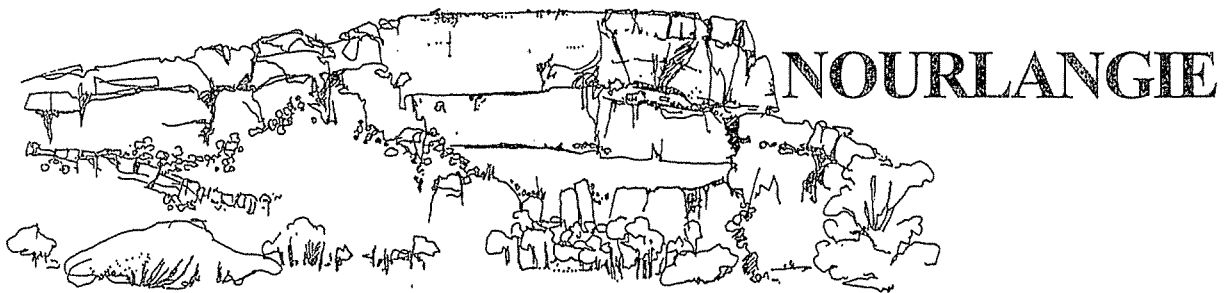
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Figure 5.3

Orientation Information Sheet on Nature Walk Trails

Park Notes

Australian Nature
Conservation Agency



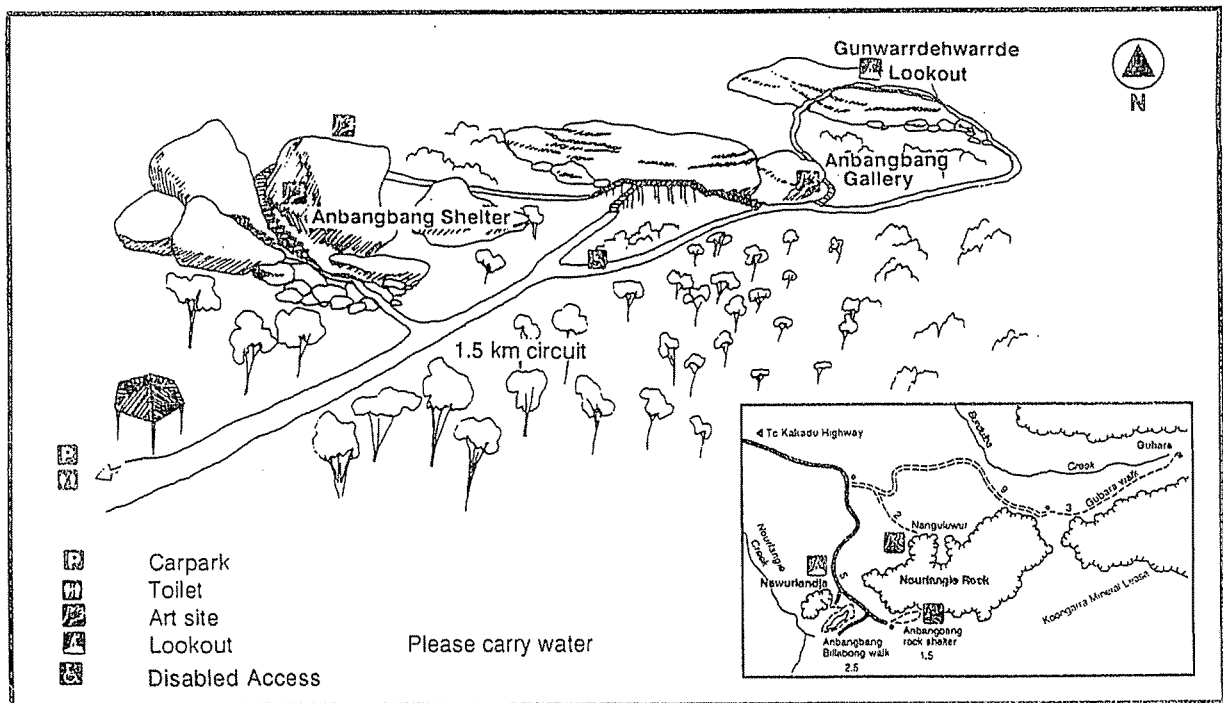
The art sites and archaeological sites of Kakadu National Park illustrate and reveal information about the development of Aboriginal culture through times of great change.

At Nourlangie you can walk to an ancient living shelter, a variety of art sites and a lookout. Signs along the way will tell you more about the area.

The name 'Nourlangie' is an anglicized version of the word 'Nawurlandja' and refers only to a portion of the whole area. The higher parts of what is commonly called 'Nourlangie Rock' is called 'Burrungui' by the Gun-djeihmi speakers who own this land. The lower areas are called Anbangbang.

In the Dry Season it is also possible to walk around Anbangbang Billabong and to the top of Nawurlandja.

There is a 12km bushwalk in the area but for your own safety, please talk to staff at Park Headquarters before you attempt this track.



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Figure 5.4
Site-Specific Orientation Information Sheet
with a Map

ANBANGBANG SHELTER

Aboriginal people have been coming home to this shelter for about 20,000 years.

Archaeological research in this area shows that the shelter was occasionally used between 6,000 and 20,000 years ago. Since then however the shelter has become more popular because the surrounding environment slowly changed to provide more food resources.

Objects discarded by people using this shelter have mounted up for about 20,000 years to form the floor of the shelter.

The excavations in this shelter revealed organic objects rarely preserved in tropical Australia because of the hot wet climate which promotes quick decay.

ANBANGBANG GALLERY

Both this gallery and the painting of Nabalwinjbulwinj were painted by Nayombolmi, known as Barramundi Charlie by Balanda (non-Aboriginals). Nayombolmi worked many years for Balanda and returned to paint the designs shortly before his death. Repainting of designs was a traditional practice. However the designs, especially of mythological figures and events were not repainted at random.

British naturalist and film producer, David Attenborough, visited the Anbangbang gallery in 1962, before the present paintings were done in 1964. He found similar although much more faded designs.

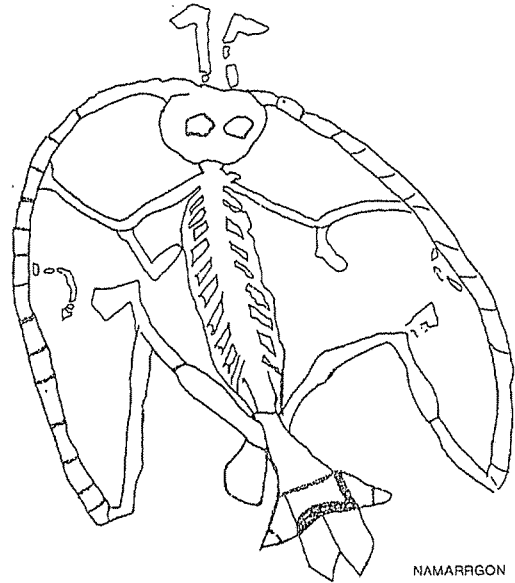
Namondjok - a dangerous spirit (top central figure).
Namarrgon - the lightning man.

The lightning is depicted by the lines joining his head and feet. The objects attached to his head, elbows and knees are garramalg (stone axes). Namarrgon makes lightning and thunder by striking those axes against the ground or clouds.

Barrginj - wife of Namarrgon (white figure below Namondjok).

Guluibirr - Saratoga fish (*Scleropages jardini*)

Family groups of men and their wives on their way to a ceremony.



Note: Because the spelling system for the Gurdjeihmi language has been only recently updated you may notice slight variations in the spellings on this leaflet and other Park publications.

CONSERVATION

Rock art is extremely important to the Aboriginal owners of Kakadu. The art is also an important historic and scientific record of human occupation of the region.

Some of the paintings are extremely fragile and can be damaged by water, large animals, insects and people.

Water washing over the surface or filtering through the rock is diverted away from the art by silicon drip lines. Prior to the reduction of their numbers, buffaloes damaged the art by rubbing against it and by stirring up dust. Wasps building mud nests, and other insects constructing tunnels across the rock surfaces can also damage the paintings.

HOW CAN YOU HELP

The thousands of people who visit Nourlangie each year are the greatest potential threat to the art. To protect the paintings please:

- Do not touch the paintings or interfere with the silicon drip lines.
- Keep to the walking tracks and keep behind the fences
- Do not enter prohibited areas

Any person defacing or damaging an archaeological site or artifact is liable to a fine of \$5000.

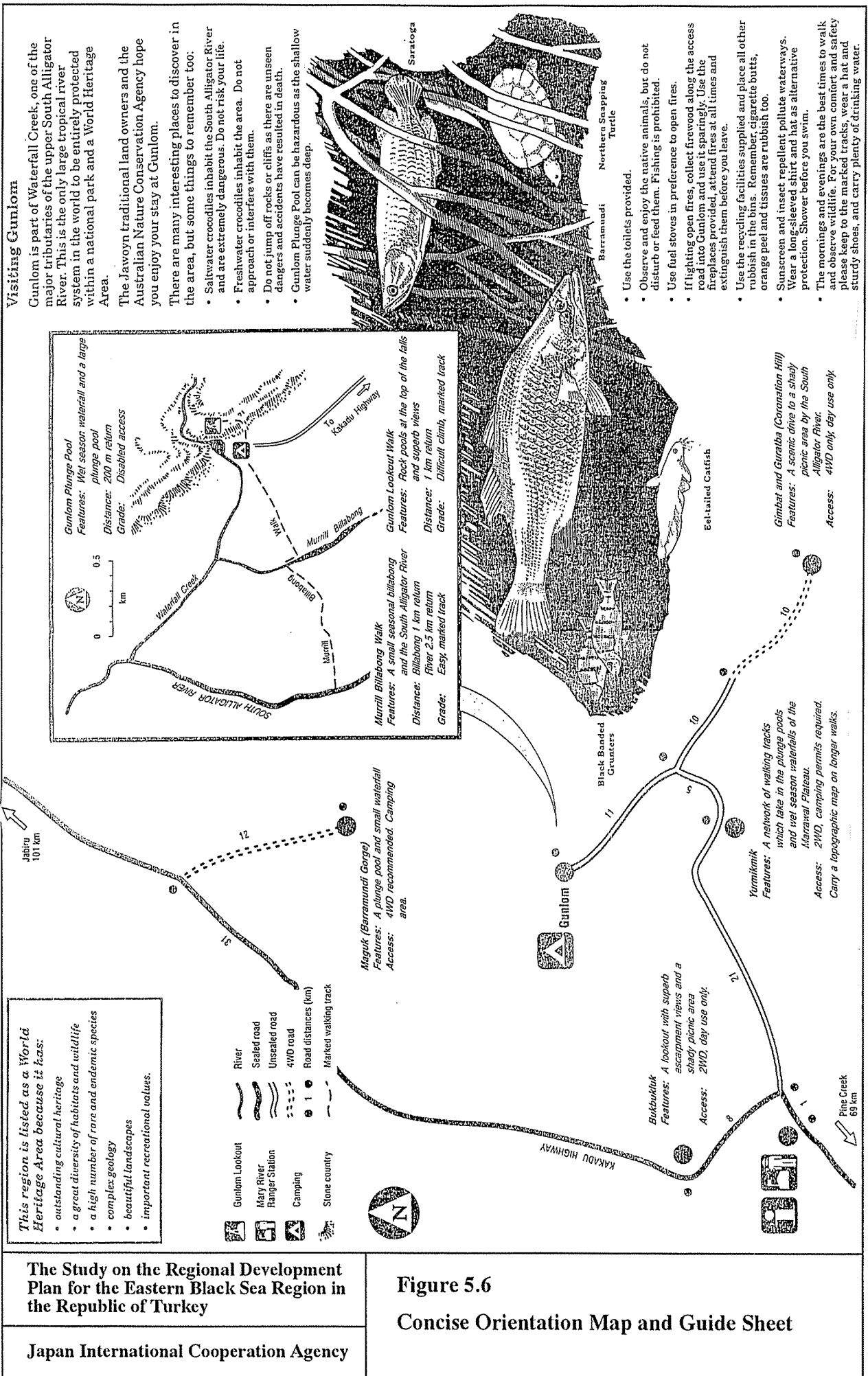
Further information on rock art is available from the Bewali Visitor Centre and the Warradjan Aboriginal Cultural Centre.

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Figure 5.5

Interpretative Information Sheet on the Attraction

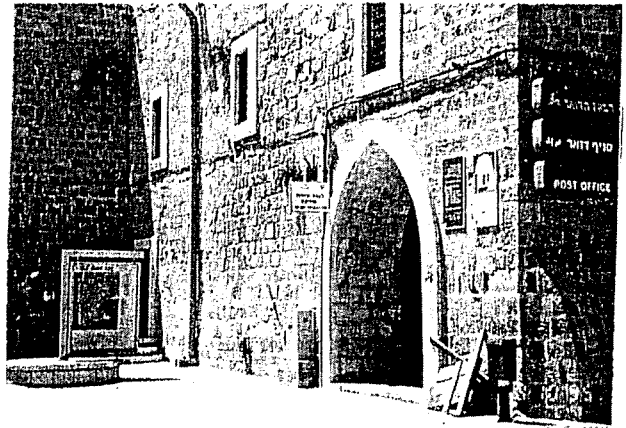
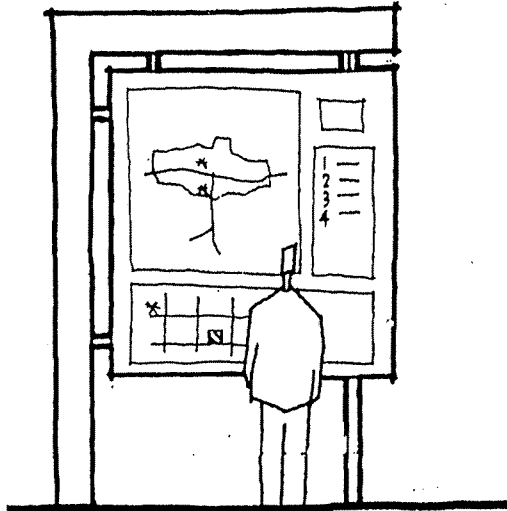


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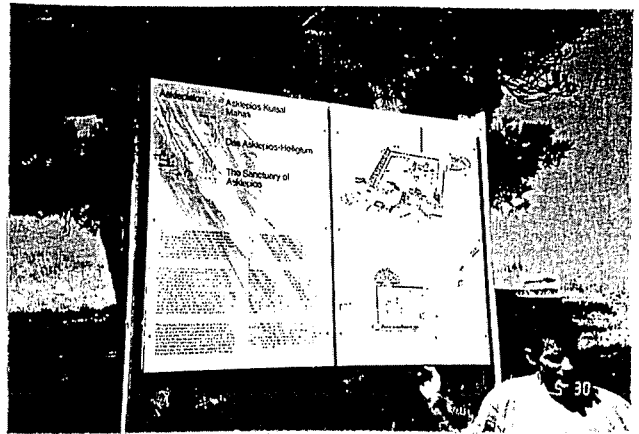
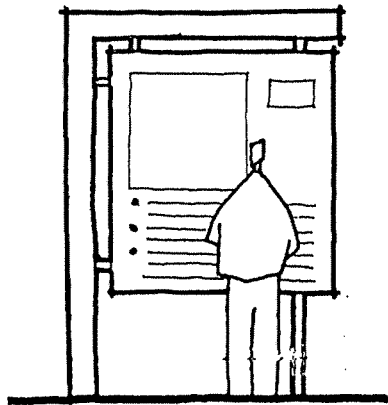
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Figure 5.6
Concise Orientation Map and Guide Sheet

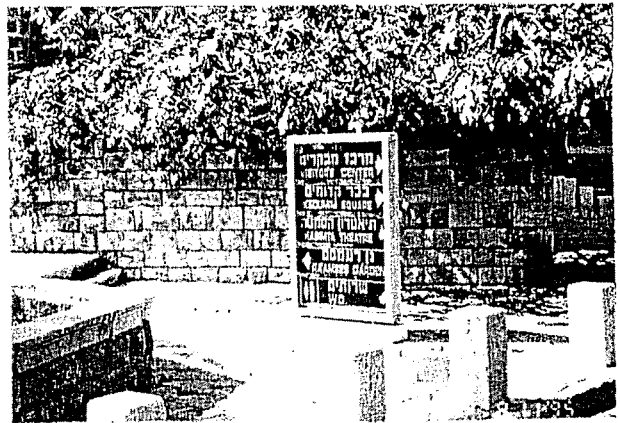
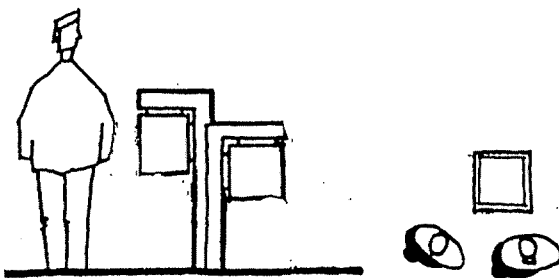
■ **Guide Board**



■ **Information Board**



■ **Guide Sign**



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Figure 5.7

Three Types of Guide/Information Signboards

5.8 DOKAP Tourism Professional Partnership Program

(1) Rationale

- to enhance DOKAP tourist image and perception in both domestic and international market, and
- to consolidate limited resources (fund, personnel, and know-how / contact) to maximize DOKAP exposure in the markets (domestic / international).

(2) Programs

- Formation of a region-wide tourism promotion council with participation of all concerned sectors (government, municipality, tourist operator, etc.);
- Pooling of fund, personnel, and know-how / contact across the region in order to avoid isolated / parochial promotional approaches currently disseminated from each province;
- Conduct of in-depth market research in both domestic and international markets to identify the best sales appeal of the region; and
- Development of effective marketing / promotion programs based on the research, which include:
 - production of region-wide promotional materials for national / international promotion and site-specific collaterals for site visit facilitation,
 - creation of new and attractive tourism products (tourist site, show / festival, event, etc.),
 - regional sales seminar / presentation at major urban centers in Turkey (travel trade and general public) and follow-up sales approach to major domestic tour operators / organizers,
 - participation in major international travel trade fairs (e.g., WTM in London, ITB in Berlin) in association with Turkish national delegation organized by MOT, and follow-up sales approach to major tour operators in OECD European countries, and
 - organization of sponsored familiarization visit to the DOKAP region by influential representatives of travel trade and media in both domestic and international markets.

5. Trade and other services

CHAPTER 1 EXISTING CONDITIONS

Trade and services have always played a critical role in the development of the DOKAP region. Trabzon was a key center on the Silk Road. The city served as a regional administrative center during the Ottoman Empire. It was an important trade center for the whole Black Sea basin.

The city lost much of this function after the Bolshevik revolution of 1917. Trade with the Black Sea basin largely disappeared under the Soviet economic policies. Trabzon and other cities on the Eastern Black Sea coast suffered declining incomes and population. Trade within the basin has expanded rapidly after the collapse of the Soviet Union and the resumption of trade.

Turkish cities on the Black Sea coast have regained their historical trade functions since 1990. Trabzon, and to some extent Rize, play an important role in trade with the former Soviet Union. Special trading arrangements have developed to cope with the lack of regular trade arrangements and administrative infrastructure in the newly independent republics.

In addition to international trade, the urban centers in the DOKAP region heavily depend on the services they provide for their rural hinterlands and on government employment for jobs and income. This dependence on services is apparent from the employment data, the most recent being provided through the 1990 Census of Population.

Employment in public services is the largest component among the non-agricultural activities. The total employment in the DOKAP region in 1990 was 1,403,228. Of this, 383,344 people were in non-agricultural occupations. Industry employed 87,142 and services employed 312,435 workers in 1990.

1.1 Government Services

1.1.1 Government employment

Close to half of the total service employment was in public services: 130,744 employees. This is close to half of the total service employment of the DOKAP region. The region's dependence on government services is much larger than the national average. Government services provided 6.1% of the GRDP of DOKAP in 1997 compared with the national average of 3.9%. The changes in government employment have thus been critical for the growth of not only the service sector but also overall regional economy.

Several scholars at Karadeniz Technical University have tried to identify the determinants of the growth of domestic product of DOKAP provinces. Among all the explanatory variables they have considered, the growth in public services was consistently found to be the most significant explanatory variable in explaining the changes in regional income and employment.

Information is not available on the changes in the number of civil servants over time in the DOKAP region. Nationally, these have grown by about 4% per annum over the last 15 years. New reform efforts for the civil service and the need to control public expenditures would suggest that this segment of income and employment would probably remain stagnant in the near future.

1.1.2 Public services

There are other equally important channels through which the public sector decisions on services affect the regional economy. Over 10% of the population of Trabzon city are students of Karadeniz Technical University. The university has faculties and vocational training schools in all urban centers in the region. Most students are from outside the provinces. The expenditures of the students provide substantial income for the urban centers where they live.

There is a similar concentration in Trabzon in health services. There are three specialized hospitals and a large university hospital in Trabzon. These draw patients from not only the Black Sea but Eastern Turkey as well. Expenditures by the patients and people accompanying them are important for local economies. These facilities are all publicly owned and locational decisions are made directly by the Government. It is likely that these specialized health services will be further developed to cope with the particular health problems observed in the DOKAP region.

1.2 Foreign Trade

Foreign trade has become increasingly important for the Turkish economy since 1980. Outward oriented liberal economic policies adopted in 1983 appear to have had little impact on the regional economy. The more recent growth of trade with the former Soviet Union, in contrast, seems to have had a much more significant impact on the DOKAP region.

Improvements in political relations with Russia have led to a relative relaxation of border controls in Turkey. Turkey has also emphasised foreign trade promotion in Caucasia and with Central Asian republics. This has led to the emergence and growth of different types of foreign trade. These new types of foreign trade have become as significant as the trade that occurs under the regular trade regime (Table 1). The three new types of trade are i) border trade; ii) suitcase trade; and iii) trade from free zones (Table 1).

The border and suitcase trade are basically tolerated by Turkey's trading partners as temporary partial solutions after the breakdown of the traditional trading arrangements in centrally planned economies. People who travel abroad are allowed to bring with them a quantity of goods without paying import duties. It is expected that these forms of trade will be reduced and gradually disappear as these countries develop the infrastructure for regular trade.

Table 1 Turkish Foreign Trade with BECC

Unit: US\$ thousand

A- Exports	1990	1992	1994	1996
1) Under the foreign Trade Regime	243,777	173,432	215,962	290,103
2) Border Trade	148	7,419	8,488	
3) Suitcase Trade	-	142,350	111,109	54,243
4) Free Zones	-	-	4,075	2,451
B – Imports	1990	1992	1994	1996
1) Under the foreign Trade Regime	22,662	72,378	26,026	97,263
2) Border Trade	354	26,145	27,173	
3) Suitcase Trade		189,886	125,829	
4) Free Zones		611	2,831	8,352

Source: Records of provincial Customs Directorates. Gumushane and Bayburt do not have borders and Customs offices.

1.2.1 Trade under the trade regime

The DOKAP region can potentially play an important role in the trade between Turkey and countries surrounding the Black Sea. These countries were recently brought together as a regional trading block. All members of this trading block, Black Sea Economic Cooperation Council (BECC), are eager to increase the trade within this area.

An overview of Turkish trade with BECC countries is given in Appendices 2 and 3 for exports in 1992 and 1997, respectively. These are total exports from anywhere in Turkey to these countries and not exports through Black Sea ports. Indeed, Turkish ports on the Black Sea play a minor role in total exports to these countries.

The commodity coverage of exports to BECC countries is highly diverse. There are hundreds of commodities/commodity groups - each with exports of over one million dollars a year. There is an equally diverse range of commodities where exports exceed \$100 million per annum: cereals, fruits and vegetables, edible oils, sugar condiments, soap and detergents, plastics, clothing, metal products, vehicles, electrical machinery, and furniture.

Although there are exports to all countries of BECC, Russia is the dominant market. It accounted for over half of the total exports in 1992 to 1997. Developments in Russia will play a key role in the future course of Turkish export growth.

Comparative data on total Turkish exports to BECC countries, and exports from DOKAP provinces show that around 15% of Turkish exports to these countries originate from DOKAP provinces. Furthermore, almost all commodities exported from the region, except tea and hazelnut, are produced elsewhere in Turkey. Large shipments of a particular product under the regular trade regime usually are made directly from the producing region to the export destinations. Some goods produced in other regions are shipped through DOKAP due to two main reasons.

The first is the trading network established by the DOKAP traders. This network

covers many of the countries surrounding the Black Sea. There are reported to be over 500 businesses owned by entrepreneurs from the DOKAP region in the Russian city of Sochi alone.

Another reason for transshipment through the DOKAP region is the mixed consignment. Most export shipments are one truckload or less and consist of a diverse range of goods. These goods are generally trucked from the producing regions. The wholesalers in the DOKAP region assemble a specific assortment for each export order.

1.2.2 Border trade

Border trade in the DOKAP region started in 1990. It reached its peak in 1994, and has been declining since then. This decline is a result of both increasing restrictions placed on border trade by Turkey's trading partners and the general deterioration in the economic conditions in these countries.

Turkey joined the Customs Union with the European Union at the end of 1996. This has also adversely affected the border trade. Under the Customs Union, Turkey imposes a customs duty of 36% on all imports from the "Third Countries-countries other than Turkey and EU members". Most third countries have retaliated by imposing a similar tax on imports from Turkey. This adversely affects both Turkish imports from and exports to these countries.

There are further restrictions on the border trade. Turkey restricts border trade to the needs of each of the provinces on the border. Shipment into interior provinces is not allowed unless the goods go through the same import and taxation procedures as regular foreign trade.

These restrictions have limited the commodity coverage and quantities. Turkish exports under this type of trade have concentrated in sugar and condiments, soaps and detergents, leather goods and various machinery. Processed food (biscuits and edible oil) is also an important export item.

Imports under border trade are much more diverse. Major items include coal, iron, metal scrap, various metals, lumber, and raw hides/skins. Petroleum products are reported to be an important element in border trade, but this is not reflected in the official records. In recent years, lumber imports are reported to have increased, part of which is exported after some processing.

1.2.3 Suitcase trade

This is the largest component of foreign trade in the DOKAP region. By its nature, there are no statistics on this type of trade. It is estimated from the number of tourist arrivals and the estimated expenditures/sales per person.

Initially, there was a balance between imports and exports. Traders from CIS brought goods for exchange. In recent years such trade has concentrated on exports. Commodity coverage is generally well recognized, but statistical data are

not available. Leather goods and apparel products are known to be dominant in exports.

This trade has declined in volume due to two main reasons. First, Turkey's trading partners have placed restrictions on the amount of foreign exchange traders are allowed to carry out of their countries, and the value of duty free imports per person/trip has been reduced. These countries have also introduced tariffs on most commodities. This is probably the main reason for the decline in this type of trade.

The second cause of decline is trade diversion. Buyers from the major importers (particularly Russia) have found other supply sources where goods are cheaper. The Arab countries of Persian Gulf have become major suppliers due to their lower prices and the low promotional transport rates they apply to tourists arriving for suitcase trade.

1.2.4 Free zones

There are two free trade zones (FTZ) in the DOKAP region. The Trabzon FTZ was completed in 1991 and started operations in 1992. So far, it has had limited success.

In July 1999, there were 27 firms operating in that zone. Two are manufacturing companies, three finance companies, and the rest are trading firms. The manufacturing firms process hazelnuts from Azerbaijan for re-export. Most traders import goods from diverse markets for resale to the CIS countries.

The volume of trade, which had reached \$150 million in 1996, has declined since then and now is around \$50 million per annum. The bulk of this trade (over 60% during most years) is in vehicles. A Turkish company is importing cars from Russia for re-export to Georgia and other countries further east.

Another FTZ was started in Rize in 1998. So far, only three companies have established in the zone and they show little activity. The total volume of trade in 1999 is expected to be around two million dollars. This zone is expected to draw potential customers from Trabzon because it charges much lower rates for lease of land and office space. It received its buildings from the government tea corporation for free and it can lease these at much lower rates than Trabzon where the private zone operator had to finance building construction.

Both of these FTZ's were designed to be centers for international trade as well as production centers for export oriented companies. These companies are to have totally unhindered access to inputs from all over the world at international prices. At the same time, they would enjoy the low labor costs and other infrastructure support incentives. Yet, there has been no interest from the export manufacturers to locate in these zones.

1.2.5 Size of trade channels and growth prospects

The share of BECC countries in Turkish foreign trade covered by the foreign trade regime is around 10%. Very little of this trade is conducted from the DOKAP

ports. The share of DOKAP ports in Turkish foreign trade is estimated to be around 1%. The share in exports is 1.4% due to hazelnut exports from the region. The share of DOKAP ports in imports is insignificant at 0.11% in 1990-1995 and is heavily concentrated on a few products. Statistical data are not available, but it is known that DOKAP ports are important for transit trade. This is particularly true of trade with Iran via the port of Trabzon.

The volume of border trade is similar to that of the trade under the trade regime. Suitcase trade in the DOKAP region, in contrast, is very significant. The growth of foreign trade in the short term could be built on the border and suitcase trade, but these are unlikely to survive in the long term. Trade from the free zones and under the regular regime need to be promoted but the extent is likely to remain limited in the short term.

1.3 Wholesale and Retail Trade

Around 80% of the DOKAP population is concentrated on the coastal strip. All coastal cities are important centers for trade and services. Trabzon and Rize serve their own hinterlands as well as supporting the transit trade. Ordu seems to be an important distribution center for its relatively rich hinterland.

All trade establishments are small family-owned enterprises. A 1992 study of KTU found that only 22.5% of the total employees in the trade sector are wage/salary earners. All the rest are self-employed. Most of these own their own shops with very few not owning a permanent workplace.

The number of trade establishments is extremely unstable. This number is reported to have doubled with the large expansion after 1992 when trade with CIS countries flourished. Since then, the number has declined to the level observed prior to 1990.

The absolute number of retail and wholesale establishments appears to be excessive. There was one retail shop per 172 residents in 1992. There was one wholesale establishment for every 10 retailers. These ratios are three to five times the Turkish national averages. This ratio of wholesale to retail stores seems to have deteriorated even further in recent years.

The information on the size and structural characteristics of the trade establishments was partially updated through a survey conducted in major urban centers in the region through a study of the settlement hierarchy. There were 42,000 enterprises in trade and personal services in 1999 in 40 of the largest urban centers for which information was collected. The number of retail and wholesale enterprises found in this survey is similar to the one found in the 1992 study.

As expected, the largest number of establishments is in retail trade as seen below. The table below, which summarized the results only for the more numerous enterprises, show that 415 of the trade establishments are located in the three

urban centers of Trabzon, Ordu, and Rize. Comparing this with the population share of the three urban centers in 1997 (12.8%), it is clear that most business done by these enterprises originates not from their own population, but from the service population in the hinterland.

Table 2 Trade and Service Enterprises in DOKAP

	Trade and service enterprises in DOKAP			
	Trabzon	Ordu	Rize	Regional total
Grocery stores	1,195	985	818	8,462
Clothing and shoe stores	952	435	418	3,065
Food wholesalers	278	369	323	2,172
Restaurants	354	245	112	1,858
Barbers	294	207	122	1,535
Furniture stores	474	44	117	1,361
Bakeries	196	142	101	1,321
Electric appliance stores	421	120	151	1,273
Stationary stores	28	5	8	1,181
Green groceries	186	21	191	1,087
Consumer durables	190	141	160	795
Butchers	106	17	57	609
Total ¹	5,077	2,910	2,632	25,826

Many of these establishments are very small and provide subsistence incomes only. It is likely that the number of both retail and wholesale establishments will decline if alternative employment becomes available.

The small size of these enterprises does not seem to result in higher trade margins. These are around 10 to 20% at the retail level and about half of these at wholesale level. Actual margins vary widely reflecting durability and payment terms, with very high implicit monthly charges for sales on credit.

The structural change in wholesale and retail sectors will have a strong adverse effect on employment. The increasing shares of large stores observed in large Turkish cities have not occurred in the DOKAP region as yet. Many of the wholesalers and some of the retailers serve the foreigners engaged in suitcase trade. This trade is likely to disappear as regular import channels are developed. Instead of each buyer transporting a small quantity, importers will buy large quantities and will employ more efficient mechanisms for transport and distribution.

1.4 Specialized Business Services

Specialized business services such as consulting, accounting and other clerical

¹ These include only the most numerous enterprises. Others include a large number of categories such as those selling construction materials, gasoline, exchange offices, photo shops, dry cleaners, jewelry shops, coffee houses, machinery and spare parts dealers, transport firms, auto and spare parts dealers, repair services, and a host of other enterprises.

services and the banking sector seem to be well developed in the region. There were 2,450 specialized business establishments and bank branches in the region in 1999. The largest number is in the group “accountants”. In Turkey, this group does not produce information for business decisions but provide records to meet bookkeeping requirements imposed on all enterprises by the tax authority.

Other specialized services cover engineering, health, shipment, and insurance services. These services are heavily concentrated in the three major urban centers. This concentration is much sharper than that of the trade and personal services. Trabzon alone has one-third of these specialized services.

CHAPTER 2 CONSTRAINTS

2.1 Constraints to Foreign Trade Expansion

The growth of international trade activities in the DOKAP region is constrained by both domestic market characteristics and the special problems in Commonwealth of Independent States, and Iran. The major export markets (particularly Russia) have contracted sharply in recent years. Trade in these markets is also severely hampered by internal organizational problems and lack of law and order. Similarly, transport through these countries is very difficult and hinders transit trade with Central Asian republics. Highway and port controls are not necessarily in the hands of government authorities, and gangs that control the routes extract a heavy price from the transporters.

This adversely affects the transport costs between the DOKAP region and many of the Caucasian and Central Asian destinations. Shipments from some European ports to these destinations can be cheaper if they use alternative safer routes than those from DOKAP ports.

Inefficiency in trade is also generated by the structural weaknesses of the trade sector. There are close to a thousand foreign traders in the region, each with a small volume of business. This discourages the use of inexpensive sea transport, because the volume of shipments is small. Small traders are also unable to develop effective trading mechanisms such as suppliers credits, swaps, barter trade and multiple-party trade arrangements covering trade between many countries.

The large decline in trade in recent years itself has reinforced this trend. The frequency of shipping services has declined and has become unreliable. The costs of existing services are also higher due to low business volume.

Low levels of organization, lack of finance and small size of foreign trade operations limits the efficiency of traders. The resulting high costs have caused many foreign buyers to shift to alternative sources of supply in Europe and the Persian Gulf. Lack of export insurance and other export promotion measures are other limiting factors for the growth of exports to CIS countries.

Under the existing export finance schemes, export financing is provided to manufacturer/exporters only. This prevents the small exporters in the region from fully utilizing the existing credit facilities, because most products exported by the traders in the region are actually produced outside the region.

Free Trade Zones were originally conceived as centers of trade as well as bases for export oriented manufacturing. Due to the weak existing manufacturing base in the region and lack of support facilities, there have been almost no export oriented manufacturing in these zones. The small size of these zones prevents the growth of linkage industries around these zones.

2.2 Inefficient Trading Sector

Most traders in the region are, in fact, small owner-operated firms. They are incapable of developing markets and procuring trade finance by themselves. This is in contrast with many countries of Turkey's competitors, where exporters can obtain government supported financing schemes.

Part of the limited capacity of traders in the region is due to government dominance in marketing of the two major agricultural products. Tea is marketed by the government-owned tea corporation and hazelnut processing and marketing are dominated by the state controlled Fiskobirlik.

Government monopoly on tea processing and marketing was terminated in mid-1980. Many private operators entered the sector. As of the end of 1999, they owned 75% of tea processing capacity in the region. The share of the private sector in processing and marketing, in contrast, is less than half of the output. This strange result, where the government owned capacity is used more intensively than the privatized enterprises, is mainly due to the privileges granted to the government owned Caykur for access to government subsidies, finance, and duty losses. The private sector can not compete with the government owned agency for processing and marketing under these conditions.

There is a similar situation in hazelnuts. Under normal conditions, the local price levels are determined by the export prices. In some years, the government owned Fiskobirlik buys the output at above the world prices with the loss born by the Treasury, directly or indirectly. During these years when the publicly owned agency pays higher prices, private buyers effectively withdraw from the market. In the reverse case, private buyers can benefit from larger differences between local and export prices so that they have incentives to increase their market shares. This instability disrupts continuity in established marketing chains and leads to under-investment by the private sector in processing and marketing facilities.

2.3 Capacity in Importing Countries

Turkey's trading partners within the Black Sea Economic Cooperation Council have not completed the transition to a market economy, and the economic contractions in these countries have not been reversed yet. This limits their capacity to import.

Legal and institutional changes being introduced in these countries to adapt themselves to the market economy create uncertainties and increase the cost of trade with these countries.

CHAPTER 3 DEVELOPMENT PROSPECTS

Domestic and international trade, tourism, business and commercial services, and specialized services in health and education are expected to provide most of the regional income and employment in the future under all development scenarios. In the future, the development of the DOKAP region thus largely depends on the growth of the service sector. The sector can play this function provided that strong support measures are implemented.

The estimated service employment of 240,000 in 1997 is expected to double by the year 2020. All of the incremental growth would need to occur in the specialized services if the income targets for the regional population are to be achieved. Three subsectors that would need to be expanded at a substantial scale are tourism, specialized business services (particularly in international trade), and specialized services in education and health.

3.1 International Trade

In the case of international trade, there is a need to identify systematically all export promotion measures allowed under the customs union agreements with the European Union. Traders in the region believe that most of the restrictions on the border trade can be removed while abiding by the stipulations of the customs union agreements.

Bilateral trade arrangements need to be made with each of the BECC countries on the terms of payments and other procedural issues. There is some expectation that delegation of some of the authority for trade arrangements to the governors of border provinces and other local officials may be desirable.

3.2 Services Provided to the Hinterlands

All settlements in the DOKAP region are expected to provide certain basic services to the population in their hinterland to ensure their general welfare. At present, however, these services are mostly public administration services. Other services need to be strengthened with an emphasis on concentration in a few regional centers. At the same time, the mobility of hinterland population should be enhanced. These measures combined would increase the range of goods and services provided and will lead to bigger multiplier effects.

Trabzon and Ordu already provide a range of administrative and trade services for their hinterlands. These can be selectively strengthened to increase the attractiveness of these two nodes to the residents of the DOKAP region as well as areas further south. Trabzon should increase the range of higher education opportunities that it supplies. These should be provided not only for domestic students but also for students from all the CIS countries.

The region is already well supplied with institutions of higher education. The vocational schools managed by various faculties should be strengthened. This should be done by taking into account the requirements of skilled manpower for those services and manufacturing industries to be promoted in the region according to the DOKAP Master Plan.

CHAPTER 4 DEVELOPMENT STRATEGY

Trade and services will play the leading role in the case that the growth of the region is accelerated. There are two components of this expected growth: international trade and specialized services as detailed below. Both will play equally important roles.

4.1 Promotion of International Trade

In the short run, international trade will be based on exporting products of other regions to the countries of BECC. In time, this trade can be strengthened by expansion of the manufacturing base in the region. The development of specialized health and education services will induce the growth of various business and personal services.

Turkey's membership in European Union will limit opportunities for border trade. Development of formal trade arrangements with the importing countries will also limit border trade and suitcase trade. Trade under the regular trade regime is more efficient than these forms of trade which appear to be transitional arrangements.

Trade under the regular trade regime should be promoted. Improving trade arrangements and development of the production base in the free trade zones would be a first step. For trade arrangements, national level efforts are required, covering export financing and guarantees for the exporters, and promotion of trade through bilateral trade agreements.

Free zones are presently used as a basis for transit trade only. Other goods that can be processed in these zones for value-added should be introduced. Barriers to exports of small consignments from these zones should be eliminated and the cost of trade from these zones should be reduced.

There is no manufacturing activity in the two existing free zones. This is partly a response to policy instability and partly effected by government regulations on management of free zones. Investments in manufacturing in free zones are possible only if products have good prospects for trade over a long-term. Policy stability is one factor to affect such long-term prospects. Additional incentives could also be provided for the manufacturers in these zones. One possibility is to allow them duty exemption for sale of part of their output in the domestic market.

4.2 Government Services

The Government largely controls development of specialized services such as education and health care. The Government takes decisions on the location of hospitals and institutions of higher learning. These should not be further concentrated in metropolitan centers but should be located in the regional centers such as Trabzon and Ordu. In the case of health services, there is a need for

hospitals specialized in regional diseases. These would serve not only the region, but also the neighboring regions in surrounding countries.

4.3 Development of the Export Base

Some locational specialization can be pursued within the region. Ordu is projected to be a production base for the region as well as for exports. The technical and scientific education now concentrated in Trabzon should be expanded in Ordu. These educational facilities to be established in Ordu should maintain their links with the existing university in Trabzon.

The production in Ordu will be partly dependent on raw materials imported from CIS countries and a major part of its output will be exported. The development of transport infrastructure in Ordu and all services related to transport and trade are critical.

These developments in services will have a major component in tourism activities. These are discussed in a separate report (Volume III, 4. Tourism).

CHAPTER 5 PROPOSED PROGRAMS AND PROJECTS

The two free trade zones in the region are highly underutilized. A quick survey should be undertaken to analyze problems that deter the industrialists in the region from investing in these zones. The required institutional measures should be adopted to promote the full utilization of the existing zones. It is expected that improvements in administration, reduced regulatory interference by the Customs Department, and a more stable business environment will attract additional businesses to these zones.

The present marketing infrastructure is inefficient for visitors from the neighboring countries. The organizations of businessmen in the region should establish a central organization which will provide referral and advisory services to foreign businessmen. Initially, this may start as a service of the chambers of industry and trade. Eventually, this should be developed into a permanent export fair similar to the one in Izmir. The particular form that this fair should take, its location, and financing arrangements should be further investigated.

One export marketing model that has been successful in Turkey is the establishment of a specialized foreign trade company. These companies undertake active marketing in the main markets on behalf of their member exporters. They supply critical services for marketing promotion, advisory services related to foreign trade, and logistic support in the main markets. The businessmen associations in the region should be encouraged to investigate the possibilities of establishing such a specialized company for DOKAP exporters.

Public investments in the region should give priority to the development of specialized health and education services. In the case of higher education, high level services can also be provided by the private sector. This can be done as private universities established by non-profit foundation. Prominent businessmen from the region can provide most of the funding needed for this purpose.

Appendix 1 Turkish Exports to BSEC Countries in 1997 (2/3)

Unit: US\$

CODE	CHAPTER NAME	ALBANIA	AZERBAIJAN	BULGARIA	GEORGIA	GREECE	MOLDOVA	ROMANIA	RUSSIAN FEDERATION	UKRAINA	TOTAL
41	Raw hides&skins, sole leather	469	429,149	6,086,911	25,869	2,080,794		761,182	414,189	799,636	10,598,199
42	Articles of leather, saddles, harness	66,566	214,911	4,873,991	61,294	1,679,762	36,053	636,287	39,917,502	933,745	48,420,111
43	Fur skins and artificial fur manufactures			931,562	36,037	262,903	693,611	45,802	71,935,022	349,287	74,254,224
44	Wood and articles of wood, wood charcoal	187,785	2,168,835	782,776	406,218	2,650,060	259,667	627,477	5,561,965	737,086	13,381,869
45	Cork and articles of cork	40	3,364		5,095			187	582	565	9,833
46	Manufactures of straw,esparto etc.		13,749		36	4,407			21,965	18,350	58,507
47	Wood and wood nature and scraps				16,306	4,741					21,047
48	Paper,paperboard,articles of paper	1,029,024	6,009,033	4,654,940	5,199,416	6,898,648	33,269	7,124,110	33,869,720	6,993,962	71,812,122
49	Printed books,newspapers,pictures etc.	49,796	1,077,217	122,092	151,372	8,025	991	373,395	236,413	103,713	2,123,014
50	Silk	2080	420	1,867	534	4,983		17	59,277	1,070	70,248
51	Wool and other animal hair	276	2,192	238,772	286	20,842	110,864	1,199,094	453,161	16,353	2,041,840
52	cotton	12365	1,259,969	3,823,919	892,679	13,969,788		4,379,748	4,744,109	293,602	29,376,179
53	Vegetable textile materials, woven fabric etc	205,747	248,733		2,190	15,073	25	496	39,527	6,312	518,103
54	Man-made filament	592,494	1,775,164	3,582,872	423,761	7,005,306	751,254	4,947,655	16,229,954	2,390,634	37,699,094
55	Man-made fibers (discontinuous)	1,475,292	545,321	2,500,287	39,397	6,576,323	1,023,824	6,225,583	8,295,354	1,728,719	28,410,100
56	Wadding and felt,twine,cordage etc.	274,293	177,146	217,024	20,955	813,590	8,426	59,239,416	766,133	57,314	61,574,297
57	Carpets,mats matting and tapestries	89,846	4,801,962	495,398	613,348	7,688,268	63,392	14,122,011	8,535,580	576,230	36,986,035
58	Special fabrics,lace,wall carpets,embroidery	931,156	98,615	2,474,455	124,602	1,337,768	39,825	377,333	13,934,747	8,478,685	27,797,186
59	Impregnated and coated fabrics	6,992	162,207	280,133	4,945	315,531		216,597	1,034,825	23,235,851	25,257,081
60	Knitted and crocheted goods	846,079	3,623	4,504,995	28,226	4,112,200	312,043	869,905	22,694,539	7,850,015	41,221,625
61	Knitted and crocheted goods articles	156,946	6,070,167	12,683,593	419,835	4,608,555	668,359	54,019,175	368,100,746	4,930,879	451,658,255
62	Non knitted and crocheted goods&articles	68,391	4,632,816	8,162,644	906,022	3,554,512	335,620	10,048,561	218,882,930	2,031,029	248,622,525
63	Old clothing and other textile articles	1,387,536	1,721,268	1,482,291	1,028,865	4,518,194	145,120	5,377,879	89,758,239	7,764,295	113,183,687
64	Footwear,gaiters and the like	930,810	2,329,669	2,151,391	212,743	1,834,714	34,362	2,686,786	116,845,313	5,651,459	132,677,247
65	Headgear and parts	84	57,476	88,401	14,155	203,812	374	15,606	568,151	28,409	976,468
66	Umbrellas,sunshades,walking sticks, whips	44,349	26,788	26,568	43,349		840	72,727	10,341	2,031	226,993
67	Prepared leathers & down,artificial flowers	8,379	8,275			87			36,871	6,221	59,833
68	Articles of stone,plaster,cement,asbestos	64,631	2,413,086	792,078	765,917	1,635,119	153,478	855,089	9,090,798	1,289,416	17,059,612
69	Ceramic products	165,270	4,529,017	4,575,848	3,190,792	3,993,324	100,210	1,360,202	12,954,364	3,442,418	34,311,445
70	Glass and glassware	1,679,395	10,577,505	3,294,434	2,362,969	14,108,131	3,864	2,422,729	16,864,016	5,568,161	56,881,204
71	Pearls,precious stones,metals and articles	146	240,882	127,976	1,060	398,825		161,891	2,159,641	366,786	3,457,207
72	Iron and steel	1,327,873	1,110,672	1,115,573	1,807,768	60,667,347	294	2,962,308	1,250,741	1,019,246	71,261,822
73	Articles of iron and steel	745,315	12,195,655	2,531,931	5,161,137	11,593,200	268,424	7,120,175	23,128,466	4,610,383	67,354,686
74	Copper and articles	8,396	377,746	2,481,158	13,387	1,250,175	159	144,851	572,580	31,212	4,879,664
75	Nickel and articles	1,153	9,144		19,344			4,705	22,622	180	57,148
76	Aluminium and articles	1,304,706	8,303,507	4,205,988	752,154	4,810,452	484,174	1,916,337	13,840,373	3,405,287	39,022,978
77	(Reserved for possible future use)										
78	Lead and articles	9,211	82,356		4,982	5,382		2,078	18,440	1,070	123,519
79	Zinc and articles	308	89,518	694	9,930	1,813,586		28,950	39,085	160,016	2,142,087

Appendix 1 Turkish Exports to BSEC Countries in 1997 (3/3)

Unit: US\$

CODE	CHAPTER NAME	ALBANIA	AZERBAIJAN	BULGARIA	GEORGIA	GREECE	MOLDOVA	ROMANIA	RUSSIAN FEDERATION	UKRAINA	TOTAL
80	Tin and articles	34	1,538	8,528	2,045	6,424			19,307	2,141	40,037
81	Other base metals,cermets and articles		28,985	14,460	678		137	120,997	62,859	450	228,566
82	Tools,implements,cutlery of base metal	110,150	646,519	104,650	204,054	761,039	613	494,045	1,381,943	319,021	4,022,034
83	Miscellaneous articles of base metal	282,803	1,847,182	806,403	1,055,935	786,747	16,123	1,272,759	6,850,856	796,681	13,715,489
84	Boilers,machinery &mechanical appliances	911,966	16,452,713	4,331,221	6,238,121	10,206,522	1,258,961	20,871,493	39,635,324	10,062,575	109,968,896
85	Electrical machinery & equipment	4,393,449	20,874,880	5,559,941	6,978,616	18,607,912	724,905	15,702,209	78,093,269	8,794,420	159,729,601
86	Railway&Tramway locomotives,rollingstock	150	58,798		18,809		4,240	1,000	132,054	16,671	231,722
87	Vehicles except above	372,242	9,186,960	676,165	1,254,991	2,133,462	910,050	4,246,146	96,473,611	8,311,633	123,565,260
88	Aircraft and parts	46	270			146			379,315	465	380,242
89	Ships,boats and floating structures		811	5,800	131,876	229,214			48,536	2,400,002	2,816,239
90	optical,photographic,cinematographic,meas	339,400	1,545,267	331,055	256,683	1,115,541	70,436	559,141	1,985,056	649,262	6,851,841
91	Clocks,watches and parts	12,289	32,466	5,993	24,940	52,560	43	22,140	124,164	6,051	280,646
92	Musical instruments,parts and accessories	504	2,602	302	1,029	253,517		801	199		258,954
93	Arms and ammunition,parts	157,732	20,105	652	90	272,534	72	205,734	15,017	3,478	675,414
94	Furniture	680828	7,426,913	1,110,243	1,923,834	1,458,999	562,266	3,174,620	16,690,607	886,263	33,914,573
95	Toys, games and sports requisites	201,814	294,145	171,130	19,565	16,827		205,161	281,613	49,105	1,239,360
96	Miscellaneous manufactured articles	92,862	562,192	642,628	544,495	304,803	44,780	746,954	2,806,452	626,351	6,371,517
97	Works of art,collectors pieces & antiques	3	20,350					4,300	340		24,993
	T O T A L	40,985,077	319,703,417	175,887,347	173,510,368	298,236,766	21,334,106	358,783,170	2,056,549,630	337,061,467	3,782,051,348

Source: Turkey's Foreign Trade with the Black Sea Economic Cooperation Countries 1997

Appendix 2 Turkish Exports to BSEC Countries in 1992 (1/3)

Unit: US\$

CODE	CHAPTER NAME	ALBANIA	AZERBAIJAN	BULGARIA	GEORGIA	GREECE	MOLDOVA	ROMANIA	RUSSIAN FEDERATION	UKRAINA	TOTAL
1	Live animals										
2	Meat and edible meat offal		1,078,556						727,446		1,806,002
3	Fish,Crustaceans and mollusks			7,529		2,658,355					2,665,884
4	Diary products,birds eggs,natural honey etc		950,000		8,795	32,535		1,500	147,022	4,211	1,144,063
5	Products of animal origin			5,766		285,722		4,915			296,403
6	Live trees and other plants			803,117		54,388					857,505
7	Edible vegetables,roots,tubers	5,769	64,729	1,488,107	2,595	7,872,443		17,861,663	821,636	8,143	28,125,085
8	Edible fruits and nuts	101,000	165,708	2,124,286	164,159	10,222,255		6,368,668	8,279,192	393,352	27,818,620
9	Coffee,tea,mate and spices		2,016,892	64,459	4,900	1,050,460		155,674	171,170	1,838	3,465,393
10	Cereals	110,200	36,052,578	275,913	1,338,020	247,779		7,823,360	74,360,217	1,554,288	121,762,355
11	Products of the milling industry		15,439,568	95	1,289,885	24,434		275,257	263,812	437,628	17,730,679
12	Oil seeds and oleaginous fruit			14,544		1,006,775		58,671	80,403	716,358	1,876,751
13	Lacs,gums,resins and others							27,800	361		28,161
14	Vegetables plaiting materials	4,498				67,602		6,350	17		91,469
15	Animal and vegetable fats and oils	302,810	8,415,320	438,354	669,759	331,305		2,616,719	17,990,447	7,696,789	38,461,503
16	Preparation of meat, fish, crustaceans			7,537		204			9,680	5,179	22,600
17	sugars and sugar confectionery	2,309,937	5,871,585	7,651,284	2,743,125	171,379		24,238,973	12,940,171	2,823,560	58,750,014
18	Cocoa and cocoa preparations	2,279,538	157,805	460,890	119,698	20,187		3,794,188	5,289,338	996,753	13,118,397
19	Preparations of cereals,flour,starch,milk	1,201,721	991,353	797,418	174,493	57,393	14,786	8,202,636	10,270,854	140,840	21,851,494
20	Preparations of vegetables,fruit,plants	7,314	13,216	2,366,328	29,307	4,540,820		10,325,394	2,446,631	34,110	19,763,120
21	Miscellaneous edible preparations	536		1,237,210	11,877	1,187,948		5,356,383	84,830	1,325	7,860,109
22	Beverages,spirits and vinegar	22,292	869,608	145,440	142,617			1,337,821	554,711	31,954	3,104,443
23	Residues,waste from food industry							3,814	750		4,564
24	Tobacco and materials instead		41,255	26,071		118,363			20,500,994		20,686,683
25	Salt,sulphur,earth,stone	2,000	13,398	474,680	186	3,275,532		2,930,155	1,397,689	973	8,094,613
26	Metallic ores,slag,ash		275,220	1,436,402		269,056		3,707,805	1,429,387		7,117,870
27	Mineral fuels & oils	99,699	7,070	141,859	117	31,598,569		171,302	92,196	859	32,111,671
28	Inorganic chemicals	4,124	171,716	722,611	91	3,488,707		1,659,097	5,677,299	10	11,723,655
29	Organic chemicals		2,970	474,474	1,579	464,488		657,132	1,273,151		2,873,794
30	Pharmaceutical products		8,944	2,346,226		107,909		842,015	16,919,499	122,350	20,434,635
31	Fertilizers	1,314,000	4,230		549,000						
32	Tanning and dyeing extracts	12,740	242,780	589,724	31,775	400,164		865,491	1,544,416	59,935	3,747,025
33	Essential oils,perfumery,cosmetics	25,721	133,694	79,536	10,293	2,653		459,560	3,864,458	453	4,576,368
34	Soap,organic surface-active agents	1,487,065	79,288	325,088	83,768	452,353		3,257,156	8,939,725	1,554	14,625,997
35	Albuminodial substances,glues,enzymes	3,131	17,061	84,981		257,674		38,954	49,479	11,702	462,982
36	Explosives,protechnic products,matches					34,100			124	36	37,673
37	Photographic and cinematographer goods		347					16,965	71	1,085	18,468
38	Miscellaneous chemical products	798	990,848	90,301	14,412	103,850		899,228	667,629	2,296	2,769,362
39	Plastic and articles thereof	574,685	163,346	1,329,200	150,904	9,326,036		1,965,277	4,501,087	485,744	18,496,279
40	Rubber and articles thereof	86,162	233,406	162,260		2,535,293		7,532,630	416,844	98,377	11,064,972

Appendix 2 Turkish Exports to BSEC Countries in 1992 (2/3)

Unit: US\$

CODE	CHAPTER NAME	ALBANIA	AZERBAIJAN	BULGARIA	GEORGIA	GREECE	MOLDOVA	ROMANIA	RUSSIAN FEDERATION	UKRAINA	TOTAL
41	Raw hides&skins, sole leather		264,339	4,710,494	26,280	16,243		58,963	204,941		5,281,260
42	Articles of leather, saddles, harness	88,112	638,729	1,180,778	95,350	80,776		325,501	21,013,360	2,177,498	25,600,104
43	Fur skins and artificial fur manufactures		7,250	59,336		22,541		4,561	10,849,957	12,150	10,955,795
44	Wood and articles of wood, wood charcoal	3,785	236,296	488,815		1,834,265		95	689,062	7,979	3,260,297
45	Cork and articles of cork		46,479						68		46,547
46	Manufactures of straw,esparto etc.					18,797			900		19,697
47	Wood and wood nature and scraps					71,784					71,784
48	Paper,paperboard,articles of paper	12,812	142,206	1,168,532	6,000	5,306,660		2,635,500	2,928,302	18,752	12,218,764
49	Printed books,newspapers,pictures etc.		44,097	85,090		20,142		44,364	52,479	131	246,303
50	Silk	1,129		21,312							22,441
51	Wool and other animal hair	2,400						345,134	14,880		362,414
52	cotton	95,048	172,321	2,055,971	630	653,493		6,957,473	81,928	109,699	10,126,563
53	Vegetable textile materials, woven fabric etc								3,287	5	3,292
54	Man-made filament	1,554,695	12,299	848,246		2,017,103		71,870	626,797	264,291	5,395,301
55	Man-made fibres (discontinuous)	544,921	6,111	248,971		99,356		2,540,978	1,090,553	27,764	4,558,654
56	Wadding and felt,twine, cordage etc.	19,994	24,548	76,295		456,920		186,401	129,633	24,418	918,209
57	Carpets,mats matting and tapestries	678,861	186,447	242,045		99,280		548,728	632,024	34,869	2,422,254
58	Special fabrics,lace,wall carpets,embroidery	91,991	45,806	93,837	22	7,300		606,480	464,139	51,699	1,361,274
59	Impregnated and coated fabrics	80,072	4,500	309,770		4,281		2,097	16,190	106,778	523,688
60	Knitted and crocheted goods	15,848		125,967				6,040	224,922	69,381	442,158
61	Knitted and crocheted goods articles	199,063	932,058	2,018,303	82,911	689,264		728,422	18,934,828	1,724,507	25,309,356
62	Non knitted and crocheted goods&articles	356,470	1,038,954	774,618	231,883	139,291		5,157,600	16,528,887	862,603	25,090,306
63	Old clothing and other textile articles	353,023	168,199	2,021,682	151,011	229,101		7,756,147	5,814,627	398,977	16,892,767
64	Footwear,gaiters and the like	1,376,388	304,551	783,863	308,655	1,964,336		771,167	17,605,391	7,508,634	30,622,985
65	Headgear and parts							73	3,241	238	3,552
66	Umbrellas,sunshades,walking sticks, whips	13,845	1,025	948		15,132					30,950
67	Prepared leathers & down,artificial flowers	6,464		1,365		887					8,716
68	Articles of stone,plaster,cement,asbestos	4,856	21,857	36,819		976,061		277,189	1,213,278	30,328	2,560,388
69	Ceramic products	11,587	147,597	625,580	46,923	1,421,143		1,420,856	6,031,106	48,257	9,753,049
70	Glass and glassware	66,944	131,054	364,374	6,462	6,645,781		2,069,013	938,431	15,635	10,237,694
71	Pearls,precious stones,metals and articles	4,147		1,343		104,521		303,365		320	413,696
72	Iron and steel		149,980	983,509		1,637,980		235,405	4,337,900	198,715	7,543,489
73	Articles of iron and steel	68,783	189,779	993,853	2,161	4,706,533		164,769	27,585,430	1,556,517	35,267,825
74	Copper and articles		676	294,470		16,208,723		21,307	161,381	701	16,687,258
75	Nickel and articles								2,061		2,061
76	Aluminium and articles	50,975	205,521	22,825		3,100,811		135,106	2,433,142	237,896	6,186,276
77	(Reserved for possible future use)										
78	Lead and articles			2,870					30,178		33,048
79	Zinc and articles		514						32,578		33,092
80	Tin and articles			946					1,508	105	2,559

Appendix 2 Turkish Exports to BSEC Countries in 1992 (3/3)

Unit: US\$

CODE	CHAPTER NAME	ALBANIA	AZERBAIJAN	BULGARIA	GEORGIA	GREECE	MOLDOVA	ROMANIA	RUSSIAN FEDERATION	UKRAINA	TOTAL
81	Other base metals,cermets and articles										
82	Tools,implements,cutlery of base metal	1,469	129,227	562		374,666		6,975	548,028	61,666	1,122,593
83	Miscellaneous articles of base metal	4,791	31,040	225,387	928	343,471		438,945	224,713	22,226	1,291,501
84	Boilers,machinery &mechanical appliances	1,610,986	8,198,528	12,915,459	465,201	4,781,444		11,121,920	10,122,284	2,225,285	51,441,107
85	Electrical machinery & equipment	3,005,799	11,692,581	3,800,437	2,980,453	5,744,630		11,845,688	9,938,400	1,885,750	50,893,738
86	Railway&Tramway locomotives,rollingstock								1,598		1,598
87	Vehicles except above	1,340,147	114,318	7,897,166	7,400	1,152,990		1,529,714	10,661,800	393,400	23,096,935
88	Aircraft and parts										
89	Ships,boats and floating structures										
90	optical,photographic,cinematographic,meas	48,475	9,130	46,230	2,200	317,919		299,469	59,125,064	3,120	59,550,482
91	Clocks,watches and parts	36,227	12,000	8,859		94,179		3,874	2,923,505	29,409	3,676,337
92	Musical instruments,parts and accessories					37,916			445	10,800	155,584
93	Arms and ammunition, parts			920		279,949			109		48,716
94	Furniture	175,379	1,116,404	351,581	209,106	359,709		729,699	5,740,860	93,728	8,776,466
95	Toys, games and sports requisites	43,206	23,859	108,844		70,620		128,491	64,400	319	439,739
96	Miscellaneous manufactured articles	1,698	11,661	46,331	631	361,533		150,283	144,906	1,931	718,974
97	Works of art, collectors pieces & antiques		1,750								1,750
	T O T A L	20,703,235	102,245,952	72,233,525	11,616,562	145,704,673	14,786	173,073,102	441,886,237	35,848,183	1,003,326,255

Source: Turkey's Foreign Trade with the Black Sea Economic Cooperation Countries 1997

Appendix 3 Turkish Exports to BSEC Countries and Change (1/2)

Unit: 000 \$

CODE	CHAPTER NAME	1992 TOTAL	1997 TOTAL	GROWTH RATE
2	Meat and edible meat offal	1,806.0	5,298.6	193.4
3	Fish, Crustaceans and mollusks	2,665.9	9,297.7	248.8
4	Diary products, birds eggs, natural honey etc	1,144.1	26,361.3	2204.1
7	Edible vegetables, roots, tubers	28,125.1	64,288.3	128.6
8	Edible fruits and nuts	27,818.6	82,732.0	197.4
9	Coffee, tea, mate and spices	3,465.4	3,837.3	10.7
10	Cereals	121,762.4	407.2	-99.7
11	Products of the milling industry	17,730.7	120,569.0	580.0
12	Oil seeds and oleaginous fruit	1,876.8	5,900.8	214.4
15	Animal and vegetable fats and oils	38,461.5	54,708.2	42.2
17	sugars and sugar confectionery	58,750.0	130,820.7	122.7
18	Cocoa and cocoa preparations	13,118.4	44,521.8	239.4
19	Preparations of cereals, flour, starch, milk	21,851.5	199,896.1	814.8
20	Preparations of vegetables, fruit, plants	19,763.1	77,511.2	292.2
21	Miscellaneous edible preparations	7,860.1	46,679.1	493.9
22	Beverages, spirits and vinegar	3,104.4	38,570.9	1142.5
24	Tobacco and materials instead	20,686.7	39,820.2	92.5
25	Salt, sulphur, earth, stone	8,094.6	14,293.6	76.6
26	Metallic ores, slag, ash	7,117.9	44,553.7	525.9
27	Mineral fuels & oils	32,111.7	29,801.6	-7.2
28	Inorganic chemicals	11,723.7	21,723.7	85.3
29	Organic chemicals	2,873.8	5,729.2	99.4
30	Pharmaceutical products	20,434.6	18,709.9	-8.4
31	Fertilizers	1,867.2	887.9	-52.4
32	Tanning and dyeing extracts	3,747.0	46,702.4	1146.4
33	Essential oils, perfumery, cosmetics	4,576.4	33,634.4	635.0
34	Soap, organic surface-active agents	14,626.0	198,348.5	1256.1
35	Albuminodial substances, glues, enzymes	463.3	6,471.9	1296.9
38	Miscellaneous chemical products	2,769.4	10,445.5	277.2
39	Plastic and articles thereof	18,496.3	160,647.8	768.5
40	Rubber and articles thereof	11,065.0	15,026.7	35.8
41	Raw hides & skins, sole leather	5,281.3	10,598.2	100.7
42	Articles of leather, saddlery, harness	25,600.1	48,420.1	89.1
43	Fur skins and artificial fur manufactures	10,955.8	74,254.2	577.8
44	Wood and articles of wood, wood charcoal	3,260.3	13,381.9	310.4
48	Paper, paperboard, articles of paper	12,218.8	71,812.1	487.7
52	Cotton	10,126.6	29,376.2	190.1
54	Man-made filament	5,395.3	37,699.1	598.7
55	Man-made fibres (discontinuous)	4,558.7	28,410.1	523.2
56	Wadding and felt, twine, cordage etc.	918.2	61,574.3	6606.0
57	Carpets, mats matting and tapestries	2,422.3	36,986.0	1426.9
58	Special fabrics, lace, wall carpets, embroidery	1,361.3	27,797.2	1942.0
59	Impregnated and coated fabrics	523.7	25,257.1	4722.8
60	Knitted and crocheted goods	442.2	41,221.6	9221.9
61	Knitted and crocheted goods articles	25,309.4	451,658.3	1684.5
62	Non knitted and crocheted goods&articles	25,090.3	248,622.5	890.9
63	Old clothing and other textile articles	16,892.8	113,183.7	570.0
64	Footwear, gaiters and the like	30,623.0	132,677.2	333.3
68	Articles of stone, plaster, cement, asbestos	2,560.4	17,059.6	566.3

Appendix 3 Turkish Exports to BSEC Countries and Change (2/2)

Unit: 000 \$

CODE	CHAPTER NAME	1992 TOTAL	1997 TOTAL	GROWTH RATE
69	Ceramic products	9,753.0	34,311.4	251.8
70	Glass and glassware	10,237.7	56,881.2	455.6
71	Pearls, precious stones, metals and articles	413.7	3,457.2	735.7
72	Iron and steel	7,543.5	71,261.8	844.7
73	Articles of iron and steel	35,267.8	67,354.7	91.0
74	Copper and articles	16,687.3	4,879.7	-70.8
76	Aluminum and articles	6,186.3	39,023.0	530.8
79	Zinc and articles	33.1	2,142.1	6371.6
82	Tools, implements, cutlery of base metal	1,122.6	4,022.0	258.3
83	Miscellaneous articles of base metal	1,291.5	13,715.5	962.0
84	Boilers, machinery & mechanical appliances	51,441.1	109,968.9	113.8
85	Electrical machinery & equipment	50,893.7	159,729.6	213.8
87	Vehicles except above	23,096.9	123,565.3	435.0
89	Ships, boats and floating structures	59,550.5	2,816.2	-95.3
90	optical, photographic, cinematographic, meas	3,676.3	6,851.8	86.4
94	Furniture	8,776.5	33,914.6	286.4
95	Toys, games and sports requisites	439.7	1,239.4	181.9
96	Miscellaneous manufactured articles	719.0	6,371.5	786.2
T O T A L		1,000,628.3	3,769,692.5	276.7

Source: Turkey's Foreign Trade with the Black Sea Economic Cooperation Countries 1997