Japan International Cooperation Agency (JICA)

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 II Master Plan

October 2000

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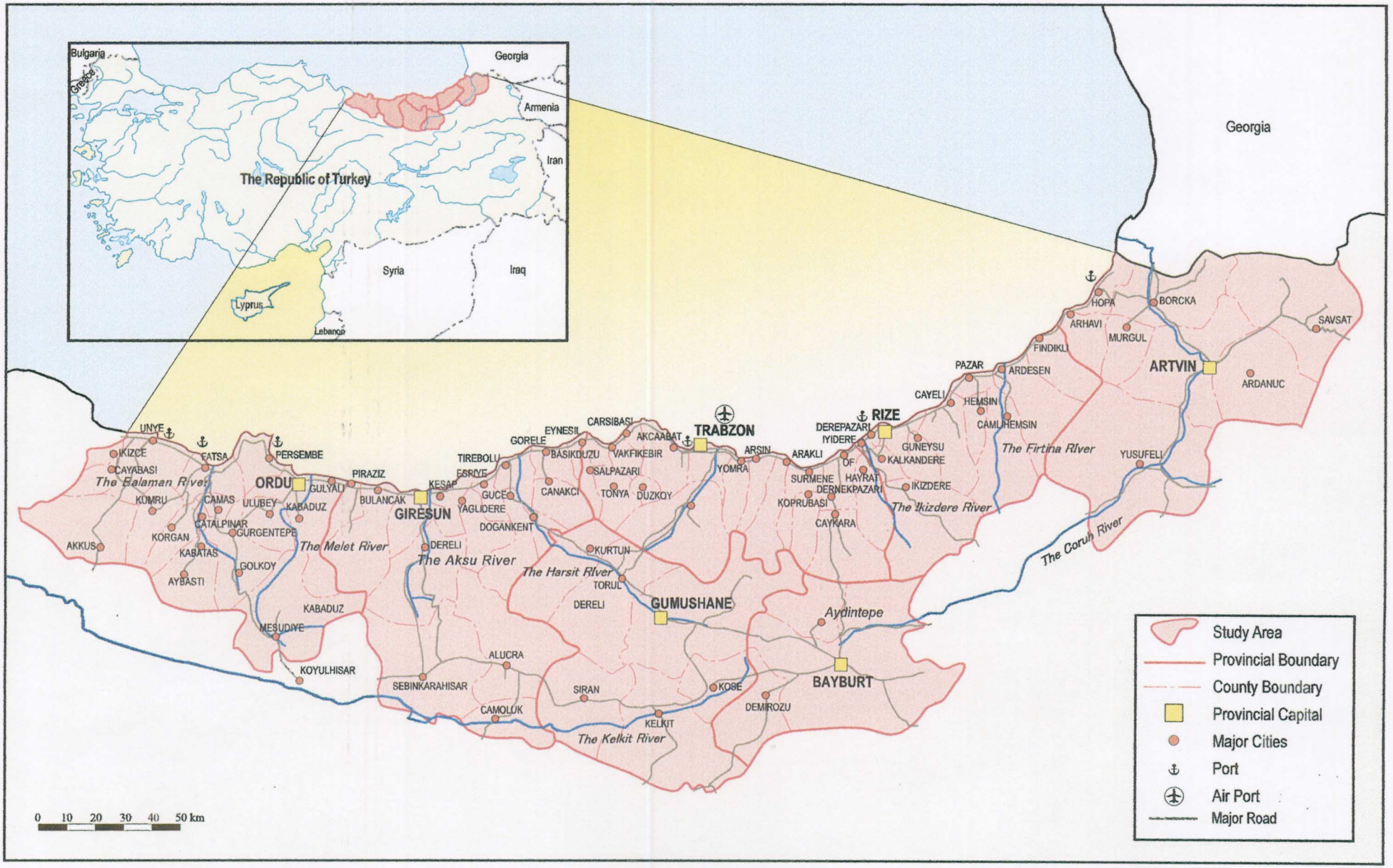
LIST OF REPORTS

(This Volume is indicated by)

Volume I	Executive Summary
Volume II	Master Plan
Volume III	Economic Sectors
Volume IV	Social Sectors
Volume V	Environment
Volume VI	Spatial Development and Infrastructure
Volume VII	Institutional Development
Volume VIII	Project Reports

Currency Equivalents		
US$ 1	=	462,280 TL
1,000 TL	=	US$0.00216

(September, 1999)



Location Map

PREFACE

In response to a request from the Government of the Republic of Turkey, the Government of Japan decided to conduct a Study on the Regional Development Plan for the Eastern Black Sea Region in the Republic of Turkey and entrusted the study to the Japan International Cooperation Agency (JICA).

JICA selected and dispatched a study team headed by Mr. Osamu Takahashi of Nippon Koei Co., Ltd. and consist of Nippon Koei Co., Ltd. and RECS International Inc. to the Republic of Turkey, three times between March 1999 and March 2000.

The team held discussions with the officials concerned of the Government of Turkey and conducted field surveys at the study area. Upon returning to Japan, the team conducted further studies and prepared this final report.

I hope that this report will contribute to the promotion of this project and to the enhancement of friendly relationship between our two countries.

Finally, I wish to express my sincere appreciation to the officials concerned of the Government of Turkey for their close cooperation extended to the Team.

August, 2000

Kimio Fujita
President
Japan International Cooperation Agency

August, 2000

Mr. Kimio Fujita
President
Japan International Cooperation Agency
Tokyo, Japan

Letter of Transmittal

Dear Mr. Fujita,

It is with great pleasure that we submit to you the Final Report of the Study on the Regional Development Plan for the Eastern Black Sea Region in the Republic of Turkey completed by our study team composed of experts from Nippon Koei Co., Ltd. and RECS International Inc., with cooperative efforts of the State Planning Organization (SPO) and other Turkish parties concerned. The Final Report is composed of Executive Summary Report, Master Plan Report, five Sector Reports and Project Reports.

The Eastern Black Sea Region has been one of less developed regions in Turkey. With a number of favorable conditions, however, the Region is starting to see a chance for economic development. The development of the Eastern Black Sea Region will contribute not only to the job creation in the Region but also to further economic development of the Country. Our study team hopes that the proposed master plan will provide useful materials in implementing the Eighth Five Year Plan (2001-2005) and the subsequent 9^{th} and 10^{th} Plans, and that it will guide the formulation and implementation of provincial and village development plans in the Eastern Black Sea Region.

Our study team would like to take this opportunity to express its heartfelt gratitude for the kind assistance and cooperation extended by the members of the Steering Committee and the Consultation Group in the SPO and by all other parties concerned, during the period of our study in Turkey from March 1999 to March 2000. The final report is a fruit of excellent collaboration of all participants in this study.

Sincerely yours,

Osamu TAKAHASHI
Team Leader
The Study on the Regional Development Plan for the Eastern Black Sea Region in the Republic of Turkey

AN OUTLINE OF THE STUDY

1. BACKGROUND

A major development objective of the Turkish Government has been reduction of disparities between different regions. This objective is given prominance in all development documents. It has been repeated in the new Five-Year Development Plan (2001 - 2005) adopted by the Parliament in June 2000.

Preperation of regional development plans is an important policy tool used by the Government. Proposals developed in these plans become the guiding principles for the sector implementation agencies and local governments. The Eastern Black Sea Regional Development Plan (DOKAP) is one of the three plans prepared recently for the least developed regions in Turkey.

Aside from being a relatively less developed region, DOKAP is expected to provide substantial contributions to the Turkish economy. The region will play a prominent role in Turkey's expanding relations with the countries of Caucasia, Central Asia, and Black Sea Economic Cooperation countries by fostering foreign trade and social/cultural ties.

Consequently, the Government of the Republic of Turkey requested the Government of Japan for technical cooperation to prepare a multi-sector regional development master plan for the Eastern Black Sea region. In response to this request, the Government of Japan decided to provide technical assistance and entrusted the implementation to Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of the technical cooperation program of the Japanese Government. The Scope of Work for this technical cooperation was agreed upon between the State Planning Organization (SPO) of the Turkish Government and JICA, and signed by respective representatives on December 17, 1998.

2. STUDY PROCEDURES

(1) Organizational set up

The Study has been carried out by a team of consultants nominated by JICA in close collaboration with a counterpart team organized by SPO. SPO also organized a consultation group consisting of representatives of different sections of SPO to discuss occasionally on various issues involved in the development planning as well as contents of formal reports of the Study. The JICA Study Team and the SPO

counterparts had regular meetings throughout the Study period to check the progress of the Study.

National and the Regional Steering Committees were established for the Study to reflect views of various agencies, sector concerns and local interests in this multi-sector planning. Each committee met occasionally when formal reports of the Study were presented, and extensive comments were made by committee members.

(2) Bases of the Study

The Study has been carried out primarily on the basis of readily available data and study reports as well as field observations and discussions with a wide range of people in the DOKAP region and elsewhere. Limited field surveys were carried out in cooperation with Turkish experts and assistants to generate additional data essential for the Study. More important surveys and other works carried out jointly by the SPO/JICA joint team and various entities included a survey of natural conditions, a social survey with three components (urban and rural household surveys and a resettlement survey), analysis of urban hierarchy, institutions and industry surveys, and GIS analysis.

(3) Study progress

The Study was carried out in three phases. Phase I started with the preparation of the Inception report in Tokyo. This report was discussed in detail in Turkey. This was followed by sector works carried out in Ankara and in the field. Partial results of the inception works and the results of the first field visits were compiled into a paper entitled “Development Diagnosis by Province”, and submitted to SPO. The paper contained initial findings related to existing conditions, constraints and prospects by province.

Sector works of the Study were carried out in cooperation with related sector agencies of the Central Government and their regional and provincial offices and local governments. Cooperative works were coordinated by SPO counterpart personnel.

A Progress Report was compiled toward the end of first fieldwork period, and submitted to SPO on July 23. It contained major findings of the first field work in the forms of development objectives and strategy, development frameworks and scenario, priority sectors/activities identified, and some preliminary project ideas. The Progress Report was reviewed by JICA upon the return of the JICA Study Team to Japan. Reflecting the review and the comments, development objectives and strategy, development frameworks and scenario, and project ideas were modified.

Additional project ideas were developed and institutional measures were formulated. Based on these, an Interim Report was compiled in Tokyo and submitted to JICA at the end of August 1999.

The second phase of the Study started in October when a draft Interim Report was prepared in Turkish and was widely discussed with the central government agencies, local people and NGO's. Based on these and further field work, the Draft Final Report was prepared. This consisted of eight volumes, including an Executive Summery and sector reports.

The third phase of the Study started with the introduction of the Draft Final Report to a wide audience in Turkey through a series of meetings in Ankara, Trabzon and Istanbul. Extensive comments were received from all interested parties and these were compiled in Ankara by the Deputy Team Leader and were shared with the JICA offices in Ankara and Tokyo.

These final comments were incorporated into the Final Report which was prepared in Tokyo in late July and early August 2000. The Final Report consists of eight volumes. The first volume is the Executive Summery and the second volume is the Master Plan. Volumes III to VII present the Economic Sectors, Social Sectors, Environment, Spatial Development and Infrastructure, and Institutional Development. The last volume contains project information, the initial environmental examination and pre-feasibility studies of some of the promising products for private sector investments.

3. EXISTING CONDITIONS OF THE STUDY AREA

Most salient features of the DOKAP socio-economy may be described in five points: 1) it is one of less developed regions in Turkey, with the per capita GRDP only 66% of the per capita GDP of Turkey; 2) the region is losing population through outmigration and it recorded negative population growth during 1990-97; 3) the regional income is too dependent on the services, a disproportionate share of these being generated by government employment; 4) the economic structure in the region is still mainly agrarian with single cpops (tea or hazelnut) dominating in different parts of the region; and finally, 5) there are large differences in levels of development within the region.

The economic activity in the region is concentrated along the coast. There are physical limits to the growth of these areas due to harsh topography. Concentration along the coast is associated with differences in incomes between these areas and the less developed inland provinces as well as leading to severe environmental degredation of the Black Sea coast.

The region is far from the major population centers in Turkey. Within the region, most urban centers are concentrated in coastal areas, and no cluster of urban centers has developed in other areas.

4. DEVELOPMENT POTENTIAL BY SECTOR

Initial investigation indicated that DOKAP has substantial potential in tourism, international trade, and as a transshipment point. The detailed studies of the tourism resources revealed that the region has modest tourism resources. These mostly consist of special interest tourism for rafting, high plateau experiences, and some culture/historical resources. This base, however, was considered inadequate to support mass tourism observed in other coastal areas in Turkey.

The region is Turkey's gateway for trade with Caucasia and Central Asia. The Study has confirmed this potential and concluded that substantial growth in international trade can be achieved by appropriate policies. This will lead to both export of products manufactured in the other regions through DOKAP ports and locating export oriented manufacturing in this Region.

The most important asset in the region is noted to be the enterprising population of the region. They have provided entrepreneurs and skilled workers for production and trade in other regions of Turkey. The Master Plan, therefore, recognized the critical importance of human resource development.

5. REGIONAL DEVELOPMENT OBJECTIVES AND STRATEGY

5.1 DOKAP Regional Development Objectives

Objectives for the DOKAP regional development are defined to address the most critical problems in economic, social and environmental aspects. They are formulated to be:

(1) To strengthen the economic structure, responding to emerging opportunities, in order to diversify employment opportunities, raise income levels, and contribute to capital accumulation within the region;
(2) To promote regional integration or social cohesiveness through minimizing intra-regional disparities and out-migration; and
(3) To restore and sustain resource and environmental capacity as a basis for diversifying socio-economic activities.

5.2 Basic Strategy for DOKAP Regional Development

Basic strategy for the DOKAP regional development is defined related to most fundamental problems identified. These are institutional problems represented by inadequate development planning and administration system, and weak local administration, and infrastructure/resource related problems. The basic strategy consists of the following four elements.

(1) Upgrading of trunk infrastructure

To overcome problems related to the harsh topography and the distance and poor access from advanced regions of West Turkey, trunk transport and communication infrastructure should be much upgraded. This strategy may be supported by improvement of highway system as the prime mode of transport, more extensive use of Black Sea with integrated port network development, establishment of high grade, multi-purpose, multi-media telecommunication networks, establishment of local air services network, and possibly rail links with neighboring regions.

(2) Multi-purpose water resources development and management

The DOKAP region has large water resources potentials, which have not been much utilized. Proper development and management of water resources for various purposes hold a key for the DOKAP regional development. This strategy comprises multi-purpose dams for hydropower, irrigation, urban water supply, tourism and flood control, incorporating also various community facilities, irrigation development with crop diversification, development and management of water supply systems by and for the alliances of local governments, and watershed management for land conservation and forest resources management.

(3) Land tenure improvement

Improving land tenure holds a key for encouraging more rational land use. Particularly important for enhancing livelihood and economic conditions of villagers, while protecting the environment are clarification of land tenure for forest areas occupied by forest villagers, establishment of use rights for exploitation of non-wood forest products, strict enforcement of forest protection with re-delineation of protection areas, establishment of communal ownership of grazing land, and consolidation of land tenure on prime agricultural land to discourage indiscriminate conversion into urban/industrial uses.

(4) Strengthening of local governments

Local administration should be strengthened to effect the decentralization of development planning and administration. Effective implementation of this strategy requires the enactment of a local administration reform bill similar to the original bill proposed to the parliament in 1997. Within that framework, the strategy comprises improvement of urban services by alliances of local governments; improvement of local taxation system and financial management of local governments; development of human resources for local planning; environmental management, and social services delivery; and effective consolidation of villages through provision of common service facilities as well as access improvement.

6. DOKAP DEVELOPMENT FRAMEWORKS AND SCENARIO

6.1 Socio-Economic Framework

A socio-economic framework has been set for the DOKAP regional development to the year 2020. The framework specifies the level of development expected in the target year by selected socio-economic indices projected in a mutually consistent way.

(1) GRDP and employment

The gross domestic product (GRDP) of the DOKAP region is projected to increase by 5.8% per annum to the year 2020 and will be US$18,257 million. The sector shares of the projected GRDP are given below.

GRDP and Employment by Sector in DOKAP Region, 2020

Sector	GRDP		GRDP/worker	Employment	
	(10^6 US$)	Share (%)	(US $)	(10^3)	Share (%)
Agriculture	1,474	8.1	2,557	429	31.5
Industry	4,428	24.3	12,865	349	25.3
Services	12,354	67.6	18,626	590	43.2
Total	18,257	100.0		1,368	100.0

(2) Population

The total population in the DOKAP region is projected to increase from 2,911,088 in 1997 to 3,447,000 in 2020. This represents an average annual increase of 0.74%. The urbanization ratio will increase from 48.6% in 1997 to 80.0% in 2020.

Population Projections in DOKAP Region, 1997 – 2020

(Unit: '000)

Population	Year			
	1997	2000	2010	2020
Urban	1,418	1,510	2,165	2,760
Rural	1,495	1,401	963	687
Total	2,913	2,911	3,128	3,447

(3) Per capita GRDP

Based on the projected GRDP and population, the per capita GRDP in the DOKAP region is calculated at US$5,296 in 2020. This may correspond to some 79% of the projected per capita GDP in Turkey, and represent a reasonable improvement from 1996, when the per capita GRDP in the DOKAP region was only 66% of the per capita GDP.

6.2 Spatial Development Framework

The land use framework aims at a balanced distribution of economic activities within the region. A critical factor is the maintenance of environmental assets of the region, and particularly soil and forest resources will be protected and enhanced overtime.

Transportation and other physical infrastructure will support this spatial distribution pattern. A multi modal artery system should be developed in the DOKAP region through selectively upgrading existing facilities. The future artery system comprises the east-west artery road (the Black Sea highway), north-south lateral highways, secondary east-west artery, supplemental secondary artery roads, and sea transport in Black Sea. Rail links and a local air services network with another airport within the region connecting to neighboring regions may also constitute the artery system in the medium to long term future.

The urban hierarchical structure of the DOKAP region is expected to change as a result of planned development. Expected changes include the following: i) increase in population in the inland as land productivity is enhanced with planned /on-going irrigation projects; ii) development of the Trabzon-Rize corridor; iii) further suburbanization in Ordu with urban cluster formation; and iv) integration between the southern and northern parts of the region.

6.3 Development Scenario

The DOKAP regional development will be realized over time as the resource capacity expands and institutional measures are taken in steps. Various elements of the basic strategy will be combined in time and space to support the development. Sequence of activities to develop and events to take place over the planning period define a development scenario. Expected performance and characterization of the DOKAP region are summarized below for each phase.

Development Scenario for DOKAP Regional Development

	Phase 1 2001 – 2005	Phase 2 2006 - 2010	Phase 3 2011 -
1 Population growth	Zero population growth (Stop depopulation)	Natural population growth (Balance between in- and out-migration)	Manageable magnitude of in-migration (Realization of mixed culture society)
2 Economic growth	~ 4% per annum	6 ~ 7 % per annum	5 ~ 6 %per annum
3 Economic characterization	Preparation for economic re-structuring	Economic re-structuring	Sustainable economic growth
4 Social characterization	Establishment of local foundations for social development	Extension of improved social services throughout DOKAP	Upgrading of social services network linked to other countries supported by multi-media telecommunication system
5 Environmental characterization	Establishment of community-based environmental management system	Broadening of environmental management system	Upgrading of environmental management system linked to the rest of the world

7. THE DOKAP MASTER PLAN

The DOKAP regional development will be achieved by a set of development projects and programs and related institutional measures constituting the DOKAP Master Plan. These programs address the major development problems of the region in an integrated and balanced manner. Equal emphasis is given to programs/ projects which will increase the levels of income, promote social development, enhance environmental quality, and achieve a pattern of spatial development supportive of overall development. Implementation of these programs/projects is expected to create the basis for sustained development of the region.

The Master Plan contains 52 programs/projects. A project profile was prepared for each of these which includes information on the design of the program, implementing arrangements, expected benefits, and preliminary cost estimates.

Recommendations for institutional development present the possible range of options. The likely advantage and problems of each alternative are presented. It is

recommended that the implementation agency of the DOKAP Master Plan should be based on the local initiative and control. The practical form of this agency is a Union of Local Governments whose legal basis already exists.

Recommendations for implementing arrangements take into account the overall government strategy of creating an open economy based on international trade, and the leading role of the private sector. The government role is confined to providing the enabling environment and the necessary infrastructure.

8. DOKAP DEVELOPMENT PROJECTS AND PROGRAMS

Four categories of programs are proposed for the DOKAP region. The first is a set of projects that will transform the spatial structure of the region. These will support the use of the region's resource base and will develop the physical infrastructure. The second group contains programs that will support productive activities in industry, trade and agriculture, and skill base. Third, there are programs which will improve the planning and management capability of the local governments and the implementing agencies of the Central Government. Finally, unique programs that will help establish the identity of DOKAP as an investment and service destination are proposed.

These programs will strengthen the region's economic base, will promote social cohesion in the region and will restore the resource and environmental balance in the region.

Anchor projects are selected and recommended for early implementation. These are: Area-wide Solid Waste Management, Irrigation Development Acceleration, Production and Marketing Support for Small and Medium-size Enterprises, Greenhouse Production, One-Village One-Product Model Area Development, Freshwater Fisheries, Development of Effective Crop Cycles in Irrigated Areas, Support for Local Governments, Support for Local Entrepreneurs, and Information Technology Incubator.

9. INITIAL ENVIRONMENTAL EXAMINATION

Initial environmental examination was carried out for the 10 anchor projects enumerated above. The impact of these projects on natural, social, and economic environment as well as infrastructure were examined at a preliminary level.

It is recommended that full environmental impact analysis should be carried out for the waste disposal projects and irrigation projects. For the remaining projects,

possible environmental dimensions and how these could be modified were identified at a preliminary level.

10. ACTION PLAN

The Master Plan includes a DOKAP Operations Plan. This specifies specific actions to be undertaken by each implementing agency and the phasing of these activities. Project profiles include information on the interrelationships between different projects and indicate the mechanisms for coordination.

The need for the formal adoption of the Master Plan by the Government is discussed. The likely procedures to be followed are indicated.

The specific steps that are recommended for exposure of the Master Plan proposals to all stake-holders and their involvement in project implementation are also discussed. The JICA Study Team prepared publicity materials and information brochures on DOKAP as a part of the Master Plan preparation. The likely schedule of follow up actions for further implementation and the role of central and local government agencies for utilization of these materials and production of additional materials is indicated in the Master Plan.

THE STUDY
ON
THE REGIONAL DEVELOPMENT PLAN
FOR
THE EASTERN BLACK SEA REGION
IN
THE REPUBLIC OF TURKEY

Final Report

Volume II Master Plan

Table of Contents

page

List of Tables

List of Figures

Appendix

ABBREVIATIONS

AGM	General Directorate of Afforestation and Erosion Control (Agaçlandirma ve Erozyon Kontrolu Genel Müdürlügü)
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 Hatlari ile Petrol Tasima A.S)
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 (Dogal Hayati Koruma Derneg)
DOKAP	Eastern Blacksea Regional Development Plan (Dogu Karadeniz Bölgesel Gelisme Plani)
DSI	General Directorate of State Water Works (Devlet Su Isleri Genel Mud.)
EIA	Environmental impact assessment
EIE	Electrical Power Resources Survey and Development Administration
EIEI	Electric Survey Administration (Elektrik Isleri Etüt Idaresi)
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
FISKOBIRLIK	Association for Hazelnut Marketing Cooperatives (Findik Tarim Satis Kooperatifleri Birligi)
FTSII	Forest Trees and Seed Improvement Institute
GAP	Southeastern Anatolia Project (Güneydogu Anadolu Pro.)
GATT	General Agreement on Trade and Tariffs
GDAR	General Directorate of Agricultural Research (Tarimsal Arastirmalar Genel Müdürlügü)
GDNPGW	General Directorate of National Parks, Game and Wildlife
GDP	Gross domestic product
GDRS	General Directorate of Rural Services (Köy Hizmetleri Genel Mudurlugu)
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 Trarders
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)
TÜSÌAD	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

cm^2 = Square-centimeters
m^2 = Square-meters
km^2 = Square-kilometers
ha. = Hectares (10,000 m^2)

Volume

cm^3 = Cubic-centimeters
m^3 = 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
^0C = Degree Celsius

CHAPTER 1 INTRODUCTION

1.1 Background

(1) Study background

Regional development programs in Turkey started in the1950s by the Central Government initiative, and have been implemented more or less continuously through successive five-year development plan periods. During the first five-year plan period, regional planning was initiated for selected pilot regions. The Marmara Region Development Project aimed at solving socio-economic problems associated with the rapid development, and the original Zonguldak Regional Development Project featured infrastructure investments to support large industries to be privatized.

The regional development policy of the Government refocused on less developed regions in the country in pursuing a new development stage as the Turkish economy developed. The Southeastern Anatolian Project or GAP was the first regional development project under this policy. Since then, the regional development policy has been given increasing importance in Turkey.

More recently, the Seventh Five-Year Plan has established more clearly the regional development policy to rectify inter-regional disparities in order to strengthen the national coherence in social, economic, cultural and political aspects. To effect this policy, regional development plans need to be prepared to guide the spatial development patterns, utilizing various potentials of different regions for accelerated national growth.

The Eight Five-Year Development Plan, approved by the Parliament in July 2000, maintains the basic government policies. The objective is to reduce inter-regional disparities while the resource base in each region should be exploited to achieve the highest level of economic growth and social welfare. The basic principles of regional development are sustainability, regional integration, achievement of social and economic balances, improvement of living conditions, equality of opportunity, cultural development, and participatory development.

Provincial planning will become an increasingly important planning tool. All local governments will be encouraged to participate in development planning. Provision of infra-structure, skill development, and support for research and development are identified to be key support mechanisms for the development of the less developed regions.

The Eastern Black Sea region is one of less developed regions in Turkey, for which a regional development plan has not been prepared yet. The region once thrived centering on trading activities between the East and the West along the Silk Road, which reached Trabzon through Erzurum and Bayburt. Such a position may be revived in the 21st century as the free trade regime is established following the collapse of the cold war structure. Recognizing the increasing importance of cross-border trade and cooperation, the Turkish Government has taken the initiative for establishing the Black Sea Economic Cooperation (BSEC).

Development of the Eastern Black Sea region would contribute to accelerated growth of the Turkish economy and also to strengthening the national integration. Moreover, the Eastern Black Sea region may hold a key for Turkey to pursue more advanced relationships with neighbouring countries and further to enhance its status in the international society. A prerequisite is to prepare a regional development plan that would substantiate the region's potentials.

Therefore, the Government of the Republic of Turkey requested the Government of Japan for technical cooperation to prepare a multi-sector regional development master plan for the Eastern Black Sea region. In response to this request, the Government of Japan has decided to implement this technical cooperation and entrusted the implementation to Japan International Cooperation Agency (JICA), the official agency responsible for the implementation of the technical cooperation program of the Japanese Government. The Scope of Work for this technical cooperation was agreed upon between the State Planning Organization (SPO) of the Turkish Government and JICA, and signed by respective representatives on December 17, 1998.

(2) Study Area and objectives

Study Area

The Study Area to be covered by this technical cooperation is the Eastern Black Sea region, defined as the combined jurisdiction of seven provinces: Artvin, Bayburt, Giresun, Gumushane, Ordu, Rize and Trabzon. The regional development project for this region is identified as the DOKAP, abbreviating its Turkish name. The Study Area has 39,361 km^2, and its total population was 2.91 million in 1997.

Study objectives

The objectives of the Study, as agreed on by the SPO and JICA, are:

(1) to formulate a short and long term integrated development plan for the Eastern

Black Sea region which aims to rectify the regional disparities currently existing between the Study Area and the rest of Turkey;

(2) to identify priority sectors and possible investment projects in line with the above plan; and

(3) to strengthen the planning capability of Turkish counterpart personnel in the course of the Study.

1.2 Study Framework

(1) Organizational set up

The Study has been carried out by a team of consultants nominated by JICA in close collaboration with a counterpart team organized by the SPO. The JICA Study Team consists not only of foreign experts but also two Turkish experts, and additional Turkish experts and assistants were employed by the Study Team to augment its capacity and improve local input.

The SPO organized a consultation group consisting of representatives of different sections of the SPO to discuss occasionally on various issues involved in the development planning as well as contents of formal reports of the Study. The JICA Study Team and the SPO counterpart personnel had regular meetings throughout the Study period to check the progress of the Study.

The National and the Regional Steering Committees were established for the Study to reflect views of various agencies, sector concerns and local interests in this multi-sector planning. Each committee met occasionally when formal reports of the Study were presented, and extensive comments were made by committee members. Lists of committee members are given in Appendix I.

(2) Bases of the Study

The Study has been carried out primarily on the basis of readily available data and study reports as well as field observations and discussions with a wide range of people in the DOKAP region and elsewhere. Limited field surveys have been carried out in cooperation with Turkish experts and assistants to generate additional data essential for the Study. More important surveys and other works carried out jointly by the SPO/JICA joint team and various entities are summarized in Table 1.1.

Table 1.1 Surveys and Other Works Carried Out by Various Entities for DOKAP Master Planning

Survey and Other Works	Main Cooperating Entities	Period
1. Natural conditions survey	Local consultants	April ~ July, 1999
2. Social survey – Part 1	SIS, KTU, METU	May ~ July, 1999
Part 2	SIS, KTU, METU, Local consultants	November, 1999~ January, 2000
3. Urban hierarchical analysis	KTU	May, 1999 ~ January, 2000
4. Institution survey	METU	April ~ May, 1999
5. Industrial survey	KOSGEB	April ~ August,1999
6. GIS works	Local consultants	May, 1999 ~ January, 2000
7. DOKAP promotion materials	Ministry of Health, Communication center	January, 1999~ February, 2000

1.3 Study Progress

1.3.1 Phase 1

(1) Inception works

The Study started (in Japan) in the middle of March 1999. The JICA Study Team arrived in Ankara on March 30 for the first field work. The SPO and the JICA Study Team discussed the Inception Report prepared in Japan on April 5 and 6, and the minutes of the meeting were prepared and signed by representatives of both sides.

On April 7, the first meeting of the National Steering Committee for the DOKAP was convened (at the SPO) to discuss the Inception Report more widely and exchange views on the DOKAP regional development. Comments and opinions were obtained from close to 30 different government agencies, institutes and NGOs.

A technology transfer seminar was organized on April 16 where the JICA Study Team gave a seminar on “National Land Development Plan in Japan”, and questions and answers followed between the SPO experts and the JICA Study Team.

During April 20 through 27, the JICA Study Team made first official visits to the seven provinces: Trabzon and Rize on 20th, Gumushane and Bayburt on 21st, Giresun and Ordu on 26th, and Artvin on 27th. Purposes were to explain about the

Study and ask for supports, to receive briefings on existing conditions and prospects, and to visit a few sites of on-going projects or activities.

The first meeting of the Regional Steering Committee was convened in Trabzon on April 22. Presentations were made by representatives of the seven provinces and the Black Sea Technical University as well as the SPO and JICA, and discussions followed.

Partial results of the inception works were compiled into a paper entitled "Development Diagnosis by Province", and submitted to the SPO informally. The paper contained initial findings related to existing conditions, constraints, and prospects by province.

(2) Sector works and surveys

Sector works of the Study were carried out in cooperation with related sector agencies of the Central Government and their regional and provincial offices and local governments. Cooperative works were coordinated by the SPO counterpart personnel.

In some aspects and areas, the Study relied more on Turkish experts. These include social survey, natural conditions survey, urban hierarchy study, and works utilizing a geographic information system (GIS). The JICA Study Team also employed additional Turkish experts and assistants on either full or part time basis to augment its capacity and to improve local input.

Special sessions were convened occasionally to exchange views with some key players in the DOKAP. A session with provincial governors was convened on June 29 to brief the governors, vice governors, Ministry of Interior and the SPO experts on the progress of the Study and some findings. A session with the Association for Protection of Characteristics of Black Sea (KÖK) was organized on June 30 to discuss environmental implications of the DOKAP regional development and other related matters.

(3) Progress Report and Interim Report

A Progress Report was compiled toward the end of the first fieldwork period, and submitted to the SPO on July 23. It contained major findings of the first field work in the form of development objectives and strategy, development frameworks and scenario, priority sectors/activities identified, and some preliminary project ideas. The Progress Report was discussed by the SPO Consultation Group and the JICA

Study Team on July 27. Minutes of the meeting were prepared, including outstanding issues for the subsequent stage of the Study.

The Progress Report was reviewed by JICA upon the return of the JICA Study Team to Japan. Additional comments on the report were transmitted by the SPO. Reflecting the review and the comments, development objectives and strategy, development frameworks and scenario, and project ideas were modified. Additional project ideas were developed and institutional measures formulated. Based on these an Interim Report was compiled in Tokyo and submitted to JICA at the end of August.

1.3.2 Phase 2

(1) Discussion on Interim Report

The Study resumed in early October. The JICA Study Team arrived in Ankara on October 6 for the second field work. At the beginning, the draft DOKAP Master Plan contained in the Interim Report was discussed extensively. With the attendance of the JICA advisor dispatched by its headquarters, the SPO consultation group met on October 13, and the second meeting of the National Steering Committee was convened on October 20. Extensive comments on the Interim Report were made on both occasions, and they were transmitted in writing subsequently.

A Turkish version of the Interim Report was prepared by the middle of October and distributed widely. The second meeting of the Regional Steering Committee was held in Trabzon on November 17 to discuss the draft DOKAP Master Plan.

The draft DOKAP Master Plan was presented at the second Congress on the Black Sea Environment held during October 22 – 23 in Trabzon, organized by KOK. A session was allocated to the DOKAP, and comments were received from highly qualified participants representing the Government, the business sector and the academy as well as NGOs.

(2) Sector works and surveys

Sector works of the Study continued with the cooperation of related sector agencies of the Government, their regional/provincial offices, and local governments. Proposed projects and programs were elaborated, and in-depth studies carried out on selected projects.

The second part of the social survey was conducted, focusing on communities to be affected by planned dam projects on the Coruh river. The urban hierarchy study concluded in December.

Works of a geographic information system (GIS) continued throughout the second phase. Based on the initial GIS database established during the first phase, land capability was analyzed and the existing land use map modified. GIS works extended also to water balance analysis and some social analysis.

(3) Draft Final Report

The draft DOKAP Master Plan contained in the Interim Report was modified, incorporating comments from various government agencies, institutes and NGOs as well as the SPO, and reflecting results of surveys and other works. A revised DOKAP Master Plan constituted the main report of the Draft Final Report. An executive summary was prepared based on it.

All the sector works were compiled separately into coherent sector reports to support the main report. The sector reports consisted of five volumes: economic sector, social sector, environment, spatial/infrastructure, and institutions. Results of the in-depth studies and project profiles were compiled into a separate volume: the project report.

Different sector reports were submitted to the SPO for their early review. The revised DOKAP Master Plan was presented to the SPO consultation group on January 27, 2000.

1.3.3 Phase 3

(1) Discussion on Draft Final Report

The Draft Final Report prepared in Japan was presented to the Turkish side during February – March, 2000, the period of the last field work for the Study. After discussions with the SPO counterpart team on the contents of the Draft Final Report, the SPO and the JICA Study Team conducted the following series of seminars to convey the DOKAP Master Plan proposals to a wider range of audience.

Seminar	Venue	Date
National Steering Committee	Ankara	February 25
Regional Steering Committee	Trabzon	February 28
Promotion Seminar	Istanbul	March 1

Seminar participants were requested to submit their comments and opinions on the Draft Final Report to the SPO by the end of March 2000. The Turkish version of the Draft Final Report was also prepared and submitted to the SPO.

(2) Final Report

Extensive comments were received on the Draft Final Report from various government agencies, local government, institutes, chambers, and other NGOs as well as different sections of the SPO. These comments, conveyed mostly in Turkish, were sorted out by the SPO in cooperation with the Turkish Deputy Team Leader of the JICA Study Team, and most substantial ones were selected jointly. These comments were examined carefully by the JICA Study Team both in Ankara and Tokyo. Reflecting them, the Final Report has been prepared in Tokyo with the same eight volume structure as given below for the Draft Final Report. The Turkish version has been prepared in Ankara.

The Final Report consists of eight volumes as follows.

1. Executive Summary
2. Master Plan Report
3. Sector Report 1: Economic Sectors
4. Sector Report 2: Social Sectors
5. Sector Report 3: Environment
6. Sector Report 4: Spatial Development and Infrastructure
7. Sector Report 5: Institutional Development
8. Project Report

1.4 Guide to the Master Plan Report

This volume represents the Master Plan Report of the Final Report. The remaining part of the report is organized in the following way. In Chapter 2, existing conditions of the DOKAP region are described with respect to its socio-economy, spatial structure, and resource capacity. Characteristics of the region are clarified and some salient features highlighted. In Chapter 3, the problem structure of the DOKAP region is analyzed, and based on it objectives and basic strategy for the DOKAP regional development are established.

In Chapter 4, development alternatives are presented to indicate the range of options for the DOKAP regional development, and the best yet realistic alternative is defined. For this alternative, socio-economic framework is worked out, and spatial development framework established. A development scenario for the

DOKAP region is described as future courses of the development that the region will follow. More specific development strategy is presented in Chapter 5 by sector for economic, social, environmental, and spatial/infrastructure development.

In Chapter 6, projects and programs of the DOKAP development master plan are presented. The structure of the DOKAP master plan is clarified, and development projects and programs are described. Investment requirements and schedule are presented.

Finally in Chapter 7, DOKAP operations plan is proposed. Alternative institutional arrangements for DOKAP implementation are presented, and a recommendable scheme suggested. Immediate actions to be taken after the completion of the DOKAP Master Plan Study are clarified.

CHAPTER 2 DOKAP REGION

Existing conditions in the DOKAP region are presented in Table 2.1 by selected indices. More detailed data by sector are found in sector reports. In this chapter, the existing socio-economy and spatial structure of the DOKAP region are summarized in five main points, respectively to clarify characteristics of the region as compared with the rest of Turkey. Also, resource capacity of the region is clarified with respect to land, water, human, and other resources. In addition, existing structure and issues for development administration are presented as an institutional setting for the DOKAP regional development.

2.1 DOKAP Socio-Economy

On the basis of analysis on existing conditions by sector, most salient features of the DOKAP socio-economy are described in five points.

(1) One of the less developed regions in Turkey

Per capita GRDP in the DOKAP region was only 66% of the per capita GDP of Turkey in 1996, although it was still larger than the per capita GRDP in the GAP region (Table 2.2). Agriculture has a larger share in the DOKAP GRDP (30.3% in 1994), twice as large as the share of agricultural GDP in Turkey. The GAP region appears to have slightly more advanced economic structure with a smaller share of agriculture and a much larger share of industry in its GRDP.

Table 2.2 Comparison of Economic Structure and Per Capita GRDP

Index	DOKAP	GAP	Zonguldak	Turkey
Economic Structure, 1994 (%)				
Agriculture	30.3	27.9	10.1	15.5
Industry	13.7	20.4	44.1	26.4
Services	56.0	51.9	45.8	58.1
Per Capita GRDP/GDP, 1996				
(TL in 1987 price)	1,107,381	848,350	1,634,553	1,670,656
Index (%)	66.3	50.8	97.8	100

Sources: SIS Gross Domestic Products by Provinces 1987 – 94
Statistical Yearbook of Turkey

A most notable index is per capita electricity consumption, which was only 543 kWh in the DOKAP region in 1997, less than a half of the national average at 1,282 kWh in the same year. This is smaller than even the average in the GAP region, which is now an important power generation region of Turkey. Some infrastructure appears more developed in the DOKAP region, but the position of the region is generally lower than the national averages (Table 2.3).

Table 2.1 Existing Conditions of DOKAP by Selected Indices

Index	Unit	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP	DOKAP share (%)	Turkey
Area	km^2	7,436	6,965	6,748	6,142	3,920	4,498	3,652	39,361	5.0%	779,452
	%	19.0	17.7	17.1	15.6	10.0	11.3	9.3	100.0		
Population (1997)		184,070	460,805	153,990	840,148	325,581	846,876	99,638	2,911,108	4.6%	62,865,574
	%	6.3	15.8	5.3	28.9	11.2	29.1	3.4	100.0		
Urban population (1997)		80,286	239,006	63,169	393,963	172,662	419,867	47,007	1,415,960	3.5%	40,882,375
	%	43.6	51.9	41.0	46.9	53.0	49.6	47.2	48.6		65.0
Rural population (1997)		103,784	221,799	90,821	446,185	152,919	427,009	52,631	1,495,148	6.8%	21,983,217
	%	56.4	48.1	59.0	53.1	47.0	50.4	52.8	51.4		35.0
Population density (1997)	persons/km^2	24.8	66.2	22.8	137.0	83.1	188.3	27.3	74.0		80.7
Population increase rate	1990-1997	▲ 2.1	▲ 1.1	▲ 1.4	0.2	▲ 1.0	0.9	▲ 1.1	▲ 0.3		1.7
Population increase rate (urban)	1990-1997	2.8	1.2	1.0	2.3	3.8	4.7	1.9	2.9		3.0
Population increase rate (rural)	1990-1997	▲ 4.8	▲ 3.3	▲ 2.7	▲ 1.4	▲ 4.8	▲ 2.0	▲ 3.2	▲ 2.6		▲ 0.7
Land use	%										
Agriculture		5.6	26.0	7.4	53.1	17.4	21.8	12.1	23.6		29.9
Fallow		0.6	2.0	3.0	0.4	-	-	5.8	1.6		5.5
Agriculture (not in use)		3.4	4.1	4.8	1.3	0.6	0.5	7.7			
Meadow and pasture		11.0	19.1	21.5	12.1	29.2	31.5	40.5	21.7		18.7
Forest		57.8	41.7	32.5	24.2	45.5	41.2	6.9	37.4		29.1
Others		21.6	7.1	30.8	8.9	7.3	5.0	27.0	15.7		16.8
Total		100.0	100.0	100.0	100.0	100.0	10.0	100.0	100.0		100
Economic structure (1994) *1	%										
Agriculture, forestry, fishery		25.1	33.0	29.7	36.3	28.5	28.1	28.4	30.3		15.5
Agriculture		26.6	25.0	27.5	31.2	18.5	13.1	28.2	20.8		14.3
Forestry		4.3	1.7	2.1	0.9	0.3	0.5	0.0	1.1		0.5
Fishery		0.2	6.3	0.0	4.2	9.7	14.5	0.1	8.3		0.7
Industry, mining		19.6	13.6	5.3	10.0	18.1	13.6	6.5	13.7		26.4
Mining and quarring		7.7	0.6	0.6	0.1	0.0	0.2	0.0	1.0		1.4
Manufacturing		10.5	10.7	0.8	9.1	16.3	12.2	2.5	11.2		22.1
Electricty, gas, water		1.4	2.3	3.8	0.9	1.8	1.2	3.9	1.5		2.9
Construction		3.3	9.2	3.4	7.1	7.5	7.8	5.2	7.1		6.8
Service		39.3	28.5	41.5	33.8	34.6	37.2	39.0	35.4		38.7
Trade		16.3	16.6	9.9	13.5	15.7	18.1	13.9	16.0		19.7
Transportation and communication		21.1	18.7	28.1	14.3	19.4	14.9	19.8	17.1		13.3
Financial institutions		1.3	20.1	1.3	1.6	3.0	1.7	2.0	4.3		3.0
Ownership of dwelling		1.1	3.6	3.2	3.0	2.4	1.9	3.7	2.4		3.3
usiness and personal service		1.1	2.4	0.7	2.4	1.3	2.5	0.8	2.1		3.7
(less) imputed bank service charges		-1.6	-32.8	-1.7	-0.9	-7.1	-1.9	-1.2	-6.6		-4.2
Government services		12.0	13.7	19.5	11.0	8.5	12.5	21.0	12.1		8.9
Private non profit institutions		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		0.2
Import duties		0.7	2.0	0.6	1.7	2.8	0.8	0.0	1.4		3.5
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0		100.0
GRDP 1996 (1987 price) *4	million TL	411,055	436,695	105,669	732,541	469,456	818,767	51,728	3,025,911	2.9%	104,745,161
GDP per capita 1996 (1987 price) *4	TL	2,205,763	907,758	692,798	824,020	1,561,050	1,047,417	512,859	1,107,381		1,670,656
Social infrastructure											
National highways (1996) *3	km	324	319	333	304	174	234	213	1,901	5.8%	32,848
Provincial highways (1996) *3	km	236	104	129	337	150	248	72	1,276	3,6%	35,516
Density of national and provincial highways (1996)	km/km^2	0.075	0.061	0.070	0.107	0.083	0.103	0.078	0.081		0,088
Rural road paved ratio (km base 1996) *4	%	9.9	7.9	11.0	11.2	8.7	5.7	11.9	9.4		25.1
No. of cars (1996) *3		11,233	19,107	5,764	28,032	19,507	42,450	3,376	129,469	2.6%	4,985,331
No.of private cars per 10,000 (1997)		350	251	208	238	348	311	217			580
Communications lines (1998)	*lines*	63,885	119,111	29,081	155,811	18,440	248,376	18,440	742,556		
Electricity consumption (1993) *2	MWh	176,182	233,616	43,321	290,549	196,533	350,024	23,965	1,314,190	2.2%	59,237,000
Per capita elect.consump. 1997	kWh	873	547	297	490	854	479	277			1,282
Water supply service ratio in the rural area (1998)*4	%	66.0	71.0	81.0	66.0	74.0	87.0	94.0	75.0		78
Literacy rate(1990)	%	80.9	75.4	78.5	75.6	80.0	81.1	78.0	78.5		80.5
Literacy rate (female) (1990)	%	73.0	63.7	69.3	65.8	69.3	71.6	68.5	68.7		72.0
Educational indicators (1992-93) *2											
Primary school											
Number of students per school		49.6	68.8	53.5	81.6	72.8	110.7	61.5	71.2		134.2
Number of students per teacher		20.2	20.0	19.8	30.9	21.9	24.1	31.4	24.0		28.5
Junior high school											
Number of students per school		177.8	184.3	195.4	232.9	267.7	224.7	168.2	207.3		338.9
Number of students per teacher		36.5	48.5	34.3	57.7	69.9	43.1	37.6	46.8		47.5
High school											
Number of students per school		279.9	274.5	199.7	382.4	272.7	374.9	190.2	282.0		411.3
Number of students per teacher		16.9	19.5	11.8	17.5	18.9	16.9	10.3	16.0		14.0
Medical services (1993) *2 Number of persons per healthcare personnel											
Specialist		9,359	8,290	11,033	9,043	7,995	9,208	8,177	9,015		5,481
Practitioner		1,702	2,718	1,902	2,913	2,506	2,238	1,772	2,250		2,273
Dentist		20,590	33,160	23,643	48,228	23,986	24,276	17,717	27,371		26,092
Nurse		990	1,086	1,672	1,479	1,492	1,311	1,541	1,367		1,496
Health officer		1,440	1,480	2,095	3,418	3,229	1,749	2,658	2,296		2,333
Midwife		618	1,009	1,217	1,520	1,466	1,264	1661	1,251		1,556

Data source: *1 Gross Domestic Product by Province 1987-1994
*2 Provincial and Regional Statistics 1994
*3 Annual Statistics of Turkish Highways 1995-1999
*4 Various indicators related to provinces and regions in Turkey
*5 Statistical Yearbook of Turkey 1997(Turkey data)

Table 2.3 Comparison of Various Infrastructure Facilities

Index	Unit	DOKAP	GAP	Zonguldak	Turkey
Density of national highways, 1996	km/km²	0.081	0.059	0.124	0.088
Paved ratio of rural roads, 1996	%	9.4	23.8	20.9	26.5*
Telephone lines per 100 population, 1998	no.	23.0			27.4
Per capita electricity consumption, 1997	kWh	543	506 ('93)	1,824 ('93)	1,282
Service coverage ratio of rural water supply, 1998	%	75	69	49	78

Sources: National Statistics of Turkish Highways 1999; * 1998
Various Indicators Related to Provinces and Regions in Turkey, TEAS

(2) Net out-migrating region

The DOKAP region recorded negative population growth during 1990-97, losing more than 50,000 people over this period or at 0.3% per annum. Considering the natural increase in population, social decrease or net out-migration is more significant than these numbers indicate. According to the 1990 census, all the DOKAP provinces recorded net out-migration during the inter-census period at the annual average rates ranging in 1.10% (Ordu) to 2.41% (Bayburt) during 1985-90 (Table 2.4). The DOKAP population increased only at 0.17% per annum during this period, implying the net out-migration rate of more or less 1.5% per annum.

Table 2.4 Provincial Population and Migration in DOKAP Region

Province	Population in 1985	Out-migration* 1985-90	In-migration* 1985-90	Net-migration* 1985-90	Net-migration* rate, 1985-90 (%p.a)	Population in 1990	Population growth rate 1985-90 (%p.a)
Artvin	226,338	32,713	12,341	-20,372	-1.74	212,833	-1.22
Giresun	499,809	58,136	23,308	-34,828	-1.36	499,087	-0.03
Gumushane	176,835	32,831	10,526	-22,305	-2.40	169,375	-0.86
Ordu	766,348	71,034	28,124	-42,910	-1.10	830,105	1.61
Rize	374,206	48,885	20,159	-28,726	-1.49	348,776	-1.40
Trabzon	786,194	81,494	29,999	-51,495	-1.28	795,849	0.24
Bayburt	109,260	20,288	6,480	-13,808	-2.41	107,330	-0.36
DOKAP	2,938,990					2,963,355	0.17

* Refer to inter-provincial migration
Source: Statistical Yearbook of Turkey, 1997

(3) Relatively large services sector

The share of the services sector in the DOKAP GRDP was 56.0% in 1994, larger than not only the GAP region (51.9%) but also a more advanced region of

Zonguldak (45.8%), although it is slightly smaller than the share in Turkey's GDP (58.1%). This reflects the importance of trade and distribution functions established over centuries as Trabzon, Gumushane and Bayburt developed along the ancient trade route of the Silk Road. Within the services sector, subsectors of trade, transport and communication, and financial services have comparatively large shares, while the shares of business and private services and ownership of dwellings are smaller. The latter represent particularly weak and inactive private sector. Government services also have comparatively larger shares particularly in Bayburt and Gumushane

(4) Dependence on single-crop farming

The economy of the DOKAP region and in particular its agricultural sector depend heavily on two most important crops: tea and hazelnuts. The region is an exclusive producer of tea with tea area covering 76,743 ha in 1996. Hazelnuts dominate the fruit tree area of 400,136 ha in 1996, with 162,790,000 hazelnut trees out of 167,895,000 fruit bearing trees or 97% of the total in 1996. Of the total agricultural land, 762,564 ha in 1996, these two crops occupy more or less 50%, the rest consisting of cereals (about 30%), pulses, fodder, tuber, some industrial crops and vegetables.

Production, processing and marketing of these dominant crops and their products rely on state enterprises, limiting opportunities for agro-processing and related service activities. Other crops do not lend themselves much to agro-processing and related manufacturing activities.

(5) Large intra-regional disparities

Within the DOKAP region, large intra-regional disparities exist in various aspects. They are caused in part by harsh topography and maldistribution of natural resources such as water resources, prime agricultural lands, and some mineral resources.

Disparities among DOKAP provinces are represented typically by comparison in Table 2.5.

Table 2.5 Disparities among DOKAP Provinces by Selected Indices

Index	Unit	Best	Worst	Average In Turkey
Per capita provincial GRDP,1996	%	92 (Artvin)	36 (Bayburt)	100
Per capita electricity consumption, 1997	kWh	873 (Artvin) 854 (Rize)	277 (Bayburt) 297 (Gumushane)	1,282
Density of national and provincial highways, 1996	km/km²	0.107 (Ordu)	0.061 (Giresun)	0,088
Service coverage ratio of rural water supply, 1998	%	95 (Bayburt)	66 (Artvin)	78
Students-to-teacher ratio at primary school, 1992/93	No.	19.8 (Gumushane)	31.4 (Bayburt)	28.5
No. of hospital beds per 10,000 population, 1994	No.	30.9 (Trabzon)	4.7 (Bayburt)	21.9
No. of doctors per 10,000 population, 1996	No.	12.8 (Trabzon)	4.5 (Ordu)	11.0
Schools enrollment rate at tertiary education, 1994/95	%	50.2 (Artvin)	20.3 (Giresun)	46.5

Source: Table 2.1

On average, the DOKAP region appears better than the national average in terms of the students-to-teacher ratio at primary school, and comparable to the national averages in the density of national highways, service coverage ratio of rural water supply, and number of hospital beds per 10,000 population. By province, however, a few provinces are much worse off than the national averages. For those indices by which the DOKAP region falls behind the national averages such as the per capita GRDP, per capita electricity consumption, number of doctors per 10,000 population, and school enrolment rate at tertiary education, situations in some provinces are much worse.

Intra-provincial disparities seem to be also large in some provinces. While the per capita provincial GRDP is the largest in Artvin, owing much to large scale copper mining and processing, most rural areas are left with low productivity agriculture. While the province has the largest number of private cars on a per capita basis, the rural road density is the second lowest of the DOKAP provinces. The service coverage of rural water supply is the lowest.

Disparities between urban and rural areas may be larger in Giresun than the neighbouring coastal provinces of Trabzon and Ordu. Also, the province is effectively divided into the northern and the southern parts separated by the Giresun mountains. In the northern part, sizeable urban centers exist only along the coast, and the inland area is largely left behind.

2.2 DOKAP Spatial Structure

Spatial structure of any region is prescribed mainly by distribution of settlements, land use patterns and provision of various infrastructure facilities, mainly transport infrastructure. Most salient features of the DOKAP spatial structure include harsh topography constraining agricultural land use and settlement development, resultant land use and settlement patterns, and undeveloped transportation artery network. These features are described below in five points. Land use and capability are further described in the next section.

(1) Harsh topography

The DOKAP region is characterized topographically by extensive mountainous areas reaching well over 3,000 m and limited lowland of high agricultural potentials. Many rivers draining generally northern slopes of the mountains are short with large riverbed gradients, and development of alluvial plains is very limited.

(2) Undeveloped artery network

The DOKAP region is served by only one east-west artery along the coast, and north-south lateral access capacity is very limited. These conditions, of course, reflect the harsh topography with high mountain ranges running generally in the east-west direction. The road network in the DOKAP region is shown in Figure 2.1 together with traffic distribution on main roads.

The DOKAP region has only one airport in Trabzon, and local air services network has not been developed even with airports in neighbouring regions. The region has not rail link with neighbouring regions. Major ports in the region are not effectively utilized.

(3) Maldistribution of urban centers

Most urban centers in the DOKAP region are located along the coast. Distribution of settlements having urban population over 10,000 in 1997 is illustrated in Figure 2.2. Only in Ordu, sizeable urban population exists throughout the province. Naturally, areas of high mountain ranges completely lack urban population. Other than provincial centers of Artvin, Gumushane and Bayburt, sizeable urban population in the inland is found only along the Kelkit river.

(4) Lack of sizeable urban centers

The DOKAP region does not have any sizeable urban center other than Trabzon with an urban population of 182,552 in 1997. Trabzon itself is only one of ten largest urban centers in East Turkey, and ranked at the third level of urban hierarchical structure in Turkey. Primacy of Trabzon within the DOKAP region is not so strong as its urban population accounts only for 13% of the total in the region.

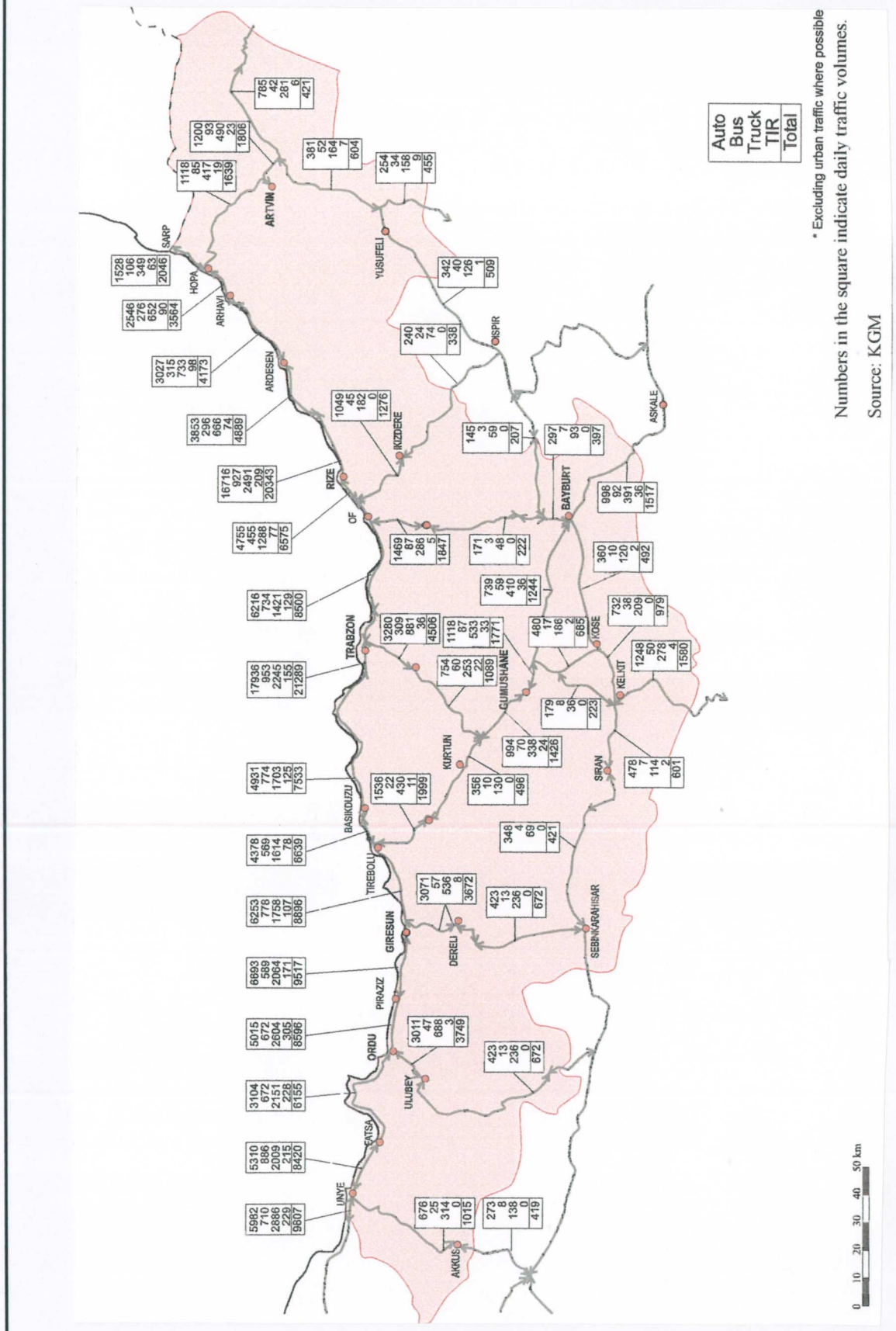


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Figure 2.1

Road Network in the DOKAP Region

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Figure 2.2
Distribution of Urban Population in the DOKAP Region

(5) Dispersed rural settlements

Rural settlements in the DOKAP region are dispersed throughout its large territory. There exist 2,714 villages as of 1997 in the region. If the rural population, 1,495,148 in 1997, is divided by the number of villages, indicative average population per village becomes only 551. This average population is relatively large in Ordu (883) and Trabzon (863), but particularly small in Gumushane (275) and Bayburt (308).

This dispersed settlement pattern makes the delivery of social services more costly and less adequate. This shows among others in low school enrollment rates especially at primary level, and low service coverage of rural water supply. The situation tends to be aggravated by rural-to-urban migration.

2.3 Resource Capacity of DOKAP Region

2.3.1 Land resources

(1) Existing land use

Existing land use in the DOKAP region is summarized by province in Table 2.6. Although different sources give slightly different data, agricultural land occupies 28% of the total DOKAP land according to the General Directorate of Rural Services (KHGM). Special crops represented by tea and hazelnut occupy 44% of the total agricultural land, while irrigated farms account for only 8%.

The forest land covers 42% of the DOKAP land, led by Artvin accounting for almost 30% of the total forest area. Bayburt has only 14,000 ha of forestland accounting for less than 1% of the DOKAP forest area. Settlements occupy only 0.47% of the DOKAP land.

Existing land use map is illustrated in Figure 2.3.

Table 2.6 General Land Use of DOKAP Region by Province

Unit: ha

Land Use	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Baybut	DOKAP	Share (%)
Agricultural land	**89,659**	**235,117**	**123,515**	**268,528**	**81,131**	**159,230**	**129,397**	**1,086,577**	**27.7%**
Special crops	19,946	122,652	0	179,407	68,698	89,161		479,864	12.2%
Yards & gardens	8,852	9	1,260					10,121	0.3%
Irrigated farm	16,375	9,315	21,127	1,782		1,599	38,163	88,361	2.3%
Unirrigated farm	44,486	103,141	101,128	87,339	12,433	68,470	91,234	508,231	13.0%
Forest land	**480,250**	**266,006**	**219,782**	**267,993**	**204,952**	**176,040**	**14,385**	**1,629,408**	**41.6%**
Forest	439,803	216,078	170,404	263,342	172,316	154,495	4,889	1,421,327	36.3%
Bushes	40,447	49,928	49,378	4,651	32,636	21,545	9,496	208,081	5.3%
Meadow & pasture	**102,393**	**153,173**	**282,026**	**58,020**	**57,151**	**120,672**	**217,757**	**991,192**	**25.3%**
Unused land	**68,871**	**36,127**	**25,112**	**2,994**	**46,221**	**8,074**	**6,557**	**193,956**	**4.9%**
Settlements	**2,376**	**2,935**	**2,360**	**2,356**	**2,363**	**4,437**	**1,649**	**18,476**	**0.5%**
Water areas	**95**	**51**	**36**	**161**	**206**	**40**	**128**	**717**	**0.0%**
Total	**743,644**	**693,409**	**652,831**	**600,052**	**392,024**	**468,493**	**369,873**	**3,920,326**	**100.0%**

Source: General Directorate of Rural Services

LEGEND

- Irrigated Agricultural Land
- Dry Agricultural Land
- Orchard & Diversified Orchard
- Pasture
- Forest
- Hazelnut
- Tea
- Settlements
- Others

Note : This map composition was prepared using the Geographic Information System (GIS) Database developed in the study.

Figure 2.3 Existing Land Use Map

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(2) Soil conditions

The DOKAP land can be classified into 14 soil groups, of which six are dominant. They are red-yellow podzolic soil, grey-brown podzolic soil, brown forest soil, brown forest soil without lime, brown soil and high mountain soil. Some features of these dominant soil groups and their distribution are explained.

Red–yellow podzolic soil is well developed and well drained, and develops usually over forest areas of humid climates. The soil is generally acidic, resulting from leaching of bases such as calcium by much rainfalls and organic acids, and naturally poor in chemical property. This soil group is found on lower part of northern slopes of the mountain ranges with more rainfalls. It covers 7,525 km², accounting for 19% of the total DOKAP land. Rize has the largest area of this soil group with 2,434 km², followed by Giresun (1,855 km²), Trabzon (1,379 km²) and Artvin (1,303 km²).

Grey-brown podzolic soil is formed under cooler climates than red-yellow podzolic soil, and develops over pine forest areas. The soil is generally shallow or very shallow, and low in fertility. The total area under this soil group is 7,386 km² or 19% of the total land area. Ordu has the largest area of this soil with 3,924 km², followed by Trabzon (1,948 km²) and Giresun (1,453 km²).

Brown forest soil is found generally in land covered by broad leaf trees, shrubs and pasture. Lime is the main parent material to make it neutral to alkaline. Drainage condition is good with granular and porous structure, and so is the chemical property. Erosion hazard due to occurrence on steep slopes is a critical limiting factor. The area under this soil group totals 5,286 km² or 13% of the total land area in the DOKAP region. Gumushane has the largest area of this soil with 2,022 km², followed by Artvin (1,313 km²).

Brown forest soil without lime appears generally on steep slopes with broad leaf trees. The soil is generally shallow or very shallow. It covers 5,885 km², accounting for 15% of the total DOKAP land, of which 3,170 km² are in Artvin.

Brown soil is found under varying climates: from arid to semi-arid and from temperate to cool. The soil is neutral to alkaline, associated typically with vegetation of bush and shrub. Parent material contains a lot of lime, and drainage condition is good. The soil group appears generally on steep slopes, and sometimes stony. It occupies 3,582 km² or 9% of the land in the DOKAP region. Of this soil group, 59% or 2,117 km² occur in Bayburt.

High mountain, meadow soil is found in cool temperate or frigid climate, in high altitude and high latitude, usually over the forest limit. Drainage condition is imperfect, and vegetation is mainly bush and meadow. The productivity is limited due to cold climates. This soil group covers 4,444 km² or 11% of the total DOKAP land. Gumushane has the largest area of this type with 1,328 km², followed by Giresun (1,024 km²) and Trabzon (925 km²).

(3) Land capability

Eight land capability classes have been defined in Turkey by combining three factors affecting the suitability for cultivation. These factors are degree of erosion, soil properties such as soil depth and chemical composition, and wetness including flood proneness and poor drainage. Capability classes I to IV are suitable for crops, orchard and pasture under proper soil management practice. Class I has little limitation for any factor, and class II has moderate limitation for one or two factors. Classes III through VII have severe and moderate limitation for progressively more factors. Class VIII has critical limitation to prohibit any agricultural land use.

The DOKAP land use has seven capability classes except class V. The distribution of area under each capability class in the DOKAP region is shown by province in Table 2.7. Most lands in the region fall under classes VI and VII unsuitable for crop cultivation, covering 33,295 km² or 85% of the total land area. There is no land under class V identified. Lands under class VIII, considered impossible for any agricultural activities, occupy 1,940 km², of which 36% or 689 km² are in Artvin.

Table 2.7 Areal Distribution of Land Capability Classes in DOKAP Region by Province

Unit: km^2

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.

Land under classes I to IV total 3,824 km² corresponding to 9.8% of the DOKAP land. Ordu has the largest area suitable for crop cultivation with 996 km², or 17% of the province, followed by Bayburt (816 km² or 22% of the province) and Gumushane (724 km², 11%).

Major limiting factors of the lands suitable for crop cultivation under classes I to IV are erosion and soil properties. Erosion hazard and soil properties are limiting factors for the lands under class VII, soil properties and wetness under class VI. Erosion hazard is related to slope gradient. Harsh topography of the DOKAP region is reflected in the land capability classification.

(4) Land holding

The last agricultural census conducted in 1991 provides the most recent data on agricultural land holding. According to the census, there are 380,826 agricultural holdings in the DOKAP region, corresponding to 9.6% of the total holdings in Turkey. A larger portion of holdings is under smaller size in the region as compared with the national averages. More than 25% of the holdings in the region are smaller than 1.0 ha (16% in Turkey), and nearly 90% are smaller than 5.0 ha (67% in Turkey). In Trabzon and Artvin, 35% of the holdings are smaller than 1.0 ha, and more than 90% are smaller than 9.0 ha. In Rize, more than 95% are smaller than 5.0 ha, and all the holdings are smaller than 20 ha.

The average size of agricultural holdings is 2.5 ha in the DOKAP region, less than a half of the national average of 5.9 ha. Artvin has the smallest average holding size with 1.7 ha, followed by Rize with 1.8 ha and Trabzon with 2.1 ha. Only Bayburt has a larger average holding size with 7.4 ha than the national average.

2.3.2 Water resources

(1) River basins

Of the 26 river basins defining the territory of Turkey, those related to the DOKAP region are the Coruh river basin, the Eastern Black Sea basin, and the Yesilirmak basin. The Coruh river originates in the Bayburt province, flows down to the east through the Erzurum province before entering Artvin, joined by the major tributary, the Tortum river, turns generally to the north, crosses the border with Georgia, and pours into Black Sea.

To the north of the Coruh and the Yesilirmak river basins, a number of small and medium size rivers flow into Black Sea. They collectively constitute the Eastern Black Sea basin. The rivers are characterized as rapid streams flowing down steep mountain slopes.

The Kelkit river is the largest tributary of the Yesilirmak river. It originates in the south of the Gumushane province, flows down to the west through the Sivas and the Ordu provinces, enter Samsun to join the Yesilirmak river, and discharges into Black Sea near the city of Samsun.

(2) Precipitation

The DOKAP region is known for abundant precipitation in the country. The average annual precipitation ranges from 900 to over 2,000 mm in the coastal area, but it decreases to 400 ~ 500 mm in the inland area. Precipitation is observed throughout a year, but varies seasonally, increasing toward winter and decreasing toward summer. Monthly average rainfall at provincial centers is given in Table 2.8.

Table 2.8 Monthly Average Rainfall at Provincial Centers in DOKAP Region

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

Snowfalls are observed during November through April, but the number of snowfall days is not many in the coastal area. The average number of annual snowfall days is 7 in Trabzon and 13 in Rize.

(3) Water resources potentials

Mean annual runoff is estimated roughly by assuming runoff coefficient by province, based on mean annual precipitation and runoff data for the Coruh river, Eastern Black Sea and Yesilirmak river basins. The runoff coefficient is calculated at 0.50 for the Coruh river, 0.48 for the Eastern Black Sea, and 0.32 for the Yesilirmak river basin. Assumed runoff coefficient and the calculated mean annual runoff by province are summarized in Table 2.9 together with groundwater potentials estimated by DSI.

Table 2.9 Water Resources Potentials by Province

Index	Artvin	Giresun	G.Hane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Land area (km²)	7,436	6,965	6,748	6,142	3,920	4,498	3,652	39,361
Mean annual precipitation (mm)	700	926	465	968	1,264	900	450	810
Runoff coefficient	0.50	0.35	0.40	0.50	0.60	0.60	0.45	(0.47)
Mean annual runoff (10^6m^3)	2,603	2,247	1,214	2,904	2,745	2,529	749	14,991
Groundwater potential (10^6m^3)	25	135	15	59	100	130	20	484
Total water potential (10^6m^3)	2,628	2,382	1,229	2,963	2,845	2,659	769	15,475

Sources: JICA Study Team
DSI (mean annual precipitation, groundwater potential)

The total mean annual runoff in the DOKAP region is estimated to be close to 15 billion m^3. This may be a rather conservative estimate, much smaller than the DSI estimate at 26.6 billion m^3. Still, the estimated total runoff corresponds to 7.9% of the surface water potential in Turkey estimated by DSI, substantially larger than the DOKAP share of the national land (5.1%). This indicates the DOKAP region is quite rich in surface water endowments.

Mean annual runoffs in the coastal provinces are comparatively larger than those in the inland provinces as far as endowments are concerned. The availability, however , is constrained by patterns of river flow, which often take a form of flash floods. Runoffs in Giresun are quite different in the northern and the southern parts. The northern part belonging to the Eastern Black Sea basin covers 60% of the provincial area but provides 80% of the total runoff in the province.

Development potential of groundwater is quite small in the DOKAP region, estimated at 484 million m^3 annually, accounting for only 3% of the total water potential. It seems there is no potential aquifer with significant extent consisting of sand and gravel, which retards groundwater runoff for a period of one hydrologic year or longer, due to the absence of alluvial plains associated with most smaller rivers.

2.3.3 Human resources

One of the major assets of the DOKAP region is its trained manpower. The people from this region are very enterprising, and the businesses they have established in other regions in Turkey have been very successful. The key characteristics of human resources in the DOKAP region can be observed from the literacy rate, education level, demography, and other social factors. Some indicators are summarized in the Table 2.10.

Table 2.10 Literacy Rate and Education Level

(Unit:%)

Index	Artvin	Giresun	G.hane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Literacy rate*	80.9	75.4	78.5	75.6	80.0	81.1	78.0	78.2	80.5
Literacy rate (male)*	89.4	87.5	88.6	85.7	92.0	91.3	88.0	88.8	88.2
Literacy rate (female)*	73.0	63.8	69.4	65.8	69.3	71.6	68.5	68.3	72.0
Literacy rate (rural)*	76.9	67.7	72.9	69.3	76.8	76.5	73.4	72.9	72.6
Schooling rate (primary school)***	96.6	93.0	88.7	98.4	93.4	97.0	94.7	-	97.1
Success rate (primary school)**	97.2	94.8	96.9	96.9	96.9	96.6	95.6	96.5	94.5
Schooling rate (junior high school rural)***	83.4	62.8	46.3	51.3	77.0	68.9	47.6	-	68.7
Success rate (junior high school)**	95.5	93.7	94.0	93.8	90.3	94.4	86.1	93.5	90.7
Schooling rate (high school)***	50.2	20.3	35.4	34.3	46.4	48.8	31.5	-	46.5
Female enrolment ratio (general high school)**	44.8	44.4	24.8	45.0	43.3	44.5	19.8	43.0	44.8
Female enrolment ratio (technical & vocational high school)**	36.5	34.1	28.5	35.0	35.7	36.3	22.4	34.8	37.7

Sources: * SIS, ** National Education Statistics 1995-1996, *** SPO

(1) Literacy rate

The literacy rate in the DOKAP region (78.2%) is slightly below the national average of 80.5% in 1996. While male literacy rate is above the national average female literacy rate (68.3%) is significantly lower than the national average. Female literacy rate is particularly low in Giresun and Ordu having the largest shares of agriculture sector in respective GRDP. This gender biase is reflected also in lower literacy rate in rural areas (72.9%).

(2) Education level

Schooling rates in the DOKAP region as a whole are generally comparable to national averages at different levels, but there are differences in the level of education among DOKAP provinces. Schooling rate for primary school is highest in Trabzon (98.4%) and lowest in Giresun (93.0%). The national average is 97.1%. The schooling rate for junior high school is highest in Rize with 77.0% and lowest in Gumushane with 46.3%. The national average is 68.7%. Schooling

rate for high school is highest in Artvin with 50.2% and lowest in Giresun with 20.3%.

The rate for successfully completing schools of all levels is higher in the DOKAP region than for the whole country. Female enrollment ratios at general high school and technical and vocational high school are lower in the DOKAP region than the respective national averages.

(3) Demography

According to the 1990 census, the share of male population in the DOKAP region is 48.8%, which is lower than that for the national average in which the share of male population is 50.7% (Table 2.11). The share of population in the age group of 15 to 59 years old, which is 56.3%, is also low for the DOKAP region compared with that for Turkey (57.8%). This shows that out-migration from the region concentrates in the young age groups and males.

Table 2.11 Population by Age Group

(Unit:%)

Population Group	Artvin	Giresun	G.hane	Ordu	Rize	Trabzon	Bayburt	DOKAP	Turkey
Male	48.9	49.4	48.2	49.2	47.7	48.6	49.0	48.8	50.7
Female	51.1	50.6	51.8	50.8	52.3	51.4	51.0	51.2	49.3
0~14	30.8	33.7	37.2	36.9	32.8	34.2	37.6	34.8	35.0
15~59	57.6	56.1	53.9	55.4	57.8	57.1	54.3	56.3	57.8
60~	11.6	10.2	9.0	7.7	9.3	8.7	8.1	8.9	7.2

Source: Census of Population 1990

(4) Social factors

The culture and tradition have an effect on the human resources in the DOKAP region. Men are expected to work outside and women are expected to stay home or engage in farming activities. The typical employment pattern is that women tend to participate in the farming activities whereas male workers dominate in modern employment pattern such as employment in the industry sector in the urban area.

This pattern is evident in labor force participation ratios. In villages, 84.4% of working age women are in the labor force (ratio for males is 70.5%). In urban areas, this declines to 22% for women compared to 73.8% for men.

2.3.4 Other resources

(1) Forest resources

Although only some 12% of Turkey's land is covered by sizeable forests as against the designated forest land covering 27%, Turkey still owns very rich and diverse flora and fauna as Anatolia serves as a passage way between Europe, Asia and Africa and heterogeneous topography with various climate zones has embraced their habitats through ice ages and subsequent periods. The number of families, genera and species found in Turkey are comparable to those in Europe as a whole. Of 9,000 flowering plants, 3,000 are endemic to Turkey, exceeding the total number of endemic species found in Europe (2,500). The number of animal species found in Turkey is about 1.5 times the number found in the continent of Europe. Main migratory routes for birds between the three continents pass over Turkey.

The DOKAP region has most extensive forest areas in Turkey, although only 13% of the 913,000 ha forest area in the Trabzon and the Artvin forest regions (not including Ordu and Giresun) may be classified as "old growth forests," according to a 1995 study. The latest data by the Ministry of Forestry place the total forest area in the DOKAP region at 1,344,786 ha consisting of 647,243 productive and 697,543 unproductive forests. Two major mountain ranges in the region, Dogu Karadeniz and Giresun, constitute effective barriers against geographic diffusion of living organisms and have helped to augment the biological diversity of flora and fauna.

The forest vegetation in the DOKAP region starts after coastal areas and goes up to 2,400-2,500 m. Up to 800 m, alder tree - hazelnut or chestnut tree - hornbeam dominates; pure beech is found from 800 to 1,400 m, beech and other foliage are mixed upto 1,000 m, and beech, spruce and other needled trees are seen above 1,000 m. The top forest level of needled areas, mostly spruce, is found above 1,500 m.

Some forest trees occur in enclaves outside their usual distribution range. An example is the case of pine forests, typical of the Mediterranean coast, found in some bays and valleys of the Black Sea coast. More prominent forest types and their distribution are described.

Chesnut – hornbeam mixed forest occurs on seaward slopes facing north or east on 300-400 m altitude. The flora includes many Mediterranean elements. Sweet chestnut forest occurs at 100-1,000m, especially in sparsely populated areas. Chestnut trees occur as pure stands, but the sub-forest flora is very rich. Pine forest is much localized, near Of, near the sea level up to 400 m altitude.

Alder tree forest occurs on damp soil in the chestnut forest zone upto 1,300 m altitude. Beech forest occurs above 1,300 m, especially between Unye to Erbaa (in the Kelkit River basin). Beech trees form more or less pure, dense stands with

individual trees growing to 30 m or higher. Mixed beech/fir forest occurs above the chestnut belt south of Giresun.

Spruce forest occurs above 1,500 m, above the mixed beech/fir belt. East of the Melet River, as far as the border with Georgia (and beyond), there are vast fir forests. These forests include many relict species. Montane pine forest occurs at 1,700-2,000 m altitude, consisting of stone pine in the valleys near the Kalenema stream and yellow pine from Surmene-Camburnu to Dernekpazari, Ikizdere and Zigana mountains.

Three major mountain ranges of Soganli, Kackar, and Karcal and many valleys of the Coruh and other rivers are noted for extensive forests and alpine habitats representing Eurasian high mountain habitats. The mountain ranges constituting a major barrier, these valleys serve as migratory routes of many birds of prey. The area east of Arakli - Soganli mountains, centering on the Kackar mountains, has been identified as an important bird area (IBA). This area has 1.23 million ha, extending over parts of Trabzon, Rize, Artvin, Bayburt, Gumushane and Erzurum.

The Coruh river valley is known for rich flora with exceptionally high endemism. Some 2,500 species of vascular plants occur in the area, including 160 endemic ones. Large mammals are well represented, including bear, wild boar, wolf, jackal, roe-deer, wild goat, bob-cat, sable and lynx. The area is important also for amphibians and reptiles, and at least three species of viper are recorded, one of which is endemic to the area. Of these species, those to be protected are bear, wolf, Turkestan alp wolf, hook horn goat, bob-cat, sable, wild cock, Artvin lizard and Caucasion viper.

(2) Tourism resources

Tourism resources in the DOKAP region include archeological/historical objects/sites, culture/folklore, opportunities for nature experiences and adventures, and natural resources with flora and fauna. More important resources are picked up from a brochure “Black Sea Region”, 1998 edition, by the Ministry of Tourism. This inventory is supplemented by those resources identified as the first degree in the inventories of the General Directorate of National Parks and Wildlife and the Ministry of Culture. The inventory is summarized by province in Table 2.12.

Table 2.12 More Promising Tourism Resources in 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	• Imerd Monstry	• Fatsa Kale • Yesilgecit Kale • Faldaca Kale • Arikmusa Yer l • Ericok Tepe • Kalekoy Kale • Ikizce Kale	• Zil Castle • Bala Kale • Rize Kale	• Sumela* • Aya Sofia* • Boztepe* • Ataturk Mansion* • Ortahisar*	• Bayburt Kale • Aksar Mound • Aydin Tepe (Under-ground city) • Sehit Osman Mound
Culture/ Folk life	• Kalfasor Fest. (Bullfights)	• Aksu Art Fest.	• Rosehip Syrup • Kadirga Fest.	• Hazelnut Fest • Hazelnut Fact	• Tea Plantation* • Anzer (honey)	• Akcabat • Uzungol*	• Ehran weaving • Dede Korkut Festivities
Plateau Experiences	• Kocabey • Velikoy • Savst	• Bektas • Kumbet	• Zigana	• Cambasi • Keyfalan	• Ayder* • Ayder (spa)*	• Hamsikoy • Hidirnebi • Sultan Murat	
Nature/Scenery/ Flora & Fauna	• Hatilla N.P. • Karagol-Sahara N.P. • Protected lands of Camili, Gorgit and Efeler		• Karaca Cave • Artabel Lakes, Torul • Tomara Fall • Ulukoy, Kurtun • Kirani, Evliya ardici • Ali aganin kavagi	• Kurul Rock	• Kackar Mts.* • Camlihemsin	• Altindere N.P.* • Uzungol* • Akcabat • Arakli • Natural monuments of Orumcek ormani Ladini ve Göknari • Camburnu	• Ammonikito Rosso Fossils • Sirakayalar Falls
Sports/ Soft adventure	• Coruh River* (Rafting)		• Zigana (skiing)		• Kackar Mts. *(climb/ trekking) • Firtiina (canoeing) • Ikizdere (hand-gliding)		

Note: * Included in tour itinerary of foreign tourists.
Sources: 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

The DOKAP region has four national parks, one natural park and four areas for preservation of nature. These are outlined.

The Kackar Mountain National Park, declared in 1994, has 51,550 ha. Rarely found geological and geomorphologic structures and extremely rich bio-diversity are the main characteristics. The Altindere Valley National Park, declared in 1987, features the historical structure of Surmela monastery and rich flora in 4,800 ha area. The Hatila Valley National Park in Artvin, declared in 1994, has distinct geological and geomorphologic structures and rich vegetation in 16,988 ha. The Karagol-Sahara National Park near Savsat town, declared in 1994 with 3,766 ha, has rich vegetation and hydrogeographic characteristics.

The Uzungol Natural Park, declared in 1998, is located near Surmene town of Trabzon, having 1,625 ha with natural beauties and wild life. The Camburnu Area for Preservation of Nature is located near Hopa town of Artvin with 180 ha. The area is considered important for its vegetation (Saricam) and a seasonal habitat of

sea birds. The Orumcek Ormani Area for Preservation of Nature has 263 ha near Kurtun town of Gumushane, characterized by most sizable Caucasian fir and Oriented spruce trees in all Europe and Caucasin region.

There are two other national parks: The one in Camili - Gorgit (Artuin province, Borçka county) has 490.5 ha and the one in Camili - Efeler has 1,453 ha. Both have old growth forests.

(3) Mineral resources

The DOKAP region is endowed with a variety of metallic and non-metallic mineral resources, although confirmed reserves are relatively small for most resources and their exploitation is constrained by environmental considerations. The largest mine operation is at Murgul in Artvin to produce copper concentrates (110,000 tons of 23 % Cu annually) and pyrite (90,000 tons/year). The remaining resource is proved to be 18-20 million tons. Another copper mine in Rize started operation in 1992 to produce copper concentrates for export (600,000 tons/year). Lead and zinc are extracted in Giresun, and chromium in Bayburt.

Additional reserves of copper and also gold have been identified in Artvin, but their exploitation has been stopped due to environmental concerns. Endowment of gold is reported also in Gumushane. The total copper-lead-zinc reserve in the DOKAP region is reported to be 700 million tons. Other reserves include 10 million ton iron, 250,000 ton manganese, 1,400 ton metallic silver and 36 ton metallic gold.

The DOKAP region relatively abounds in non-metallic mineral resources, mainly construction materials and cement raw materials. Limestone is distributed in Giresun and Gumushane. In addition to kaolin and barite already extracted, Giresun is considered promising for granite plates and faience. Although mining and querying are practically non-existent in Bayburt, marble and granite are considered promising in the province. Bayburt is endowed also with lignite, but its quality is low for economic exploitation. Kaolin is endowed in Artvin as well.

(4) Hydropower potentials

A large number of hydropower development projects are planned in the Coruh river and the Eastern Black Sea basins. The total annual energy to be produced by these projects amounts to 19,393 GWh with the combined installed capacity of 5,695 MW. This corresponds to some 20% of the present power consumption in Turkey (86,247 GWh in 1995). The hydropower potential by province are summarized in Table 2.13.

Table 2.13 Hydropower Development Potential by Province

	Artvin	Giresun	G.Hane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Installed capacity (MW)	2,591	959	293	557	966	329	0	5,695
Annual Energy (GWh/year)	8,537	3,262	814	1,887	3,759	1,134	0	19,393
No. of hydropower stations	20	16	6	17	19	10	0	88

Source : DSI

In the Coruh river basin, there are 19 hydropower development projects within the DOKAP region, consisting of one in operation and 18 in planning, design or construction stages. The development potential amounts to 8,161 GWh of annual energy with the installed capacity of 2,481 MW.

The Eastern Black Sea basin belongs entirely to the DOKAP region. Hydropower development projects in the basin consist of three in operation, two under construction, and 64 in planning or design stages. The development potential totals 11,232 GWh of annual energy with the installed capacity of 3,212 MW.

(5) Irrigation potentials

KHGM has estimated the total irrigation development area at 635,434 ha, corresponding to 16.2% of the total land of the DOKAP region. The total area of ongoing and planned irrigation development, however, amounts only to 120,685 ha. Provincial breakdowns are given in Table 2.14.

Table 2.14 Planned and Potential Irrigation Areas by Province

(Unit: ha)

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Planned/existing irrigation area	17,383	9,933	44,792	2,200	0	3,044	43,333	120,685
Potential irrigation area	60,285	110,950	49,691	117,298	50,292	56,729	69,504	514,749
Total irrigation development area	77,668	120,883	94,483	119,498	50,292	59,773	112,837	635,434

Source: KHGM and DSI

(6) Black Sea

Black Sea constitutes another important resource for the DOKAP region. The sea has an area 436,400 km² and the maximum depth exceeding 2,135m. Severe storms occur frequently, particularly during winter, prevailing winds being from the north.

In the Black Sea, 33 species of fish are identified but only four species provide 80% of the total catch (Black Sea Environmental Program, 1997 Annual Report). This is reportedly due to over-fishing and pollution of seawater. More significant sources of pollution or hot spots in the DOKAP region are identified as domestic wastewater of cities of Trabzon, Giresun and Ordu, and the copper industry at Murgul in Artvin (Black Sea Diagnostic Analysis).

Black Sea is of special importance in regional and sub-regional commerce. Principle ports are Odessa, Khersan and Sevasptopol in Ukraine, Jovorossiysk in Russia, Constanta in Romania, Burgas and Varna in Bulgaria, and Eregli, Samsun, Sinop and Trabzon in Turkey.

2.4 Institutional Setting

The DOKAP regional development will take place basically within the framework of existing administration. Administrative capacities for development planning, finance and management, however, are expected to increase especially at the local level along with the DOKAP regional development. How and to what extent the capacities will increase depend, in turn, on institutional arrangements for the DOKAP regional development. In this section, therefore, the existing development administration in Turkey is outlined as related to the DOKAP region, and issues for its improvement presented.

2.4.1 Existing development administration in Turkey

(1) Basic structure of development administration

The development planning and administration system in Turkey is still highly centralized, despite the renewed emphasis on regional development in recent years. The administration of provinces represents deconcentration of central functions of various Central Government agencies to their regional and provincial offices rather than devolution or delegation of central functions to local governments.

In terms of central administrative structure, Turkey is divided into provinces on the basis of geographic situation, economic conditions, and public service requirements, and provinces are further divided into counties and districts (Turkish Constitution Article 126). Some ministries have various central agencies, and both ministries and their agencies have their branch offices or field units on the basis of provincial division. Some agencies have regional offices comprising several provinces.

Local administrative bodies are public corporate entities established to meet the common local needs of inhabitants of provinces, municipal districts and villages, whose decision-making organs are elected (Article 127). Four types of local

governments can be distinguished: 1) special provincial administration, 2) municipalities, 3) metropolitan municipalities, and 4) villages.

Distribution of administrative duties between central and local governments is summarized in Table 2.15

Table 2.15 Distribution of Administrative Duties

Responsibility	Safety	Social Capital	Education	Welfare-Health	Economy
Central	Diplomacy Defense Judiciary Criminal punishment Police Register	Expressways National roads Ports	Universities High schools Primary schools	Social insurance Doctor licenses Medicine licenses National health insurance	Currency Trade customs Postal services Economic policies
Provincial Self-Governments	None	Local roads (mostly repair)	Primary schools (mostly repair)	Hospitals Orphanages (optional)	Exhibitions Fairs
Municipalities	Control of public places	City planning Local roads Licensing for housing Public housing Sewerage (Other optional duties)	Kindergartens Public libraries	Hospitals Orphanages Day nurseries (all optional) Water supply Waste disposal Local transport	Price and quality control

Local governments may establish unions for undertaking their legally assigned duties, regulated by the Municipality Law. Unions may be formed for different purposes: 1) for economic and commercial purposes, 2) for social and cultural purposes, and 3) to provide physical infrastructure.

(2) General issues for local development administration

Weak local administration

As a converse of the high centralization mentioned above, the local administration in Turkey is generally weak. A province has dual roles of being both an arm of the Central Government and a unit of local self-government. Functions of the latter, however, are largely administrative. The Provincial Administrative Council is a legislative-type assembly of the province, whose members are elected for five-year term, but presided over by the Governor, who is appointed by the Council of Ministers and reports through the Ministry of Interior. On an average, expenditures of the provincial self-government make only about one-tenth of those undertaken by the Central Government within the province. The major

source of revenue for the provincial self-government is grant transferred from the Central Government.

Collectively, municipalities are more important units of local administration, as the sum of municipalities' budgets is 20 times as large as that of provincial self-governments (in 1996). Municipal administration comprises an assembly as an elected legislative body, an executive committee, and a mayor as the chairman of the executive committee, elected for five year term. The Municipal Assembly approves the annual budget and the development plan, plans local projects, and negotiates loans. The municipal budget, after the review by the Municipal Council, is submitted to the highest administrative agent of the central administration in the locality, provincial or sub-provincial governor, for approval.

Villages are the smallest units of local administration. Compulsory duties of a village are related to the protection of health, strengthening of social relations, maintaining order and security, cleaning and construction activities in the village. Village administration comprises a village assembly, a council of elders, and a village headman elected for five year term. The Headman is also considered as the representative of the Central Government in the village, and receives his salary from the Government. The main source of revenue of village administration is nominal amount of household tax (salma). Otherwise, it depends on traditional "collective work obligation (imece) ".

Local governments as a whole realize less than 10% of the total public expenditures in Turkey. They employ collectively only 10% of the total public employees.

Lack of coordination

According to the Provincial Administration Act, responsibilities and duties of a provincial governor as the chief administrative and political officer in the province are related to (1) administration of provincial programs, (2) inspection and audit of field offices of the Central Government, (3) coordination and planning of operations of Central Government agencies within the province, (4) maintenance of public order and safety, and (5) representation of the State and the Central Government. Although each field unit or provincial office has direct contacts with its ministry, all the requests for technical and accounting information as well as budget requirements must go through the governor.

In practice, however, there are problems involved in the coordination of two administrative divisions: regional and provincial offices of Government agencies. Provincial offices report directly to the provincial governor, and they are under his authority and control. Regional offices, however, report directly to their ministries or central agencies. The Provincial Coordination Board proved to be unsuccessful in resolving this problem, as governors found it difficult to have regional offices participate in Board meetings. Relations between regional offices and their central

organizations are negatively affecting the coordination efforts at the level of province.

Too many municipalities of small size and metropolitan municipalities

Municipality is defined as a corporate body providing local government services in all communities over 2,000 population. There are more than 3,000 municipalities of varying sizes in Turkey. About two-thirds of the municipalities have population smaller than 5,000. Despite their variance in size, financial and administrative powers, all the municipalities are equally charged with a long list of duties according to the Municipality Law.

Metropolitan municipality is a new local government unit introduced in 1983. The basic idea is to facilitate coordination of activities of municipalities within a larger jurisdiction of the metropolitan municipality for better services provision. The law establishing metropolitan municipalities allowed them to obtain 5 % of the taxes collected within their jurisdictions respectively, in addition to the shares of municipalities from centrally collected taxes, prompting more metropolitan municipalities to be established. There are 15 metropolitan municipalities at present, varying in size and capacities. All of them are subject to mandates of the same law, while some do not have characteristics of metropolitan areas.

Poor management of municipal enterprises

Local governments in Turkey manage not only public services, but also profit-seeking enterprises. Revenues and costs of these services and enterprises account for sizable part of their revenues and expenditures. Revenues other than taxes constitute about one-third of the total revenue of municipalities during 1983-95, increased to 43 % in 1996. Revenues of institutions and enterprises managed by municipalities and rents and profits accrued from immobile and mobile municipal goods made up 30 % and 49 % of the total earnings in this category in 1993 and 1995, respectively.

Despite their importance in municipality accounts, revenues and costs of municipal services and enterprises are not accounted for separately. It is difficult to see the profit-loss situation of each activity, while some activities are clearly incurring large losses.

To ensure more effective functioning of municipal enterprises, larger municipalities and metropolitan municipalities have been attempting to change their status to corporations at an increasing rate since 1984. As other corporations, municipal corporations are regulated according to private law. Municipalities can benefit from this opportunity as they can evade several restrictions imposed on local governments by the central administration. Municipal corporations cannot be controlled by municipal assemblies except their establishment. It is often argued that most municipal corporations do not function effectively in providing goods and services as compared to private firms.

2.4.2 Existing development administration and finance in DOKAP region

(1) Existing local development administration in DOKAP region

Local administration in the DOKAP region, as of 1997, consists of 286 municipalities and 2,714 villages as shown below, as well as seven provincial self-governments. There is no metropolitan municipality in the DOKAP region (Table 2.16).

Table 2.16 Number of Municipalities and Villages

Province	No. of municipalities	No. of villages
Artvin	12	308
Giresun	77	557
Gumushane	18	330
Ordu	72	505
Rize	21	348
Trabzon	77	495
Bayburt	9	171
DOKAP	286	2,714

In 17 provinces of the Black Sea region, there exist 182 unions of local governments, of which 133 are inter-village unions, no inter-province and only two inter-municipality unions. Of the total, 149 are formed to render various services (mostly infrastructure services), and 10 for irrigation. One-third of all the unions has no permanent financial resources.

The revenue structure of DOKAP municipalities and all the municipalities in Turkey is compared in Table 2.17 for the year 1996. The revenue structure of all the provincial self-governments in the DOKAP region and Turkey is compared in Table 2.18 also for 1996.

Table 2.17 Revenue Structure of All Municipalities in DOKAP and Turkey, 1996

(Unit : %)

Revenue source	DOKAP	Turkey
Share of payments, general budget tax revenues	48	50
Municipal taxes	6	8
User charges	3	3
Revenues from institutions and companies managed by municipalities	13	5
Profits of enterprises	5	1
Revenue from municipal properties	7	10
Special aids and transfers	11	5
Others	8	19

Source: SIS, Final Accounts, Municipalities and Special Provincial Administrations, 1996.

Table 2.18 Revenue Structure of Provincial Self-Governments in DOKAP and Turkey, 1996

(Unit: %)

Revenue source	DOKAP	Turkey
Income and wealth tax	18	19
Expenditure tax	0	2
Other taxes	0	0
Income from corporations managed by provincial administration	0	0
Revenue from property of provincial administration	22	16
Other revenues and fines	37	35
Special revenue and funds	23	27

Source: SIS, Final Accounts, Municipalities and Special Provincial Administrations, 1996.

(2) Specific issues for DOKAP local administration

Small public investment per capita

The Black Sea region has the smallest public investment expenditure per capita of all the regions in Turkey during 1990-97. This expenditure is only two-thirds of the average in Turkey. The DOKAP region has even a smaller public investment expenditure per capita, corresponding to smaller than a half of the national average during 1990-97. Moreover, differences between the DOKAP provinces are quite large as shown in the Table 2.19.

Table 2.19 Comparison of Public Investment per Capita, 1990-97

Region/Province	Average population, 1990-97 (1,000)	Public investment expenditure, 1990-97 (TLx 10^9 in 1998 prices)	Per capita public investment expenditure, 1990-97 (TLx 10^6)
DOKAP	2,940	132,482	45
Artvin	199	15,314	77
Giresun	481	6,353	13
Gumushane	162	18,969	117
Ordu	834	17,525	21
Rize	338	13,601	40
Trabzon	822	51,434	63
Bayburt	104	9,286	89
Black Sea	7,991	526,452	66
Mediterranean	7,542	556,665	74
East Anatolia	5,481	571,021	104
Aegean	8,024	952,817	119
South-East Anatolia	5,645	543,771	96
Central Anatolia	10,247	1,217,410	119
Marmara	14,742	1,354,960	92
Turkey	59,672	5,723,096	96

Note: 1) Investments of local administration and funds are not included.
2) Projects which cannot be shared among provinces and involve more than one province are not included.

Source: Various Indicators Related to Provinces and Regions, SPO, 1999

Small revenue per capita

Municipalities in the DOKAP region have much smaller revenue per capita. The DOKAP provinces had a total revenue of TL10,779 billion in 1996 or TL3.73 million per capita, while Turkey's total was TL398,725 billion or TL6.36 million per capita.

Poor management and financial losses of some public services

There are some cases of poor management of public services in municipalities of the DOKAP region. A case of huge losses in water supply is reported, which in part may be attributed to low user charges.

Larger shares of personnel expenditure

Municipalities in the DOKAP region have on an average a larger share of payroll costs, 31 % in the total expenditure, compared to the average 25 % in Turkey. The ratio of current expenditures, including the personnel costs, is 48 % in the DOKAP region, much larger than the average, 38 % in Turkey. The ratio of compulsory payment, including current expenditures and loan repayments, to the revenue available for any purposes was 80 % in DOKAP municipalities in 1996, much larger than the ratio in Turkey at 71 %. This indicates limited financial flexibility of municipalities in the DOKAP region.

CHAPTER 3 DOKAP REGIONAL DEVELOPMENT OBJECTIVES AND STRATEGY

3.1 Problem Structure of DOKAP Region

The existing conditions of the DOKAP region have been analyzed by sector, and results are summarized in Chapter 2 in such a way to clarify characteristics of the region. Some salient features and positive characteristics of the DOKAP region are noted. Despite these, the DOKAP region faces various problems, which combined would work as constraints to the DOKAP regional development.

Many of these problems are inter-related to cause undesirable phenomena observed. A problem structure analysis is a method to clarify these inter-relationships in a macroscopic way. The analysis is used usually during the initial stage of the multi-sector planning, as against a more popular problem tree analysis which is applied usually to a simpler problem complex for project formulation in a specific sector. The problem structure analysis would allow to maintain a broad perspective without getting into details to identify more essential factors and major problems to be alleviated through planned development efforts. The analysis is used here to define development objectives and strategy for the DOKAP region.

A problem structure analysis has been conducted for the DOKAP region, and results are shown in Figure 3.1. In the figure, more important factors and phenomena are shown expressed in generic terms to imply many specific factors and phenomena. The figure also shows only main inter-relationships among them.

(1) Major problem phenomena

Referring to Figure 3.1, major problem phenomena in the DOKAP region are identified in economic, social and environmental sectors. They are described below.

Economic problems

The major problem in the economic sector is the weak economic structure in the DOKAP region caused by:

- Limited access to external markets due to geographic location and under-developed transport infrastructure,
- Low level of urbanization or lack of urban agglomeration,
- Undeveloped tourism resources,

- Improper land use and management for agriculture,
- Dependence on single crop farming with tea and hazelnuts, or otherwise cereals,
- Stagnation of traditional rural economies, and
- Large intra-regional disparities.

The weak economic structure in the DOKAP region is characterized by the undiversified industry sector where even agro-processing is limited, and lack of specialization in services. This problem typically takes forms of low income, lack of capital accumulation within the region, and limited employment opportunities, causing large out-migration as shown in Figure 3.1.

Social problems

The major problem in the social sector of the DOKAP region may be expressed as the lack of regional integration or social cohesiveness. Macro problem phenomena, as shown in Figure 3.1, include large out-migration that tends to disrupt social and family ties, limited employment opportunities that tend to depress local people, and large intra-regional disparities in social services delivery. Stagnation of traditional rural economies as well as various economic problems listed above are root causes of the phenomena.

Environmental problems

The major problem in the environment sector of the DOKAP region may be collectively expressed as degrading resource capacity in land and water regimes and in rural and urban areas. Macro problem phenomena, as shown in Figure 3.1, include neglect of rural environment, deteriorating urban environment, and pollution and resource degradation in Black Sea.

Problems in rural areas include degradation of forest resources, resultant reduction in bio-diversity, and deteriorating living environment such as reduced levels of social services due to depopulation and physical dilapidation of facilities. Problems in urban areas including improper solid wastes management, traffic congestion, and unorderly urbanization patterns. Natural disasters such as floods and landslides tend to be aggravated by these problems in rural and urban areas, and constitute also a factor for the problems in the Black Sea and along its coast.

(2) Fundamental problems

Four fundamental problems are noted as shown in Figure 3.1. Two of them are inherent problems: distance and poor access from advanced regions, and harsh topography with limited flatland. Two other factors are institutional: inadequate

development planning and administration system, and weak local administration. The two inherent problems may be overcome, to a good extent, by improving physical and institutional infrastructure and providing more adequate management of natural conditions and resources. These two problems, therefore, can be addressed within the other two institutional problems.

These institutional problems are causing an array of infrastructure and resource related problems as shown in Figure 3.1. These are:

- Delay in transport infrastructure development,
- Unclear and ineffective land tenure system,
- Insufficient water resources development and management,

Figure 3.1 Problem Structure of DOKAP Region

- Inadequate rural infrastructure, and
- Uneven social services delivery.

These problems are problem factors linking the fundamental problems and the major problem phenomena identified above.

3.2 DOKAP Regional Development Objectives

Objectives for the DOKAP regional development are defined addressing to the major problem phenomena identified above in economic, social and environmental sectors. Three objectives are defined as follows corresponding to the economic, social, and environmental problems, respectively.

Objective 1 (Economic)

To strengthen the economic structure, responding to emerging opportunities, in order to diversify employment opportunities, raise income levels, and contribute to capital accumulation within the region.

Objective 2 (Social)

To promote regional integration or social cohesiveness through minimizing intra-regional disparities and out-migration.

Objective 3 (Environmental)

To restore and sustain resource and environmental capacity as a basis for diversifying socio-economic activities.

3.3 Basic Strategy for DOKAP Regional Development

Basic strategy for the DOKAP regional development should be established on the basis of problem factors, those at the root of various problem phenomena observed. Of the problem factors mentioned above, the two inherent problems cannot be overcome directly. Others, institutional problems and infrastructure/resource related problems, provide the basis for establishing basic strategy. The following four elements constitute the basic strategy for the DOKAP regional development.

Upgrading of trunk transport and communication infrastructure

To overcome problems related to the harsh topography and the distance and poor access from advanced regions, trunk transport and communication infrastructure

in the DOKAP region should be much upgraded. This strategy may be supported by the following components:

- More extensive use of sea lanes in Black Sea with integrated port network development and introduction of new types of vessels;
- Stage-wise development of the Black Sea highway starting with vertical by-passes with viaducts for larger urban centers;
- Establishment of alternative north-south lateral highways; and
- Development of high grade, multi-purpose, multi-media telecommunication networks.

Establishment of local air services network and rail links with neighbouring regions may also constitute elements of this strategy.

Multi-purpose water resources development and management

The DOKAP region has huge water resources potential which has not been much utilized. Proper development and management of water resources for various purposes hold a key for the DOKAP regional development. The following constitute this strategy:

- Multi-purpose dams for irrigation, hydropower, urban water supply, tourism and flood control;
- Irrigation to enhance productivity of limited agricultural land with crop diversification;
- Development and management of larger water supply systems by and for alliances of local governments;
- Incorporation of various community and tourism facilities into dam projects to vitalize rural economies; and
- Watershed management with community involvement as an inherent component of any dam projects.
- Prevention of pollution and maintenance of water quality

Forests are another major resource in the DOKAP region constituting inseparable part of watershed . These should be developed effectively to increase incomes, reduce conflicts with the local people and to enhance the environment.

Land tenure improvements

Land use in the DOKAP region should be more rationalized with respect to areas to be protected, to be used for various agricultural purposes, and to be allowed for urbanization. Improving land tenure holds a key for encouraging more rational

land use. The following are particularly important for enhancing livelihood and economic conditions of villagers, while protecting the environment:

- Clarification of land tenure for forest areas occupied by forest villages, depending on land capability;
- Establishment of use rights for exploitation of non-wood forest products;
- Re-delineation of forest protection areas and strict enforcement of protection;
- Establishment of communal ownership of grazing land with proper management organization for more flexible yet sustainable uses; and
- Consolidation or strengthening of land tenure on prime agricultural land to discourage indiscriminate conversion into urban/industrial uses.

Strengthening of local government

To effect the decentralization of development planning and administration, local administration should be strengthened. The following are instrumental for this strategy:

- Promotion of urban services improvement by alliances of local governments for better locational decisions on facilities, pooling of limited staff and financial resources, and effective cross subsidizing from larger to smaller local governments under the economy of scale;
- Improvement of local taxation system and financial management of local governments;
- Development of human resources particularly for local planning, environmental management, and social services delivery;
- Introduction of local administration evaluation system; and
- Effective consolidation of villages through provision of common service facilities as well as access improvement.

The improvement of living conditions in settlements is considered to be vital for keeping local manpower and capital resources in the region. This will contribute to sustained, self-generating regional development.

CHAPTER 4 DOKAP DEVELOPMENT FRAMEWORKS AND SCENARIO

4.1 Development Alternatives

4.1.1 Conditions for the development alternatives

Two serious problems of the DOKAP region are the low per capita income and out-migration. The basic condition for DOKAP regional development is to eliminate, or substantially reduce, the gap between incomes in the region and the rest of the country by the end of the planning period. SPO projects that the national GDP per capita will reach $6,300 in the year 2020 in constant 1992 prices. The per capita GDP in the DOKAP region in the year 2020 should exceed $4,000 if the income gap between the region and the rest of the country is to be reduced.

The second critical parameter for setting development alternatives is the size of the population. The region has lost the natural increase in population through out-migration during the last decades. Even the absolute size of the population has declined between 1990-1997. One of the regional development targets is to create a sufficient number of well paying jobs in the region to reduce the pressure for out-migration.

If the present trends in population continue and these are not reversed by active interventions, the population of the region is projected to decline to 2.7 million in the year 2020. In the opposite case where the region retains all the natural increase in population and receives maximum in-migration and return migration, the regional population may increase to 4.3 million by the year 2020. The development framework is detailed for an intermediate case. In this case, the 2020 population is projected to be 3.44 million.

The intermediate growth is estimated by assuming that the decline in the population of the region stops after the projects proposed by the Master Plan start to be implemented. This will begin in the year 2001 and will have an immediate effect to reverse the population trends. The absolute size of population is targeted to increase beginning in the year 2005. The region will retain the projected natural increase in population after 2005 and will receive a modest amount of return or in-migration towards the end of the Master Plan period.

These two conditions related to income levels and population are the basis of setting and examining development alternatives. The distribution of the projected employment by sector, levels of productivity, and the rural/urban distribution of

the population projected for the end of the Master Plan period are derived from these two basic conditions.

4.1.2 Definition of development alternatives

Three possible development alternatives are conceived for the DOKAP regional development through the year 2020. These are:

I. Self-sustaining, integrated development,
II. Accelerated agro-industrial development, and
III. Outward-oriented, services-led development.

Alternative I is derived from the present trends, and will improve the economic performance by integrating different areas of the DOKAP region and by diversifying its economic base utilizing primarily indigenous resources. Production and services are oriented mainly to local and regional markets.

Alternative II aims at higher economic growth through accelerated agro-industrial development. It may still be based mainly on indigenous resources, but more diverse agricultural products will be produced for regional and national markets and more agro-industries will be established. Some export processing will also be undertaken to expand the indigenous resource base and produce for export markets.

Alternative III targets an even higher economic growth through outward-oriented development. More export processing will be undertaken, but the growth will be led more by various services. More important service activities include international trade, specialized business and personal services, international tourism and related services. Specialized health, education and cultural services may also be established to serve people in neighbouring regions and countries as well as local people.

Although these are conceptually distinct alternatives, many common elements may be involved in different alternatives. They are presented here to examine the range of possibilities for the DOKAP region and various implications of alternative development paths.

4.1.3 Projected development under each alternative

The intermediate level of population growth is assumed for all three alternatives. Levels of urbanization, total labor force and its sector-wise distribution, and labor productivity vary among the alternatives.

The levels of GRDP under different alternatives are calculated by first projecting the sector distribution of the labor force, and then combining it with the levels of sector value added per employee to arrive at the total regional income. This methododology thus incorporates the impact of both shifts from the less efficient (agriculture) to higher value added (i.e. industry and services) sectors, and changes in productivity within each sector.

(1) Population growth

Within the range examined in subsection 4.1.1, the likely population growth of the DOKAP region is assumed to be the medium level reflecting the impact of planned developments. The decline in DOKAP population will be gradually controlled as development programs proposed by the Master Plan are implemented beginning in the year 2001. The region will keep all the natural growth of population up to the year 2010. It will start to receive manageable magnitude of in-migration after 2011. The expected population and its distribution are summarized in Table 4.1.

The rural population in the region has been declining steadily since 1980 at the rate of 2.05 % per annum. In the base case, this decline is assumed to continue with rural population reduced to 937,000 in 2020. The rural population is expected to decline further under Alternatives II and III by 250, 000 people to 687,000 in the year 2020. Even in these cases, the rural population ratio remains at the relatively high level of 20%.

Table 4.1 Present and Projected Population in DOKAP Region

	1990	1997	2000	2005	2010	2020
Total population	2,963,355	2,911,088	2,911,633	2,952,424	3,125,879	3,447,889
Rural population	1,804,051	1,495,148	1,406,000	1,270,000	1,148,000	937,000
Urban population	1,159,304	1,415,940	1,505,673	1,682,424	1,977,879	2,510,889

The natural increase in the region's population is calculated on the basis of total fertility parameters for Turkey and the DOKAP region. The projections made by SIS indicate that the two are expected to converge in the year 2010 as shown

below. The DOKAP region parameters given below are those of the Northern Region as defined by SIS for demographic analysis.

Table 4.2 Total Fertility Rates in Turkey and DOKAP Region

	Year				
	1998	**2000**	**2005**	**2010**	**2020**
Turkey	2.31	2.2	2.1	2.1	2.1
DOKAP	2.68	2.5	2.2	2.1	2.1

Source: SIS

(2) Size and sector distribution of labor force

The estimated size of the labour force depends on the projected size of the population and, as critically, on the projected rural urban distribution of this population. Labor force participation ratios are high in rural areas, becouse all adult women are assumed to be full time employees in agriculture as shown below. The shift from villages to cities is thus expected to cause substantial reductions in the size of labor force for any level of population.

Table 4.3 Parameters for Labour Force and Employment in DOKAP Region

	(A) Labor force coefficient*		**(A) Labor participation ratio****		**(A) Composite labour coefficient*****	
	Rural	**Urban**	**Rural**	**Urban**	**Rural**	**Urban**
1990	64.3	66.5	0.86	0.41	55.3	27.3
1997	70.2	72.7	0.85	0.41	60.0	30.0
2010	73.8	76.3	0.84	0.42	62.0	32.1
2020	76.1	78.7	0.82	0.43	62.4	33.9

Notes: * Share of population over 15 years of age
** Share of working age population active in labour force
*** Composite of (A) and (B)

The proportion of rural population actually working is estimated to be 55.3% of the total in 1990. Projections which take into account the changes in age structure indicate that this ratio will increase to 62.4% in 2020. In urban areas, the estimated ratio was small (27.3% in 1990) and will remain at a relatively low level by the year 2020 (33.9 %). The expected shift of population from the urban to rural areas, therefore, will lead to a large reduction in the supply of labour force even if the size of the overall population remains unchanged.

In Alternative I, the rural population continues to decline at the trend rates. This suggests that the 1997 rural population of a little less than 1.5 million will decline

to 937,000 by 2020. All migration and the natural increase in the region's population will be accomodated in cities. This change in rural population is directly reflected in agricultural employment.

The size of the agricultural employment is derived from that of rural population. Although some villagers hold non-farm jobs and some city residents are involved in agriculture, the future employment in cities is assumed to derive from non-farm jobs. The reverse is true for the urban dwellers. This convention is indicated by the existing structure; at present, 25% of the urban labour force is estimated to work in agriculture. Similarly, 14% of the rural workers held non-farm jobs. The magnitudes of the two are similar and they are expected to balance each other out.

Adjustments were made in the rural-urban distribution of population after an initial evaluation of the results of the base case (Alternative I). The region will maintain its agrarian character under Alternative I with over 40% of the labor force remaining employed in agriculture. The growth in GRDP will not be sufficiently high to close the gap betweeen the region and the rest of Turkey. Therefore, adjustments were made for Alternatives II and III.

Under Alternative I, the rural population is projected to decline by half a million people during the Master Plan period. In addition to that a further decline of 250, 000 is projected under Alternatives II and III. The further growth in urban labor force is employed mainly in industry under Alternative II and in services under Alternative III.

(3) Labor productivity

Labor productivity in the DOKAP region is low in all the three sectors compared with the national averages. The difference is particularly large in agriculture as shown in Table 4.4. The main cause in agriculture is the dominance of tea and hazelnuts and the particularly low productivity of labour in tea. Most of the reported employment in tea could be considered as disguised unemployment. Turkish domestic tea prices are considerably above the world market prices and the alignment in prices will further reduce the value added per worker.

Table 4.4 GRDP/GDP per Worker*

(Unit: current US$)

	Agriculture	**Industry**	**Services**
DOKAP	1,314	6,517	10,612
Turkey	2,922	15,532	11,236

* Simple averages of 1990, 1995 and 1997

The low efficiency of manufacturing employment is also largely due to the mono-culture in agriculture. Agro-industries are dominant in manufacturing. Processing is highly seasonal, dominated by the state sector, and is extremely inefficient. Other subsectors of manufacturing are comparable to the national averages in terms of labour utilization efficiency.

Over half of the service employment is government employees, estimated at 130,000 in 1999 in the DOKAP region. The salaries in this sector are considerably above the incomes in informal service jobs, and this is reflected in the relatively high value added in the services sector in the DOKAP region.

The change in labor productivity in agriculture is estimated from the levels of output and employment. It is assumed that the levels of agricultural GRDP will continue to increase at the rate of 1% per annum despite the decline in the size of the rural labor force. Fairly high levels of growth in labor productivity are derived under these assumptions.

The impact of structural change on labour productivity in agriculture is also reflected in the national level estimates. SPO has prepared productivity estimates for the country for the period 1999-2020. The implied changes in labour productivity in Turkey are 1.2% for industry, 2.0% for services, and 2.9% for agriculture.

The estimated changes for labor productivity in the DOKAP region are given in Table 4.5. The changes assumed are quite moderate and reflect the relatively large size of the existing base relative to the expected increments. The additions to the services and industrial employment may be relatively efficient but the projected growth reflects the change in the total employment.

Table 4.5 Changes in Labour Productivity Assumed for DOKAP Alternatives

(%)

	Alternative I	Alternative II	Alternative III
a) Change in labour productivity			
Agriculture	2.9	4.3	4.3
Industry	2.0	3.0	3.0
Services	1.5	2.5	3.0
b) Change in GRDP	4.2	5.5	5.8

The realization of the growth under the last two alternatives will substantially reduce the productivity gap between the region and the rest of the country by 2020

as shown below. Implied levels of productivity are estimated for the terminal year of the DOKAP Master Plan and are compared in Table 4.6 with the national parameters estimated for the same year 2020.

Table 4.6 Comparison of GRDP/GDP per Worker between Turkey and DOKAP

(Unit: US$)

	Agriculture	Industry	Services
DOKAP - 1996	1,546	6,396	9,204
2020*	3,437	12,865	20,948
Turkey - 1995	2,470	15,142	13,096
2005	3,383	16,870	14,069
2020	5,007	20,184	21,752

(*) The change under Alternative III (services led growth).

4.1.4 Evaluation of development alternatives

The development alternatives are evaluated and compared to each other from various points of view including not only economic aspects but also social, environmental, and spatial aspects. Implications to public sector intervention are also indicated.

(1) Level and composition of GRDP

Details of the main development indicators under each alternative are given in the Appendix to this chapter. These are summarized below for the most critical parameters.

Table 4.7 Projected Development under Three Alternatives

	Alternative I	Alternative II	Alternative III
Growth in GRDP (%) per annum (average of 1997-2020)	4.16	5.54	5.77
Sector composition of GRDP (%) (In the year 2020)			
Agriculture	12.4	9.0	8.1
Industry	25.1	27.2	24.3
Services	62.5	63.8	67.6
Sector composition of employment in 2020 (%)			
Agriculture	42.3	32.3	31.0
Industry	21.2	26.0	20.0
Services	36.5	41.7	49.0
Share of urban population in 2020 (%)	72.8	80.0	80.0
GRDP per capita in 2020 (in constant 1996 US $)	3,856	4,729	5,296

Alternative I represents an insufficient level of development with regard to key indicators. The GRDP growth rate is low at 4.16% for the period 1997-2020. The share of agriculture in employment declines from the estimated 74% in 1997 to 42% in 2020, but the level in 2020 is too high and indicates an agrarian nature for the region.

Alternatives II and III attain higher levels of development than Alternative I. Alternative II is based on a relatively rapid build up of the manufacturing industries. There already is a broad consensus that the industries to be promoted will be environment friendly and intensively use skilled manpower.

The likely manufacturing enterprises under this alternative would serve both the national market and countries surrounding Black Sea. Use of raw materials from the neighbouring countries would be an advantage. These industries would require large capital investments, which can be mobilized only from outside the region. It is also possible to realize a modest level of growth in products serving the regional market. The desired levels of industrial growth can be achieved by combining this with substantial growth in a few selected commodities produced for the CIS countries.

The highest levels of growth can be attained under Alternative III. This would rely on promoting trade, particularly international trade, and specialized business and personal services. The services will include tourism, and specialized health, education and cultural services. This growth in services will be accompanied by a moderate growth in manufacturing.

(2) Social aspect

Alternative I may not be satisfactory from a social point of view. The GRDP growth rate is low at 4.16% per annum up to the year 2020, and the population growth is lower than the natural growth. This means out-migration will continue although it will be at a reduced rate. The share of agriculture in employment declines from 73% in 1996 to 42.3 % by 2020, but the DOKAP region will still be largely an agrarian society. This slow growth and the limited structural change imply that disparities between the region and Turkey and those between rural and urban areas within the region will persist.

Alternative II will be supported by trained manpower to be generated within the DOKAP region. This alternative will take advantage of the access to the CIS markets and raw materials from these countries. The development of the

manufacturing base in the region will be facilitated by stronger ties with the CIS countries.

Alternative III aims to realize an open society through increasing international trade not only with neighbouring countries but beyond. High grade social services will also support this alternative such as advanced health care and higher education to serve people in neighbouring countries as well as local people. Tourism is another key sector under this alternative. Rural tourism will be instrumental in revitalizing rural socio-economies, capitalizing on local culture as well.

(3) Environmental aspect

Under Alternative I, out-migration from rural areas will continue as the DOKAP region continues to be agrarian with weak economic base in rural areas. Consequently, the neglect of rural environment will be continued. Local and regional market-oriented production and services under this alternative will not demand high level of urban services and facilities. Therefore, urban environment may stay unattractive, although risks of serious pollution are relatively low.

Under Alternative II, urban environment will be improved to attract more manufacturing and related service activities, possibly at the cost of continued neglect of rural environment. In fact, the rural population will decline under this alternative as shown above. Due to some industries being expanded or established under this alternative, risks of industrial pollution may be higher.

Alternative III will be supported by improved urban services and facilities to attract more investors from outside. These together with high grade social services will create urban amenity, which will attract even more visitors and investors. Rural environment is expected to be enhanced under this alternative as a prerequisite for rural tourism.

(4) Public-private relationships

Relatively small intervention by the public sector is expected to pursue Alternative I. A main area of the intervention will be strategic improvement of intra-regional roads to strengthen links between different areas in the DOKAP region. Other urban infrastructure facilities will continue to be improved as part of regular programs, including water supply, electricity, and telecommunications.

Table 4.8 Comparison of Three Development Alternatives for DOKAP Region

	1. Self-sustaining integrated development	**II. Accelerated Agro-industrial development**	**III. Outward-oriented, Services-led development**
1. Characterization	Indigenous resources-based, local market-oriented development	Agro-industrial and export-processing development	Export market-oriented trade, business and personal services and tourism-led development
2. Economy			
Economic growth (%p.a., 2000-2020)	4.16	5.54	5.77
Economic structure (%)			
Agriculture	12	9	8
Industry	25	27	24
Services	63	64	68
Per capita GRDP in 2020 (Const. 1996 US$)	3,856	4,729	6,296
3. Spatial development			
Urbanization in 2020 (%)	72.8	80.0	80.0
Settlement pattern	More dispersed	Larger secondary towns	Concentration in a few large urban centers
4. Social implications	• Self-contained agrarian society • Persistent disparities between urban and rural areas	• Trained manpower as key for development • Stronger ties with neighbouring countries	• Open society • High grade social services • Revitalized rural socio-economies
5. Environmental implications	• Continued neglect of rural environment • Unattractive urban environment	• Possible pollution due to some industries • Improved urban environment	• Urban amenities Enriched rural environment for rural tourism
6. Public-private partnership	• Relatively small intervention by public sector mainly for improvement of intra-regional roads	• Public sector resources to improve physical infrastructure • Training, technology adoption etc. by private sector to be supported by public sector	• High degree of development management by public-private partnership

To promote the agro-industrial growth under Alternative II, more public sector resources need to be mobilized to improve physical infrastructure, including trunk transport and communication infrastructure, and major dams and irrigation facilities. Manpower training and technology adaptation are expected to be undertaken primarily by the private sector initiative, but the public sector will

support them with credit and other incentive measures. Also quality and product standards will be enforced by the public sector.

Alternative III will require, in general, a high degree of development management by public-private partnership. Special export guarantee and financing scheme as well as improved infrastructure would be necessary to promote international trade activities by the private sector. The Government needs to make a concerted effort to increase bilateral trade. All promotional measures allowed under WTO rules and the new treaty of Customs Union with EU should be undertaken.

4.1.5 Recommended DOKAP development alternative

The three development alternatives have been assessed above from various points of view. Results are summarized in Table 4.4. Based on the assessment, the best yet realistic alternative for the DOKAP regional development is defined as follows.

The three development alternatives, although conceptually distinct, are not mutually exclusive. Internal integration with maximum utilization of indigenous resources as envisioned by Alternative I is desirable and may be pursued for the DOKAP region from the initial stage.

Production and services, however, should be oriented not only to local and regional markets but also to national and international markets to capitalize on the locational advantage of the region in relation to the CIS countries. This means more agro-industrial activities should be established in line with Alternative II. Some export processing may be expanded more easily during an early stage of the DOKAP regional development based on raw materials to be imported from the CIS countries and for the export market. These production activities will induce international trade and specialized business and personal services as well.

To build up on the expanded and diversified economic base, more outward-oriented activities may be introduced in the DOKAP region in line with Alternative III. They may include other export processing industries and some higher order services to cater for needs of the neighbouring countries as well as local people. Markets for these latter activities, however, may be volatile, subject to socio-political conditions in the neighbouring countries, and over-dependence on them should be avoided. Therefore, these additional activities should be introduced carefully in the medium to long term upon the observation of development conditions in the DOKAP region and the surrounding socio-political environment.

The most appropriate alternative for the DOKAP regional development, therefore, is defined somewhere between Alternative II and Alternative III. Internal integration with maximum utilization of indigenous resources is built in within this alternative. Most elements of agro-industrial development and related services are also incorporated in line with Alternative II, but only selected elements of outward-oriented activities are included in this best yet realistic development alternative.

4.2 Socio-Economic Framework

A socio-economic framework for the DOKAP regional development is worked out by the indices used in the previous section to examine the three development alternatives. The DOKAP socio-economy in the year 2020 is expressed by the GRDP and the employment by sector, urban and rural population, and the per capita GRDP. As the DOKAP development alternative is defined above as an intermediate path between Alternative II and Alternative III, value of any index for the DOKAP socio-economy is taken as intermediate value between the value of corresponding index under these alternatives.

(1) GRDP and employment

The GRDP, GRDP per worker, and employment by sector in 2020 for the DOKAP development alternative are summarized in Table 4.9 for Alternative III. As shown in the table, the GRDP will grow at 5.8% per annum to the year 2020, where the sector shares are 8.1% for agriculture, 24.2% for industry, and 67.7% for services. Employment is dominated by services with a 43.3% share, followed by 31.5% for agriculture and 25.2% for industry.

Table 4.9 GRDP and Employment by Sector in DOKAP Region, 2020

Sector	GRDP		GRDP/ worker	Employment	
	(10^6 US$)	Share (%)	(US$)	(10^3)	Share (%)
Agriculture	1,474	8.1	2,557	429	31.5
Industry	4,429	24.2	12,865	344	25.2
Services	12,354	67.7	20,948	590	43.3
Total	18,256	100.0		1,363	100.0

(2) Population

Urban and rural population in 2020 under the DOKAP development alternative is the same as projected for Alternatives II and III. Results are summarized in Table 4.10. As seen from the table, the population in the region will increased to 3,447,000 by 2020 at the average annual rate of 0.74%. This level of population may be attained as follows. The decline in DOKAP population will be gradually controlled as development programs proposed by the Master Plan starts implementation in 2001. The region will keep all the natural growth of population up to the year 2010. After 2011, the region will start to receive managable magnitude of in-migration. The urbanization ratio will increase to 80.0% by 2020.

Table 4.10 Population Projection in DOKAP Region, 1997 – 2020

(Unit 1,000)

Population	Year			
	1997	2000	2010	2020
Urban	1,416	1,510	2,165	2,760
Rural	1,495	1,401	963	687
Total	2,911	2,911	3,128	3,447

(3) Per capita GRDP

Based on the projected GRDP and population, the per capita GRDP in the DOKAP region is calculated at US$ 5,013 in 2020. This may correspond to some 79% of the projected per capita GDP in Turkey, and represent a reasonable improvement from 1996, when the per capita GRDP in the DOKAP region was only 66% of the per capita GDP.

4.3 Spatial Development Framework

Spatial development of any region is affected by various factors such as natural conditions including resource endowments, existing infrastructure facilities, existing distribution of population, economic activities and wealth, and other physical and socio-cultural factors as well as policy interventions. Three most dominant factors, that are more directly subject to planned development, are (1) distribution of settlements, (2) transportation network, and (3) land use and potential. A spatial framework for DOKAP regional development is prescribed with respect to these factors.

4.3.1 Land use framework

(1) Existing land use and capability

Existing land use and land capability for agriculture in the DOKAP region were described in subsection 2.3.1. Characteristics of the existing land use in the region may be summarized as follows:

1) Agricultural land is quite limited: 19% (762,600 ha) of total land in 1996 (35% in Turkey);
2) Tree crop area dominates the agricultural land : 52.5% in 1996 (9.2% in Turkey);
3) Service coverage of irrigation is low with planned and existing irrigation development area (120,700 ha) corresponding only to 19% of the potential irrigation area (635,400 ha);
4) Protected area is limited with national parks, natural park, and areas for preservation of nature accounting for 2.1% (81,100 ha) of the total land, although this share is larger than the corresponding share in Turkey (1.0%);
5) Designated forest area is large: 37.4% (1,466,200 ha) in 1994 (29.1% in Turkey); and
6) Urban areas are confined largely to coastal strips.

Characteristics of the land capability in the DOKAP region may be summarized as follows:

i) Land suitable for crop production accounts only for 9.8% (382,400 ha) of the total land;
ii) Land that can not be used for any agricultural activities occupies 4.9% (194,000 ha) of the total land; and
iii) Major limiting factors against crop growth are erosion including slope gradient, soil property including soil depth, and wetness including susceptibility to floods and drainage.

(2) Criteria for land use planning

Existing land use and land capability are combined and analyzed by a GIS, and future land use planned. Criteria to be used for land use planning include the following:

1) Limited agricultural land should continue to be used in principle for agriculture, but hazelnuts production on prime agricultural land be discouraged;

2) Maximum irrigation development should be pursued to enhance land productivity for agriculture with crop diversification as much as possible;
3) Forest protection areas should be re-delineated and use of excluded forest areas for tree crops and exploitation of none-wood forest products allowed depending on land suitability;
4) Urbanization into lush plateau and on limited alluvial plains along flood-prone river courses should be controlled; and
5) Use of grazing land should be rationalized based on land capability.

A land use plan is developed for each province based on these criteria. The results are presented in Table 4.11 and Figure 4.1.

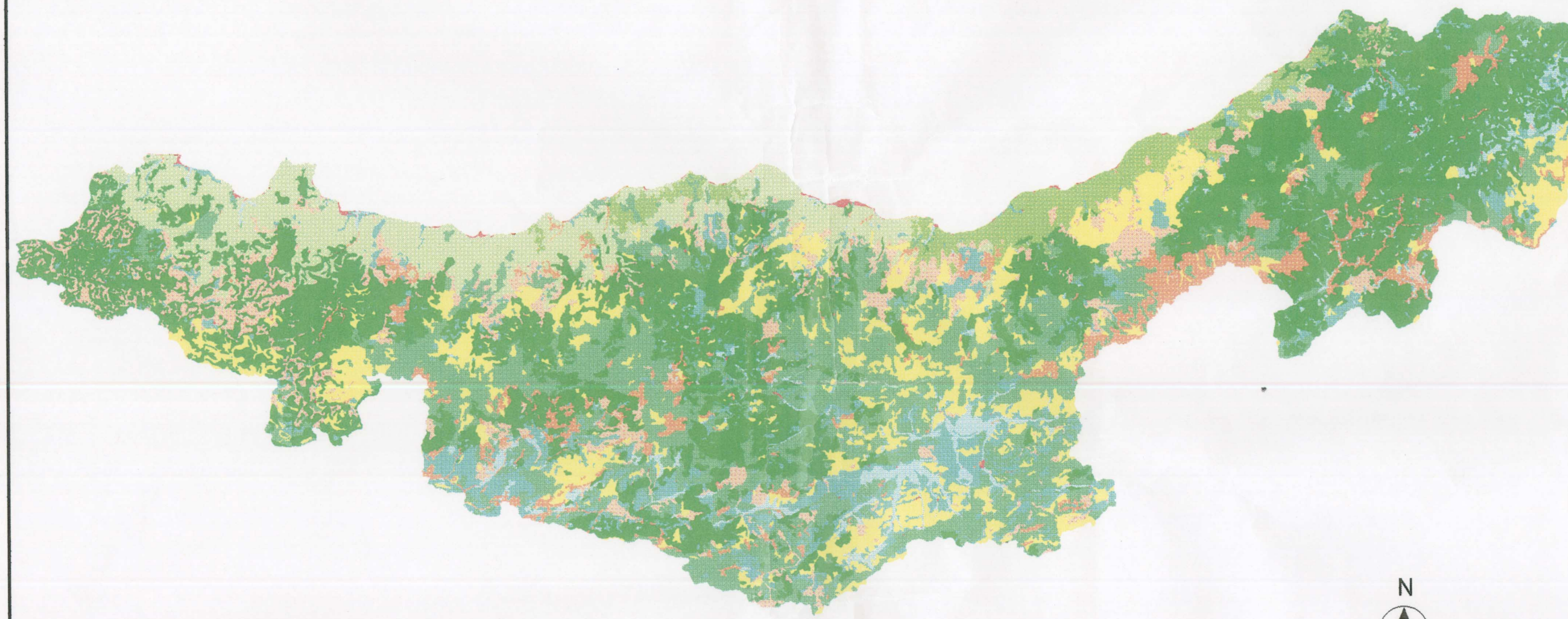
Table 4.11 Future Land Use in DOKAP Region

Unit: km^2

	Artvin	Giresun	Gumushane	Ordu	Rize	Trabzon	Bayburt	DOKAP
Irrigated Agricultural Land	415.16	118.42	175.44	32.95	6.44	35.51	407.02	1,190.94
Dry Agricultural Land	452.89	639.03	700.45	169.12	168.60	294.31	783.57	3,207.97
Orchard	624.01	775.81	605.55	504.47	598.18	725.34	922.68	4,756.04
Diversified Orchard	186.88	484.23	256.24	950.64	345.59	412.09	95.23	2,730.87
Pasture	948.94	1,455.66	2,499.76	324.23	490.25	982.03	1,374.64	8,075.51
Forest	4,473.11	1,694.28	2,178.21	2,516.74	1,140.20	970.81	92.35	13,065.70
Hazelnut	34.80	1,131.02	0.00	1,431.60	39.33	660.63	0.00	3,297.38
Tea	153.37	163.28	0.00	0.00	677.56	384.63	0.00	1,378.86
Settlements	7.26	10.05	12.30	19.66	8.96	26.46	10.26	94.96
Others	683.79	495.24	261.07	37.13	410.83	93.20	70.57	2,051.81
TOTAL	7,980.21	6,967.00	6,689.01	5,986.53	3,885.94	4,585.00	3,756.33	39,849.10

"Others" includes No Data, Rocky Areas, Sand Dunes, Flood Plain and Artificial Lake Areas

The amount of land area proposed for each category is, in broad terms, similar to the existing land use, though it is not possible to make location specific comparison between the proposed and existing land uses. The available information on land use, and the proposed pattern suggest that the emphasis of land use policy should be on conservation to prevent land conversion.



Note : This map composition was prepared using the Geographic Information System (GIS) Database developed in the study.

Figure 4.1 Future Land Use Map

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4.3.2 Transportation system

An important element of the basic strategy for the DOKAP regional development is to strengthen the trunk transport and communication infrastructure as presented in Section 3.3. In particular for the transportation system, a multi-modal artery network should be developed (Figure 4.2). Elements of the future artery network are described by mode.

Land transport

1) East-west artery

The existing east-west artery along the coast should be strengthened as a backbone axis, from which links to other areas of the DOKAP region, and neighboring regions and countries extend. Some sections of the existing coastal highway should be improved with lane expansion, minor re-alignment and re-surfacing. The improvement of Trabzon-Rize section will support the corridor development. The Black Sea highway should be developed in stages starting with vertical by-passes of viaducts to avoid intra-city traffics of larger urban centers.

2) North-south lateral highways

The north-south lateral access capacity should be much expanded. At present, the Trabzon-Torul-Gumushane-Bayburt highway is practically the only north-south lateral highway. The road between Tirebolu and Torul is under upgrading associated with the Kurtun dam construction. Once completed, this will provide a supplementary secondary artery. The road from Hopa through Artvin leading to Erzurum is another secondary artery, but it needs to be relocated due to ongoing dam projects. The Unye-Akkus road leading to Tokat is another secondary artery serving the western part of the DOKAP region. In addition, another major north-south lateral highway should be established: the Giresun-Sebinkarahisar road utilizing ongoing improvement and the Arakli-Dagbasi-Aydintepe-Bayburt road should be further investigated..

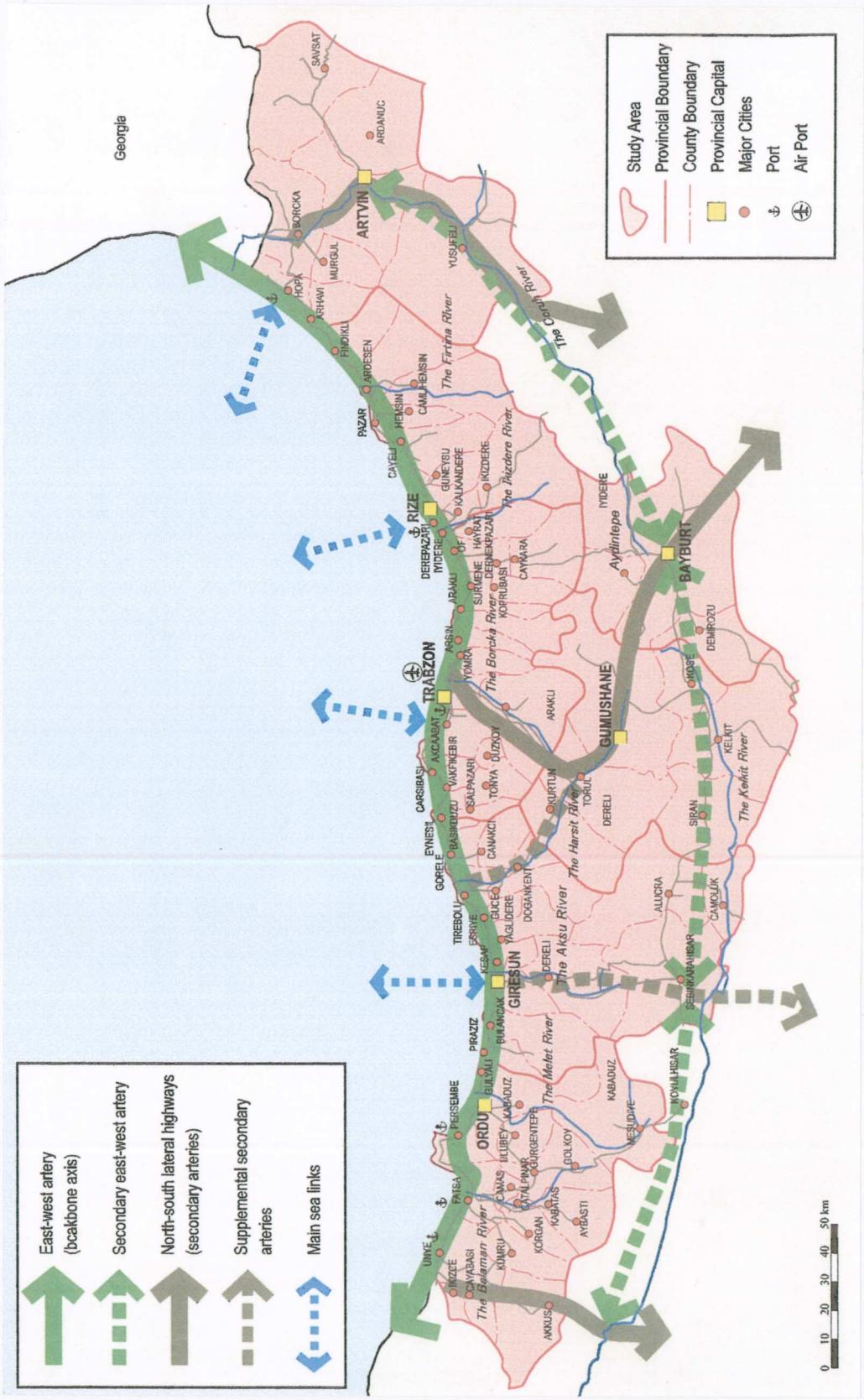

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Figure 4.2
Artery Network in DOKAP Region

3) Secondary east-west artery

A secondary east-west artery should be established to serve inland areas of the DOKAP region. The road along the mid to upstream of the Coruh river linking Artvin and Bayburt extends to Sebinkarahisar through Kose - Kelkit-Siran-Aluca sections, and links to the road along the Kelkit river. The road sections along the Coruh river should be improved in association with planned dam projects. Other sections need to be upgraded.

4) New railway lines

Establishment of rail links with neighbouring regions or countries may become viable in the medium to long term. As a first step, this option should be examined within the context of inter-regional and international trade and transportation centering on East Turkey.

Sea transport

Three major ports in Hopa, Rize and Giresun have been privatized, and the port of Trabzon is expected to be privatized in the near future. While the privatization is expected to improve operation and management of individual ports, efficient operation and effective management of the port system in the DOKAP region need to be ensured. Complementary operation of all the major ports in the region should promote domestic trade and passenger movements initially. In the medium to long term, these ports should be able to accommodate increasing number of ship calls for international trade and tourism by allocating berthing spaces in a more efficient way from the overall regional point of view. Linking the ports with advanced telecommunication systems is a prerequisite. The ports of Trabzon and Rize may even be managed jointly together with respective industrial estates or free trade zones.

Air transport

The Trabzon airport is the largest airport in East Turkey in terms of the number of passengers and the number of departures and arrivals. Considering there exist no significant domestic air links from Trabzon, local demand for air travels is quite high. This may lead to need for another airport in the DOKAP region, and the proposal Ordu-Giresun airport is an option to be examined. Also small air strips and heliports should be established in the medium term primarily for emergency purposes related to natural disasters

and health services. They may be used also for tourism purposes. A local air services network will establish, connecting with destinations in neighbouring regions and countries, including the Batum airport in Georgia.

4.3.3 Settlement system

(1) Existing settlement system

As part of the DOKAP spatial structure, the settlement system in the region was analyzed in Section 2.2. Characteristics of the existing settlement system may be summarized as follows:

1) Location of urban centers is heavily biased to the coastal area with only a few larger urban centers in the inland area, except in the province of Ordu;
2) There is no sizable urban center other than Trabzon, and the primacy of Trabzon is not so strong;
3) No clustering of urban centers is observed other than in areas around Trabzon; and
4) Rural settlements are largely dispersed due mainly to topography, and the situation tends to aggravate due to rural-to-urban migration.

(2) Conditions for improving settlement system

Given the existing characteristics of the settlement system, the following conditions need to be satisfied to improve the settlement system in the DOKAP region. First, more orderly urbanization patterns should be realized in the coastal area rather than ribbon-type development proceeding at present. For this purpose, certain concentration of urban activities in selected areas with larger land area and other favorable conditions may be desirable for accelerated urbanization.

Second, larger urban centers should be created in the inland area, where growth potentials are high due to strategic location along artery roads and planned / on-going water resources development. Related infrastructure should be provided to accelerate the urbanization for such areas.

Third, clear urban hierarchy should be established with functional division, and various urban infrastructure facilities should be selectively improved in line with functions assigned to different urban centers. In particular, lower tier urban centers in the inland area should be much strengthened to serve rural communities in their respective hinterlands.

(3) Urban hierarchy

The existing hierarchy in the DOKAP region is not so strong. The largest urban center of Trabzon is at the third tier in the national hierarchy. Some smaller urban centers in the southern part of the region are more strongly linked to larger urban centers outside the region such as Erzurum, Erzincan, and Tokat.

An urban hierarchy study was conducted as part of the Study by KTU Faculty of Engineering and Architecture. The study ranked 40 urban settlements over 10,000 population in the DOKAP region by centrality indices related to eight urban functions: (1) retailing, wholesaling and personal services, (2) judicial services, (3) administrative functions, (4) health and sanitary services, (5) cultural functions, (6) tourism and recreational functions, (7) educational functions, and (8) business services. The study also provided the overall ranking and analyzed changes since the early 1980s when the previous national urban hierarchy analysis was conducted by SPO. Results are summarized in Table 4.12.

The DOKAP urban hierarchy is expected to change as a result of planned development. The following changes are expected related to the future hierarchy of urban centers in the DOKAP region:

i) Increase in population in the inland as land productivity is enhanced with planned /on-going irrigation projects,
ii) Development of the Trabzon-Rize corridor,
iii) Further sub-urbanization in Ordu with urban cluster formation, and
iv) Integration between southern and northern parts of the region.

Functional division among different urban centers should be clarified, and some urban centers specialized in certain functions for more effective overall services delivery to local people and visitors. Those functions to be strengthened in selected urban centers are indicated also in Table 4.12. For those functions, a certain urban center may be ranked higher in the future urban hierarchy. Also location of urban centers in relation to existing and future arteries, other major urban centers and facilities is taken into account in designating functions to be strengthened.

Taking these conditions into account, the future hierarchical structure of urban centers in the DOKAP region has been worked out. Five tiers of urban centers are defined for the region in addition to district capitals. Results are summarized in Table 4.13.

4.4 Development Scenario

Given the existing conditions of the DOKAP region described in Chapter 2, the DOKAP regional development will be pursued to attain the development objectives defined under the basic strategy established respectively in Chapter 3. Various elements of the basic strategy will be combined in time and space, and the DOKAP regional development will be realized over time as resource capacity expands and institutional measures are taken in steps.

Sequence of activities to develop and events to take place over the planning period are described as a development scenario. The planning period is divided into three phases: Phase 1 for 2001-05, Phase 2 for 2006-10, and Phase 3 after 2011. Expected performance and characterization of the DOKAP region in each phase are summarized in Table 4.14.

Out-migration and depopulation constitute the major problem facing the DOKAP region. The DOKAP regional development will overcome this problem by attaining first, zero population growth in Phase 1, and natural population growth in Phase 2. In Phase 3, manageable magnitude of in-migration may be desirable to realize lively mixed culture society where people from different regions and countries communicate actively. Indicative average annual growth rates of the DOKAP economy may be about 4% in Phase 1, 6-7% in Phase 2, and 5-6% in Phase 3 that should be sustained.

Table 4.12 Ranking of DOKAP Urban Centers by Centrality Indices

Urban center	Prov.	Retail, wholesale, personal services	Judical services	Administ. functions	Health & Sanitary	Cultural functions	Tourism, recreational functions	Education functions	Business services	Overall ranking
Trabzon	TR	8	4	6	8	8	7	6	6	8
Ordu	OR	7	3	5	7	6	4	5	5	7
Giresun	GI	6	2	4	6	7	5	5	4	6
Rize	RI	6	2	3	5	6	6	5	4	6
Unye	OR	5	2	2	6	5	2	4	3	5
Akcaabat	TR	4	1	1	3	4	3	3	2	4
Fatsa	OR	4	1	2	4	5	2	3	3	4
Bulancak	GI	4	1	2	3	4	1	1	2	4
Gorele	GI	3	1	1	4	4	1	2	2	4
Artvin	AR	2	2	3	4	4	***4***	4	3	4
Cayeli	RI	3	1	1	4	3	2	1	2	4
Baybur	BA	***1***	2	***2***	4	***1***	***2***	***4***	***1***	3
Pazar	RI	2	1	1	4	3	***1***	1	2	3
Tirebolu	GI	3	2	2	4	2	1	3	1	3
Gumushane	GU	2	1	***1***	4	3	***2***	4	3	3
Hopa	AR	2	1	1	2	***1***	3	4	2	3
Espiye	GI	2	1	1	4	1	1	1	1	3
Besikduzu	GI	2	1	1	1	1	2	2	1	3
Aybasti	OR	2	1	1	2	3	1	1	***1***	2
Golkoy	OR	2	1	1	2	4	1	1	1	2
Of	TR	2	1	1	2	1	1	1	1	2
Ardesen	RI	1	1	1	4	4	1	1	1	2
Korgan	OR	2	1	1	2	2	1	1	1	2
Ulubey	OR	1	1	1	2	1	1	1	1	2
Sebinkarahisar	GI	2	1	***1***	3	3	***1***	2	***1***	2
Arhavi	AR	1	1	1	1	2	1	3	1	2
Kelkit	GU	***1***	1	1	3	1	***1***	2	***1***	2
Vakfikebir	TR	1	1	1	2	1	2	1	1	2
Arakli	TR	1	1	1	1	1	1	2	***1***	2
Kumru	OR	1	1	1	2	1	1	1	1	2
Macka	TR	***1***	1	1	***1***	***1***	5	2	1	2
Persembe	OR	1	1	1	1	1	2	2	1	2
Surmene	TR	1	1	1	2	1	2	3	1	2
Yanra	TR	1	1	1	3	1	1	1	1	1
Akkus	OR	1	1	1	2	2	1	1	1	1
Alucra	GI	***1***	1	1	2	1	1	1	***1***	1
Gurgentepe	OR	1	1	1	2	3	1	1	1	1
Tonya	TR	1	1	1	2	1	1	1	1	1
Camas	OR	1	1	1	1	1	1	1	1	1
Siran	GU	1	1	1	2	1	1	1	1	1

* Bold and italic numbers indicate functions to be strengthened.
Source: JICA Study Team

Table 4.13 Urban Hierarchy in DOKAP Region

Hierarcy	Urban Center	Main functions
1. Regional center	Trabzon	Multi-functioanl urban center for high-grade urban services and amenity Regional trade center and tourism gateway
2. Subregional centers	Ordu	Multi-functional urban center complementary to Trabzon Agro-industrial center and trade subcenter
	Rize	Multi-functional urban center complementary to Trabzon Industrial and trade center
3. Major urban centers	Giresun	Trade and financial center
	Unye	Agro-processing subcenter
	Artvin	Social and cultural services center Tourism subcenter
	Bayburt	Social services and agro-processing center
	Gumushane	Social services center Tourism subcenter
4. Secondary urban centers	Akcaabat	Trade and social services subcenter
	Fatsa	Trade and cultural subcenter
	Bulancak	Trade and cultural subcenter
	Gorele	Social services subcenter
	Cayeli	Social services subcenter
	Pazar	Social services subcenter
	Tirebolu	Social services and trade subcenter
	Hopa	Trade and cultural subcenter
	Sebinkarahisar	Trade, social services and cultural subcenter
	Macka	Tourism subcenter
5. Service urban centers	Espiye, Besikduzu Aybasti, Golkoy, Of Ardesen, Korgan, Arhavi, Kelkit, Persembe, Surmene, Yonra, Akkus, Gurgentepe, Alucra	
6. District capitals	49 urban centers	

Source: JICA Study Team

Economic characterization of the DOKAP regional development is as follows:

Phase 1: Preparation for economic re-structuring,
Phase 2: Economic re-structuring, and
Phase 3: Sustainable economic growth.

Some key activities and characteristics to support the economic growth in each phase are also listed in Table 4.9. These are not comprehensive lists, and more specific activities are presented in respective sector reports.

In social aspects, local foundations for social development should be established in Phase 1, and the improved social services delivery system should be extended to cover the entire DOKAP region in Phase 2. Typical activities in these phases are shown in Table 4.14. In Phase 3, the social services network for the DOKAP region will be extended to other countries with upgrading supported by multi-media telecommunication system.

In the environmental sector, community-based environmental management system should be established in Phase 1, especially for forest and watershed management, environmental impact assessment (EIA), and information exchange on Black Sea environment. Such a system should be broadened in Phase 2 with respect to scope and participation. Not only the EIA but more broadly environmental monitoring and evaluation (M&E) should be conducted with community involvement, an eco-community network established to exchange various environmental information between stakeholders and a Black Sea environmental inventory undertaken. The system will be further upgraded in Phase 3 and eventually linked to the rest of the world.

Table 4.14 Development Scenario for DOKAP Regional Development

	Phase 1 2001 – 2005	**Phase 2 2006 - 2010**	**Phase 3 2011 -**
1 Population growth	Zero population growth (Stop depopulation)	Natural population growth (Balance between in- and out-migration)	Manageable magnitude of in-migration (Realization of mixed culture society)
2 Economic growth	~ 4% per annum	6 ~ 7 % per annum	5 ~ 6 %per annum
3 Economic characterization	Preparation for economic re-structuring • Improvement of land tenure • Applied research and extension for crop cycles under irrigation • Market development for horticultural crops, aquaculture products, export processing etc. • Initiation of region-wide rural tourism promotion • Institutional arrangements for promoting cross-border trade	Economic re-structuring • Development of viable and sustainable forestry and livestock activities • Full scale implementation of irrigation with crop diversification • Establishment of new strategic industries • Diversification of trade, business and personal services, and financial services	Sustainable economic growth • Fully established irrigated agriculture with new crop cycles • Industrial agriculture with controlled environment greenhouses • Robust industrial structure with basic, linkages and resource-based industries • International tourism linked with other regions and countries • Advanced central service functions within BSEC cooperation
4 Social characterization	Establishment of local foundations for social development • Full adaptation to eight-year compulsory education system • Initial devolution of health services • Establishment of another major vocational training institute	Extension of improved social services throughout DOKAP • Distance education at all levels • Further devolution of health services with local government initiative and community participation • Expansion of the new vocational institute with sub-centers	Upgrading of social services network linked to other countries supported by multi-media telecommunication system
5 Environmental characterization	Establishment of community-based environmental management system • Community-based forest/watershed management • Strict enforcement of EIA with open information system • Information exchange on Black Sea environment	Broadening of environmental management system • EIA and environmental M&E with community involvement and people's participation • Eco-community network to exchange environmental information • Black Sea environmental inventory	Upgrading of environmental management system linked to the rest of the world

Appendix to Chapter 4

Population, Labor Force and GRDP: Alternative I

a) Population

	Rural	Urban	Total	%Urban	Share of pop. Over 15		LFP Ratios		Labor Coefficient	
					Rural	Urban	Rural	Urban	Rural	Urban
1997	1,495,000	1,416,000	2,911,000	0.49	0.70	0.73	0.85	0.41	0.60	0.30
2000	1,406,000	1,505,000	2,911,000	0.52	0.71	0.74	0.85	0.41	0.61	0.30
2010	1,148,000	1,980,000	3,128,000	0.63	0.74	0.76	0.84	0.42	0.62	0.32
2020	937,000	2,510,000	3,447,000	0.73	0.76	0.79	0.82	0.43	0.62	0.34

b) Labor force (including unemployed)

	Rural	Urban	Total
1997	892,067	422,663	1,314,730
2000	853,301	456,000	1,309,301
2010	711,668	634,511	1,346,179
2020	584,707	849,409	1,434,116

c) Employment[1)]

	Agriculture	Industry	Services	Total	Urban Labor Force	Sectoral Labor Force		
						Agriculture	Industry	Services
1997	892,067	143,322	245,528	1,280,917	388,850	0.70	0.11	0.19
2000	853,301	154,626	264,894	1,272,821	419,520	0.67	0.12	0.21
2010	711,668	219,835	376,605	1,308,108	596,440	0.54	0.17	0.29
2020	584,707	294,289	504,155	1,383,151	798,445	0.42	0.21	0.36

1) Unemployment at 8% in 1997 and declining to 6% in industry and services in 2020. No unemployment reported in agriculture.

d) Value added /worker: in 1996 US$

	Agriculture	Industry[2)]	Services[3)]
1997[1)]	1,314	6,517	10,612
2000	1,675	6,916	11,097
2010	2,050	8,433	12,878
2020	2,557	10,277	14,942

1) Simple averages of 1990, 1995 and 1997.

2) Industrial productivity growing by 2.0% per annum

3) Service productivity by 1.5% per annum

e) GRDP – in 1996 US$

	Agriculture	Industry	Services	Total	Annual Growth Rate
1997	1,172,175,381	934,027,826	2,605,547,934	4,711,751,141	
2000	1,429,279,845	1,069,368,415	2,939,520,355	5,438,168,615	
2010	1,458,919,728	1,853,867,271	4,849,795,144	8,162,582,143	
2020	1,495,095,134	3,024,502,481	7,532,933,947	12,052,531,562	4.16%

Appendix to Chapter 4

Population, Labor Force and GRDP: Alternative II

a) Population

	Rural	Urban	Total	%Urban	Share of pop. Over 15		LFP Ratios		Labor Coefficient	
					Rural	Urban	Rural	Urban	Rural	Urban
1997	1,495,000	1,416,000	2,911,000	0.49	0.70	0.73	0.85	0.41	0.60	0.30
2000	1,401,000	1,510,000	2,911,000	0.52	0.71	0.74	0.85	0.41	0.61	0.30
2010	963,000	2,165,000	3,128,000	0.69	0.74	0.76	0.84	0.42	0.62	0.32
2020	687,000	2,760,000	3,447,000	0.80	0.76	0.79	0.82	0.43	0.62	0.34

b) Labor force (including unemployed)

	Rural	Urban	Total
1997	892,067	422,663	1,314,730
2000	850,267	457,515	1,307,782
2010	596,983	693,796	1,290,779
2020	428,702	934,012	1,362,713

c) Employment[1)]

	Agriculture	Industry	Services	Total	Urban Labor Force	Sectoral Labor Force		
						Agriculture	Industry	Services
1997	892,067	143,322	245,528	1,280,917	388,850	0.70	0.11	0.20
2000	850,267	157,358	265,774	1,273,399	420,914	0.67	0.12	0.21
2010	596,983	273,100	411,793	1,281,876	652,168	0.47	0.21	0.26
2020	428,702	345,738	554,370	1,328,810	877,971	0.32	0.26	0.42

1) Unemployment at 8% in 1997 and declining to 6% in industry and services in 2020. No unemployment reported in agriculture.

d) Value added/worker: in 1996 US$

	Agriculture	Industry[2)]	Services[3)]
1997[1)]	1,314	6,517	10,612
2000	1,675	7,123	11,429
2010	2,050	9,567	14,623
2020	2,557	12,865	18,730

1) Simple averages of 1990, 1995 and 1997.

2) Industrial productivity growing by 3.0% per annum

3) Service productivity by 2.5% per annum

e) GRDP – in 1996 US$

	Agriculture	Industry	Services	Total	Annual Growth Rate
1997	1,172,175,381	934,027,826	2,605,547,934	4,711,751,141	
2000	1,207,693,467	1,120,879,426	3,037,558,163	5,366,131,057	
2010	1,334,041,079	2,612,719,807	6,021,774,282	9,968,535,168	
2020	1,473,615,519	4,447,781,075	10,383,347,794	16,304,744,388	5.54%

Appendix to Chapter 4

Population, Labor Force and GRDP: Alternative III

a) Population

	Rural	Urban	Total	%Urban	Share of pop. Over 15		LFP Ratios		Labor Coefficient	
					Rural	Urban	Rural	Urban	Rural	Urban
1997	1,495,000	1,416,000	2,911,000	0.49	0.70	0.73	0.85	0.41	0.60	0.30
2000	1,401,000	1,510,000	2,911,000	0.52	0.71	0.74	0.85	0.41	0.61	0.30
2010	963,000	2,165,000	3,128,000	0.69	0.74	0.76	0.84	0.42	0.62	0.32
2020	687,000	2,760,000	3,447,000	0.80	0.76	0.79	0.82	0.43	0.62	0.34

b) Labor force (including unemployed)

	Rural	Urban	Total
1997	892,067	422,663	1,314,730
2000	850,267	457,515	1,307,782
2010	596,983	693,796	1,290,779
2020	428,702	934,012	1,362,713

c) Employment[1)]

	Agriculture	Industry	Services	Total	Urban Labor Force	Sectoral Labor Force		
						Agriculture	Industry	Services
1997	892,067	155,784.51	266,878.75	1,314,730	422,663	0.68	0.12	0.21
2000	850,267	168,630.07	288,884.83	1,307,782	457,515	0.65	0.12	0.23
2010	596,983	255,718.12	438,077.78	1,290,779	693,796	0.46	0.15	0.39
2020	428,702	344,256.41	589,755.19	1,362,713	934,012	0.31	0.20	0.49

1) Unemployment at 8% in 1997 and declining to 6% in industry and services in 2020. No unemployment reported in agriculture.

d) Value added/worker: in 1996 US$

	Agriculture	Industry[2)]	Services[2)]
1997	1,314	6,517	10,612
2000	1,675	7,671	11,599
2010	2,050	9,567	15,578
2020	2,557	12,865	20,948

1) Simple averages of 1990, 1995 and 1997.

2) Productivity in industry and services growing by 3% per annum.

e) GRDP – in 1996 US$

	Agriculture	Industry	Services	Total	Annual Growth Rate
1997	1,172,175,381	1,015,247,637	2,832,117,319	5,019,540,337	
2000	1,207,693,467	1,293,510,648	3,350,746,300	5,851,950,415	
2010	1,334,041,079	2,446,429,648	6,824,550,944	10,605,021,671	
2020	1,473,615,519	4,428,721,035	12,354,250,658	18,256,587,212	5.77%

CHAPTER 5 STRATEGY BY SECTOR

5.1 Strategy for Economic Development

5.1.1 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, (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 manpower and economy of scale is hardly pursued.

Dry climate in inland areas with an annual rainfall ranging in 400 to 600mm limits crops to be cultivated under rainfed conditions. Lower temperature is another constraint limiting crop species in most inland areas with high elevation.

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

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 prices. 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 by the State or State companies, other crops and livestock products have not established

effective marketing 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 systems, 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. This is an inherent constraint which makes utilization of existing agricultural land by land tenure improvement even more important.

Delay in cadastre surveys due to insufficient technical staff and equipment, harsh topography and many rainy days 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 farming area and to exploit forest resources. Even with established boundaries, rural poverty tends to force farmers to encroach on forest areas.

Inadequate support infrastructure

Both soft and hard infrastructure supports are inadequate. Irrigated area covers 88,400 ha or only 14% of the potential irrigable area. The number of extension workers is insufficient to deliver new technology to farmers. 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 difficult, however, for farmers to apply for credits due to 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 costs of 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 baling machines have not been introduced, resulting in decay of forage by occasional rainfalls.

Another constraint in livestock production is diseases, most common being foot-to-mouth. Animals are kept usually in barns which are generally dark, moist and insufficiently ventilated. Under such conditions, animals often get sick, and it takes longer for them to recover, resulting in delayed growth.

(2) 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 the 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 the coastal provinces, and cereals and forage crops in the inland provinces to support livestock. Although tea and hazelnut are well adapted to natural conditions in coastal areas, over-supply poses a serious problem. In inland provinces, considerable area expansion is expected for crop production upon completion of ongoing and planned irrigation projects. Under these 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, flowers and vegetables may be promoted in the coastal provinces, while new cropping systems under irrigation would be introduced in the inland provinces.

Considering the limited availability of agricultural land, intensive agriculture should be pursued in the coastal provinces. Greenhouse production 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 will be introduced as well as silage production, and a rotational cropping system will be established to avoid disease occurrence and sustain productivity.

Entrepreneurial 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 for marketing 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 forest villages. Being isolated and having small farm lots, most forest villagers live on subsistence agriculture. Without clear land tenure, they often go into surrounding forests to utilize forest resources including woods for energy and housing, and grasses 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 the deteriorated forest areas behind. The cadastre survey should be completed for these areas, and land tenure established for those areas occupied by forest villages depending on land suitability. At the same time, indiscriminate sale of forest land without vegetation to forest villagers with no regard to land suitability should not be allowed. Use rights for non-wood forest products should also be clarified.

R&D enhancement

R&D activities should be enhanced in the DOKAP region. They should focus on the following:

- market research on tea exports to diversity market channels,
- silage production technology for feeding animals during winter,
- integrated livestock development encompassing breed improvement, feed improvement, disease control and better managed sheds,
- farming system under irrigation,
- green house production for maximum profits,
- agro-forestry system in forest villages for income generation,

- processing of chestnut, walnut, and hazelnut,
- 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 for new technology. Group farmer training should be conducted by subject, using the trained farmers' fields effectively as experimental and demonstration farms.

Subsector strategies

More specific strategies in the agricultural sector are presented by subsector in Table 5.1.

Table 5.1 Subsector Strategies in Agricultural Sector (1/2)

Subsectors	Prospects	Strategies	Priority
Crops			
Hazelnut	Dominant share in world market High quality oil	• Production control through law enforcement • Products development (processed product)	• Giresun, Ordu, Trabzon
Tea	High value tea production (first harvest tea, organic tea, etc.)	• Products development • Market research	• Rize, Trabzon, Artvin
Cereals (wheat, barley, maize, rye, oat, etc.)	Increase in production /productivity to contribute to activation of local economy	• 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 faiming • Organizing producers' cooperative	• Irrigated field in Gumushane and Bayburt • Mechanization
Forage crops	High demand on feed for animals	• Silage production through maize and soybean production • Mechanization • Range improvement	• Irrigated fields in Gumushane and Bayburt
Vegetables	High demand for fresh vegetables Steady demand for daily consumption	• Further promotion of greenhouse production (tomatoes, cucumbers, lettuces, green peppers, strawberry, etc.) • Multiple cropping to maximize profit • Establishment of market channels • Vinyl mulch for early planting of temperate vegetables (cabbage, lettuce, spinach, etc.)	• Throughout DOKAP • Irrigated fields Gumushane

Table 5.1 Subsector Strategies in Agricultural Sector (2/2)

Subsectors	Prospects	Strategies	Priority
Cutflowers and ornamental plants	Growing demand High value	• Organizing farmers • Planned production • Contract farming	• Coastal provinces
Fruits	Favorable climate for temperate fruits (apple, cherry, peach, pear, kiwi, etc.) Various berries (blueberry, raspberry, blackberry, mulberry), chesnuts, and wallnuts for processing	• Pursuing economy of scale • Organizing producers • Cold storage • Products development • Links with tourism	• Coastal provinces • Ordu, Giresun, Gumushane, Rize, Trabzon
Specialty products	One village-one product movement High value product	• Increase in production of quality rosehip varieties (quality control) • Herbal plants production (inventory, research) • Mushroom (Inventory, processing)	• Gumushane • Coastal provinces
Livestock and poultry			
Livestock (dairy and meat)	Large scale production	• Improvement of production system (barns) and further breed improvement • Veterinary services (eradication of foot-mouth diseases) • Expansion of feed base (silage) • Organizing farmers • Meat/dairy processing factory	• Gumushane and Bayburt
Dairy	Backyard livestock	• Organizing farmers • Efficient milk collection system • Pasture land improvement	• Coastal provinces
Poultry	Local chicken production	• Intensive production system using concentrate feed	• Trabzon
Honey	High quality brand honey	• Quality control • Brand honey production • Bee breeding	• Throughout DOKAP

Source: JICA Study Team

5.1.2 Forestry

(1) Constraints

The DOKAP region in general, have been blessed with forest resources thanks to large precipitation. The forest area shares some 30% of the land area, more than national average of 26%. 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 flush floods and land slides. While the exploitation continues, however, there is a fear of resources exhaustion unless proper management practices are made. Major constraints to hamper the sound forest management are: (1) limited private forest development, (2) forest

degradation and slowed management activities, and (3) spread of a harmful insect, as described below.

Limited private forest development

According to the Forest Law No.4785 in 1945, all the forests and forest lands 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, according to the Forest Law No.6831. It seems the modification of the Law has not been well informed so that many people still hesitate to plant trees on 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 very difficult, however, to identify those areas under the situation that land tenure has not been clear due to the delay of cadastre survey.

Forest degradation and slowed management activities

The region's share of degraded area in the total coppice forest, which is mainly utilized for cooking and heating, is as high as 94 %, far larger than the 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, thining, etc., have been slowed down, which will bring about further forest degradation. As the forest policy clearly states the importance of proper management of forests as well as utilization, and of reforestation and afforestation activities, the forest management activities should be more emphasized.

Spread of harmful insect

In the DOKAP region, particularly, spruce forests have suffered from the infestation of harmful bark beetle, Dendroctonus micans. As chemical control of it has 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) Strategy

Forestry has been playing an important role to sustain the life of people in the DOKAP region in terms of economy, social and environment. The functions 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, and 3) R&D enhancement, and 4) land tenure improvement.

Promotion of private forest development

In order to encourage the 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 for establishment of private forests,
- 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 forests as well as their utilization, and of reforestation and afforestation activities, the forest management activities should be further 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 use right of forests as well as responsibility of management,
- Closer coordination of planning and budget allocation between logging and management activities, and
- Strengthening of control measures to 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. into areas where ecologic restoration is not possible,
- 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.

5.1.3 Fishery

(1) Constraints

Environmental and resource degradation in Black Sea

East Black Sea fishery accounts for more or less a half of the total production by marine capture fisheries in Turkey in the past several years (193,696 ton in 1997 accounting for 48% of Turkey's total, 404,350 ton). It declined from 300,000 ton level in early to mid-1980's to 105,478 ton in 1990, but recovered gradually. The decline is attributed to direct predation on fish eggs and larvae and/or competition for food by introduced species of jellyfish, and mass mortality caused by the presence of hydrogen-sulfide rich benthic water strata. Over-fishing and pollution by discharges of domestic and industrial wastewater and local contamination from land reclamation and other construction works are considered other causes for lower production in recent years.

Also the diversity of fish species and products has declined. According to the 1997 Annual Report of Black Sea Environmental Program, 33 species exist in Black Sea, yet only four species provide 80.4% of the total catch. In particular, the marine capture fisheries production in Black Sea is dominated by anchovy as shown in Table 5.2.

Table 5.2 Marine Capture Fisheries Production in Black Sea

	1990	1991	1992	1993	1994	1995	1996	1997
Total marine fishery production (ton)	342,017	317,425	404,766	502,031	542,268	582,610	474,243	404,300
Anchovy catch (ton)	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: SIS, Fisheries Statistics

Technical and market limitations to sea farming

Fish farming in floating sea cages for trout and salmon started around 1990, targeting mainly for export market. The present design of sea cages does not suit the severe wave frequency and period in the Black Sea during the winter. As the Black Sea is deep and its coast lacks natural indentations, bays or coves that provide sheltered sites for mooring conventional floating cages, more cages are deployed close to the shores, where the water is shallow and temperature profile is unsuitable.

Such areas are also subject to pollution by wastewater discharges and construction works along the coast.

During summer, the surface water temperature becomes critically high for rainbow trout, which does not tolerate temperatures above 20℃, forcing farms to harvest all their fish before summer. This results in an early summer glut and fall in prices, as this peak supply does not coincide with the peak in demand later in summer.

The culture of large size rainbow trout originally targeted off-season deliveries to the European market, outside the summer harvesting period in northern Europe. Turkish producers, however, have to compete heavily with re-established salmon industries of Norway, Scotland, and Chile. Consequently, Black Sea trout producers have to rely more on domestic markets, where large trout is still relatively unknown.

As part of efforts to overcome the technical limitations, a MARA/JICA cooperation project has been implemented at Trabzon Fisheries Institute. The project aims at developing seed production culture techniques for flatfish to contribute to aquaculture in the Black Sea coastal areas.

Unorganized marketing for inland fisheries products

Inland capture fisheries and aquaculture production of the DOKAP region was 5,009 ton in 1997 contributing only 5% of the national production, consisting of 4,711 ton from aquaculture (10% of the total in Turkey) and 298 ton from inland capture fisheries. There are 284 trout farms in the DOKAP region with a combined annual capacity of 3,490 ton, but they are not producing at full capacity. Trout production from inland aquaculture was 2,865 tons in 1997.

The DOKAP region has no shortages of sites suitable for trout farming. Inland aquaculture development is constrained by various factors, main ones being marketing of products by individual producers. Other constraints include inadequate planning in site selection and production facilities, insufficient supply of fry, high feed costs, low quality feed, lack of assistance for disease diagnosis, prevention and control, and inadequate extension services.

Lack of fish storage and processing facilities

There are four fishmeal factories in the DOKAP region with a total daily capacity of about 1,075 tons, but only two are known to be operational. The fishmeal industry is diminishing, and the animal feed industry's demand for fishmeal is met largely by imports. There are two processing facilities in Fatsa, Ordu: EBK facilities for trout fillet processing, anchovy canning and others, and the other bottling anchovies in

oil for export. As anchovy deteriorates rapidly, lack of cold storage constrains processing as well as marketing for human consumption. Fishmeal factories often buy directly from fishermen on boats. Otherwise, the fish is pumped in bulk to a vehicle for transport or transferred to boxes for distribution.

Lack of reliable data and management capacity

The fishery resources of the Black Sea are not well known due to lack of reliable data in the Turkish part as well as in the neighboring countries. Anchovies spend 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 oceanographic variables of temperature, salinity, availability of food (plankton) and others, which are largely unknown.

The Directorate of Protection and Control of MARA is to enforce fishing regulations related to restricted fishing gear and equipment, closed seasons and areas. The Directorate, however, suffers from shortages of manpower, equipment and facilities for effective monitoring, surveillance, and control.

(2) Strategy

The DOKAP region has an adequate number and capacity of fishery facilities such as fishing harbors and fish landing facilities except cold storage and processing facilities. In view of the declined catch from Black Sea due to over-capitalization and degradation of marine environment, however, the development prospects are rather limited. For the long-term sustainability of the fishery sector, a resource inventory should be conducted as an initial step to conserve and manage the limited resources. In the meantime, various sea farming practices should be experimented to widen options for Black Sea fisheries. Inland fishery and aquaculture have much room for expansion with various support measures including market development with cold chains.

Resource inventory

Despite its importance in the fishery sector of Turkey as a whole, Black Sea is relatively unknown. It has unique characteristics; it is an inland sea with only one narrow outlet at the Bosporus channel, its catchment area includes major parts of seventeen countries, drained by the second, third and fourth largest rivers in Europe (Danube, Dnieper, and Dan), and its morphology due to complex geological formations creates a wide range of oceanographic, meteorological and ecological phenomena that are not well understood. As a reasonable base for cooperation

between countries sharing the Black Sea to control and manage marine and fishery resources, a resource inventory should be worked out, extending the efforts initiated by the Black Sea Strategical Action Plan following the Bucharest Agreement signed in 1991 by six countries.

Experiments on sea farming

Ongoing practices of sea farming with floating cages face technical and marketing difficulties. Other kinds of sea farming should be experimented including innovative mariculture to widen options for Black Sea fisheries in the medium to long term. Artificial fish sanctuaries to be created by rafting with artificial seaweed may deserve an experiment in the deep seawaters where artificial reefs cannot be created.

Market development for aquaculture products

Trout farming in inland waters has much potential as the DOKAP region has no shortages of sites and waters. At present, most trout farming operations are undertaken individually, often linked to restaurants in their immediate neighbors or to particular wholesalers. Producers should be organized to cooperate in market development. The initiative may be taken by wholesalers who would provide cold chains for wider distribution and marketing. Other products from both Black Sea and inland waters would also benefit from such organized marketing. It may lead to brand development for all the fresh fish products from the DOKAP region.

Freshwater aquaculture supports

To expand the output of trout farming and other freshwater aquaculture practices, a set of support measures need to be introduced. The following may be worth serious consideration:

1) Establishment of a hatchery to ensure regular and quality supply of fingerlings,
2) Establishment of fish feed manufacturing for quality feed at reasonable prices,
3) Technical support in selection of sites, design of ponds, and diagnosis, prevention and control of diseases, and
4) Encouragement of cooperatives for collaborative management and marketing.

5.1.4 Industry

(1) Constraints

Overview of industry

There is little industry in the DOKAP region. The level of industrialization is very low compared with the national average. In 1996, manufacturing provided 23.8% of GDP and 11.9% of employment in Turkey. Respective figures were 11.3% and 5.9% in the DOKAP region.

Within the region, there is practically no industry in Bayburt and Gumushane. Industries are concentrated largely in Ordu and Trabzon. These two provinces have more than half of manufacturing employment of the region. The level of manufacturing value added in Rize fluctuates widely depending on tea prices. In Giresun, hazelnuts processing is the base of manufacturing, although the province has fairy diversified industries. Artvin is specialized in lumber products.

There are two key characteristics of manufacturing industry in the DOKAP region. First, the little industry that exists in the region is heavily concentrated in food processing led by tea and hazelnuts. Second, almost all manufacturing enterprises are small. Only few firms employ more than 100 workers.

The most commonly cited problems faced by local firms are lack of support services and production 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 commonly identified with the growth of small firms. Further inquiries reveal that the local technological capability is very limited, and skill levels are very low. More specific constraints are described below.

Weak agricultural supply base

The most significant constraint to the development of industry in the DOKAP region is the mono-culture in agriculture. Tea and hazelnuts dominate agriculture in the region. Processing of these products, in turn, dominates the manufacturing sector.

Separate indices of industrial concentration are calculated for the manufacturing sector based on data from different sources. These show that there is a large concentration in food processing in the DOKAP region. This concentration is three to five times the average observed in Turkey. 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 investments. The possible exception is building one packaging plant in the region.

In hazelnuts, the markets for processed products are very small. The 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. There is practically no activity in many subsectors of manufacturing.

Limited mining and mineral resources

Except for the copper mine in Artvin and the Tasbasi lead mine, there are very few mineral resources in the DOKAP region that can be profitably exploited. Small copper, zink and lead mines are also being exploited in Rize, Trabzon and Gumushane, but the known reserves are small. There are few marble and stone quarries that are successfully exploited in the region. The potential for mining and processing of granite and marble is noted to be particularly large.

Small regional market

The DOKAP region has 4.6% 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.

Weak industrial base

The weak industrial base itself is the biggest constraint. Lack of agglomeration constrains the circulation of information, transfer and creation of competences and thus an industrial atmosphere. It hinders, also, exchange of tools or raw materials, and joint procurement, marketing and use of common facilities.

(2) Strategy

Support for existing industries

The growth of existing industries will be promoted by formulating a comprehensive package of support measures. These measures will be implemented for a selected set of industries/ product lines.

Introduction of new manufacturing activities

New manufacturing activities will be introduced into the region. These will supply both the national market and the markets in CIS countries. These industries will be of two different types. One will be foot loose, skilled labor intensive industries. Prominent among these is consumer electronics, measurement and precision equipment, and some apparel industries including leather goods.

Another type of goods is those that will partially utilize raw materials imported from the CIS countries. These would serve both the national and export markets. The most important examples of this group are products of wood and pulp and paper.

Policy instruments and programs to support industrial growth

Industrialization will rely on the private initiative. The private sector will be supported through a consistent program, which addresses critical issues. The identification of these issues largely derives from targets for the subsector development.

Trained manpower is a key input for foot loose industries. Specialized training needs to be provided to a large pool of manpower. An effort should be made to integrate the private sector into the identification and management of the training programs.

Industrialization policy will encourage concentration in a few appropriate locations. Agglomeration effects thus created will facilitate the circulation of information, the transfer and creation of competencies and thus an industrial atmosphere. It will also ease 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 there is a sufficiently large market.

Infrastructure improvements will be undertaken for whole settlements instead of specific locations. Thus, all manufacturing enterprises will benefit and a rational pattern of industrial location will be promoted.

The incentive system should be rationalized and simplified to enable technology transfer to small manufacturing enterprises. Technology information and referral services, as well as training, will be provided by the Technology Development Center to be established in the DOKAP region.

Credit requirements of industry in the region should be fully met through special allocations within existing programs. The existing programs on credit, market information, and other SMI support should be integrated. Access to imported inputs and export facilitation will be carefully considered. The two existing free trade zones, and new ones to be established, will play an important role in access to imported inputs used in export manufacturing.

Product lines to be supported have been identified. They include food processing (flour, concentrated feed, edible oil, dairy, confectioneries etc.), wood processing, textiles, leather products, construction materials, non-organic chemicals (detergent,

fertilizer, agro-chemicals etc.), PVC products, metal products, machinery, transport equipment (ship building, car components and assembly), and precision equipment. Details are found in the sector report.

5.1.5 Tourism

(1) Constraints

Foreign arrivals registered at accommodations in the DOKAP region licensed by the Ministry of Tourism (MOT) and municipalities decreased from 287,450 in 1994 to 162,338 in 1997 to reduce the regions share to 1.3 % of the total in Turkey. The decrease 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). Domestic arrivals to the region fluctuated more widely in recent years, but recorded 765,170 in 1997 or 3.8 % of the total in Turkey.

Tourism is considered an important pillar to support the DOKAP regional development, as the region has a variety of tourism resources as seen in subsection 2.3. Tourism development in the DOKAP region, however, is constrained by both physical/natural and human/institutional factors as outlined.

Resource constraints

Despite various historical/cultural sites and diverse landscapes, the DOKAP region is scarce of monumental world-class tourism resources to highlight the region's tourist image and recognition. Most tour packages for international tourists belong to culture tourism with limited elements of nature/activity tourism. "Yayla (high plateau) tourism" promoted by MOT has not received any international recognition. Even domestic packages hardly venture into inland provinces of Gumushane and Buyburt, except for a short side visit to the Karaca cave from the Zigana yayla.

Natural/physical constraints

The DOKAP tourism is constrained by the distance and poor access from the established tourist regions of Mediterranean, Aegean, Marmara and Central Anatolia. The access to tourism objects within the region is hampered by difficult terrains of the East Black Sea mountain ranges. Climatic conditions with high rainfalls and short summer constrain the development of mass-market beach holiday tourism together with unattractive shorelines without sandy beaches.

Inadequate promotion activities

The DOKAP region has generally adequate tourism facilities and services at least for the present levels of tourism activities. The number of licensed accommodations in the region increased from 326 in 1993 to 386 in 1997 with corresponding increase in bed availability from 13,058 in 1993 to 16,644 in 1997. Site presentation and visitor facilitation services, however, are below the national average. Practical site specific information materials are generally lacking.

Lack of coordination/cooperation among provinces

A related constraint for the DOKAP tourism is almost complete lack of coordination nor cooperation among the provinces. Each province has prepared tourist information/promotion materials, most of which are impractical and sometimes out-of-focus. Another aspect is the lack of initiatives to learn from experiences of other major tourist regions nor other provinces.

(2) Strategy

Given the constraints outlined above, the DOKAP tourism strategy consists of products development to improve the resource quality, market development through collaborative marketing, and more aggressive promotion deployment. Each strategic element is presented below.

Products development

To make maximum use of rich tourism resources for both domestic and international markets, products development should be pursued along two lines. One is to improve presentation of existing resources through proper packaging and routing together with improved site presentation and visitor facilitation services to ensure satisfactory site experiences for all the visitors. The other is to introduce a new line of tourism products that would appeal to a larger market segment and diversity opportunities for domestic and international tourists. These combined would lead to enhanced tourist appeal and attractiveness of the DOKAP region in both domestic and international markets.

In addition to mass tourism, alternative tourism of various forms should be pursued. A sort of rural tourism, or yayla tourism as promoted by MOT, will effectively utilize local culture and tradition as well as existing facilities with renovation (subsection 5.3.4)

Market development

Collaborative marketing should be undertaken to sell the DOKAP tourism to domestic and international markets. Collaboration among the provinces to promote the tourism within the region by combining resources in different provinces would enhance awareness for the value of tourism and contribute to regional integration or social cohesiveness.

Inter-regional tourism should be promoted, linked with other major tourist regions. For this purpose, major urban centers in the region should be strengthened to become tourist distribution hubs, around which major tourism circuits should be created.

The DOKAP tourism should also make direct access to international market through collaborative efforts. For this purpose, professional partnership from outside the region should be sought, including collaboration with partners in other regions originated from the DOKAP region.

Promotion deployment

Along with the market development, specific promotional measures should be taken for domestic and international tourism. Inter-provincial coordination should be facilitated by some institutional measures. Professional partnership should be initiated with influential tourism bodies in major urban centers and tourist hubs such as airlines, tour operators, conference organizers, and business associations. This would contribute to maximizing returns on tourism promotion efforts, and the region's exposure to the world.

5.1.6 Trade and other services

(1) Constraints

Overview of services sector

Trade and services have always played a critical role in the development of the DOKAP region. Trabzon was a terminal on the Silk Road, served as a regional administrative center during the Ottoman Empire, and has been an important trade center for the Black Sea region.

Employment in public services is the largest source of income among non-agricultural activities. The total employment in the DOKAP region was 1.40 million in 1990, of which 383,000 were in non-agricultural occupations. Public services employed more than one-third of the latter or 131,000.

The relative relaxation of border controls in Turkey, increasing emphasis on promoting foreign trade and easing of political relations with neighboring countries have led to the emergence and growth of different types of foreign trade. Three new types of trade are 1) border trade, 2) suitcase trade, and 3) trade from free zones. The DOKAP region can play an important role in the trade with neighboring countries of Black Sea Economic Cooperation (BSEC). The comparative data on Turkey's exports to BSEC countries and exports from DOKAP provinces indicate some 15% of Turkish exports to these countries originate from the DOKAP region.

Most wholesale and retail traders in the DOKAP region are small family-owned enterprises. A 1992 study by the Black Sea Technical University found only 22.5% of the total employees in the trade subsector were wage/salary earners, while the rest were self-employed.

Constraints

The growth of service activities in the DOKAP region is constrained by both domestic market characteristics and special problems in CIS countries and Iran. The major export markets 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 generally, highway and port controls are not necessarily in the hands of government authorities.

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.

Low levels of organization, lack of finance and small size of foreign trade operations limit 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 very little of goods exported by the traders in the region is actually produced in the region.

Free Trade Zones were originally conceived as centers of trade as well as basis 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) Strategy

Domestic and international trade, tourism, business and personal services, and specialized services in health and education are expected to provide major portion of income and employment opportunities in the DOKAP region under any development scenario. Given the existing situation and the constraints described above, however, strong support measures need to be taken for the sector under the following strategy.

Export promotion

All export promotion measures allowed under the Customs Union with the European Union should be systematically identified. Most 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 BSEC country on terms of payments and other procedural issues. Possibilities to delegate some of the authority for trade arrangements to governors and other local officials need to be further studied.

Specialization in higher education

The DOKAP region is already well supplied with institutions of higher education. The supply capacity should be widened to increase the range of higher education and skills and to serve students from CIS countries as well. Vocational schools should be strengthened by taking into account the requirements for skilled manpower by services and manufacturing industries to be promoted in the region. The technical and scientific education now concentrated in Trabzon should be expanded in Ordu and Gumushane linked with existing facilities in Trabzon.

Transport and trade services strengthening

Some export processing is undertaken in the DOKAP region such as wood products manufacturing with imported logs in Ordu and Giresun and flour from imported wheat in Giresun. To promote this type of industries, transport and trade services should be much strengthened.

5.2 Strategy for Social Development

5.2.1 Social environment

The major problem in the broad social sector of the DOKAP region is expressed as the lack of regional integration or social cohesiveness as identified in Chapter 3. Among specific problems are large out-migration that tends to disrupt social and family ties, limited employment opportunities that tend to depress local people, and large intra-regional disparities in various aspects including social services delivery. These macro problems defined at the regional level have various implications at individual and community levels.

Out-migration is age and gender-selective with working age males being dominant. This results, therefore, not only in depopulation of communities but more specifically in stagnation of economic activities with aging, loss of lively socio-cultural activities, insufficient communal works for social infrastructure, neglect of rural and natural environments, insufficient social security, and heavy burdens on women.

With the aging population and the heavy burdens on women, local communities in the DOKAP region may not have sufficient dynamism to improve their social environment. A long history of over-dependence on governments makes the situation even more dismal. The DOKAP implementation with local participation are expected to turn the stagnant situation into self-reliant and sustainable development. Such an all-out conversion will call for concerted efforts in all the sectors as indicated in different sections of this chapter. Directions of efforts in the social sector are indicated in this section.

5.2.2 Education

(1) Constraints

A basic condition for the DOKAP regional development in the long run is to improve the education sector including primary education, secondary education consisting of general and vocational/technical high schools, higher education, and adult/non-formal education. Problems facing the education sector in the DOKAP region that may constrain the conceived development are summarized.

<u>Unclear roles of local administration</u>

Policy making and implementation in the education sector in Turkey are controlled mostly by the Central Government. Provincial Directorates and District Directorates of the Ministry of Education (MOE) are responsible for supervising

education services within provinces. Some powers are vested to the local level, but local governments only implement the plans determined by the Government.

The ratio of education budget to the GNP has been largely consistent at 2.40 – 3.84% in the past 10 years (3.69% in 1999). As the ratio of consolidated budget of the Government to the GNP has increased steadily during this period, however, the share of education budget has been reduced from close to 20% in early 1990‘s to 12.3% in 1999. Apparently, this has not been accompanied by corresponding increase in education budget of local administration.

Problems in transition

In 1997, the five year primary education and three year junior high school education were merged, and efforts have been made to adopt to an eight year compulsory education system. It is still early to see the full effects of the new system, but some problems have emerged in transition. To satisfy the compulsory education, many primary schools in rural areas have been closed/merged, and many students have been transferred to schools in city centers. Consequently, schools in urban areas are over-crowded, aggravating ironically urban-rural disparities. The number of students per class is now 46 in urban areas and 21 in rural areas of the DOKAP region, although these are better than the national averages of 59 in urban and 28 in rural areas. School facilities are generally insufficient in urban areas, and double shift is practiced in some cases.

Free bus services are provided to send students in small settlements to central primary schools. The success of the busing system varies, and in some areas, the busing systems are over-loaded physically and financially. Boarding schools for those who cannot be served by the bus systems are not sufficient especially for girls. Also in some areas, merger of schools in rural areas is difficult due to dispersed settlement patterns.

It is expected that the eight year compulsory education will narrow the gap of education services between urban and rural areas. Also, some claim that communications between rural and urban areas have become more active, and the change in the education system has opened a new life for the people in rural areas.

Problems with teachers

The DOKAP region faces shortages of teachers in general and especially in English, mathematics, and Turkish. The qualified language teachers have a tendency to teach at private schools where the programs are flexible. The shortages of teachers also

force to rotate the subjects they teach or to adopt multi-grade teaching, leading to inefficiency in executing the programs.

Teachers tend to avoid the DOKAP region because of the poor image of the region, lack of urban atmosphere and amenities, and high cost of living. Living costs are higher in the DOKAP region as most goods have to be transported from outside, and housing is expensive due to limited land. The Gumushane province provides the housing for 50% of the teachers. Teachers for public schools are appointed by the Government so that young inexperienced teachers tend to be assigned to the DOKAP region. Regional preferences of teachers are accepted only for experienced teachers, who tend to teach in urban areas.

Gender bias

There exist large gaps in school enrollment for boys and girls at secondary level particularly for vocational and technical high schools. Girls' enrollment in general high schools shares 43% in the DOKAP region (20% in Bayburt and 25% in Gumushane). The share is smaller for vocational and technical high schools, 35% in the DOKAP region (22% in Bayburt and 29% in Gumushane) as compared to 38% in Turkey.

The low enrollment rates for girls are due to economic and cultural reasons. Parents in rural areas are conservative and expect their girls to get married at young age. They do not want to send their daughters to schools in a city. Also smaller job opportunities for girls give less incentives for parents to let them pursue higher education.

The Government gives priority to achieving 100% schooling rate for primary schools by providing bus services and opening boarding schools to solve the access problems. No bus services are provided for secondary schools. Boys stay in boarding schools of rent houses, but girls are not allowed to stay away from home, which hinders girls in rural areas from attending secondary schools in urban areas.

Problems with vocational and higher education

Vocational and higher education in the DOKAP region is both insufficient and inadequate. According to the statistics before the eight year compulsory education, the enrollment rates in the DOKAP region were slightly lower than the respective national averages at primary and secondary levels but particularly low for higher education (38.1% in the DOKAP region and 46.5% in Turkey in 1994/95). At secondary level, the DOKAP region has stronger orientation to vocational and technical high school rather than general high school with 54.0% registered for the

former as compared to 45.6% in Turkey as a whole. The share of girls' enrollment, however, is lower in the DOKAP region than in Turkey as seen already.

Subjects covered by vocational and technical schools may not adequately satisfy diversifying requirements of the industry. Skill levels attained in these schools may not be high enough to work in the industry. The Rize province has a vocational school for tea, but plans to establish another specialized in science including maritime engineering. Trade, tourism, and other business services constitute another major area where upgrading is required.

The Black Sea Technical University (KTU) is the only university in the DOKAP region. It has 16 faculties and 12 vocational schools located in the provinces of Trabzon, Gumushane, Rize, Giresun, and Ordu. Rize University has been proposed with mining, geology and other engineering faculties but it has been disputed. Strong orientation of people in the DOKAP region for higher education should not in any way be constrained by the lack of sufficient facilities and adequate programs.

(2) Strategy

Principles for education reforms

The national council of Education, convened in May 1996, determined to focus on the following five issues to reconstruct the education system in Turkey in conformity with the anticipated social, scientific and technological developments of the coming century:

1) primary education and its orientation,
2) reconstruction of the secondary education system,
3) re-arrangement of the ways of transition to higher education,
4) meeting the educational needs of the society, and
5) financing of education.

For the primary education under the new system, the following basic principles have been adopted:

1) to eliminate double-shift education currently in practice in some parts of big cities,
2) to decrease gradually the number of students per classroom to 30 by the year 2000.
3) to bus free of charge those students living in small settlements to central schools in order to ensure students access to quality education.
4) to remove gradually integrated classrooms along with the busing system by

expanding Regional Primary Education Boarding Schools (YIBO) or Primary Education Schools (PIO),

5) to provide children in need with uniforms, school-bags, textbooks, and notebooks,
6) to support formal education through distance education,
7) to install computer laboratories in primary education institutions and provide access for all students to Computer Aided Education (CAE), and to make them computer literate,
8) to start the teaching of at least one foreign language at primary education level,
9) to equip the schools with modern technological materials,
10) to fulfill the most important principle of being a "learning society" through producing individuals who know how to learn and who can question through scientific and rational approaches,
11) to establish the physical infrastructure to ensure the physical development of the children along with their mental development, and
12) to provide opportunities for five year primary education graduates who are out of compulsory education because of their age, to complete their eight year primary education through open education.

The strategy for the education sector to support the DOKAP regional development should be established in line with these principles. In view of the stronger orientation for high education and generally less adequate education system in the DOKAP region, however, new approaches and measures should be introduced preferentially in the region to change existing conditions more drastically.

A three-prong strategy may be taken for the education sector in the DOKAP region. It consists of streamlining the eight year compulsory system in the short to medium term, devolution of the education services in the medium to long term, and establishment of innovative education system and programs in the long term. Each of these is described below.

Eight year compulsory education

The introduction of the eight year compulsory system should be seen as presenting opportunities to improve communications between rural and urban areas, and to narrow gaps between education services in rural and urban areas. To realize these ideas, the primary education system in the DOKAP region needs to be further streamlined extending the ongoing efforts.

Main instruments for effecting the eight year compulsory system are consolidation of schools, provision of bus services, and expansion of boarding schools as being

pursued already. To complement these efforts, distance education should be strengthened, as currently pursued by MOE, to serve remote rural areas and those who cannot commute nor enter boarding schools for social or economic reasons.

Distance education should be extended in steps to other levels as well. It should be complemented by intensive courses with transport and boarding services to ensure sufficient qualifications for all the students at each level and in each field.

Devolution of education services

The budget allocation by the Government to the education sector has comparatively decreased in the past decade, and no expectation is justifiable for reversing the trend. Only way to improve the education services, therefore , is to increase the roles of local governments. Planning and implementation of education services should be devolved to local administration under the guidance and supervision by the Provincial Directorates of Education. A prerequisite is to strengthen financial capacities of local governments.

To improve the quality of education, special benefits or incentives need to be provided to attract more qualified teachers. Under the devolution, such incentives would better be provided by local governments to encourage competition rather than allowing uniform benefits provided by the Government for teachers to be posted to less privileged regions. This would also give additional motivation for local governments to improve their financial capacity and management.

Innovative education system and program

To improve the education system in the DOKAP region more drastically, innovative approaches and measures should be introduced preferentially as pilot measures initially. Distance education at all the levels mentioned above is one such example. Another is to mobilize a cadre of successful businessmen in other regions originated from the region for occasional training and education courses.

Capitalizing on its locational advantages, higher education and research institutes may be established in the DOKAP region to serve neighboring countries as well. Such open universities would symbolize outward oriented development of the region. Subjects that the DOKAP region should be specialized in may include marine science and maritime engineering, mining and metallurgy, geology, disaster management, and tourism and hotel administration.

5.2.3 Skill development

(1) Constraints

Limited access to training facilities

Skill development opportunities are provided by apprenticeship centers, vocational and technical high schools, chambers (for members), KOSGEB (mainly for managers of small and medium scale industries), Institute for Finding Jobs and Workers and some companies (in-house training). Apprenticeship centers provide skill development in 89 fields for those who finished only primary schools. Each center selects several courses among the 89 fields. Even in Trabzon, however, only four apprenticeship centers are available. Also some centers are located far from organized industrial estates, causing difficulty for students to commute.

Vocational schools are allowed to participate in commercial production as part of practical training through bidding for projects. Many projects are from the Ministry of Education for production of school supplies such as desks and chairs. While vocational schools have a priority for receiving such projects, opportunities are limited. The internship program has been promoted through increasing cooperation between vocational high schools and industries. In the DOKAP region, however, availability of internship is constrained by limited industries themselves.

The capacity of vocational high schools is limited in the region as a whole and particularly in Gumushane and Bayburt. Three types of vocational high schools, Anatolia Technical Highschool, Technical High school, and Industrial Vocational Highschool, are operated in the same complex. Also, some equipment used in apprenticeship centers and vocational high schools are outdated.

Mismatch between supply and demand

Primary school graduates, without experiences and supports of apprenticeship centers, can perform only simple tasks. Although the large majority of jobs available do not require highly skilled labor, some technicians are also needed. At factories in the Organized Industrial Zone of Trabzon, 70% of all the employees are workers, but 28% are engineers, technicians, mechanics, and foremen. Also comparatively more technical and computer staff is demanded at the Zone than presently employed.

Another aspect of this problem is the lack of management skills, particularly in marketing and financial management. Also, adaptation of new technology and search for new business opportunities are largely lacking in the DOKAP region.

Over-reliance on tea and hazelnuts

Close to a half of people have been registered to the Institute for Finding Jobs and Workers of Ordu and Giresun for a year or longer. Most of them are waiting for vacant positions in the public sector, while some income from hazelnuts is guaranteed. Most people staying in the DOKAP region have a strong preference for the employment in the public sector, especially those who own tea or hazelnut farms. They do not accept low wages, and are not serious about acquiring skills. This tendency is in contrast with other people moving out of the region to aquire skills and seek better employment opportunities.

Social problems

Women's participation in the labor force is low in the DOKAP region. Two-thirds of workers are considered to be illegally employed, paid at 30-50% of the minimum wage without social security.

(2) Strategy

The DOKAP regional development would call for much wider range of skills and technology than those available at present, including some upgraded skills and high technology. Value development and information are essential conditions to overcome the constraints described above. In addition, another major institute for vocational and technical education and training should be established to generate a large number of students in new fields to be demanded for the industry to capture emerging opportunities.

Value development

Value development education should start at the primary level to prepare next generations of people for value systems of the coming age. Specialized training should be provided for new types of industries by the private sector initiative, and farmers should be trained in business planning and management.

Capacity increase for vocational and technical education

Facilities at existing apprenticeship centers and vocational high schools should be expanded/upgraded selectively based on assessment of existing facilities and equipment. Another major institute for vocational and technical education and training should be established to generate a large number of graduates in new fields to be demanded by industries. Another way to improve the matching between labor demanded and supply is to establish functional linkages between the Government's placement agency, vocational training centers and employers associations to help

placement of graduates and to give direction to the design of new training programs.

5.2.4 Health services

(1) Constraints

High centralization and limited budget

Formulation of policies and strategy and implementation of programs for health services in Turkey are undertaken mostly by the Central Government. Provincial and District Directorates of the Ministry of Health are responsible for supervising health services within provinces. Local governments, with limited budget and human resources, only implement the projects and programs determined by the Central Government.

Shares of the health sector in the consolidated budget have been in the range of 2.6 – 4.7% during 1983-97 and almost consistent in the recent years (3.3% in each year of 1995–97) on expenditure basis. Shares of investment expenditure in the total health budget have varied more widely from 3-5% in most years to over 10% in a few years during 1983-97. This implies that the health sector would have to manage within a limited share in the consolidated budget for both current and investment expenditures.

Problems with health staff

The number of medical doctors and pharmacists is limited in the DOKAP region. The population per medical doctor was quite large in the region (4,364 per specialist, 2,012 per practitioner, 9,978 per dentist and 4,818 per pharmacist in 1995) as compared to the national averages (1,892 per specialist, 1,430 per practitioner, 4,820 per dentist and 2,958 per pharmacist in the same year).

Before 1996, graduates with diploma or license from public health schools had an obligation to work for the public health sector determined by the Government for three years at least. The system changed since then, and many graduates now work for the private health sector. In general, inexperienced and unskilled health staffs are disposed in remote rural areas. The obligatory disposition may be reinstated by 2001.

Inadequate health facilities

In Turkey, 82% of hospitals and 93% of hospital beds are provided by the public sector. Mostly due to government efforts and partly due to out-migration, the

provision of health facilities in the DOKAP region has improved to reach the national average. The population per bed in 1996 was 452 in the DOKAP region as compared to 484 in Turkey. In 1996, there existed only one private hospital in the DOKAP region with 67 beds, decreased from three private hospitals with 172 beds in 1990. Many hospitals in the DOKAP region, however, are poorly maintained and lack adequate equipment and materials.

Large intra-regional disparities

Although the DOKAP region appears to be better off for availability of midwives and close to the national averages for registered nurses and sanitarians, Gumushane and Bayburt are much worse than the national averages for all types of health personnel. Bayburt had only one public hospital with 50 beds in 1996 to make the population per bed 1,993, by far the largest of all the DOKAP provinces. A new hospital with 100 beds opened in 1999. The population per bed at private hospitals was much smaller in Artvin (335) and Trabzon (354) in 1996. There existed seven hospitals in the DOKAP region in 1996 attached to the Social Insurance Institutions, but none in Gumushane and Bayburt.

Availability of health centers and health stations is relatively higher in the DOKAP region. The population per health center and health station was 7,621 and 2,296, respectively in the region, much smaller than 11,716 and 5,281 in Turkey in 1997. This varies from 5,113 in Artvin to 9,769 in Ordu for health centers, and from 1,058 in Artvin to 3,443 in Ordu for health stations. Access to health facilities may become even worse in Artvin with ongoing dam construction unless roads are properly relocated.

(2) Strategy

Devolution with community involvement

The health sector in Turkey has been suffering from limited budget allocation to cover both current and investment expenditures. In the DOKAP region, the provision of health facilities has generally reached and in some aspects even exceeded the national level, and therefore the health budget should be devoted more to health personnel, materials, and operation and maintenance of existing facilities. Then it would make sense to devolve these recurrent services to local governments with transfer of staff and financial resources in steps.

While the devolution of health services may take place over time, involvement of local communities in the health sector needs to be enhanced. Health services in Turkey are overly dependent on the public sector, and the devolution would have to

be accompanied by enhanced community involvement in the health sector to realize self-reliant societies with sustainable health care systems.

Health education

A prerequisite to enhancing community involvement in the health sector is to raise the awareness of the people for health and sanitation through proper health education. This applies immediately to sanitary and hygienic problems in rural areas due to lack of access to safe drinking water and a custom to keep livestock in the house. The health education is to be extended to cover primary health care as a whole and some curative health services as well. Education on traditional medical care and use of medicinal herbs and plants would also help to raise the awareness of local people for health.

Health referral system

Health centers and health stations are generally poorly maintained and insufficient in equipment and materials as well as health personnel. Local people tend to go to larger health facilities with better conditions. That is, the health referral system is not properly functioning. To utilize limited staff and financial resources effectively, the health referral system needs to be re-established with proper telecommunication systems. This may be the first step to establish high grade health functions at major health facilities in the DOKAP region linked to advanced facilities outside. Specialized facilities should be established for typical diseases in the region such as goitre and rickets.

Disposition system for health personnel

The disposition system for health personnel needs to be improved in line with expected devolution of health services. As local governments would have increasing responsibilities, they should compete to attract more qualified health personnel by providing special benefits or incentives. Also locally trained health staff would better be disposed in their homelands. Graduates of vocational schools of health science in the Black Sea Technical University should be given priority to work in the DOKAP region.

5.3 Strategy for Environmental Development

5.3.1 Forest ecosystem

(1) Constraints

The DOKAP region has most extensive forest areas in Turkey. In particular, three major mountain ranges of Soganli, Kackar, and Karcal and many valleys of the Coruh and other rivers are noted for extensive forests and alpine habitats. The Coruh river valley is known for rich flora with exceptionally high endemism, where large mammals are also well represented. The forest ecosystem of the DOKAP region encompassing these and other resources suffers at present from general lack of clear and adequate government policies, lack of coordination between government agencies involved in different aspects of forest management, and inefficient national park system.

Lack of policy for globally most important mountain ecosystems

The DOKAP region has two important mountain ecosystems: Firtina valley including the Kackar mountains and the Karcal mountains. They are situated in the eco-region considered as one of "The Global 200" biologically outstanding eco-regions that deserve special attention (World Wide Fund for Nature in Switzerland, International Union for Conservation of Nature). However, the Turkish Government has not established clear policies for conservation of these ecosystems. Hydropower development planned in the Firtina river basin still poses threats to this ecosystem. Uncontrolled logging is a serious threat to the Karcal and other mountains ecosystem due to the lack of official conservation status as well as rural poverty.

Lack of coordination for forest management

Outside the mountains ecosystems mentioned above, there are a few areas that maintain equally important old growth forests. They are categorized generally as "productive forests" in their management plans to allow exploitation. While the introduction of high growth species such as maple or alder eases the pressure to such old growth forests, they are still under threat of exploitation to meet timber demand as there exist no comprehensive forest management plans. Four General Directorates have separate management plans for production, protection, afforestation and serving forest villages. Coordination between these entities seems to be almost totally lacking.

Inefficient national park system

The Ministry of Forestry (MOF) shares authority with other government offices for the management of the national park system in Turkey. While the primary aims of the national park system in Turkey are recreational use and preservation of scientific, aesthetic and cultural value of forests, MOF tends to see it as trees rather than part of the ecosystem extending beyond the system. The management of the national park system is hampered also by contradictions among the National Parks Act, Tourism Incentives Act and the Settlement Act.

Limited capacities of MOF regional offices

Officials of MOF and its regional offices are generally well educated and trained. They have thorough knowledge of forest management and conservation. Management of forest ecosystem, however, is more demanding in terms of expertise and area of coverage. Limited staff and financial capacities of MOF regional offices work as a constraint to the management.

(2) Strategy

To improve the management of valuable forest ecosystem in the DOKAP region, value of the forest ecosystem as a whole needs to be appreciated, comprehensive management plans prepared coordinating efforts of related government offices, and related human resources need to be developed to enforce the effective management. A prerequisite is to strengthen/improve the legal basis for protected area status.

Updating and upgrading forest resources inventory

There is a forest inventory covering all the regions in Turkey. This should be updated using scientific methods and advanced technology. A conventional method identifies species and age, and estimates the volume of forest resources by area and by species. Phyto sociology should also be applied to identify the plant hierarchy and species native to any area. Also the application of a GIS and a GPS would be effective to identify spatial distribution of forest resources by type.

The forest ecosystem in the DOKAP region contains vast reserves of genetic resources that may be utilized for pharmaceutical, dietetic, and other purposes. Bioprospecting should be conducted to collect and catalogue plant species including fungus. Indigenous knowledge and use of plants should also be covered to appreciate the real value of the forest ecosystem.

Developing comprehensive forest management plans

Current management plans, developed separately by four different general directorates should be integrated into comprehensive management plans through coordinated efforts. The ecosystem conservation point of view should be incorporated in such plans. The planning process should involve all the stakeholders including forest villages so that actions can be taken more effectively based on the plans.

Extending faculties of the Black Sea Technical University

To effectively expand the human resource base for the management of forest ecosystem, new programs and faculties may be added to the Black Sea Technical University. Specialized fields/facilities include plant biology, conservation biology extending marine science and forestry departments, biochemistry, genetic resource center (gene bank), and anthropology. Some of them may become independent departments in the future.

Reforming protected area management system

To improve the current national park system in Turkey, a new protected area management system may be introduced. The following are important elements of the reform.

1) Establishment of "Park Ranger": the General Directorate of National Parks should be reformed into a more area-specific office that may be called a "Park Ranger". Ideally, it should be an independent agency under the Prime Ministry, transferring responsibilities for managing the national park system from MOF regional directorates.
2) Coordination of different ministries for protected area management: at present, three other ministries have authorities, other than the General Directorate of MOF, for different aspects of National Park management: the Ministry of Culture for cultural sites, the General Directorate of Rural Services for rural infrastructure within the park boundaries, and the Ministry of Public Works and Settlements for issuing permissions to construct buildings. These offices should be coordinated under the proposed Park Ranger.
3) More effective land use control: in the current national park system, there are four categories in the protection status. An additional classification should be introduced and applied based on existing land use and land capability as well as forest resources to be protected and needs of local people.
4) National park management master plan: in 1972, USAID provided a technical cooperation to prepare a national park management plan, which eventually

developed into the national park master plan of Turkey. A new master plan should be prepared with the participation of local people based on the upgraded forest resources inventory to be prepared by the scientific methods, covering potential protection areas as well.

5.3.2 Marine ecosystem

(1) Constraints

The marine ecosystem of the Black Sea has been largely neglected. The sea is seen as receiving water body for discharge of municipal wastewater and dumping ground of solid wastes. Limited shallow waters of the Black Sea provide breeding areas for many species, but tend to be subject to reclamation. Lack of reliable data and a single authority in charge of the Black Sea environment makes its management difficult.

General neglect of marine ecosystem without priority

Clearly protecting the marine ecosystem of the Black Sea is not a priority in the face of urbanization along the coast and need to expand infrastructure capacities. The Black Sea coast has been reclaimed extensively for various urban uses. In addition to continual widening of the coastal road, planned use of reclaimed land includes the new Ordu-Giresun airport at Gulyali and an organized industrial zone in Rize.

Pollution by municipalities

In coastal municipalities, sewage from most households is collected and discharged to the Black Sea without treatment. Sewage from the provincial centers is discharged typically with some 1,000 m long sewage pipe at the depth of some 30 m from the sea surface. The city of Trabzon contributes to the largest amount of loads for BODs, TSS and total nitrogen, followed by Giresun, Ordu and Rize in this order. For total-phosphorus, the city of Ordu tops other coastal municipalities, followed by Trabzon, Giresun and Rize (Black Sea Transboundary Diagnostic Analysis). All the four provincial centers along the coast use the Black Sea as main disposal sites for their solid wastes.

Lack of scientific data on marine ecosystem

The Black Sea offers a unique marine ecosystem, which is not well known. It is an inland sea with only one narrow outlet at the Bosphorus Channel, but drained by the second, third, and fourth largest rivers in Europe. Its morphology due to complex geological formations creates a wide range of oceanographic, meteorological and

ecological phenomena. Scientific data on them are largely lacking to make the management of the Black Sea ecosystem difficult.

No authority in charge

Many government offices and agencies are concerned in the development and management of coastal areas and use of marine resources. Yet there is no single authority in charge of overall management of the Black Sea ecosystem. Moreover, the catchment area of the Black Sea is shared by seventeen countries, among which cooperation for the use and management of these common resources has been on agenda only recently.

(2) Strategy

Given the constraints described above, the proper management of the lack Sea ecosystem is a long-term issue. Measures at various fronts need to be initiated in the immediate future with a view to developing them into improved overall management of the ecosystem in the long run. Clarifying priority policies, establishing institutional mechanism to get all the stakeholders together, preparing a common base for best available data, and human resources development constitute the strategy.

Comprehensive coastal management planning

Preparation of a comprehensive coastal management plan for the Black Sea will provide a forum for all the stakeholders to get together and discuss various issues related to the Black Sea ecosystem. Priority policies should be clarified, and the management plan prepared through the participation of municipalities, research institutes, fishermen's groups, local business communities and NGOs as well as related government offices. The plan should cover reclamation, beach protection and waterfront beautification as well as use and management of coastal and marine resources.

This joint activity may prove to be the first step to establishing a management entity for the Black Sea marine ecosystem, preferably with the local initiative in cooperation with the Central Government. Local people should be involved in the planning and also in operation of the management entity for monitoring and other activities. Open information system would be a key for the success of this entire process.

Local alliances for wastewater treatment and solid waste management

Wastewater treatment plants need to be established in steps and solid waste management practices improved for larger urban centers along the coast. Given

limited financial and staff capacities of most municipalities, alliances of local governments should be promoted for cost-effective provision of these facilities.

Black Sea environmental inventory

Concerted efforts should be made, extending the ongoing initiative by MOE, to prepare a common database that can be used for discussion on issues, preparation of the management plan, and reference for monitoring. The database should represent the best available data, but an environmental inventory should be initiated to collect more scientific data using advanced methods.

Extending faculties of KTU

For the management of marine ecosystem, human resources development holds a key. The existing Marine Science Faculty at the Black Sea Technical University should be supported for new programs, and new faculties may also be created. Oceanography, maritime engineering including hydraulic simulation, and water quality modeling may be among the subjects to be considered for new faculties.

5.3.3 Urban environment

(1) Constraints

Black Sea seen as constraint rather than opportunities

Most urban centers in the DOKAP region are located along the Black Sea coast, but most people and government officials tend to see the Black Sea not as an important part of urban environment but rather as a factor constraining urban development. The Black Sea provides, in fact, dumping area for solid wastes and discharge sink for wastewater. This perception itself is a constraint to improving urban environment.

Lack of urban amenity

The harsh topography of the DOKAP region forces urban centers to develop along the narrow strips of coastal land, in river valleys, and on top of mountains. Conversely, urban environment in the region can effectively utilize magnificent landscapes ranging from alpine mountains to the Black Sea coast as important elements of urban amenity. In reality, however, Artvin commanding mountain views generally lacks adequate urban facilities, and coastal towns see the Black Sea as a constraint as mentioned above. Within urbanized areas, mixed land use is commonly observed.

Lack of effective urban land use plans

Despite the legal mandate, most municipalities do not have land use plans that can be used to guide and control urban land uses effectively. In the DOKAP region, however, even provincial centers do not have sufficient staff in the urban planning and development section.

Degrading social environment in urban areas

Following the collapse of the cold war structure, the DOKAP region has received a large influx of people from neighboring countries. Most of them have moved into larger centers, mainly Trabzon and Artvin. While they contribute to the local economy through various transactions, they have also brought changes in social environment including some negative impacts.

(2) Strategy

Preparation of waterfront development plans

As the first step toward changing the negative perception of the Black Sea for urbanization, major urban centers on the Black Sea coast should prepare waterfront development plans. Such plans should incorporate the Black Sea and its coast as important part of urban environment. While continued land reclamation is inevitable to some extent to expand the capacity of urban infrastructure, access to beaches should be warranted in the plans selectively.

Provision of core urban areas/facilities

As a step to enhancing urban amenity in larger urban centers, urban renewal or redevelopment may be undertaken to create areas for core urban facilities. Existing mixed land use areas may be used for the purpose, or relocation of factories and workshops to suburbs may provide opportunities for the urban renewal. Core urban facilities may include some high grade facilities and amenity such as cultural and sporting facilities and shopping arcades.

Encouragement of “coopetition” among municipalities

As mentioned in the previous subsection, alliances of local governments should be encouraged to improve various urban infrastructure facilities in a more cost-effective way. More broadly, “coopetition” or cooperative competition should be encouraged among municipalities for improvement of urban environment. Various urban facilities in different municipalities should be developed in a mutually complementary way in line with the urban hierarchy with functional division. Larger urban centers may compete with each other for the provision of

high grade urban facilities of different kinds so that each will develop definite characters which will complement one another to attract more visitors to the DOKAP region as a whole.

Another way to encourage "coopetition" is for the Central Government to introduce additional criteria for allocating fund to finance infrastructure needs, depending on performance of local municipalities in compliance with various environmental regulations. This may be applied to the Municipality Fund and other centrally controlled grants.

5.3.4 Rural environment

(1) Constraints

Degrading rural settlements

Living environment of rural settlements tends to be neglected as a result of out-migration and depopulation. Some seasonal settlements have been degraded by lack of attention due to changing lifestyle and social habits. This creates unsightly scenery, although it eases pressure on forests.

Forest villages

According to official figures, there are 657 officially designated forest villages in the forest areas with 80,573 households and 294,096 people in Ordu and Giresun alone. They are located generally within the elevation range of 700 – 1,600 m. Some of them harvest some aromatic and medicinal plants, mushrooms and other forest products. They sometimes open additional forest areas for cultivation and grazing as well.

Improper management of grazing land

Rangelands in Turkey are State owned and used as communal land for grazing and other purposes. Village communities have usufruct rights, which can be confirmed by the Government with an assessment certificate issued collectively to a village. Individual users are supposed to pay a fee that is to be used for maintenance, rehabilitation and protection of the rangelands. In practice, however, rangelands tend to be overused without proper management.

Soil erosion

Soil erosion is a common problem throughout the DOKAP region. It is caused generally by improper agricultural practices especially on slope land, deforestation, unstabilized rural roads and construction works for dams, roads and other

infrastructure facilities. In the southern areas where the climate is semi-arid, heavy rainfalls following an extended dry period tend to wash away shallow brown forest soil. Despite the permanent vegetation cover by the two dominant crops of tea and hazelnuts, the northern slopes of mountains are vulnerable to soil erosion with flash floods.

(2) Strategy

Promotion of rural tourism

Rural tourism, or yayla tourism as promoted by MOT, will provide a viable means to protect and enhance rural environment. It is a kind of low impact tourism utilizing local resources and revitalizing local cultures. Rural houses, that may be neglected otherwise, may be rehabilitated to provide low cost accommodations for tourists together with the provision of common facilities. Local festivals and food, and participation in socio-cultural or even economic activities are among the features as well as trekking and other common tourist activities.

Land tenure improvement

Improvement of land tenure holds a key for managing living environment of villagers, avoiding indiscriminate use of forest areas and overuse of grazing lands. Land tenure for forest areas occupied by forest villages should be clarified, subject to land suitability, while forest protection areas re-delineated. Use rights for exploitation of non-wood forest products should be established to guarantee this livelihood option for villagers together with their management responsibilities. Communal ownership of grazing land may be established with proper management organization for more flexible yet sustainable uses of such lands.

Land use rationalization for agriculture

Sound agricultural practices especially on slope land should be promoted with proper crop selection to minimize soil erosion. As irrigation is developed to cover extensive areas, proper crop cycles should be established not only from economic but also from soil protection points of view.

5.4 Strategy for Spatial/Infrastructure Development

5.4.1 Transportation

Overview of DOKAP transport development

The DOKAP region, through some 4,000 years, had been on the cross-roads linking the Far East to Europe via Iran in the south and Black Sea in the north. Trabzon was

the hub point on the Silk Road where road transport joined sea transport. As alternative routes developed, the importance of the Silk Road diminished. The latter lost its importance as the embargo was imposed on Iran. An even bigger loss for trade was the Bolshevik Revolution of 1917 which severed the trade between countries around the Black Sea.

Most recently, the emergence of CIS countries has increased the traffic between former Soviet Unions and Turkey, utilizing either the Trabzon port or the highway between Sarp and Trabzon in the form of border trade, including "suitcase trade." The border trade reached its maximum in 1994, and declined thereafter due to restrictions imposed by EU customs regulations and diversion of the border trade to more lucrative markets.

The initiative that Turkey has taken to facilitate trade and development through cooperative efforts of the Black Sea Economic Cooperation (BSEC) has added a new dimension to the future development of the DOKAP region. Despite the apparent locational advantage, however, only some 15% of all the exports transhipped are via DOKAP ports.

Conditions of the road network in the DOKAP region as a whole appear to be comparable to the national averages as far as road density and road length per population are concerned except provincial roads. The density of provincial roads is 0.033 km/km^2 in the DOKAP region, much lower than the national average of 0.046 km/km^2. Capacities of roadways, except urban sections, are assessed to be in excess of traffic volumes encountered. Even along the most heavily utilized coastal road, short trips are dominant and heavy traffics concentrate only on sections around larger urban centers.

(1) Constraints

The road network in the DOKAP region is generally adequate for existing and near future traffic. Despite the common belief, the region receives larger amounts of budget and expenditure of the General Directorate of State Highways (KGM) on population or area basis. In 1998, the total cost for KGM projects related to the DOKAP region accounted for 16% of the KGM budget. Maritime transport is largely undeveloped in the region, while existing facilities at major ports are modest. The Trabzon airport is the largest airport in East Turkey in terms of the number of departures and arrivals and the number of passengers, but still the capacity utilization was only some 40% at the maximum in 1994, when visitors from former Soviet Union made a record number of arrivals.

Despite the existing conditions outlined above, the transportation sector faces many constraints in view of the DOKAP regional development envisioned by the Master Plan. They consist of both physical and non-physical constraints. The latter include institutional and financial problems related to government transport agencies, environmental constraints to highway development, management of existing ports, and relocation of roads associated with dam construction.

Physical constraints

Topography, geology and climate are factors that affect the transport development in the DOKAP region. As socio-economic activities are also affected by these factors, resultant levels and distribution of these activities match the existing transport infrastructure. For future development of the DOKAP region, however, some physical conditions are more critical. In particular, limited north-south access capacities constrain more balanced development of the region. Although the Trabzon airport has sufficient capacity for some time, access to the airport from other provinces works as a constraint. Existing conditions of the DOKAP ports will constrain the international trade and transportation with the CIS countries and the Russian Federation.

Financial constraint for road development

Financing the development of roads and highways depends increasingly on the private sector. In 1998, 69.6 % of the total investment for KGM projects was to be financed through budgetary sources, and the rest by the private sources. For the improvement of the coastal road in the DOKAP region, for instance, 11 out of 21 road sections were contracted out to private companies who are responsible for financing through foreign credits. As credits are obtained on yearly basis, contractors face on situation where they have to find appropriate financial sources in limited time as they use up the fund.

TCDD's financial status

The General Directorate of State Railways (TCDD) is dependent on the Government not only for any investments but also for operating losses. Given this status, TCDD is not in a position even to talk about new railway links for the DOKAP or any other regions.

GDVA's position for rural roads

The rural settlement pattern in the DOKAP region is characterized by dispersed rural settlements with a relatively small size. This increases the cost of rural infrastructure. The General Directorate of Village Affairs (GDVA), responsible for

village roads, cannot expropriate land required for the right of way; instead villages are designated to provide the land for their village roads. GDVA has to make sure all the parties involved are convinced before any action can take place.

A new system for improving village roads has been introduced under "the Master Plan for Priority Village Roads." This is expected to allow prioritization of village roads by objective criteria, eliminating political interventions. However, only 40-45 % of the GDVA budget will be used according to the plan, while the rest will continue to be used in the "traditional" way.

Environmental concerns for coastal road

The ongoing improvement of the coastal road has been receiving growing opposition due to possible adverse environmental and other effects. Main points raised are the following.

1) According to the Decree for Environmental Protection issued by the Ministry of Environment, no environmental impact assessment (EIA) is required for highway construction, although the pressure from the public forced the highway administration to have preliminary EIA for some sections.
2) For almost a half of the length, the road will be constructed on embankment to be reclaimed from the sea.
3) Higher standards for design speed tends to make the road construction more costly in both financial and environmental terms.
4) Disruption of coastal areas will adversely affect marine life and coastal fishery.
5) The road will go through many settlements, and there are no infrastructure designed for pedestrian movements and residents' access to the coast.
6) Contracting the construction with financing will increase the financial costs and risk.

Port management

Trabzon is the only port in the DOKAP region being operated by the Turkish Shipping Company (TDI). The traffic handled at the port has declined drastically not only due to changes in trade patterns and the embargo imposed on Iran but also due to illegal organizations and operations. The drop in traffic has affected other activities such as duty free shops.

Social concerns for road relocation

Construction of dams on the Coruh river will make it necessary to relocate extensive sections of roads. Some settlements may be cut off from the existing road

network or their access to farms, markets and urban centers may be adversely affected, unless the new road alignment is carefully selected.

(2) Strategy

Corresponding to the constraints identified above, the strategy for the DOKAP transport development addresses both physical and non-physical factors. For physical measures, the basic strategy should be to maintain the existing transport network and upgrade key elements in it rather than introducing new roads and facilities. The ongoing improvement of the coastal road should continue, but efforts to finance the construction should focus on priority sections/subsections. The Trabzon-Gumushane-Bayburt-Erzincan road should be maintained properly as it will become a major highway to the inland. Its southern sections should be upgraded. Relocation of roads to be submerged by dam construction should not be prioritized until the dam projects themselves are reviewed from the national energy balance point of view. Strategy for non-physical measure is described below.

The capacity of DOKAP ports need to be increased for containerization and possibly Ro-Ro services. The frequency of shipping service needs to be increased. Appropriate measures should be taken to reduce cost of maritime transport.

Restructuring of government transport agencies

Given the financial and institutional constraints described above, it seems clear that the government agencies related to transportation need to be re-structured. In particular, clearly defined planning, design and implementation guidelines should be set out to use the limited public sector resources in most effective way, minimizing effects of political pressures.

The new system for village roads improvement by GDVA provides a good case in point. Planning, construction, and improvement of "Group Village Roads" should be prioritized on the basis of assessment by well defined criteria in accordance with the Group Village Roads Master Plan prepared by GDVA. However, all the budgetary sources should be included in the provisions instead of 40-45 % currently earmarked.

EIA for natural and social environments

Despite the provision of the Decree for Environment Protection exempting EIA for highway construction, preparation of preliminary EIA has already been accomplished. A further step should be taken to mandate the conduct of EIA for any transportation projects that might have significant impact on natural and social environments. EIA is more than a document but more importantly a procedure to

cultivate social consensus on important development issues. It is, in fact, the only way to ensure social and environmental accountability of any development activities.

Port management and development

Ongoing operations and management together with customs at the port of Trabzon will not render it for effective trade and transportation. The privatization alone may not be the answer as dedicated efforts are required on both the private operators and the government side. Correcting the existing problems is a prerequisite to encouraging coastal shipping services for domestic passenger and cargo transportation.

Complementary operation of all the major ports in the DOKAP region through networking would be a key for providing more frequent and reliable services. This would allow more efficient allocation of berthing spaces for increasing number of ship calls for international trade and tourism in the medium to long term. The national port development master plan (ULIMAP), being prepared by the Government, foresees two macro roles for the DOKAP ports. One is to provide an outlet for products of GAP to be shipped to CIS countries. The second role is for connections to nearby countries. Particularly Hopa Port.

Multimodal transportation

Turkey should adapt itself to multimodal transportation and containerization for transport of goods. This mode of transportation is still poorly perceived in the former Soviet Union, where long distance rail transport has been dominant, but re-organization of trucking industry is already under way in most CIS countries. In Europe, most part of long distance transportation has been handled by multimodal transport operators. Although the DOKAP region is not served directly by railways, the future transport development in the region should anticipate the shift to multimodal transportation. In particular, links between sea and land transport need to be planned to facilitate transshipment.

5.4.2 Telecommunications

(1) Constraints

Overview of recent development and needs

The DOKAP regional development, as conceived, calls for rapid and consistent expansion and improvement of the telecommunication sector. The telephone penetration rate in the DOKAP region has been increasing rapidly as a combined

effect of capacity expansion and population decrease in recent years. It is 23.0 per 100 in the DOKAP region as of 1998 compared to 27.4 per 100 in Turkey as a whole, which in turn increased at 13.3% per annum on the average during 1980 – 97, among the highest in the world. The annual growth rate of main subscribers in the DOKAP region was 10% during 1994 – 98. As the population decrease ceases as expected along with the renewed growth of the economy in the DOKAP region, telecommunication facilities would have to expand even faster.

Main constraints

Two factors possibly constraining the rapid expansion of telecommunication facilities are the privatization and the telephone tariff. The legal framework for the privatization of Turk Telekom A.S. (TTAS) has been established, and the privatization of TTAS started with the passage of Law 4107 in 1995 which authorizes the sale of 49% of its shares. The Government now issues licenses to private firms to operate and provide services such as mobile telephone, paging, data network, cable TV, payphones, satellite systems, and other value-added services.

The telephone tariff is relatively low in Turkey. In 1996, a three-minute domestic call cost about US$ 0.055, almost half of the rate in South Korea and Thailand. While the low tariff encourages more people and firms to subscribe and use the services, it tends to discourage private telecommunication firms to expand their operations.

Intra-regional disparities

The telecommunication sector is expected to support not only economic activities but also various social services. For instance, a countrywide internet network for education institutions has been established. International gateway capacity will increase under an ongoing project, and cities of varying sizes will be linked to core nodes by different capacity protocol. In this connection, wide variance in service levels among DOKAP provinces and cities should be taken as another potential constraint. There are only 280 internet subscribers even in Trabzon, and the main telephone penetration rate varies between 16.4 per 100 in Bayburt and 29.4 per 100 in Rize in 1998.

(2) Strategy

The Government has placed the reform and privatization of the telecommunication sector at the top of its agenda. As per commitment made to WTO, the monopolistic status of the sector will terminate by 2003, two years ahead of the target. This does

not mean the Government's role in this sector will also terminate as telecommunications support various public and social functions.

The DOKAP regional development should be supported in this sector by a high-grade, multi-purpose, multi-media telecommunication system. Subsystems may include an Internet network for distance education, health referral system network, and other social and community services network as well as market information network. This strategy is particularly relevant to the DOKAP region, where physical transportation of goods and people for these services is constrained by harsh topography.

Another viable strategy for the DOKAP regional development is to make the establishment of some central facilities serving the Black Sea region a turning point to upgrade the telecommunication facilities in the DOKAP region as a whole. Candidates may include a Black Sea information technology R & D center and a Black Sea environmental information center.

5.4.3 Urban system

(1) Constraints

Recent urbanization

Although the DOKAP region is less developed, urbanization is inevitable. The urbanization ratio in the region increased steadily from 34.0% in 1985 to 39.1% in 1990 and 48.6% in 1997. Despite the decrease in total population, the urban population in the region increased at 2.9% per annum during 1990 – 97, only slightly lower than the growth rate of urban population in Turkey (3.0% per annum).

According to the 1990 census, cities in the DOKAP region lost their population to outside by 292,325 and gained by 148,383, a net decrease by 143,942 during 1985-90, while the urban population grew at 1.3% per annum during this period, close to the rate of natural increase. This implies that about the equal number of people who moved from villages to cities within the DOKAP region moved out from the cities in the region to outside. Probably, more significant village-to-city migration took place within the DOKAP region during 1990-97 to realize much higher growth of the urban population

Growth performance varies among urban centers in the DOKAP region. In Ordu, which gained population during 1990-97, seven out of 18 districts recorded higher increase in both total and urban population than the respective averages in the

region. Highest increase in urban population was attained by two inland districts of Akkus (7.8% per annum) and Mesudiye (5.1%). This indicates that urban growth in Ordu is largely suburbanization as the province has much larger habitable land. Other districts where both total and urban population increased at rates higher than the DOKAP averages concentrate mostly in the coastal area in Trabzon, Rize and Artvin. In Trabzon, urban growth proceeded from the coastal area to the inland in Salpazar, Duzkoy, Koprubasi, Caykac and Hayrat. Two other districts where both total and urban population increased at rates higher than the DOKAP averages are Sebinkarahisar in Giresun, and Torul in Gumushane.

Through a review of population trends and the current situation of urbanization in the DOKAP region as outlined above, major constraints to urban development in the region have been identified as summarized below.

Limited land for urbanization

Larger urban centers in the DOKAP region are found mostly along the Black Sea coast, where land for urbanization is limited. Urban growth is proceeding from the coastal area to the inland along river courses especially in Trabzon. As the population pressure increases in the coastal area, increasing conflicts will arise over land use between agriculture and urban/industrial uses. Urbanization into lush plateau in foothills of mountains will increase the risk of flash floods for coastal towns as well.

The city of Artvin is situated on mountain slopes, constraining the provision of physical and social infrastructure. Some urban areas are located in disaster-prone areas. The ribbon-type developments along the coast and river courses as well as mountainous topography constrain complementary development of a cluster of urban centers.

Insufficient urban infrastructure

Urban centers in the DOKAP region have been developing as rapidly as those in Turkey as a whole, but development of urban infrastructure has not kept pace with it. Expansion of water supply is going on for many towns including some larger cities such as Trabzon and Ordu. For urban water supply in the region, surface water sources need to be used increasingly with dams, major treatment plants, and other related facilities. A prerequisite will be cooperation of neighboring municipalities and related government agencies.

Sewerage systems have not been developed in most municipalities, and septic tanks are commonly used even in some urban areas of the DOKAP region. Sewer systems

serve most households in the provincial centers. In coastal towns, collected sewage is discharged to Black Sea without treatment, typically with some 1,000 m long sewage pipe at the depth of some 30 m from the sea surface. In inland towns, sewage is discharged into nearby rivers, which drain eventually in Black Sea.

Roads and streets in urban areas are generally old and narrow, and roadside parking makes their capacity even smaller for increasing traffics. Major highways pass through urban centers without a by-pass. Harsh topography in general and limited land along the coast constrain construction of by-pass roads.

Generation of solid wastes in the DOKAP region is still relatively small with the per capita generation in the range of 240-420 gram per day in municipalities. Most solid wastes are disposed by dumping without intermediate treatment. Only in several municipalities, some solid wastes are burned in an open area, and only one municipality has a compost plant. Main disposal sites for the provincial centers are shown in Table 5.3.

Table 5.3 Main Disposal Sites for Solid Wastes in Provincial Centers

Provincial Center	Disposal sites			
	Dumping sites on land	River	Sea	Landfill
Artvin		*		
Giresun			*	
Gumushane	*			
Ordu			*	
Rize			*	
Trabzon			*	*
Bayburt	*			

Source : Interviews by the JICA Study Team

Insufficient capacity of local governments

Planning for and implementation of various urban infrastructure improvements involve both central government agencies and local governments. Of the three levels of local administration, provincial special administrations and municipalities are involved in the urban sector. Both staff and financial capacities of local governments are insufficient and they rely heavily on the Bank of Provinces (BOP) technically and financially for improvement of various urban infrastructure facilities.

The major source of revenue for provincial special administrations is grants transferred from the Central Government. On an average, provincial

self-governments' expenditures make only about one-tenth of those undertaken by the Government in provinces.

Revenue structure of municipal governments in Turkey is shown in Table 5.4.

As seen, transfers from the Central Government constitute the major single source of revenue for municipalities. Currently 6% of the national tax revenue collection is redistributed among municipalities on the basis of population, and 3% is deposited in BOP under the name of the Fund for Municipalities to be used to finance infrastructure needs of municipalities. Moreover, 0.25% of national tax revenues is transferred to the fund for Local Governments, which is controlled by both the Ministry of Public Works and Resettlement and the Ministry of Interior. There are other centrally controlled grants administered by ministries, which are distributed among municipalities on either ad hoc or a project basis. In addition, municipalities can take loans on project basis for capital goods from ministries and BOP.

Table 5.4 Revenue of Municipal Governments (1996)

Revenue Source	Share (%)
Shares of national tax revenues in the general budget	38
Special aids and transfer (grants)	6
Municipal taxes	10
User charges	3
Revenues from properties, enterprises, fees and fines etc.	43

Source: Budgets, municipalities, special provincial administrations, and villages, 1996, SIS

Expenditures of municipalities in Turkey consist of salary (25%), other current expenditures (13%), debt repayment (29%), and others (5%). The total current expenditure may not be so large, but debt repayment appears to be quite large.

BOP is the central actor in addressing infrastructure needs particularly of small and medium sized municipalities. It supplements local governments' own investment expenditures by financing and executing public works (through private contractors) using earmarked revenues from the Central Government.

An important obligatory duty of municipalities is to prepare development plans of their jurisdictions. In the DOKAP region, even provincial centers do not have sufficient staff in the urban planning and development section. The number of staff in the section is determined by the size of population of municipalities. Accordingly, Bayburt, for example, does not have a city planner or engineer in its planning section. Physical plans of municipalities are often prepared by BOP, sometimes without adequate local information.

Lack of urban development guidelines

Illegal settlements have emerged in the DOKAP region due to uncontrolled urban development. Any plan and construction of buildings have to follow the Construction Law, which defines land acquisition and transactions. Majority of lands in urban areas of the DOKAP region belongs to private owners. According to the law, 35% of the private land is allowed for acquisition, if the land needs to be used for public purposes. In case of a large development, land acquisition exceeds the financial capacity of a concerned municipality. Private landowners tend to sell their lands illegally and illegal settlements are created.

Municipalities are responsible for issuing permits and licenses for construction. Still many buildings, especially residential ones, are constructed in the outskirts of urban areas without a building permit, as observed in the DOKAP region. There also exist many un-finished multi-storey buildings in the region, which obstruct scenery and urban environment.

(2) Strategy

Given the urbanization trend and the constraints outlined above, strategy for the DOKAP urban development is established with the following four components.

Urban development with hierarchy

The hierarchical structure of urban centers in the DOKAP region should be clarified and strengthened for the region to perform expected roles. Various urban infrastructure facilities should be selectively improved in accordance with functional division to be clarified by the urban hierarchy. Some urban centers at upper tiers of the hierarchy should be equipped with high-grade services and amenity facilities. Some of them may serve neighboring countries as well as local people in the DOKAP region.

Promotion of local government alliances

Urban infrastructure needs to be improved more rapidly to keep up with the accelerated urbanization expected under the DOKAP, while most local governments face serious financial problems. Under these conditions, alliances of local governments should be promoted for cost-effective improvements of urban infrastructure. This strategy applies particularly to water supply and solid waste management.

As the demand for water in urban areas increase significantly, increasingly more surface water sources need to be tapped with major facilities such as dams and central treatment plants. Water sources tend to be located further away from

demand centers. This situation will expand opportunities for neighboring municipalities and villages to cooperate in the development through pooling staff as well as financial resources when the same source is used.

Solid waste management in the future will have to adopt more sophisticated treatment and disposal methods. Intermediate treatment such as composting and sanitary land fill will be the common methods. Incineration is unlikely due to the composition. Location of an incineration plant and sanitary landfill site should better be determined from a broad geographic point of view, considering social and environmental effects.

Creation of larger urban centers inland

Ongoing urbanization in the coastal area will face physical limits unless extensive land reclamation is undertaken. This option may not be desirable from an environmental point of view. Rather, larger urban centers should be created in the inland areas by providing improved infrastructure. Such urban centers should be located at strategic points along transport arteries, where major water resources development is expected to improve water supply and related facilities.

Strengthening of urban planning and control functions

There is no doubt urban planning and urban land use control functions should be much strengthened to support the planned development of the DOKAP region. A most effective way to realize this may be through pooling of experts at some level of local administration or some institute for common use by many municipalities. At present, the Bank of Provinces effectively serves this purpose. Alternatively, provincial self-government may be strengthened for planning and coordinating functions of development activities to provide technical supports for municipalities in their respective jurisdictions.

5.4.4 Water resources

(1) Constraints

Characteristics of DOKAP water resources

The DOKAP region is relatively rich in water resources as compared to other regions in the country as far as endowments are concerned. Due to its topography, however, the region has many short rivers with large riverbed gradients, making it difficult to use them effectively while suffering from occasional flash floods. The DOKAP region is also susceptible to landslides and debris flows that may be triggered by high precipitation. Snow cover in high mountains tends to smooth out

runoff of larger rivers such as Coruh, Kelkit, and Harsit, but degrading watershed areas work against this as well as causing turbid water in the rivers.

Insufficient water resources development and management

A major problem facing the DOKAP region has been identified as insufficient water resources development and management. The large hydropower potentials have been mostly undeveloped. In fact, the DOKAP region has just entered the stage of major hydropower development with the Kurtun dam on the Harsit river near completion, and the Deriner dam on the Coruh river under construction.

Irrigation development is also limited in the DOKAP region. Out of the estimated irrigation potential covering 635,434 ha, the total area of existing, ongoing, and planned irrigation development amounts only to 120,685 ha.

Many small rivers flowing into Black Sea are largely unutilized, while causing flash floods. Water supply for most cities depends on groundwater except Trabzon. The new water supply system relying on the Degirmen river is already in operation for Trabzon, and construction of the Atasu dam was initiated in 1997 to meet future increase in water demand together with a 5 MW hydropower station. As water demand increases in urban areas, future water supply will have to rely increasingly more on surface water.

The province of Bayburt, having the most extensive irrigation development in the DOKAP region, faces drainage problems, constraining further extension of agricultural land. Storm water drainage may become a serious problem in the region as urbanization proceeds.

(2) Strategy

Proper water resources development and management are essential for the DOKAP regional development. Implementation of planned dam projects should be promoted as a matter of principle not only for hydropower generation but also for irrigation, flood control and water supply. These multi-purpose dam projects should be planned and implemented in such a way that local people and communities would be the prime beneficiaries.

The irrigation component is essential to enhance the land productivity in semi-arid areas of the DOKAP region, particularly in Bayburt. Community facilities should be provided and watershed management effected as integral parts of any major dam projects. Resettlement issues need to be addressed. For all of these, involvement of local governments and communities needs to be enhanced. More important elements of the strategy are described.

Multi-purpose dams with community development

Implementation of any multi-purpose dam project should be taken as an opportunity to vitalize rural economies in the project area. Re-settlement of people to be affected by the dam reservoir is a very basic condition. The irrigation component should benefit farmers to be relocated as well as downstream farming communities. Some community and possibly tourism facilities should be incorporated in the project. To effect these, local communities should be involved in the project from early stage of development, facilitated by relevant local governments.

Watershed management

Watershed management should be taken as another inherent component of any dam project. Proper watershed management is essential to extend the economic life of the dam, and also a way to minimize adverse effects on downstream activities as it would reduce the possibility of turbid river water to prolong due to storage. Local communities should be organized and involved in tree planting, promotion of sound land use practices, and monitoring and evaluation. Local governments should support these activities, coordinating with the implementing agency of the dam project.

Irrigation for crop diversification

Irrigation is a prerequisite to enhancing agricultural productivity in semi-arid areas of the DOKAP region. It may increase yields of more conventional crops such as wheat and potatoes, but it would better be used also for diversifying crops. Various horticultural crops should be introduced under supplemental irrigation, including vegetables, fruits and flowers.

Water supply by alliances of municipalities.

As water demand increases with urbanization, larger and probably more remote water sources will have to be tapped. This will enlarge opportunities for neighboring municipalities and villages to cooperate in water supply expansion with an integrated system. Joint development and management of larger water supply systems by alliances of local governments will allow more cost-effective undertakings in terms of both facilities and personnel costs.

5.4.5 Energy

(1) Constraints

Energy development to support the DOKAP regional development is constrained by resource availability, environmental concerns, and policy/institutional factors. Main constraints are outlined.

Limited energy resources

There exist no significant deposits of energy resources in the DOKAP region, except hydropower potentials and low grade lignite. The hydropower potentials account for 10% of the national total. The DOKAP region does not benefit directly from imported energy, as no oil or gas pipelines pass through the region. Two proposed gas pipelines will by-pass the DOKAP region: one from Russia through the Black Sea to Samsun and the other to go through Erzurum from Iran to Central Anatolia.

Insufficient public investment

To meet the national power demand for economic growth expected at 5-6% annually to the year 2020, the investment requirements amount to US$ 80 billion for the next 15 years. The power subsector alone will need US$ 55 billion. This is beyond the capacity of the public sector, and the private sector has been invited since 1984 to participate in power generation through “build, operate and transfer” (BOT) or “build, own and operate” (BOO) schemes.

Environmental concerns

Development of the hydropower potentials may be constrained by environmental concerns. Planned dams on the Coruh river will inundate settlements, roads and other infrastructure as well as land with vegetation, affecting flora and fauna including some endemic ones. Hydropower projects in the Firtina river basin face opposition from environmentalists. Also, use of low grade lignite is constrained by environmental considerations as well as the economy.

Power supply quality

The quality of power supplied to the DOKAP region poses another problem. The line loss rate in the region is high, averaging 18.1%, although it is slightly lower than the national average of 18.7%, due probably to insufficient substation capacity and long distance transmission at low voltage. Power supply reliability is low in the DOKAP region due also to insufficient supply capacity and unstable power frequency from the neighboring country‘s system.

Policy/institutional factors

Some unresolved issues exist related to several BOT/BOO power projects, for arbitration of disputes between Turkish companies, Turkish Power Generation and Transmission Company (TEAS) and BOT/BOO investors. Also, both TEAS and Turkish Power Distribution Company (TEDAS) are in the process of privatization. TEAS is gradually divesting from its power plants and will eventually become an independent transmission company. As the power sector will become increasingly in the hand of the private sector, a new set of policies and regulations may be introduced to guide private investments.

(2) Strategy

Given the constraints outlined above, power development for the DOKAP region should effectively utilize the hydropower potentials as indigenous energy resources, combine them with increased power import from neighboring countries to improve power supply reliability and stability, and realize cost-effective power supply in balance with environmental protection. Involvement of local governments and communities will be essential to realize such power development and also to increase the use of renewable energy resources and to effect demand side management. More important strategic elements are outlined.

Involvement of local governments and communities in hydropower development

Development of the hydropower potentials should be promoted as a matter of principle. To ensure the development will not undermine the environmental quality, however, local governments and communities should be involved in large and small hydropower development. In particular, local communities to be affected directly by any hydropower project should be involved in the planning for compensation schemes such as resettlement so that their options should be fully examined and the best option incorporated in the project.

Increase in power exchange with neighboring countries

The faster developing economy of Turkey in general and the DOKAP region in particular can benefit from surplus power to be supplied through inter-connections with the European power system (UCPTE). Low prices of power from neighboring countries will contribute to cost-effective improvement of power supply quantity and quality. The power purchase from Georgia was US$ 0.04/kWh in 1998, and the newly signed power purchase agreement (PPA) would price power supply from Bulgaria at US$ 0.035/kWh up to 2008. These prices are lower than delivery prices from BOT projects, ranging typically in US$ 0.07 – 0.09/kWh.

Development of renewable energy resources

The DOKAP region has limited renewable energy resources. Mini-hydro may be more extensively utilized for various purposes such as small scale processing of tea. Solid wastes may be used to generate electricity to turn a problem into goods. Biomass and biogas may also be exploited for specific purposes.

Demand side management

Although per capita consumption of electricity is still low in the DOKAP region, the industrial use has exceeded the household use in all the coastal provinces except Trabzon. The region has a few electricity intensive industries such as copper mining and dressing and tea processing. As power demand by the industrial use is expected to accelerate in the coming decades, demand side management will become increasingly more important. Rational pricing of electricity plays an important role to avoid wasteful use of cheap imported energy and to ensure financial viability of selected BOT/BOO power generation schemes.

Price regulation

Energy distribution will remain a local monopoly in the near future. The pricing under the BOT schemes is completely opaque. This can lead to abuse and commitments for unreasonably high priced energy by the Government procurement and transmission monopsony. This, in turn, will lead to higher prices and reduce the competitiveness of end-users and the welfare of the household sector. Turkey urgently needs to introduce a system for review and regulation of utility prices, not only for energy but for urban water and gas as well.

CHAPTER 6 DOKAP DEVELOPMENT PROJECTS AND PROGRAMS

The DOKAP regional development to the year 2020 will be supported by a set of development projects and programs and related institutional measures constituting the DOKAP Master Plan. Proposed institutional measures are presented in the next chapter. This chapter presents projects and programs. Proposed projects and programs are the instruments for implementing the basic strategy to attain the DOKAP regional development objectives discussed in Chapter 3.

Most projects and programs have been newly formulated through the master planning. Some have been taken from existing plans and programs of sector agencies, and modified or expanded through discussions with relevant agencies and experts. Projects and programs newly formulated were discussed with officials and experts of government agencies, local governments, academic institutes and some NGOs on various occasions.

6.1 Structure of DOKAP Master Plan

A total of 52 projects and programs in different sectors are included in the DOKAP Master Plan. They have been packaged into 10 broad programs. Three programs aim at transformation of DOKAP spatial structure. They are directly in line with the basic strategy for DOKAP regional development: (1) upgrading of trunk infrastructure, (2) multipurpose water resources development and management, and (3) land tenure improvement. These programs for transforming DOKAP spatial structure will be instrumental in changing settlement patterns through selective investments to improve various infrastructure and to enhance land productivity. These programs are:

1. Spatial Structure Strengthening Program,
2. Local Alliance Urban Development and Management Program, and
3. Comprehensive Water and Land Resources Management Program.

Within such spatial structure, three programs aim at strengthening the DOKAP economic structure through effectively supporting various economic activities in rural and urban areas. These programs are:

4. Industry and Trade Support Program,
5. Rural Economy Diversification and Intensification Program, and
6. Applied Research Program.

Further development and implementation of these six programs should be supported by the increasing local initiative for development planning and

management, further development of human resources, and improved living environment. The third group of programs, therefore, aim at enhancing administrative, social and environmental accountability. They consist of:

7. Local Administration Strengthening Program,
8. Sustainable Human Development Program, and
9. Living Environment Enhancement Program.

For successful and accelerated regional development, external resources need to be mobilized both in the public and the private sectors. Establishing strong and visible identity of DOKAP will help for this purpose. Thus another program aims at establishing the DOKAP identity:

10. Special Program to Establish DOKAP Identity.

The DOKAP regional development objectives as defined in Section 3.2 may be most effectively attained through strengthening the economic structure, enhancing the administrative, social and environmental accountability, and establishing the identity. Structure of the DOKAP Master Plan with the 10 programs is illustrated in Figure 6.1. Each program/project is outlined in the subsequent section. Profiles of all the proposed projects and programs are contained in Project Report.

6.2 DOKAP Development Projects and Programs

6.2.1 Transformation of spatial structure

(1) Spatial Structure Strengthening Program

This program consists of nine projects. (1.1) Trabzon-Rize Corridor Development is to promote integrated development of industries and services in area between the two provincial centers to form a development corridor with high population density. For this purpose, various infrastructure need to be improved and a new management entity established. (1.2) Inland Urban Centers Development aims at concentration of new service and manufacturing activities in the provincial centers of Gumushane, Bayburt and Artvin. It would contribute to easing population pressure on the coastal areas and achieving economies of scale and growth momentum in less developed inland areas.

Figure 6.1 Structure of DOKAP Master Plan with 10 Programs

Two projects will strengthen the artery road network for the DOKAP region through upgrading of existing roads. (1.3) Black Sea Highway will be developed in steps, starting with the ongoing expansion of some sections and viaducts for through traffics in major urban centers. (1.4) Highway Network Improvement is to strengthen the DOKAP highway network as the main mode of transportation with two subprojects: Two-lane Highway System Improvement, and Highway O&M Improvement. The first is to upgrade selected road sections including an alternative north-south lateral highway and a secondary east-west artery. The second aims at providing regular monitoring of axle-loads together with improved periodic maintenance works.

(1.5) Integrated Port Network Development is to promote integrated operation and management of major ports in the DOKAP region initially for domestic trade and passenger movements and increasingly for international trade and tourism. Privatization of the Trabzon port may be the first step. Possibility of rail links will be examined under (1.8) DOKAP-DAP-GAP Transport Development (study).

(1.6) Telecommunication Improvement is to establish in steps high grade, multipurpose, multi-media telecommunication system for the DOKAP region linked to the rest of the world. (1.7) High Voltage Power Transmission Lines Extension is to extend power transmission lines at high voltages as local power production and import from neighbouring countries increase.

(2) Local Alliance Urban Development and Management Program

This program consists of five projects. (2.1) Local Alliance Urban Planning will establish unions of local governments to deal with regional settlement issues for better urban planning. Existing programs for providing local physical infrastructure will be consolidated, and improvement of levels of urban amenity in selected cities planned.

Two projects deal with most critical urban infrastructure issues that can be addressed by cooperation of neighbouring local governments. (2.2) Integrated Water Supply Systems Development is for planning and implementation of larger water supply systems by unions of neighbouring municipalities and villages. (2.3) Area-wide Solid Waste Management will promote the introduction of advanced solid waste management practices such as incineration, composing and sanitary land fill by joint efforts of neighbouring local governments. Also a thermal power plant to utilize solid wastes will be established

Two projects will contribute to improving environmental quality as a prerequisite

to creating urban amenity. (2.4) Black Sea Participatory Coastal Management will create a forum to discuss issues on the Black Sea coastal environment and to prepare a comprehensive management plan by all the stakeholders. This may lead to the establishment of a management entity. (2.5) Eco-community Network is to establish telecommunication links between local communities, industries and government offices to exchange information for effective monitoring of pollution and enhancement of accountability.

(3) Comprehensive Water and Land Resources Management Program

Seven projects are contained in this program. Two projects are directly related to water resources development. (3.1) Multipurpose Dams and Community Development promotes planning for various community facilities by the participation of people who will be affected by planned and ongoing multi-purpose dam projects. Design of any dam may be modified as a result. (3.2) Irrigation Development Acceleration will promote the early implementation of small and large irrigation schemes through land consolidation and drainage improvement as well as extension services in crop cycles, on-farm management and input use.

Two other projects address directly to critical land issues. (3.3) Land Conservation is a program to expand application of community-based approach to watershed management, erosion control and land conservation by extending on-going efforts. (3.4) Cadastral Survey Acceleration aims at early completion of cadastre surveys in the DOKAP region particularly to establish forest boundaries and land tenure for forest villagers.

Three projects aim at restoring resource and environmental capacity as a base for sustainable socio-economic development. (3.5) DOKAP Environmental Inventory and Management Planning is to initiate environmental inventory of DOKAP flora and fauna and to prepare a comprehensive management plan to preserve them. (3.6) Protected Area Management System Improvement is to establish a new system with park rangers for improved management of the national park and protected area system of Turkey to be pioneered in the national parks in the DOKAP region. (3.7) DOKAP Environmental Improvement Fund is to establish a special fund based on part of the forest revenue that should be used exclusively for compulsory purchase of particularly intrusive rural homesteads and private assets in areas of special importance for environmental management.

6.2.2 Strengthening of economic structure

(1) Industry and Trade Support Program

This program consists of five projects. Two of them specifically support small and medium enterprises. (4.1) SMEs Production and Marketing Center is to establish a one–stop center to facilitate effective utilization of marketing and advisory services presently available from various public agencies. (4.2) Small Enterprise Credit and Support is a combined credit and technical assistance program to support existing and new projects. It will provide a full range of consulting services and directed credit for SMEs.

Two other projects will contribute to improving the matching between labour demand and supply. (4.3) Vocational Training Improvement will provide upgraded facilities for quality training to meet changing and diversifying demands of industries. Technical schools attached to KTU and its faculties in various provinces will be given priority. (4.4) Job Opportunities Information and Placement Center will establish functional linkages between the Government's placement agency, vocational training centers and employers' associations to help placement of graduates and to give direction to the design of new training programs.

(4.5) DOKAP Trading and Manufacturing Zones Expansion will support the existing free trade zones to expand their facilities and provide additional incentives for both export and domestic market oriented companies to locate in these zones. It will also promote foreign trade from the free zones through the development of infrastructure and legal/institutional measures.

(2) Rural Economy Diversification and Intensification Program

This program comprises five projects. (5.1) Livestock and Poultry Promotion aims at establishing new livestock production systems on the basis of improved feed base expected from forage crop production under irrigation. It will also promote poultry in all the DOKAP provinces. (5.2) Greenhouse promotion is a credit scheme to promote the production of vegetables, cut flowers, ornamental plants and other crops in greenhouses.

(5.3) One village-One Product Model Area Development is to increase production of various fruits, vegetables, handicrafts, and other specialty products, utilizing various characteristics and resources of different villages to be specialized in one product at least of national or even international significance. It will provide subsidies for specialty products development, technical extension, and guidance

for management and marketing.

(5.4) Freshwater Aquaculture Support aims at market development for trout and other freshwater aquaculture products with cold chains, provision of a hatchery, establishment of feed industry, and other technical supports. (5.5) Rural Tourism Promotion provides concerted marketing of tourism products for low impact tourism, utilizing local resources and revitalizing local cultures.

(3) Applied Research Program

Three projects are included in this program. All of them will support economic activities mostly in rural areas. (6.1) Renewable Energy Applied Research Center is to promote applied research on more promising renewable energy resources including solid wastes, biogas, mini-hydro and wind. Priority for field application will be given to rural areas. (6.2) Irrigated Crop Cycles Research will conduct research on crop cycles under irrigation, combining both traditional and new crops for crop diversification. (6.3) Innovative Mariculture Experiment and Development will experiment on alternative aquaculture practices including innovative mariculture through support for the KTU marine research center. It will develop also more viable schemes for floating cage aquaculture to suit local conditions in Black Sea.

6.2.3 Enhancement of administrative, social and environmental accountability

(1) Local Administration Strengthening Program

This program contains three subprograms. (7.1) Local Development Planning Improvement is to establish a system to pool limited human resources for development planning that can be shared by local governments. (7.2) Local Administrative Capacity Enhancement takes various measures to enhance the financial and staff capacity of local administration such as improvement of tax system and financial management, promotion of local alliances, and manpower development. (7.3) Local Administration Evaluation System Establishment is to introduce an evaluation system for local governments starting from DOKAP municipalities.

(2) Sustainable Human Development Program

Six projects are included in this program: three each for the education and health sectors. (8.1) Eight-year Compulsory Education System Support will continue on-going efforts to consolidate schools, provide bus services and expand boarding

schools. (8.2) Distance Education will promote distance education further to serve remote rural areas. It may start with the eight-year compulsory education, but will be extended to cover formal education at all levels and adult education as well. (8.3) Value Development Education is to introduce curricula for value development to expose young generations to value systems of coming age. It may be applied in various fields, including new industries and new crops.

(8.4) Community Health Care Promotion is to promote various community based health care systems including those based on traditional health care along with further devolution of health services. (8.5) Health Education aims at raising awareness of people for health and sanitation through health education programs for realizing self-reliant society. (8.6) Health Referral System Improvement is to re-establish effective health referral system with proper telecommunication links and upgrading of key health facilities.

(3) Living Environment Enhancement Program

This program, consisting of four projects, will help to improve living environment mainly in rural areas together with the five projects under the Rural Economy Diversification and Intensification Program. Three of them will improve the provision of various infrastructure to support better living, and another will improve rural environment through providing viable livelihood opportunities for forest villagers.

(9.1) Rural Services Center Support will strengthen basic service functions of rural service centers, which may be selected from 354 central villages identified by SPO in 1993. (9.2) Rural Infrastructure Improvement will extend the ongoing efforts by GDVA to improve rural water supply, village roads, small irrigation schemes and others. Sewerage facilities may also be provided to relatively populated and well-settled villages with drinking water systems, including in potential tourism areas. Self-help efforts of rural people should be mobilized under the GDVA supervision as much as possible.

(9.3) Social Telecommunication Network Development is to establish telecommunication links between rural and urban communities to share and exchange information on various social services, socio-cultural events and opportunities. It is expected to contribute to social cohesiveness under highly mobile demographic conditions expected in the future.

(9.4) Community-based Forestry Development and Management is to utilize forest villages for sustainable use and management of forest resources. It will be

implemented in areas where the cadastre survey is completed to clarify forest boundaries and land tenure. Re-delineation of forest areas depending on land suitability and establishment of land tenure or use rights will be involved in the project.

6.2.4 Special program

Establishing strong and visible identity of DOKAP will help to attract external resources in the public and the private sectors. It will also contribute to accelerated regional development through promoting sense of participation among a wider range of people under the common vision. The Special Program to Establish DOKAP Identity contains six projects.

(10.1) Black Sea Technology Center is a joint project of KOSGEB, KTU and the DOKAP regional agency to provide technology selection, adaptation and referral services for SMEs. It will provide a full range of product testing and certification services on commercial basis. (10.2) DOKAP Trade Fair is established in Trabzon as a permanent trade fair. It will be managed jointly by the Chambers of Commerce and Industry in the region and the DOKAP regional agency.

Two projects support the DOKAP tourism to establish fame in international market. (10.3) DOKAP Brand Tourism Products Development is to introduce a new line of tourism products that appeal to a larger market segment and diversify the range of products on offer. This involves integrated development of existing resources in Zigana-Hamsikoy, Sumela-Artindere, Uzungol, and Ayder-Kackar. (10.4) DOKAP Tourism Professional Partnership will seek partnership with airlines, tour operators, conference organizers, business associations and other professionals outside the region for effective marketing and the region's exposure to the world.

Two other projects aim at making the DOKAP region a world center in specialized fields. (10.5) Genetic Resource Center aims at establishing a center to preserve seeds of plants endemic to the region and its vicinities and also to develop a database for their distribution and traditional uses. (10.6) Information Technology Incubator is to establish an information technology revolving fund for business incubator functions at or close to KTU to promote entrepreneurship in high-tech industries, increase job opportunities, and attract investments into the region.

6.3 Investment Requirements and Schedule

6.3.1 Expected public investment allocation to DOKAP

(1) Existing public investment allocation

Existing regional allocation of public investment expenditures by the Central Government, and investment expenditures by municipalities and provincial self-governments in Turkey and the DOKAP region were analyzed in the institution sector. Results are summarized in Table 6.1.

Table 6.1 Public Investment Allocation in DOKAP and Turkey

(Unit: US$ in 1998 prices)

	DOKAP	Turkey	Note
Central Government	508,132	21,950,783	1990-97 average
Municipalities	31,554	1,410,457	1996
Provincial self-governments	31,163	610,485	1996
Total public investment expenditures	570,849	23,971,725	
GDP/GRDP	5,058,947	181,305,718	1996
Share of public investment in GDP/GRDP (%)	11.3	13.2	

Source: Sector report on institutions

As seen from Table 6.1, the share of the DOKAP region for the total public investment expenditure in Turkey is 2.4%, while the GRDP of the region accounts for 2.8% of the GDP of Turkey. These shares are much smaller than the population share of the DOKAP region (4.6% of the total population in Turkey). The ratio of total public investment to the GRDP is 11.3% for the DOKAP region, while the ratio of total public investment in Turkey to the GDP is 13.2%. The gross fixed capital formation in Turkey has been more or less 25% of the GDP in recent years (25.8% in 1996). Thus, public investments account for about 50% of the gross fixed capital formation in Turkey.

(2) Expected levels of public investment in 2020

Expected levels of public investment in Turkey and its allocation to the DOKAP region are projected based on the expected GDP/GRDP growth and assumed ratios of public investment to the GDP/GRDP at the national and regional levels. According to the SPO projection, the GDP of Turkey is expected to reach US$ 522 billion by 2020. The GRDP of the DOKAP region is expected to grow from US$ 5,851 million in 2000 to US$ 18,256 million in 2020 at the average annual rate of 5.8% according to the socio-economic framework.

Expected levels of public investment allocation to DOKAP in 2020 may be calculated in two ways. The ratio of total public investment to the GDP of Turkey will decrease in the future and 10% is assumed for the year 2020. Thus, the total public investment is calculated at US$ 52,200 million in 2020. The share of the DOKAP region should increase from the current level of 2.4% to at least the expected population share of 4.2%. The public investment allocation to DOKAP is calculated to reach US$ 2,192 million by 2020.

On the other hand, the ratio of total public investment to the GRDP of the DOKAP region should rather increase from the current level of 11.3%. If 12% is assumed for this ratio, the public investment allocation to DOKAP is calculated to be US$ 2,190 million in 2020. A conservative estimate of US$ 2,000 million is taken here as the total public investment in the DOKAP region in 2020. In the immediate future, the public investment allocation to DOKAP may not increase due to requirements for restoration from the recent earthquake damages, and it is assumed at US$ 570 million in 2000.

(3) Estimate of DOKAP investment requirement by phase

Within the projected framework described above, the amount of public investments necessary to attain the projected GRDP in the DOKAP region is roughly estimated by phase. The estimate is based on the projected GRDP growth over 2000-2020, investment efficiency to be expected, and the share of public investments to the total investment. The investment efficiency is expressed by the incremental capital-to-output ratio (ICOR), which is the ratio between the amount of investment and the increase in value-added (GDP/GRDP) over a certain time period. Smaller values of ICOR indicate more efficient investment.

DOKAP investment requirements together with assumed parameter values for ICOR and the shares of public investments to the total investment are summarized in Table 6.2. Efficiency of public investments is expected to improve from ICOR value of 4.5 during Phase 1, through 4.0 during Phase 2, and 3.5 during Phase 3. A comparatively larger portion of the total investment needs to be contributed by public investments during the initial phase to improve key infrastructure as the foundation for the DOKAP regional development. This share is assumed to be 50% during Phase 1, decreasing to 40% for Phase 2 and 35% for Phase 3, as the business environment improves and more private investments attracted.

Table 6.2 Estimate of DOKAP Investment Requirement by Phase

	GRDP (US$x10^6) Assumed			ICOR	Cumulative investment (US$x10^6)	Share of public investment	Cumulative public investment (US$x10^6)
	Beginning	End	△GRDP (US$x10^6)				
Phase 1	5,852.9	7,292.5	1,440.6	4.5	6,482.7	0.50	3,241.3
Phase 2	7,292.5	10,605.0	3,312.5	4.0	13,250.0	0.40	5,300.0
Phase 3	10,605.0	18,256.6	7,651.6	3.5	26,780.6	0.35	9,373.2

Source: JICA Study Team

6.3.2 Indicative investment schedule

Investments to be required in the DOKAP region over 2000-2020 have been estimated as shown in Table 6.2. The total investment required is estimated at US$ 46.5 billion over 2000-2020, of which US$ 17.9 billion may be required as public investments. The latter is broken down by phase as US$3,241 million for Phase 1, US$5,300 million for Phase 2, and US$ 9,373 million for Phase 3.

Crude estimate of investment costs are made for all the projects and programs proposed in the DOKAP Master Plan. They are allocated to different phases in due consideration of the development scenario for the DOKAP region presented in Section 4.4. For those projects and programs of which the implementation is subject to results of studies recommended by the Master Plan, only indicative allocations are made.

An indicative investment schedule thus prepared is given in Table 6.3. Public investment requirements for all the DOKAP Master Plan projects and programs, calculated from the indicative schedule, are US$1,100 million during Phase 1, US$1,842 million during Phase 2, and US$1,826 million during Phase 3.

The total public investment requirements for all the proposed projects and programs correspond to 33.9% of the estimated public sector investment for Phase 1, 39.2% for Phase 2, and 18.4% for Phase 3. In view of uncertainties in the short to the medium term due to the current financial conditions and restoration needs from the recent earthquakes, some investments originally expected in Phase 1 have been deliberately deferred to Phase 2.

Table 6.3 Indicative Investment Schedule for DOKAP Regional Development

Code	Project/Program	Implementing agencies			Investment Costs (US$x10^6)			
		Central Government Public entity	Local governments	Private sector	Phase 1	Phase 2	Phase 3	Total
1	Spatial Structure Strengthening Program							
1.1	Trabzon-Rize Corridor Development	Inter-agency	O	O	80	160	160	400
1.2	Inland Urban Centers Development	Inter-agency	O		100	180	120	400
1.3	Black Sea Highway	KGM			200	300	*	500+
1.4	DOKAP Highway Network Improvement	KGM			100	300	320	720
1.5	Integrated Port Network Development	DLH, TD	O	O	3	*		3+
1.6	Telecommunications Improvement	TTAS		O	3	*	*	3+
1.7	High Voltage Power Transmission Lines Extension	TEDAS			6	8		14
1.8	DOKAP - DAP - GAP Transport Development	KGM, TCDD SPO			2	*	*	2+
	Sub-total				414	948	600	2,042
2	Local Alliance Urban Development and Management Program							
2.1	Local Alliance Urban Planning		O		2	*	*	2+
2.2	Integrated Water Supply System Development	GDRA, BOP	O		80	120	200	400
2.3	Area-wide Solid Waste Management	BOP	O		3	3	20	26
2.4	Black Sea Participatory Coastal Management	Inter-agency KTU	O	O	2	10	15	27
2.5	Eco-Community Network		O	O	1	3	6	10
	Sub-total				88	136	241	465
3	Comprehensive Water and Land Resources Management Program							
3.1	Multipurpose Dams and Community Development	DSI	O	O	40	60	100	200
3.2	Irrigation Development Acceleration	DSI, GDRS, TCZB			55	55	154	264
3.3	Land Conservation	DSI, GDRS,	O	O	3	12		15
3.4	Cadastral Survey Acceleration				5	10	10	25
3.5	DOKAP Environmental Inventory and Management Planning	MOF,MENR	O	O	1	*	*	1+
3.6	Protected Area Management System Improvement	PM, MOF			1	*	*	1+
3.7	DOKAP Environmental Improvement Fund	Treasury	O		5	10	10	25
	Sub-total				110	147	274	531
4	Industry and Trade Support Program							
4.1	SMEs Production and Marketing Center	TESK		O	2	1	1	4
4.2	Small Enterprise Credit and Support	Halkbank		O	2	2	2	6
4.3	Vocational Training Improvement	MONE			2	12	4	18
4.4	Job Opportunities Information and Placement Center	MONE		O	2	2	4	8
4.5	DOKAP Trading and Manufacturing Zones Expansion	Treasury	O		10	40	60	110
	Sub-total				18	57	71	146
5	Rural Economy Diversification and Intensification Program							
5.1	Livestock and Poultry Development	MARA			2	2	4	8
5.2	Greenhouse Promotion		O		2	2	5	9
5.3	One Village-One Product Model Area Development	MOT, PDAs	O		1	*	*	1+
5.4	Freshwater Aquaculture Support	MARA			3	12		15
5.5	Rural Tourism Promotion	MOT	O	O	1	*		1+
	Sub-total				9	16	9	34
6	Applied Research Program							
6.1	Renewable Energy Applied Research Center	MENR KTU			1	1	3	5
6.2	Irrigated Crop Cycles Research	GDAR			1	1		2
6.3	Innovative Mariculture Experiment and Development	MARA			2	1		3
	Sub-total				4	3	3	10
7	Local Administration Strengthening Program							
7.1	Local Development Planning Improvement		O		1	1	1	3
7.2	Local Administrative Capacity Enhancement		O		1	2		3
7.3	Local Administration Evaluation System Establishment	MOI	O		5	5	10	20
	Sub-total				7	8	11	26
8	Sustainable Human Development Program							
8.1	Eight-year Compulsory Education System Support	MONE			5	10		15
8.2	Distance Education	MONE			10	40	*	50
8.3	Value Development Education	MONE KOSGEB		O	2	4	4	10
8.4	Community Health Care Promotion	MOH	O	O	5	10	20	35
8.5	Health Education		O		1	2	2	5
8.6	Health Referral System Improvement	MOH			2	10	20	32
	Sub-total				25	76	46	147
9	Living Environment Enhancement Program							
9.1	Rural Services Center Support	GDRS	O		60	80	100	240
9.2	Rural Infrastructure Improvement	GDRS	O		250	350	450	1,050
9.3	Social Telecommunication Network Development		O	O	10	10	10	30
9.4	Community-based Forestry Development and Management	MOF	O	O	2	*	*	2+
	Sub-total				322	440	560	1,322
10	Special Program to Establish DOKAP Identity							
10.1	Black Sea Technology Center	KOSGEB, KTU		O	5	10	10	25
10.2	DOKAP Trade Fair				1	1	1	3
10.3	DOKAP Brand Tourism Products Development	Inter-agency	O	O	5	*		5+
10.4	DOKAP Tourism Professional Partnership	MOT		O	1	*		1+
10.5	Genetic Resource Center	MOF, MENR		O	10	*	*	10+
10.6	Information Technology Incubator	KTU, KOSGEB		O O	1	*	*	1+
	Sub-total				23	11	11	45
Total					1,100	1,842	1,826	4,768

CHAPTER 7 DOKAP OPERATIONS PLAN

The bulk of development projects and programs proposed by the DOKAP Master Plan can be implemented or further developed by the relevant sector agencies as a part of their ongoing work. The Master Plan will serve only as a formal reference for those projects and programs. It will streamline sector agencies' activities for more effective programming and budgeting.

Various development efforts by many agencies, however, need to be coordinated more properly to ensure timely implementation of all the proposed projects and programs. For this purpose, three kinds of activities need to be taken subsequent to the completion of the Master Plan: (1) adoption and promotion of the Master Plan; (2) restructuring/strengthening of implementing arrangements; and (3) further development of individual projects and programs as well as initial implementation of identified priority projects. These activities are described in this chapter as the DOKAP operations plan.

7.1 Master Plan Adoption and Promotion

(1) Master Plan adoption

As the first step to formalize the DOKAP Master Plan, Master Plan proposals will have to be discussed among related agencies to resolve sector concerns and conflicts. The National Steering Committee established for the DOKAP master planning may provide a most appropriate forum for this. the SPO should take the initiative to convene such a forum. The Master Plan should be formally adopted as a matter of principle, if necessary with addenda. the SPO should prepare a policy paper for submission to the High Planning Council to formalize the adoption of the Master Plan.

Master Plan proposals should also be discussed at the regional level to further promote the cooperation between local governments, institutes and NGOs. The Regional Steering Committee for the DOKAP master planning may serve as a vehicle for this. It is recommendable that a resolution be made among members for continued cooperation in the implementation phase of the DOKAP Master Plan.

(2) Master Plan promotion

In parallel with the Master Plan adoption procedure, Master Plan proposals should be disseminated widely to facilitate the implementation through further cultivating public acceptance. The following will be particularly effective:

1) implementation of orientation seminars to convey the Master Plan proposals to a wide audience including politicians, local government officials, NGOs, environmentalists and researchers, as well as general public;
2) preparation of publicity materials such as brochures and videos addressing different audiences in addition to the general purpose brochure and promotion video already prepared,
3) drafting of promotion materials for selected priority projects/programs, especially those to be promoted to the private sector,
4) launching of a series of local TV programs combining video presentation, plan schematics and commentaries by various people, and
5) organization of international donors meetings and investment promotion seminars by public-private cooperation.

The SPO should take the initiative for all the activities, but member NGOs of the Steering Committees for the DOKAP master planning may be effectively mobilized for some activities. Various existing international fora in the private sector should also be effectively utilized. For example, DOKAP should be put on the agenda of the next annual meeting of the Turkey-Japan Economic Cooperation Committee.

7.2 Restructuring/Strengthening of Implementing Arrangements

7.2.1 Need for regional level institutions

Legal and institutional issues need to be addressed for effective implementation of the DOKAP Master Plan. Key institutional development issues include limited grassroots participation in formulation of development projects, excessive centralization of public revenues and control over local governments, weak local capacity for project management and implementation, and finally, lack of regional level administrative structures to deal with emerging region wide social, environmental and development issues.

The Turkish administrative system is organized at the national and provincial levels. There is also a long tradition of dealing with the problems of individual settlements. At the regional level, there is no administrative mechanism. Yet, many of the key problems faced in the DOKAP region are regional in nature. A new institutional

arrangement is needed to deal with regional level issues identified by the Master Plan.

The DOKAP development administration will also need to integrate regional sector plans. These will include a regional tourism master plan involving the Ministry of Tourism, an environmental master plan and a regional water resources master plan. The preparation and implementation of these need to be coordinated.

There are also issues of management in cases where the planning area extends beyond the borders of one province. One such problem having particular relevance to the DOKAP region is the planning and management of urban growth. This has occurred along the coast. Other issues requiring a regional perspective are watershed management, planning of large areas for tourism development, and selecting sites for solid waste disposal.

Another subject for which regional level actions are required is the promotion of the region as an investment destination. Some actions need to be taken at the regional level to promote international trade between the region and the BSEC countries.

A mechanism for addressing these problems already exists. The existing law allows formation of unions between any number of provincial administrations and/or municipalities. In the past, efforts to establish and manage unions of municipalities have failed. Major disputes occur when a municipality is selected as the waste disposal site or some municipalities within the union believe they have received insufficient development or local revenue base.

7.2.2 Legal and institutional improvements under consideration

A comprehensive legal framework for development administration was provided in a bill “Local Administration Reform”, which was presented to the Grand National Assembly, in 1997. This law has now been redrafted for the third time.

The first draft is a very comprehensive review of the problems of local administration in Turkey. The preamble to the law states these problems and proposed far reaching changes. These changes still need to be made.

The first draft of the reform bill aimed to improve the productivity, transparency and democratic participation in public services by enabling the local provision of these services. Its starting point was a new definition of central and local government functions and responsibilities. Many functions were to be transferred from the central to local governments. The law aimed at strengthening the financial

and administrative capacities of municipalities and provincial administration. It placed special emphasis on supporting the provincial administration.

The original bill would have transferred many of the development functions presently provided by the central government to municipalities and provincial administration. These included the provision of education facilities, health and social welfare facilities and services, and services for youth, sports, culture and tourism. All development functions in agriculture, trade, and industrial development were to be transferred to the provincial administration. This was to be achieved by transferring the related staff of the ministries to provincial governments and providing the financial means to both the provincial administrations and municipalities.

At present, the provincial administrative share of tax allocation from the Central Government is 1.7%. The reform bill aimed to increase this to 5%. It authorized the Council of Ministers to further increase the fiscal transfers so that this share may go up to 20%. The share of municipalities in tax allocation from the Central Government at present is 6%. The bill sought to increase this to 10%. It also empowered the Council of Ministers to raise this to 15%.

The transfer of financial resources to the municipalities, and the new bill's proposals to reduce the control of the Ministry of Interior in municipal budgeting and management would improve local control and promote local accountability. The provisions for a volunteer city assembly, envisioned under the new law, and the broad membership in this assembly, including NGOs, would greatly facilitate democratic participation. There were other provisions concerning municipal administration such as the right of residents to demand information, increase transparency and introduce accountability.

The law granted new regulatory powers to the provincial administration for environmental improvement and management of urban growth. This appears to provide adequate mechanisms for land use control within the province. Powers exercised by the municipal governments within municipal areas are granted to the provincial administration for areas outside the municipal borders.

Despite the law's aim of encouraging democratic participation in development administration, the extent of local participation envisioned in the bill was indeed limited. The provincial local administration would continue to be administered by the governor who is, and will remain to be, a central government appointee reporting to the Ministry of Interior. The provincial assembly has elected members but they would have little formal control over the day to day management of the

provincial government. The new law would thus largely transfer the powers of central government ministries to the local representative of the Ministry of Interior.

The version, under deliberation at present, was submitted to the parliament in December 1999 and it has lost all its reform features. The new definition of the local and central government functions have been dropped, effectively keeping all development functions in the hands of central government ministries. The attempt to reduce the central government control over the local governments and to encourage local participation in decision making has also been abandoned.

It is difficult to understand why this bill should be enacted in its present form. Passing a bill with the word "reform" in its name would prevent or indefinitely postpone the enactment of a true reform bill.

7.2.3 Alternative institutional arrangements

There are many different possibilities for the form of regional administration to ensure effective Master Plan implementation. Five alternative institutional forms were presented in the Interim Report for discussions with the government agencies and other concerned groups. Two of these were considered impractical (establishment of a separate agency for DOKAP in the office of Prime Minister or establishment of a regional office of the SPO) and were eliminated from further deliberations.

A consensus had developed that the most desirable institutional form for Master Plan implementation would be a union of local governments. This is discussed in detail below. It was concluded that two of the other possible institutional forms may be further considered as practical tools to be used by the Union which will be the main implementing agency. These are described below.

(1) DOKAP Development Corporation

Like the Union, the local governments will establish this corporation. It will be established, however, as a commercial company with paid-in capital. Another difference will be on the emphasis. The Corporation will have a business orientation compared with the emphasis on regional planning and coordination under the Union.

Many variants of the Development Corporation are possible. It can be empowered to initiate or take shares in commercial activities. The emphasis for such activities could be on developing the regional infrastructure such as ports, industrial estates, municipal water supplies and power generation/distribution.

Part of the capital of the Corporation need to be paid at the time of its establishment. The rest would be raised in the capital markets through guarantees to be provided by the Government. The type of guarantees to be provided and the limits within which the Corporation will be allowed to operate need to be specified. The Corporation's flexibility would be greatly enhanced if it were exempted from all usual licensing and permit requirements when it undertakes development projects.

(2) Project Management Unit

A private consulting company may be hired to assist with the implementation of DOKAP Master Plan. It will exist for a limited duration. The Project Management Unit (PMU) will be responsible to the Union, but it may also have some links with the SPO.

PMU will have three major duties. First, it will provide coordination between all local governments and central government agencies for Master Plan Implementation. Second, it will provide technical assistance to local governments for preparation and implementation of development projects. Finally, PMU will promote the image of the region for investments, and it will promote trade and assist the businessmen from the region on all region wide issues.

7.2.4 Recommended implementation arrangement: a Union of DOKAP Local Governments

(1) Founding members of the Union

This union will be established by the local governments in the DOKAP region. It will be established by approval of the Council of Ministers and will be under the administrative control of the Ministry of Interior.

The Study Team has prepared a draft by-law for the union. It is proposed that this union should be established by the seven provincial governments in the DOKAP region and a selected number of municipalities. It is suggested that initially, the municipalities which will be members may be restricted to those of provincial and sub-provincial (Ilce) centers.

The possibility of NGO participation has been explored, particularly Chambers of Trade, Industry, and Agriculture. The Turkish law governing the unions does not seem to allow for participation of non-public agencies in establishing unions.

(2) Organization of the Union

The union will have three layers of administration. Its founding members will supply two representatives each to the general assembly. This assembly will elect a management committee which will be the key decision making body. The union will implement its decisions through a chief executive.

The law governing the unions restricts the flexibility in employing this executive as well as his staff. All are civil servants. This makes the use of a combination of the union and the two other forms, discussed above, essential if the private sector flexibility is to be introduced into the implementation capability.

Turkey has many experiences with establishing and managing service unions. Unions have been in existence for a long time in the densely settled parts of the Aegean and Mediterranean and they have been instrumental in managing infrastructure when more than one local governments were involved. There is a regional level union presently operating in the Yesilirmak river basin.

(3) Funding sources

The main source of funding for the union will be contributions of the founding members. This is generally expressed as a percentage of the income of founding members.

The union would need to raise income on its own to increase its appeal to for the local governments. One possibility is the grants from the Local Administration Fund controlled by the Ministry of Interior. There seems to be some possibility of utilizing funds administered by the SPO.

The union's by-law is prepared with a view to enabling it to receive funds from abroad. The management of the union should explore the means to utilize some of these funds. Early projects to be implemented for environmental improvement in the region have a high chance of being funded by external sources.

(4) Establishment of the Union

A draft by-law has been prepared for the union for submission to the SPO. Following the approval by the SPO, this draft should be transmitted to the provincial governors for review and eventual adoption. The SPO needs to maintain the initiative until the provincial administration and the municipalities, identified in the draft by-law, review the charter of the union.

The approved by-law needs to be submitted to the Ministry of Interior for submission to the Council of Ministers under the existing law. The procedures to be followed thereafter are contained in the proposed by-law.

7.3 Project Development and Implementation

(1) Sector projects

Some projects and programs proposed by the Master Plan are expected to be initiated or further developed during Phase 1 by relevant sector agencies. Coordinated and timely implementation of various projects by many agencies should be ensured by the existing planning and coordination mechanism guided effectively by the Master Plan. The planning and coordinating functions may be performed by the proposed DOKAP regional agency once it is established.

(2) Inter-agency consultation

All the projects and programs proposed by the Master Plan have been packaged into 10 broad programs. Each of them consists of component projects/programs that complement one another to contribute to program thrust. Each program involves multiple agencies, including central government agencies, local governments and some private sector entities. They should be discussed among related agencies, respectively coordinated by the SPO. Sector representatives of the SPO Consultation Group for the DOKAP master planning may be in the best position to take the initiative in this consultation.

In addition to relevant sections of the SPO, those agencies to be involved in this initial consultation are given in Table 7.1. Private sector representatives should also be invited as relevant. At each consultation meeting, the key implementing agency will be confirmed for any project/program, and roles of other agencies, if any, will be clarified. Further development and implementation of some projects/programs may be entrusted entirely to key implementing agencies identified.

Table 7.1 Agencies to be Involved in Initial Consultation for DOKAP Programs

Program	Lead agencies	Other public entities
1. Spatial Structure Strengthening	MPWS, KGM, DLH	TEAS, TEDAS, TCDD
2. Local Alliance Urban Development and Management	Provincial governments	BOP, KTU
3. Comprehensive Water and Land Resources Management	DSI, GDRA, MOF, MENR, Local governments	TCZB
4. Industry and Trade Support	KOSGEB, MOE, PM	Halk Bank, TESK
5. Rural Economy Diversification and Intensification	MARA, MOT	
6. Applied Research	MARA, MENR, Provincial governments	KTU
7. Local Administration Strengthening	Provincial governments	
8. Sustainable Human Development	MOE, MOH, KOSGEB	
9. Living Environment Enhancement	GDRA, MOF, Provincial governments	
10. Special Program for DOKAP Identity.	KOSGEB, MOT, MOF, MENR, Provincial governments	KTU

For most projects/programs, continual consultation is desirable for monitoring on progress of project development and implementation. A coordinating committee may be established for this purpose within the SPO. Subcommittees or task forces may also be established to prepare implementation programs for the broad programs, clarifying implementation schedule, implementing agencies and budget allocation for each component project/program. Projects to be supported by international aid organizations should also be selected.

(3) Local government initiative

For some projects, the local government initiative is essential for early implementation. The SPO initially or the DOKAP regional agency should provide guidance for relevant local governments to prepare implementation programs, to take actions or to make request to government agencies for their actions. The following projects are particularly relevant.

(2.1) Local Alliance Urban Planning,
(2.2) Integrated Water Supply System Development,
(2.3) Area-wide Solid Waste Management,
(2.4) Black Sea Participatory Coastal Management,
(2.5) Eco-Community Network,
(3.1) Multipurpose Dams and Community Development,
(3.3) Land Conservation,
(3.4) Cadastre Survey Acceleration,

(5.3) One Village-One Product Model Area Development,
(5.5) Rural Tourism Promotion,
(7.1) Local Development Planning Improvement,
(7.2) Local Administrative Capacity Enhancement,
(7.3) Local Administration Evaluation System Establishment,
(8.4) Community Health Care Promotion,
(8.5) Health Education,
(9.1) Rural Services Center Support,
(9.2) Rural Infrastructure Improvement,
(9.3) Social Telecommunication Network Development, and
(10.4) DOKAP Tourism Professional Partnership.

In case that external assistance is sought for any of these projects, the SPO or the DOKAP regional agency should cooperate with concerned local governments to coordinate their applications either directly or through relevant government agencies.

(4) Private sector involvement

For some projects, active participation of the private sector is expected. Their inclusion in the Master Plan signifies that they are in line with the vision and the scenario for the DOKAP regional development. They include the following.

(1.1) Trabzon-Rize Corridor Development,
(1.5) Integrated Port Network Development,
(1.6) Telecommunications Improvement,
(4.1) SMEs Production and Marketing Center,
(4.2) Small Enterprise Credit and Support,
(5.5) Rural Tourism Promotion,
(8.3) Value Development Education,
(8.4) Community Health Care Promotion,
(9.3) Social Telecommunication Network Development,
(10.1) Black Sea Technology Center,
(10.2) DOKAP Trade Fair,
(10.3) DOKAP Brand Tourism Products Development, and
(10.4) DOKAP Tourism Professional Partnership.

The Master Plan has also identified promising areas for private investments in the agriculture, the industry and the services sectors as detailed in respective sector reports. Guidance and support of the SPO or the DOKAP regional agency are expected to promote these opportunities for the private sector.

APPENDIX

Appendix – 1: Members of DOKAP Steering Committees

a) National Steering Committee

Ministry of Interior Chairmanship of Researching, Planning and Coordination Committee Department Head of Planning and Budgetary General Directorate of Local Administrations Head of Department of Local Administrations	 Nesrin Kaya Muammer Türker
Ministry of Education Chairmanship of Researching, Planning and Coordination Committee Expert	 Yücel Yüksel
Ministry of Public Works and Settlement Department of Public improvements and Projects Director of Physical and Urban Planning Section	 Mehmet Yavuz
Ministry of Public Works and Settlement General Directorate of Disaster Affairs Earthquake Research Department Jeophisician	 Demir Akin
Ministry of Health General Directorate of Mother and Child Healthcare and Family Planning Director of Section	 Dr. Hüseyin Atik
Ministry of Transportation General Directorate of Construction of Railways Harbors and Airports Director of Fisybility Section Civil Engineer	 Murat araburçak Ülya Lekili
Ministry of Agriculture and Rural Affairs Chairmanship of Researching, Planning and Coordination Committee Department Head of Project and Planning Agricultural Engineer (MS)	 Dr. Namik Kirazlar M. Haluk Güçlü
Ministry of Industry and Trade General Directorate of Small Industrial Estates Director of Section Engineer	 Seyfetin Yagci Tolga Arican
Ministry of Energy and Natural Resources Chairman of Researching, Planning and Coordination Committee Engineer Engineer	 Buran Altas Erdal Gençkan Alper Aydogan
Ministry of Culture General Directorate of Protection of Cultural and Natural Wealths Archaeologist and Art Historiana	 Naki Bayar
Ministry of Tourism General Directorate of Investments Department of Planning Director of Section Urban Planner	 F. Isin Sun A. Didem Akman
Ministry of Forest Chairman of Researching, Planning and Coordination Committee Director of Planning Section	 Ertan Özugrlu
Ministry of Environment General Directorate of Environmental Impact Assessment and Planning Department Head	 M. Ertugrul Alparman
Undersecretariat of Foreign Trade General Directorate of Economical Researches and evaluations Expert	 Ertan Demiray

Undersecretariat of Maritime Affairs	
General Directorate of Marine Transportation	
Deputy General Director	Ergün Marasli
Department Head	Fikret Çaglar
General Directorate of Ship Building and Shipyards	
Junior Expert	Bülent Koçak
Engineer	Hüseyin Seçmen
State Institute of Statistics	
Department Head of Statistical and Econometrical Interpretations	Ergin Ögüt
Director of the Section of GAP Statistics and Regional Analyses	Fatima Tarpis
KOSGEB	
KOSGEP Regional Development Institution	
Process Director	Hasan Çavusoglu
Expert	Selma Okur
Gen. Dir. of KOSGEP-Trabzon-Small Enterprises Development Center	Bayram Mecit
The Union of Turkish Chambers and Stock Market	
Private Counsellor of the Chairman	Prof Dr. Bilge Hacihasanoglu
Turkish Chamber of Agriculture	
Consultant	Dr. Senol Erdogan
Consultant	Jale Gülen
The Club of Protection of Characteristics of Black Sea	
President of the Club – the Former	Ali Riza Uzuner
Former Undersecretary of Finance Ministry	Talat Saral
Former Gen. Direc. of SPO Incentives and Implementation Department	Dr. Niyazi Yesilyurt
TEMA	
The Organization of Turkish Struggle with Erosion, Afforestation, and Protecting Nature	Ümit Gürses
General Directorate of Highways	
Directorate of Planning Section	
Engineer	Atilla Yaylioglu
General Directorate of Bank of Provinces	
Head of Department of Researching, Planning and Highway	Nihat Sayinalp
Civil Engineer	Ayhan Atli
General Directorate of Rural Services	
Chairmanship of Researching, Planning and Coordination Committee	
Director of the Section of Long-term Plans and Foreign-Credited Projects	Mehmet Ergüven
General Directorate of Water Affairs	
DSI Researching and Planning Department	
Deputy Chairman	Yalçin Dikmen
Director of 3. Planning Section	Hüseyin Çelik
Director of 4. Planning Section	Salim Fakioglu
Turkish Department Bank	
Deputy Director	Ahmet Kandemir
Deputy Director	Tülay Canpolat
Consultant	Dr Ahmet Demir
Consultant	Dr Serdar Sahinkaya
Turkish People Bank	
Director of Fund Credits	Ugur Kinay
Director of Research, Department and Planning Department	Serif Yürekli
Agricultural Bank	
Director of Agricultural Credits	Sedat Rifat Doyum

b) SPO Consultation Group (1st phase)

Deputy Director General of Regional Development and Structural Adjustment	Refet Turtin (chairman)
Head of Economic Models Department	Zafer Ali Yavan
Head of Strategic Survey Department	Yusuf Isik
Head of Energy and Services Department	Tülin Candir
Head of Agriculture and Food Department	Dilek Ülgüray
Head of Industry Department	Muzaffer Keles
Head of Local Governments, Environment and Technological Research Department	Istiklal Alpar
Head of Income ad Payment Department	TuncerKocaman
Head of Social Policies Department	Mehmet Kontas
Head of Regional Development Department	Danyal Asik
Head of Priority Regions Department	Lütfi Elvan
Head of Bilateral Economic Relations and Technical Cooperation Department	Nuri Birtek
Head of Mutual Economic Relations Dep.	Mustafa Sirin
Head of Structural Adjustment and SMIs Department	Ali Yonca
Head of Project Investments Evaluation and Analysis Department	Kamil Ayanoglu
Regional Development Department	Deniz Akkahve (coordinator)
Regional Development Department	Ata Naime Koçtürk
Regional Development Department	Taner Kavasoglu
Regional Development Department	Yasin Ceran

c) SPO Consultation Group (2nd phase)

General Director of Regional Development and Structural Adjustment	Ismail Sarica (chairman)
Head of EU Policies Department	Mustafa Dönmez
Head of Finance Department	Erhan Usta
Head of Industry Department	A. Latif Tuna
Head of Mutual Economic Relations Dep.	Mustafa Sirin
Head of Economic Models Department	Zafer Ali Yavan
Head of Harmonization to EU Department	Ragip Sahin
Head of Agricultural Department	Hayri Yürür
Head of Infrastructure and Services Dep.	Osman Olcay Günegi
Head of Project Investments Evaluation and Analysis Department	Cüneyd Düzyol
Head of Human Resources Improvement Department	Mustafa Demirezen
Head of Social Policies Department	Recep Dumanli
Head of Social and Physical Infrastructure Department	Ismail Hakki Yücel
Head of Social Surveys Department	Mehmet Tekin
Head of Priority Regions Department	Lütfi Elvan
Head of Bilateral Economic Relations ad Technical Cooperation Dep.	Nuri Birtek
Regional Development Department	Deniz Akkahve (coordinator)
Regional Development Department	Ata Naime Koçtürk
Regional Development Department	Taner Kavasoglu
Regional Development Department	Metin Özaslan
Regional Development Department	Yasin Ceran