Appendix F

Socioeconomic Conditions

Appendix F SOCIOECONOMIC CONDITIONS

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Appendix F SOCIOECONOMIC CONDITIONS

F.1 General Information

The table below outlines the socioeconomic situations in Macedonia. The detailed explanation is provided in the following sections.

Summary of Socioeconomic Data of Macedonia

1	Land Area	25,713km^2		
2	Population	1,945,932	(1994 Census)	
3	Population Density (person/km^2)	76	(1994 Census)	
4	Annual Growth Rate of Population	0.77%	(1994-1997)	
5	% of Urban Population	59.4%	(1994 Census)	
6	Main Towns	(Population in '000)	(1994 Census)	
		Skopje	444.2	
		Bitola	77.5	
		Kumanovo	71.9	
		Prilep	68.1	
		Tetovo	50.3	
		Veles	46.8	
7	Languages	Macedonian, Albanian		
8	Currency	Temporary government coupons were replaced by the denar on May 10th 1993. The National Bank of Macedonia fixes daily the exchange rate of the denar against the major currencies		
		Average exchange rates in 1996: MKD40 : US$1		
		Exchange rates as of July 1st, 1998: MKD55.99 : US$1.00		
9	Fiscal Year	Calendar year		
10	Ethnic Composition ('000)	Macedonians	1,296 (1994 Census)	
		Albanians	441	
		Turks	78	
		Romanies (Gypsies)	43	
		Serbs	40	
11	Infant Mortality Rate	16.4deaths/1,000live births	(1994)	
12	Number of Doctors	3.2 per 1,000 of population	(1994)	
13	Elementary School Enrollment Rate	Over 95%		
14	Adult Literacy Rate	94%		
15	Access to Central Water Supply (UNICEF Data)	99.0% of Urban Population 70.0% of Rural Population		
16	Per Capita Nominal GDP	US$1,580 (82,850MKD)	(1997)	
17	Real GDP Growth	0.8% in 1996 1.5% in 1997		
18	GSP by Industrial Origin		1993	1994	1995
		Industry & Mining	48.1%	45.9%	43.1%
		Agriculture	22.8%	25.1%	27.0%
		Trade	10.5%	10.2%	10.8%

(Data Source: "Statistical Yearbook 1997", Statistical Office of the Republic of Macedonia)

F.2 Social Aspects

F.2.1 Total Population

Macedonia had an official total population of 1,945,932 according to the latest Census in 1994. The estimated population in 1995 was 1,966,033, an increase of 1.03% from the previous year, followed by 1,983,099 in 1996 and 1,991,389 in 1997 with increases of 0.86% and 0.42%, respectively (data source: Statistical Office). The average annual growth rate of the population from 1994 to 1997 was 0.77%. Based on the 1994 Census data, the population density is 76 inhabitants per square kilometer (km^2); the average family size is 3.9 members/household.

The 1994 Census did not count the citizens of the Republic who had been absent with staying abroad for more than one year. This new definition of total population has been started since the last Census in 1994. The previous Censuses were conducted according to the methodology for population enumeration of the Former Yugoslavia which included persons living abroad more than one year in the total population. To compare the 1994 population to the 1991 using the same enumeration methodology, the 1994 population must be adjusted to 2,106,664. When using this figure for 1994, the average annual growth rate of the population from 1991 to 1994 was 1.18%.

Considering the population growth rates for the past 20 years, the country has shown a downward tendency with an annual growth rate of less than 1.00% since its independence in 1991. This might be because the fertility rate has decreased due to improvement of primary and health education as well as due to the social unrest about the stagnant economic situations with no clear perspectives. The population growth rates based on the previous census data is shown in Table F.1.

F.2.2 Distribution of Population

According to the 1994 Census, the former municipality of Skopje has the greatest population with 545,228 persons or 28.0% of the total population and a density of 293 inhabitants/km^2. This is followed by the former municipalities of Tetovo (172,171-inhabitants/density of 158/km^2), Kumanovo (127,814/106), Bitola (108,203/63) and Gostivar (108,181/79). The population distribution and growth rate by former and new municipalities is shown in Table F.2; and the location of the 123 new municipalities and 30 former municipalities is shown in Figure F.1.

Out of the total population, 1,156,297 persons (59.4%) live in urban areas and 778,737 persons (40.6%) in rural areas. The size of the urban population in Macedonia has increased rapidly over the past 30 years. This movement has

been caused by urbanization and industrialization as well as uncontrolled migration from hilly mountain and boundary areas. Various countermeasures are being considered for promoting migrating population back to rural villages by the central and municipal governments. Population density and average annual growth rate by former municipality are shown in Table F.3 and Figure F.2.

F.2.3 Ethnic Composition

The 1994 Census shows that 1,332,983 persons (68.5%) speak Macedonians; 431,363 (22.2%) Albanian; and 64,665 (3.3%) Turkish, and 116,921 (6.0%) other. Among the former municipalities, Tetovo has the largest of Albanian-speaking population of 126,559 persons (73.5%), followed by Skopje (113,328-persons/20.9%) and Gostivar (27,088-persons/63.0%). The percentage share of Turkish-speaking population is large in the former municipalities of Makedonski Brod (28.1%), Debar (18.4%) and Radovish (14.1%). Ratio of non-Macedonians (mother tongue) by former municipality is shown in Table F.4 and Figure F.3.

The percentage of Albanians in the total population has been increasing for the past 30 years because of active immigration in the boundary areas and their high fertility rate: 19.8% (377,208 persons) in 1981, 21.7% (441,987) in 1991 and 23.0% (484,228) in 1994. Although their fertility rate has been decreasing due to dissemination of health education and change of their lifestyle, it is still higher than the Macedonian's.

F.2.4 Problems in Satisfying Basic Human Needs (BHN)

(1) Health Services

The infant mortality rate (IMR) is still a priority health problem in spite of its reduction in recent years. In 1994, 16.4 infants died for every 1,000 born alive. This is mainly caused by lack of maternal and child health care services and poor access to health facilities in small villages scattered in highland and mountainous areas. Among the former municipalities, Krushevo (39.8 deaths per 1000 live birth), Sveti Nikole (31.7), Debar (30.2), Veles (25.8) and Makedonski Brod (25.5) have the higher IMRs. Infant deaths per 1000 live birth and number of medical doctors per 1000 population by former municipality are shown in Table F.5.

However, many infectious diseases are declining as a result of promoting primary health care service networks, implementation of preventive health measures, and general improvement in sanitary conditions. Malaria and polio have been eliminated, and typhus, trachoma, diphtheria, and measles are likely

to be eliminated in the next few years. However, with the progress of urbanization and industrialization, the cases of respiratory diseases and bronchitis have increased mainly because of growing air pollution in the urban areas (data source: statistics data from WHO Skopje Office). Diseases caused by polluted water have become a serious problem in some industrial and mining areas. A project of constructing wastewater treatment facilities has just started in Veles with financial support of the Government of Japan.

(2) Education Services

As is shown by the favorable numbers of children's enrollment rate in elementary schools (over 95%) and adult literacy rate (94%), primary education services in Macedonia was distributed in good conditions (data source: A situation analysis of children and women in the FYR of Macedonia 1996, UNICEF). However, due to the socioeconomic problems since its independence, the country has faced problems with educational materials and finances; and, school buildings are in a poor state. Some of the local self-governments have plans to improve their primary school facilities and equipment through the support from the central government and international agencies such as World Bank.

On the other hand, the country's high coverage rate of electric supply enables lots of community members to enjoy a variety of information through television and radio systems. Considering their good performance of primary school enrollment and literacy rate, campaigns using mass media would be helpful in order to improve their awareness of effective water utilization and importance of environment protection.

(3) Access to Safe Water and Sanitation

The country has had a generally good record on water supply; approximately 99.0% of urban population and 70.0% of rural population are covered by public water supply system (data source: A situation analysis of children and women in the FYR of Macedonia 1996, UNICEF). However, there are growing problems in the maintenance of the systems and in the quality of water in rural areas, which is very poor. As for sanitation facilities, most urban areas have a central sewage system and proper modern toilets, but waste from these systems is discharged, untreated, into rivers and lakes. Villages do not have sewage systems and their waste is discharged into septic tanks.

(4) Gender Consideration

The number of women employed in the public sector has risen from 23% in 1981 to 37% in 1988, which is still behind male employment (63%). Twenty

eight percent of employed women work in social services including health and education services. Women also play an essential role in agricultural production besides domestic and childcare activities. Women's participation in community activities is not very common in rural villages, especially in the Islamic communities.

Judging from the similar primary school enrollment rates and adult literacy rates between women and men, serious gender problems were not observed during this Study period. However, gender-related issues need to be considered in order to formulate optimum master plan and development projects including plans of institutional strengthening, community participation and human resources development.

(5) New Administration System of Local Self-government

The country was divided into 30 municipalities (administrative districts), including Skopje, which comprises 5 municipalities, with local government reform bringing in new structures in 1996. Since January 1997, a new division of the administrative district has been introduced. There are 123 municipalities; out of which the Grand Skopje has 7 municipalities. Each new municipality consists of 1 city (or town) and 1 to 15 villages.

One of the main purposes of this change was to clarify economically underdeveloped areas through reducing the municipality sizes and then to promote the improvement of those areas more effectively and efficiently. This is expected to help alleviate overpopulation in urban areas, especially in Grand Skopje. Each of the 123 municipalities has a mayor, who is elected directly by community members.

The mayor's responsibility is to provide administrative services in collaboration with municipality council members in order to resolve everyday issues of common interest in a more direct and suitable way. Budgets of the municipalities are allocated by the central government based on the size of the population and economic activities of each municipality. They are still very limited; for example one municipality near Gostivar with approximately 5,000 inhabitants has received DM80,000 as the annual budget. Development projects are being planned and implemented using the funds from the central government agencies including the Agency of Economically Underdeveloped Areas and the Ministry of Urban Planning and Construction.

F.3 Economic Aspects

F.3.1 National Economy

(1) Overview

Macedonia currently is in the process of transition from a centralized economy to a market economy. The county's economy is essentially characterized by relatively higher social stock and lower flow income. Higher social stock is reflected in moderately provided basic infrastructure such as the road network and water and electricity supply systems as well as the higher level of human resources (indicated by higher literacy rates and school enrolment rates). Lower income is illustrated by lower per capita GDP (estimated at about US$1,580[1]) which may be attributed to an inefficient use of resources in the economy.

These economic features are rooted in the legacy of the Former Yugoslavia. The former Yugoslavia's (SFRY) government policy was to build a vertically integrated, autarkic socio-economic base in each region in an attempt to realize equity across regions. In line with this policy, less developed regions including Macedonia received large direct transfers from the central government, and they were used both for provision of social infrastructure and for promotion of economic activities. Although investment in social infrastructure may be judged as a reasonable investment in society, most investment in economic activities is generally viewed as inefficient. Bad investment occurred because the decision of public investment was more likely to be made without consideration of economic viability.

Another cause of the present economic features undoubtedly is a series of adverse external shocks on the nation's economy after the independence in 1991. They include 1) discontinuation of federal transfers from the former SFRY government (that accounted for 5-10% of annual national output); 2) the loss of foreign exchange reserves held at the National Bank of Yugoslavia (over US$1 billion); 3) UN economic sanctions against Serbia and Montenegro, Macedonia's principal commercial partners; and 4) the unilateral blockade against access to the port of Thessaloniki imposed by Greece in February 1994.

The government of Macedonia is now attempting to realize sustainable economic growth in the long-run while minimizing economic disturbances due to adverse external shocks in the transition period. To accomplish this national

[1] In Macedonia, aggregate output was measured by gross social product (GSP) during the Former Yugoslavia era. The GDP measurement was introduced after the independence. Currently, there are three methodologies for measuring GDP: 1) PARE (price adjusted rate of exchange), 2) MER (market exchange rate and 3) WA (World Bank atlas conversion rate). Also, purchasing power parity (PPP) has been employed in some cases. The number of US$1,580 for GDP per capita during the period 1995-1996 was calculated using PARE method with 1994 as a base year.

goal, the government has implemented economic policies targeted toward stabilization and revitalization of the economy, with help of IMF and World Bank since 1994. The government economic policies have led to positive effects. Because of the consistent implementation of the strict stabilization program, the county's annual inflation rate fell to 1.1% in 1996 from 1,915% in 1992 at the peak. On the contrary, the effect of the adjustment program just began to emerge.

The real GDP rebounded to the positive growth (0.8% in 1996 and 1.5%[2] in 1997, respectively: Statistical Office) after five successive years of negative growth after 1991. It is anticipated that this upward trend will be accelerated in the foreseeable future along the favorable long-run development path. The key to achievement of long-run economic growth is to establish the market-oriented economic environments that will allow the nation's economy to be integrated in the international economic processes.

(2) National Output and Economic Structure in Supply Side

Per capita nominal GDP in 1996 was estimated to be MKD82,850 or US$1,580. After independence in 1991, the nation's output fell substantially. The real GDP in 1995 was equal to three-quarters of the 1990 level. This suggests that on average, the aggregate output dropped with an annual rate of 5.6%. In terms of per capita, GDP fell by 6.7% per annum. In 1996, GDP turned out to grow positively after the successive negative growth during the first half of 1990s; however, its level remained much lower than the pre-independence level.

The composition of GDP across sectors has greatly changed since independence. In 1990, industry and mining contributed to 32% of GDP; however, its share fell to 23% in 1996. On the other hand, during the same period, agriculture and fisheries raised their share in GDP from 6.7% to 9.2%. The sector that achieved the most significant growth is financial, technical, business and insurance services. Its share jumped by 58% during the period 1990-1996. The other salient feature is that non-economic activities' shares had consistently increased during this period.

The changes in the share of GDP across sectors indicate the changes in the nation's economic structure. Industry and mining output drastically fell; the output level in 1996 was 55% that in 1990. This stems from an inefficient use of resources, characterized by low capacity utilization or under-utilization of capital in enterprises. The loss of the access to international markets for both input materials and final goods also was responsible for a substantial decline of industrial production. This market constraint was brought about by the

[2] According to the MOD's evaluation, the growth rate of the real GDP was estimated to be 1.0% in 1997.

blockade of the northern and southern borders. Agricultural production increased its GDP share; however, its production level actually did remain almost unchanged. This indicates that the role of agriculture in the nation's economy has become important because its production structure was more stable against the external shocks than industry and mining, and other activities.

(3) Factor Markets

1) Labor

The labor market is characterized by excessive supply of labor. According to the MOD's evaluation, the unemployment rate in 1997 was 31.2%, which was calculated by dividing the number of those seeking job by total economically active population. It has consistently increased since the independence. In the process of transition toward realization of an efficient productive operation, many employees, specifically, those at state-owned companies were destined to layoffs. In the productive sector such as industry and agriculture, employment declined by about one-third during the period 1992-1997. However, the non-productive sector such as central/local governments maintained its employment size amounting to 84,000 persons over the period of time.

2) Capital

The nation's social and economic capital assets (such as road and electricity systems) are relatively well provided in terms of quantity. The problem exists in terms of quality, specifically for capital goods utilized for economic activities such as buildings and machines. These capital goods are one of the main causes of inefficient operation in production and need to be rehabilitated through investment. However, overall the nation is faced with the shortage of savings in the economy. The domestic private savings rate was low. The deficiency in savings needed for domestic investment (about 18% of GDP) is owed greatly to increased government savings. Foreign capital inflow still accounts for the smaller share of total investment. This is because investment in Macedonia is still risky for foreign investors, given the lack of a legal framework prerequisite for the modern market economy and unstable political and economic environments of neighboring countries.

The reform of the financial sector such as bank rehabilitation is underway. In fact, rehabilitation of large banks entered into the final stage. Realization of bank rehabilitation supported by foreign investors' entrance is expected to activate domestic savings mobility. The key to its success is how financial institutions will regain their credibility or people's trust in them by improving the people's negative perceptions against banks that

were formed by financial crisis in early 1990s.

It should be noted that although the amount of foreign capital inflow is limited in the official record, presently the substantial amount of money is assumed to transfer from abroad through Macedonian migrants working in Western Europe or other countries. Overlooking this money inflow would provide the misleading interpretation of the Macedonian economy such as an underestimation of the people's income levels. Moreover, an efficient use of transferred money for local economic activities instead of for private assets (e.g., houses), could play a key role in revitalizing the nation's economy.

3) Public sector

The public sector plays an important role in the nation's economy, especially in factor markets. It still is a principal employer in the nation's labor market although wage increases have been kept under control in accordance with the Wage Control Law that was introduced in 1993. In the capital market, the government has consistently constituted over half of total domestic investment; in 1996, MKD14,126 million (out of total investment equal to MKD27,503 million) was allocated to the public sector. Also, in the demand side the public sector is identified as the important consumer; collective consumption had accounted for about 20% of GDP (against about 70% for individual consumption) during the first half of 1990s.

The fiscal budget is huge relative to the size of national output, accounting for above 20% of GDP. In 1997, total central government revenue was MKD36,310 million while its total expenditure was MKD36,001 million. Nearly 90% of the government revenue came from taxes, and taxes on good and services (sales tax and excises) were the leading contributor to total revenue with its revenue amounting to MKD17,686 million (49% of total revenue). The share of borrowing from abroad in total budget stayed below 5%.

The government budget was allocated mostly to wages and salaries (39% of total expenditure) and transfers (37%), about half of which was used for transfers to individuals.

The heavy weight of the government's budget in the economy is attributed partly to increases in social expenditures and costs associated with various reforms in the transition period. Such social allowances (in the form of transfers to individuals) are necessary to alleviate the enlargement of unequal income distribution during the period of transition and further to avoid social catastrophe that might happen due to the consistent presence

of the large number of unemployed people over time.

In recent years, tax system modernization has been implemented under the economic adjustment program. Its objective is to broaden the tax base, improve tax collection rates and replace sales tax with value added tax. Also, the fiscal expenditure system is in the process of transition. The government has attempted to restrain expenditure growth through a series of programs: 1) reduction in agricultural subsidies for exports and input materials (fertilizers and seeds), 2) wage freeze in the public sector, and 3) cut in discretionary expenditures such as health and education services. The government tax reform has led to a balanced budget after fiscal deficits during the early 1990s.

4) External sector

The external sector plays an important role in the Macedonian economy. Total volume of trade (the sum of exports and imports) accounted for over 70% of GDP in 1996. Current account deficit was recorded at US$288 million, with trade deficit equivalent to US$317 million. This large trade deficit was offset by current transfers (US$213 million in net) such as official transfers (including foreign assistance) and private transaction (i.e., remittance, cash deposits and purchased foreign currencies).

In 1996, the major contributors to exports were production materials (49% of total export earnings) such as raw materials and semi-finished goods (36%), and finished production materials (12%); capital goods (3%); and consumer goods (47%) such as textiles and clothing (26%) and food (7%). On the other hand, the composition of imports is the following: production materials (56%), capital goods (13%), and consumer goods (30%). These general trade patterns imply that Macedonia have comparative advantage for production of consumer goods and disadvantages for production of capital goods against the rest of world.

The government is attempting to improve trade deficit by promoting exports through the outward-looking policy. In 1996, the government reached free trade agreements with FR of Yugoslavia, Slovenia and Croatia, and it expects same agreements to be soon made with other countries such as Bulgaria and Albania. Also, renewal of the free trade agreements with Bosnia and Herzegovina is under negotiation, and Russia shows some interest in the future trade negotiation with Macedonia.

The foreign exchange rates have been stabilized in terms of Deutsche Mark, which is used as a target foreign currency for the county's exchange rate regime. Stable exchange rates have contributed to stable consumer price levels because a variety of imported goods are flooded in Macedonian

retail markets; however, they may affect export-oriented economic activities due to lower competitiveness in terms of prices on international markets.

5) Household sector

Individual consumption has steadily accounted for about 70% of GDP over time. Vitalization of individual consumption leads to increases in aggregate demand that would in turn stimulate domestic production activities. However, individual consumption is currently stagnant because consumers have been negatively affected in the period of transition. In fact, many people lost their jobs, while those that hold jobs are likely to be patient with wage freeze. Under this situation, most of households have multiple income sources to make ends meet.

According to the national survey of the revenue and expenditure of households in 1996, the average household budget (with 4.17 members) was MKD214,365. Earnings from the regular work accounted for only 44% of total income, while social transfers (retirement and social insurance) constituted 17%. As for the household expenditure, as high as 47% was allocated to food and beverages. The expenditure shares for housing, health and education are 2%, 6% and 3%, respectively.

(4) Economic Policies

It is anticipated that the government will continuously implement the on-going economic programs: the stabilization program and the structural adjustment program. Also, the government is expected to reach various international agreements in terms of economic cooperation and trade so that the nation's economy will be modernized and integrated into the world economic processes.

The main components of the stabilization program are: 1) continuation of the current exchange rate regime, 2) control of wages and public sector prices at lower levels, and 3) strict monetary and fiscal policies. On the contrary, the structural adjustment program includes 1) finalizing the privatization process; 2) strengthening the legal and regulatory environment to suit the emerging market economy; 3) liberalizing prices and foreign trade; 4) enhancing mobility in the labor market; and 5) land reforming the enterprise and banking sectors. In line with these programs, currently various development plans have been formulated to revitalize the economy through realization of an optimal utilization of available resources.

(5) Regional Economy

1) Regional income disparity

Income disparity is distinct across former municipalities. According to per capita national income (GSP minus depreciation of assets) in 1995, Skopje (covering five former municipalities) showed the highest level as much as MKD100,000, while M. Brod and Debar recorded less than MKD20,000. The average per capita net income was 57,000MKD, and its mode was only MKD38,000 among 30 former municipalities. This indicates that Skopje is dominant in the nation's economy and that over half of municipalities had only 40% the income level for Skopje. Municipalities with lower per capita income are located in the western part of the country (Debar, Gostivar, Struga, Krushevo and Demir Hisar) and in the eastern part (Makedonski Brod and Probishtip). Economic situation by former municipality is briefed in Table F.5 and Figures F.4, F.5, and F.6.

However, it is noted that this overview based on official statistics does not necessarily reflect the actual income level of individuals. This is partly because Skopje has more population than the official number that covers only those registered and partly because of the presence of gray economy in the country; in rural communities receiving considerable amount of money from family members emigrated to foreign countries.

2) Government's regional development plan

The Agency for Economically Underdeveloped Areas under MOD is responsible for implementing regional development program by which to improve rural living conditions. An ultimate objective of this program may be realization of well distributed population across regions for an efficient utilization of the nation's resources as well as the reinforcement of national defense. However, its short-run goal is viewed as avoidance of population concentration in big cities like Skopje. This is because population concentration in a few cities is more likely to lead to social problems as experienced in many other countries.

The main component of the regional development program is provision of social infrastructure (e.g., rural roads and water supply) in underdeveloped areas. Although under this program, subsidies for credits (covering part of interest rates of loans) are provided for those engaged in farming and forestry management on a small-medium scale, the small amount of the Agency's budget is also allocated to promotion of rural economic activities.

Economically underdeveloped areas are determined based on criteria under

the Act effective during the period 1994-98 (refer to Figures F.7 and F.8). Criteria are composed of three indicators in terms of per capita: 1) social product, 2) basic assets (e.g., roads, equipment, buildings and other infrastructure excluding term-power generation facilities and rail roads), and 3) the employment level. The disadvantage for these criteria is judgement based on a per capita basis (average). For instance, one big factory may overwhelm the economic situations for the rest in a small area. Also, the western part of the country is more likely to be judged as underdeveloped areas due to its higher population density.

Underdeveloped areas are categorized into the two types: 1) an economically underdeveloped municipality, and 2) special regions, geographically determined — which are further divided into a) hilly, mountainous areas above 800 m in elevation, b) settlements near the border, and c) compactly underdeveloped areas extending across some municipalities. There are ten municipalities categorized as the first type: Berovo, Makedonski Brod, Vinica, Gostivar, Debar, Demir Hisar, Kichevo, Krushevo, Struga and Tetovo). Special regions are scattered across the country. Areas categorized as economically underdeveloped areas represent 60% of national land, 29% of total population, and 52% of total settlements.

Table F.1 Trend of Total Population (1971-1997)

	Census				Estimation			
	1971	1981	1991	1994	1995	1996	1997	
Former Method	1,647,308	1,909,136	2,033,964	2,106,664				
		1971-1981	1981-1991	1991-1994				
Annual Growth Rate (%)		1.49	0.64	1.18				
New Method				1,945,932	1,966,033	1,983,099	1,991,398	
					1994-1995	1995-1996	1996-1997	1994-1997
Annual Growth Rate (%)					1.03	0.87	0.42	0.77

Source: Data of 1971-1996 = Statistical Yearbook of the Republic of Macedonia 1997, Statistical Office
Data of 1997 = Statistical Office Estimation

Table F.2 Population by Former and New Municipality (1/4)

No.	Name of former municipalities	Name of new municipalities	1994 Census Population	Estimated Population in 1997	Annual Growth (%) 1994-1997
01	Skopje	Gazi Baba	67,664	69,293	0.80
	City of Skopje	Dorce Petrov	37,961		
		Karpos	58,359	119,658	0.57
		Kisela Voda	118,079	119,601	0.43
		Centar	85,021	86,752	0.67
		Cair	63,375	80,480	1.19
		Suto Orizari	14,301		
		Aracinovo	9,960	10,670	2.32
		Zelenikovo	4,236	4,378	1.11
		Ilinden	14,512	14,937	0.97
		Kondovo	9,840	10,399	1.86
		Petrovec	8,123	8,368	1.00
		Saraj	21,302	(*)	
		Sopiste	9,684	9,843	0.54
		Studenicani	14,747	15,572	1.83
		Cucer-Sandevo	8,064	8,262	0.81
	Sub-total		**545,228**	**558,213**	**0.79**
02	**Gostivar**	Vrapciste	8,416	8,731	1.23
		Vrutok	5,460	5,708	1.49
		Gostivar	45,740	47,939	1.58
		D.Banjica	7,791	8,061	1.14
		Mavrovi Anovi	1,349	1,400	1.24
		Negotino(Polosko)	14,992	16,002	2.20
		Rostusa	10,366	10,853	1.54
		Srbinovo	3,951	4,213	2.16
		Cegrane	11,746	12,369	1.74
	Sub-total		**109,811**	**115,276**	**1.63**
03	**Tetovo**	Bogovinje	13,001	13,684	1.72
		Brvenica	14,793	15,492	1.55
		Vratnica	3,270	3,353	0.84
		Zelino	21,760	23,027	1.90
		Jegunovce	7,013	7,197	0.87
		Kamenjane	12,136	12,918	2.10
		Tearce	20,797	21,596	1.26
		Tetovo	65,318	67,673	1.19
		Depciste	7,286	7,650	1.64
		Sipkovica	6,797	7,293	2.38
	Sub-total		**172,171**	**179,883**	**1.47**
04	**Kicevo**	Vranestica	1,650	1,628	-0.45
		Drugovo	3,555	3,528	-0.25
		Zajas	10,055	10,551	1.62
		Kicevo	27,543	28,447	1.08
		Oslomej	9,170	9,587	1.49
	Sub-total		**51,973**	**53,741**	**1.12**
05	**M. Brod**	Makedonski Brod	5,517	5,483	-0.21
		Plasnica	4,449	4,650	1.48
		Samokov	2,057	2,019	-0.62
	Sub-total		**12,023**	**12,152**	**0.36**

Table F.2 Population by Former and New Municipality (2/4)

No.	Name of former municipalities	Name of new municipalities	1994 Census Population	Estimated Population in 1997	Annual Growth (%) 1994-1997
06	Kumanovo	Klecevce	2,162	2,068	-1.47
		Kumanovo	94,589	97,074	0.87
		Lipkovo	24,351	25,931	2.12
		Orasac	1,638	1,560	-1.61
		Staro Nagoricane	5,074	4,925	-0.99
	Sub-total		**127,814**	**131,558**	**0.97**
07	Kratovo	Kratovo	10,898	10,905	0.02
	Sub-total		**10,898**	**10,905**	**0.02**
08	Kriva Palanka	Kriva Palanka	20,782	20,989	0.33
		Rankovce	4,347	4,318	-0.22
	Sub-total		**25,129**	**25,307**	**0.24**
09	Veles	Bogomila	1,336	1,305	-0.78
		Veles	56,751	57,568	0.48
		Gradsko	3,822	3,896	0.64
		Izvor	1,157	1,137	-0.58
		Caska	2,876	2,923	0.54
	Sub-total		**65,942**	**66,829**	**0.45**
10	Sv. Nikole	Lozovo	2,916	2,939	0.26
		Sveti Nikole	18,528	18,677	0.27
	Sub-total		**21,444**	**21,616**	**0.27**
11	Stip	Karbinci	4,342	4,326	-0.12
		Stip	46,372	47,027	0.47
	Sub-total		**50,714**	**51,353**	**0.42**
12	Probistip	Zletovo	3,687	3,706	0.17
		Probistip	12,963	13,060	0.25
	Sub-total		**16,650**	**16,766**	**0.23**
13	Kocani	Zrnovci	3,344	3,394	0.50
		Kocani	32,051	32,576	0.54
		Oblesevo	5,356	5,412	0.35
		Orizari	4,724	4,765	0.29
		Cesinovo	2,540	2,529	-0.14
	Sub-total		**48,015**	**48,676**	**0.46**
14	Vinica	Blatec	2,005	2,029	0.40
		Vinica	17,058	17,409	0.68
	Sub-total		**19,063**	**19,438**	**0.65**
15	Delcevo	Delcevo	17,726	17,880	0.29
		Makedonska	8,084	8,269	0.76
	Sub-total		**25,810**	**26,149**	**0.44**
16	Berovo	Berovo	14,179	14,259	0.19
		Pehcevo	5,650	5,654	0.02
	Sub-total		**19,829**	**19,913**	**0.14**
17	Demir Hisar	Demir Hisar	7,616	7,552	-0.28
		Sopotnica	2,994	2,904	-1.01
	Sub-total		**10,610**	**10,456**	**-0.49**
18	Krusevo	Zitose	2,116	2,218	1.58
		Krusevo	9,821	9,916	0.32
	Sub-total		**11,937**	**12,134**	**0.55**

Table F.2 Population by Former and New Municipality (3/4)

No.	Name of former municipalities	Name of new municipalities	1994 Census Population	Estimated Population in 1997	Annual Growth (%) 1994-1997
19	Bitola	Bac	963	928	-1.23
		Bistrica	5,779	5,818	0.22
		Bitola	86,176	86,780	0.23
		Dobrusevo	2,379	2,395	0.22
		Kukurecani	2,859	2,843	-0.19
		Mogila	4,954	4,960	0.04
		Novaci	2,844	2,844	0.00
		Staravina	456	453	-0.22
		Capari	1,793	1,768	-0.47
	Sub-total		**108,203**	**108,789**	**0.18**
20	Prilep	Vitoliste	882	832	-1.93
		Dolneni	11,705	11,980	0.78
		Krivogastani	6,312	6,329	0.09
		Prilep	71,899	72,797	0.41
		Topolcani	3,385	3,372	-0.13
	Sub-total		**94,183**	**95,310**	**0.40**
21	Kavadarci	Kavadarci	37,189	37,744	0.50
		Konopiste	510	484	-1.73
		Rosoman	4,238	4,266	0.22
	Sub-total		**41,937**	**42,494**	**0.44**
22	Negotino	Demir Kapija	4,815	4,821	0.04
		Negotino	18,341	18,721	0.69
	Sub-total		**23,156**	**23,542**	**0.55**
23	Valandovo	Valandovo	12,092	12,271	0.49
	Sub-total		**12,092**	**12,271**	**0.49**
24	Gevgelija	Bogdanci	8,899	8,950	0.19
		Gevgelija	19,488	19,593	0.18
		Miravci	2,779	2,766	-0.16
		Star Dojran	3,651	3,674	0.21
	Sub-total		**34,817**	**34,983**	**0.16**
25	Ohrid	Belcista	3,354	3,212	-1.43
		Kosel	1,759	1,716	-0.82
		Meseista	2,918	2,885	-0.38
		Ohrid	52,732	53,720	0.62
	Sub-total		**60,763**	**61,533**	**0.42**
26	Struga	Vevcani	2,448	2,464	0.22
		Velesta	6,917	7,341	2.00
		Deloguzdi	6,561	6,956	1.97
		Labunista	9,312	9,745	1.53
		Lukovo	1,932	1,950	0.31
		Struga	35,509	36,760	1.16
	Sub-total		**62,679**	**65,216**	**1.33**
27	Debar	Debar	17,588	18,422	1.56
		Centar Zupa	6,200	6,573	1.97
	Sub-total		**23,788**	**24,995**	**1.66**
28	Resen	Resen	17,681	17,708	0.05
	Sub-total		**17,681**	**17,708**	**0.05**

Table F.2 Population by Former and New Municipality (4/4)

No.	Name of former municipalities	Name of new municipalities	1994 Census Population	Estimated Population in 1997	Annual Growth (%) 1994-1997
29	Radovis	Konce	3,713	3,779	0.59
		Podares	3,669	3,755	0.78
		Radovis	23,143	23,703	0.80
	Sub-total		**30,525**	**31,237**	**0.77**
30	Strumica	Bosilovo	12,476	12,744	0.71
		Vasilevo	11,409	11,726	0.92
		Kuklis	4,682	4,783	0.71
		Murtino	6,230	6,398	0.89
		Novo Selo	12,382	12,621	0.64
		Strumica	43,868	44,683	0.62
	Sub-total		**91,047**	**92,955**	**0.69**
Grand Total			**1,945,932**	**1,991,398**	**0.77**

Source: Statistical Yearbook of the Republic of Macedonia 1997, Statistical Office
Note: The borders of the groups of new municipalities are not exactly the same as the previous municipality borders.
* Estimated population of Saraj in 1997 is included in the one of Karpos.

Table F.3 1994 Census Population by Municipality

No.	Former Municipalities	1994 census population	Percentage distribution (%)	Population of urban area	Population of rural area	% of urban population in former municipalit	Population density (person/km^2)
01	Skopje	545,228	28.02	444,299	100,929	81.49	293
	(Gazi Baba	*100,259*	*5.15*	*58,458*	*41,801*	*58.31*	*---)*
	(Karpos	*127,462*	*6.55*	*102,409*	*25,053*	*80.34*	*---)*
	(Kisela Vod	*146,746*	*7.54*	*123,633*	*23,113*	*84.25*	*---)*
	(Center	*85,021*	*4.37*	*85,021*	*0*	*100.00*	*---)*
	(Cair	*85,740*	*4.41*	*74,778*	*10,962*	*87.21*	*---)*
02	Gostivar	108,181	5.56	41,008	67,173	37.91	79
03	Tetovo	172,171	8.85	50,344	121,827	29.24	158
04	Kicevo	52,958	2.72	25,129	27,829	47.45	64
05	Brod	11,022	0.57	0	11,022	0.00	12
06	Kumanovo	127,814	6.57	71,853	55,961	56.22	106
07	Kratovo	10,898	0.56	6,481	4,417	59.47	29
08	Kriva Palanka	25,129	1.29	11,166	13,963	44.43	35
09	Veles	65,942	3.39	46,798	19,144	70.97	42
10	Sveti Nikole	21,444	1.10	13,292	8,152	61.98	33
11	Stip	50,714	2.61	41,730	8,984	82.28	58
12	Probistip	16,650	0.86	10,201	6,449	61.27	51
13	Kocani	48,538	2.49	26,364	22,174	54.32	84
14	Vinica	19,063	0.98	9,971	9,092	52.31	43
15	Delcevo	25,287	1.30	10,554	14,733	41.74	43
16	Berovo	19,829	1.02	9,784	10,045	49.34	24
17	Demir Hisar	10,524	0.54	0	10,524	0.00	24
18	Krusevo	12,005	0.62	5,507	6,498	45.87	59
19	Bitola	108,203	5.56	77,464	30,739	71.59	63
20	Prilep	94,183	4.84	68,148	26,035	72.36	51
21	Kavadarci	41,937	2.16	32,773	9,164	78.15	37
22	Negotino	23,156	1.19	12,516	10,640	54.05	31
23	Valandovo	12,092	0.62	4,357	7,735	36.03	36
24	Gevgelija	34,817	1.79	14,974	19,843	43.01	46
25	Ohrid	60,763	3.12	41,146	19,617	67.72	58
26	Struga	62,679	3.22	16,037	46,642	25.59	115
27	Debar*	25,452	1.31	6,582	7,972	25.86	95
28	Resen	17,681	0.91	8,684	8,997	49.11	24
29	Radovis	30,525	1.57	15,068	15,457	49.36	41
30	Strumica	91,047	4.68	34,067	56,980	37.42	95
	Grand Total:	1,945,932	100.00	1,156,297	778,737	59.42	76

Source: Statistical Yearbook of the Republic of Macedonia 1997, Statistical Office of Macedonia

Notes: For the municipality of Debar, the data about urban and rural population includes only the enumerated population; the total of them is different from the official census population.

Table F.4 Population by Mother Tongue and by Municipality

No.	Former Municipalitie	Total population	Mother Tongue: Macedonian	Albanian	Roma	Turkish	Serbian	% of Albanian
01	Skopje	545,228	365,226	113,328	20,691	11,607	17,345	20.79
02	Gostivar	108,181	27,088	68,148	817	10,602	272	62.99
03	Tetovo	172,171	36,841	126,559	1,789	3,697	889	73.51
04	Kicevo	52,958	23,638	25,934	130	2,858	128	48.97
05	Brod	11,022	7,844	30	0	3,099	19	0.27
06	Kumanovo	127,814	67,798	46,842	3,063	368	8,664	36.65
07	Kratovo	10,898	10,718	0	131	7	26	0.00
08	Kriva Palanki	25,129	24,370	0	510	4	140	0.00
09	Veles	65,942	55,580	4,366	464	1,601	694	6.62
11	Stip	50,714	44,832	16	1,146	2,296	285	0.03
12	Probistip	16,650	16,437	0	16	10	85	0.00
13	Kocani	48,538	46,452	0	481	1,161	78	0.00
14	Vinica	19,063	17,709	0	881	233	31	0.00
15	Delcevo	25,287	23,980	6	539	157	77	0.02
16	Berovo	19,829	18,822	2	431	370	55	0.01
17	Demir Hisar	10,524	10,148	229	0	11	11	2.18
18	Krusevo	12,005	6,926	2,978	15	377	64	24.81
19	Bitola	108,203	100,282	4,062	325	1,768	576	3.75
20	Prilep	94,183	82,702	1,741	3,036	3,633	299	1.85
20	Sveti Nikole	21,444	20,630	52	45	221	133	0.24
21	Kavadarci	41,937	40,953	4	132	31	523	0.01
22	Negotino	23,156	22,078	31	41	346	544	0.13
23	Valandovo	12,092	9,981	13	20	1,453	596	0.11
24	Gevgelija	34,817	32,911	52	33	705	818	0.15
25	Ohrid	60,763	53,254	4,068	15	2,347	428	6.69
26	Struga	62,679	33,712	26,970	70	981	133	43.03
27	Debar*	14,554	7,978	3,813	2	2,671	29	26.20
28	Resen	17,681	13,498	2,099	82	1,841	58	11.87
29	Radovis	30,525	26,018	14	30	4,292	80	0.05
30	Strumica	91,047	84,577	6	185	5,918	235	0.01
	Grand Total:	1,935,034	1,332,983	431,363	35,120	64,665	33,315	22.29

Source Statistical Yearbook of the Republic of Macedonia 1997, Statistical Office of Macedonia

Notes: For the municipality of Debar, the data about urban and rural population includes only the enumerated population; the total of them is different from the official census population.

Table F.5 Socio-economic Indicators by Former Municipality

No.	Former Municipalities	1994 census population	Surface area	Population density	Average annual growth rate of population (1994-1997)	% of non-Macedonians (mother tongue)	Infant deaths per 1000 live birth	No. of medical doctors per 1000 pop.	% of cultivable area	Income per capita (National Income/pop.) '000 Denar	Wheat yield (kg/ha)	% of mining & industry sector in national income	% of agriculture & fisheries sector in national income
01	Skopje	545,228	1,858	293	0.79	33.01	19.7	4.6	26.37	100	2,607	27.75	3.05
02	Gostivar	108,181	1,370	79	1.63	74.96	7.9	1.7	10.29	25	3,366	24.29	36.84
03	Tetovo	172,171	1,091	158	1.47	78.60	14.5	1.5	28.96	35	3,415	29.98	45.16
04	Kicevo	52,958	833	64	1.12	55.36	13.8	1.8	14.65	27	2,246	48.81	14.84
05	Brod	11,022	933	12	0.36	28.83	25.5	1.5	7.50	18	1,501	--	42.37
06	Kumanovo	127,814	1,202	106	0.97	46.96	13.8	1.9	45.92	37	2,284	44.95	15.10
07	Kratovo	10,898	380	29	0.02	1.65	16.8	1.7	28.68	50	1,370	77.04	14.72
08	Kriva Palanka	25,129	728	35	0.24	3.02	16.9	1.7	29.12	30	2,201	29.04	14.73
09	Veles	65,942	1,552	42	0.45	15.71	25.8	3.6	25.00	55	2,134	46.60	17.52
10	Sveti Nikole	21,444	651	33	0.27	3.80	31.7	2.1	53.76	49	1,951	41.69	37.47
11	Stip	50,714	870	58	0.42	11.60	22.7	3.5	27.36	51	2,226	35.84	10.87
12	Probistip	16,650	329	51	0.23	1.28	5.3	1.9	32.22	29	1,689	47.21	30.36
13	Kocani	48,538	577	84	0.46	4.30	11.1	2.1	30.33	37	2,611	29.80	24.93
14	Vinica	19,063	442	43	0.65	7.10	17.3	1.8	19.91	38	1,628	61.28	11.91
15	Delcevo	25,287	591	43	0.44	5.17	16.8	1.7	25.89	38	1,339	62.16	13.30
16	Berovo	19,829	815	24	0.14	5.08	5.2	2.4	23.19	36	981	42.80	21.38
17	Demir Hisar	10,524	435	24	-0.49	3.57	11.8	4.7	16.09	32	1,666	34.27	28.04
18	Krusevo	12,005	204	59	0.55	42.31	39.8	2.2	29.41	29	2,125	23.33	46.15
19	Bitola	108,203	1,716	63	0.18	7.32	20.6	6.0	37.18	78	2,897	41.56	17.62
20	Prilep	94,183	1,842	51	0.40	12.19	14.4	3.3	34.96	57	1,516	53.31	19.61
21	Kavadarci	41,937	1,146	37	0.44	2.35	15.4	2.9	19.37	59	2,242	34.01	35.79
22	Negotino	23,156	743	31	0.55	4.66	NA	1.9	19.11	65	2,578	56.33	22.58
23	Valandovo	12,092	334	36	0.49	17.46	12.9	2.0	19.76	27	2,586	20.32	45.95
24	Gevgelija	34,817	765	46	0.16	5.47	10.7	3.1	18.56	68	2,759	23.25	14.97
25	Ohrid	60,763	1,041	58	0.42	12.36	17.2	4.9	15.56	61	2,121	35.43	13.68
26	Struga	62,679	546	115	1.33	46.21	9.5	2.5	20.70	25	1,971	33.79	15.68
27	Debar*	25,452	267	95	1.66	68.65	30.2	1.8	13.48	19	2,189	32.19	22.17
28	Resen	17,681	746	24	0.05	23.66	10.5	4.2	15.95	67	2,271	40.12	33.03
29	Radovis	30,525	743	41	0.77	14.76	18.8	1.3	23.55	42	1,830	52.61	24.27
30	Strumica	91,047	963	95	0.69	7.11	18.0	2.2	30.01	39	2,465	25.37	34.92
	Grand Total:	**1,945,932**	**25,713**	**76**	**0.77**	**31.50**	**16.4**	**3.2**	**25.58**	**59**	**2,292**	**33.80**	**13.99**

Source: Statistical Yearbook of the Republic of Macedonia 1997, Statistical Office of Macedonia

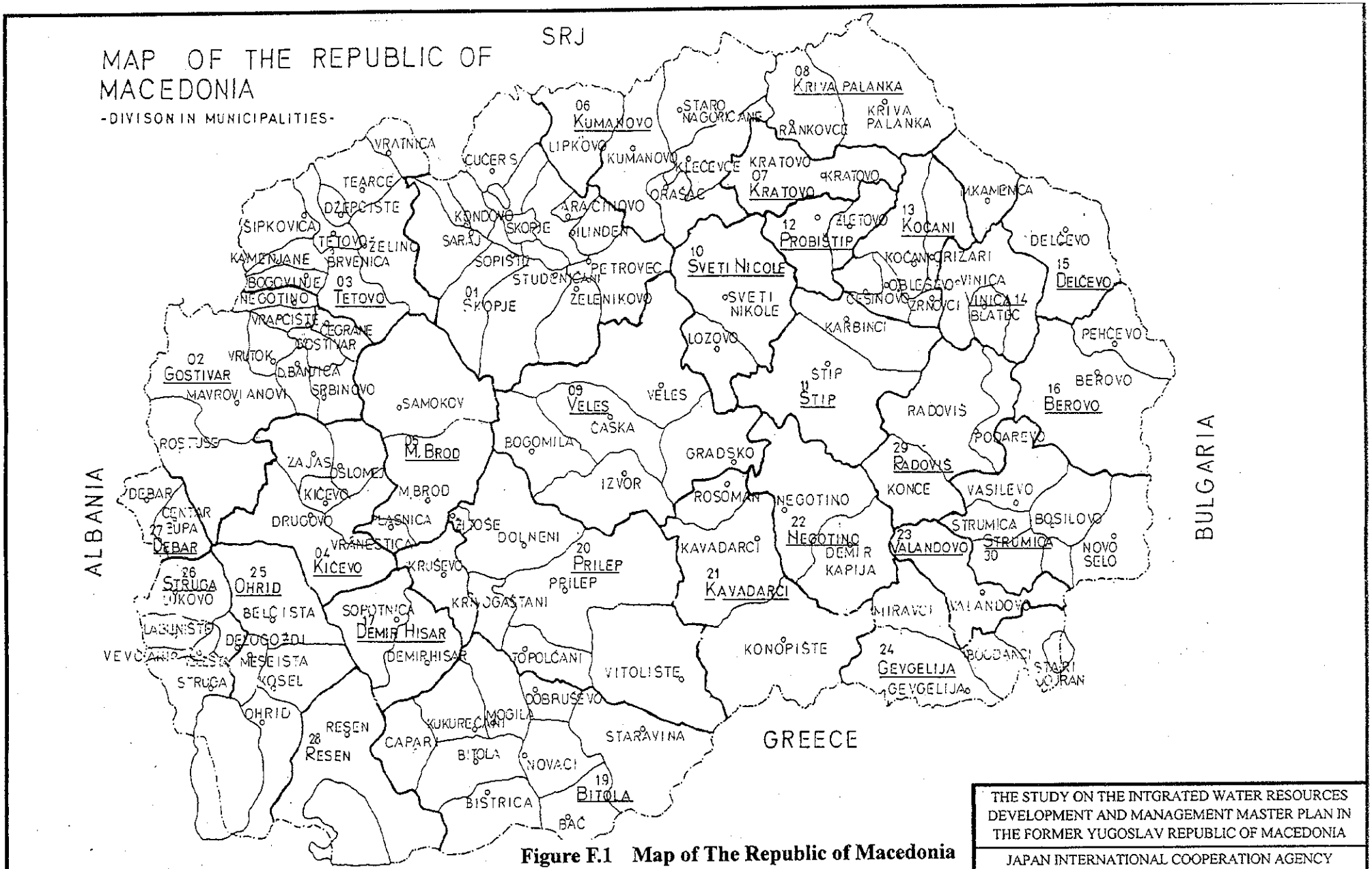

Figure F.1 Map of The Republic of Macedonia

THE STUDY ON THE INTGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT MASTER PLAN IN THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

JAPAN INTERNATIONAL COOPERATION AGENCY

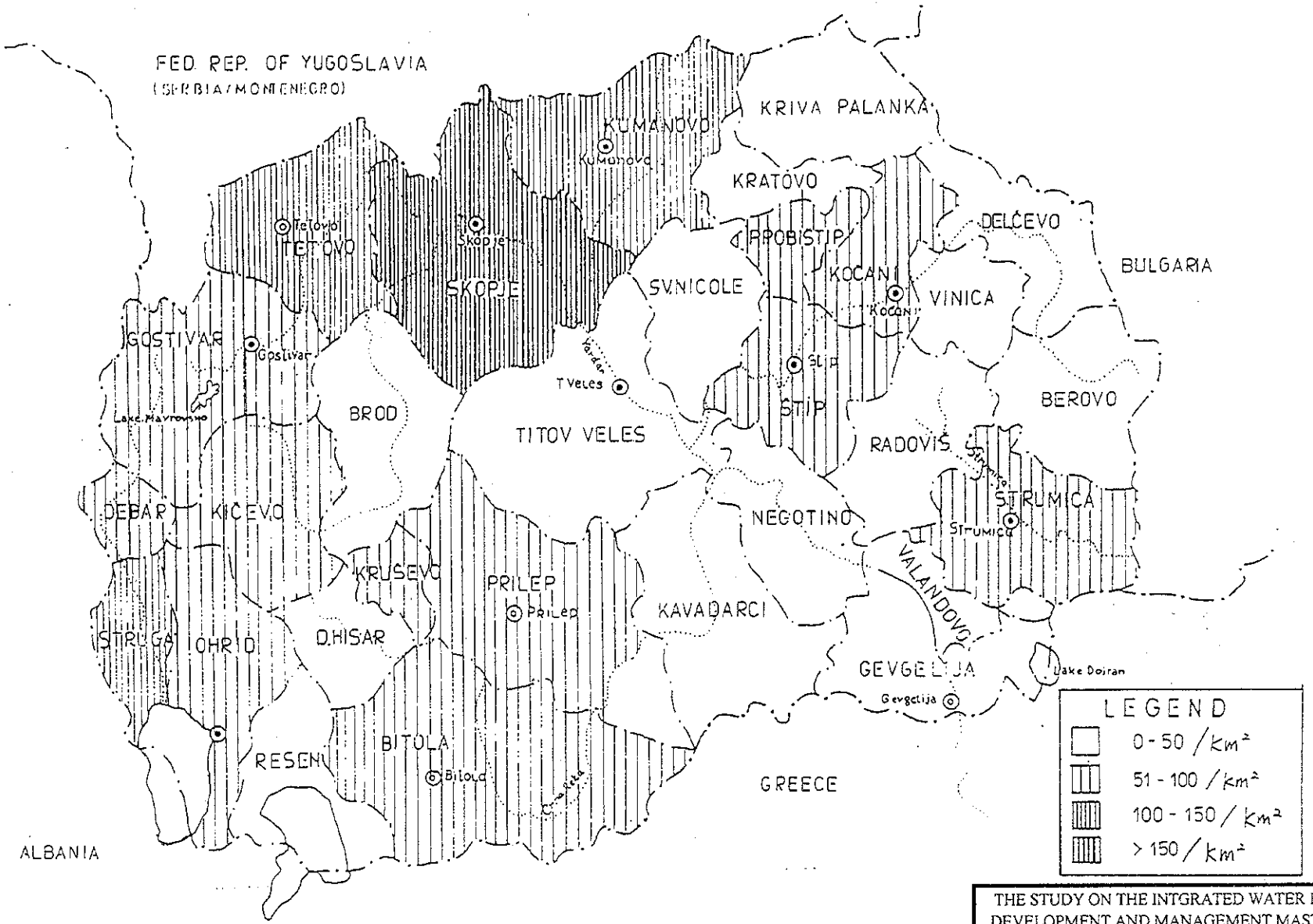

Figure F.2 Population Density

THE STUDY ON THE INTGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT MASTER PLAN IN THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

JAPAN INTERNATIONAL COOPERATION AGENCY

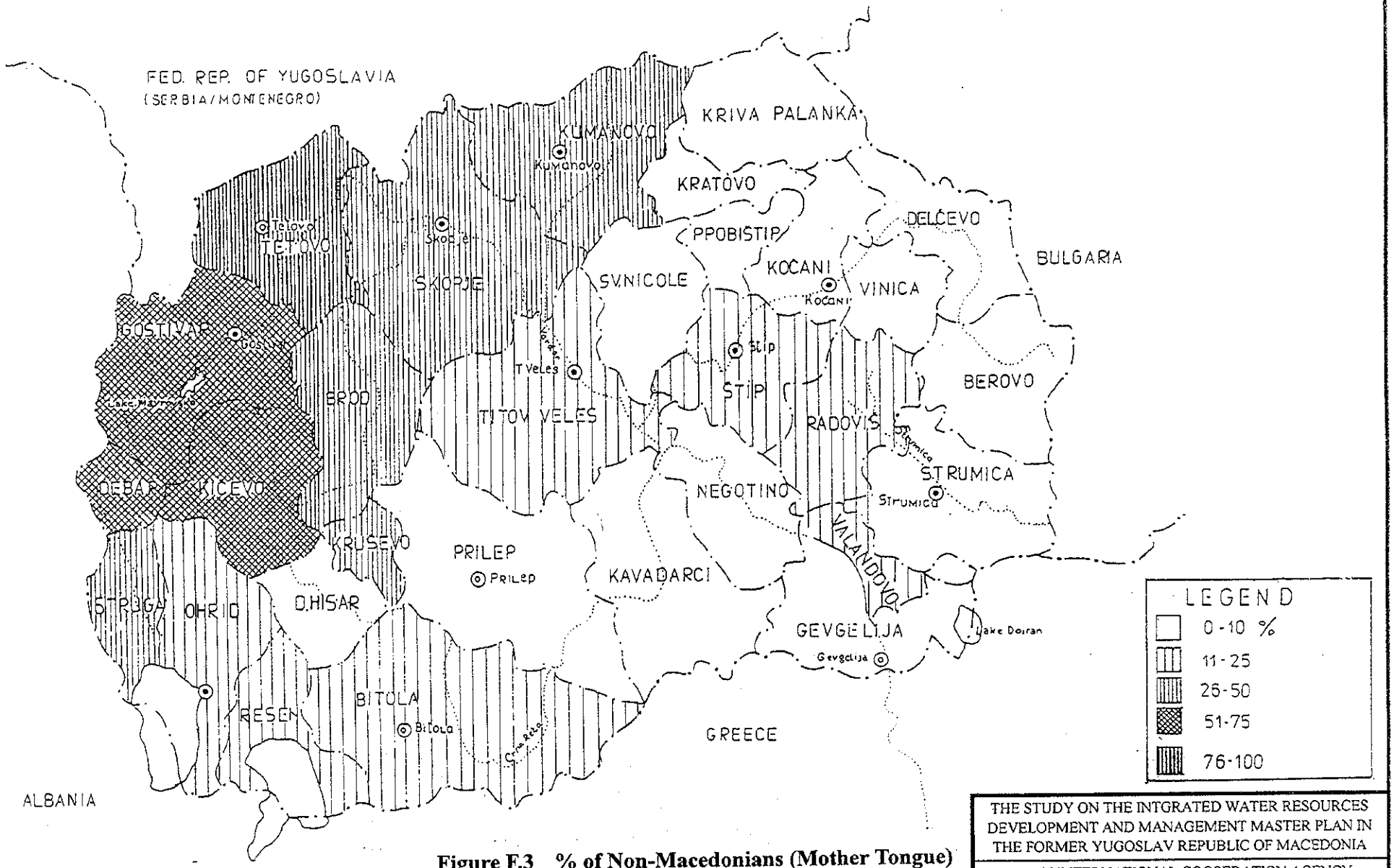

Figure F.3 % of Non-Macedonians (Mother Tongue)

THE STUDY ON THE INTGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT MASTER PLAN IN THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

JAPAN INTERNATIONAL COOPERATION AGENCY

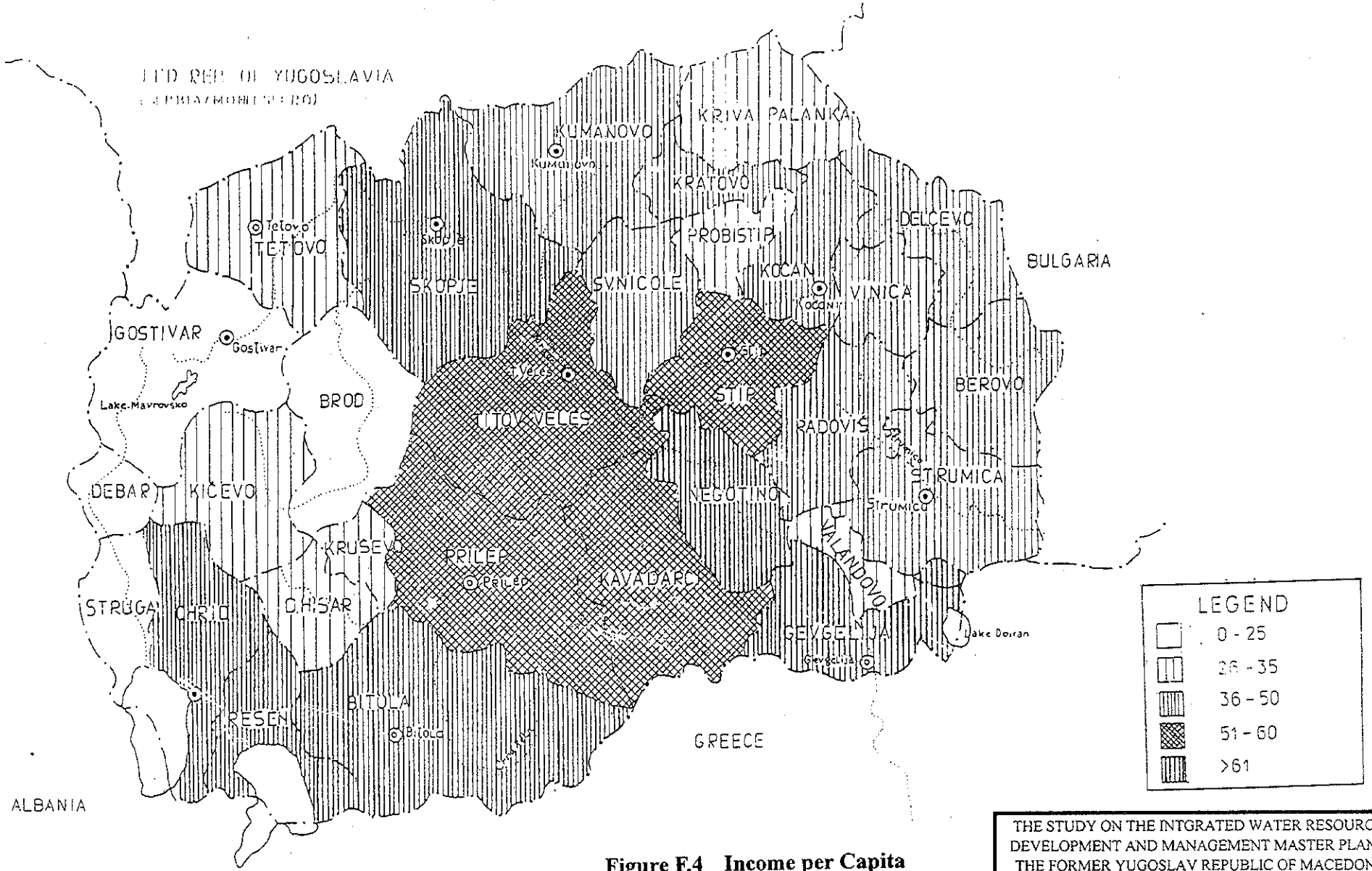

Figure F.4 Income per Capita

THE STUDY ON THE INTGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT MASTER PLAN IN THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

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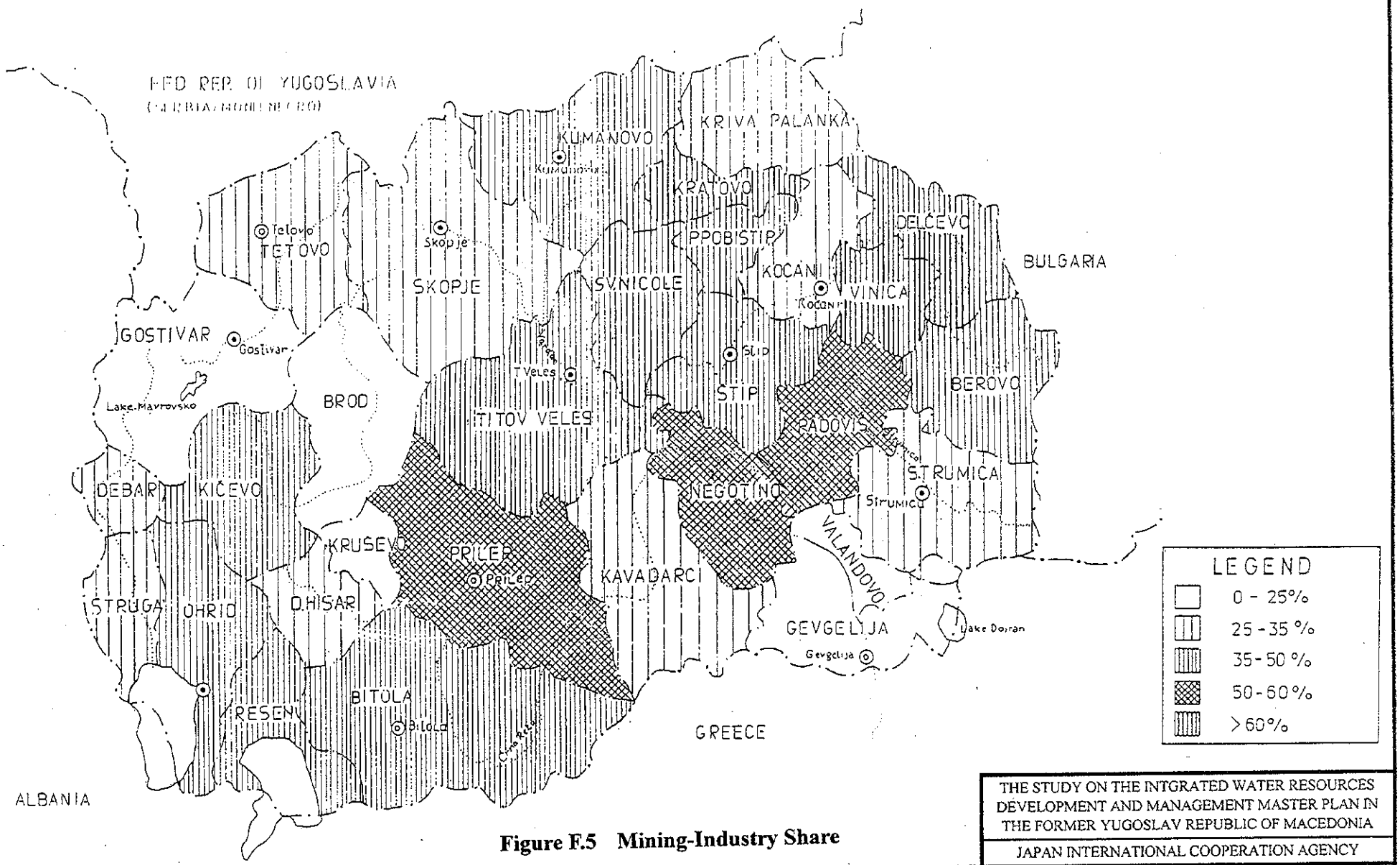

Figure F.5 Mining-Industry Share

THE STUDY ON THE INTGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT MASTER PLAN IN THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

JAPAN INTERNATIONAL COOPERATION AGENCY

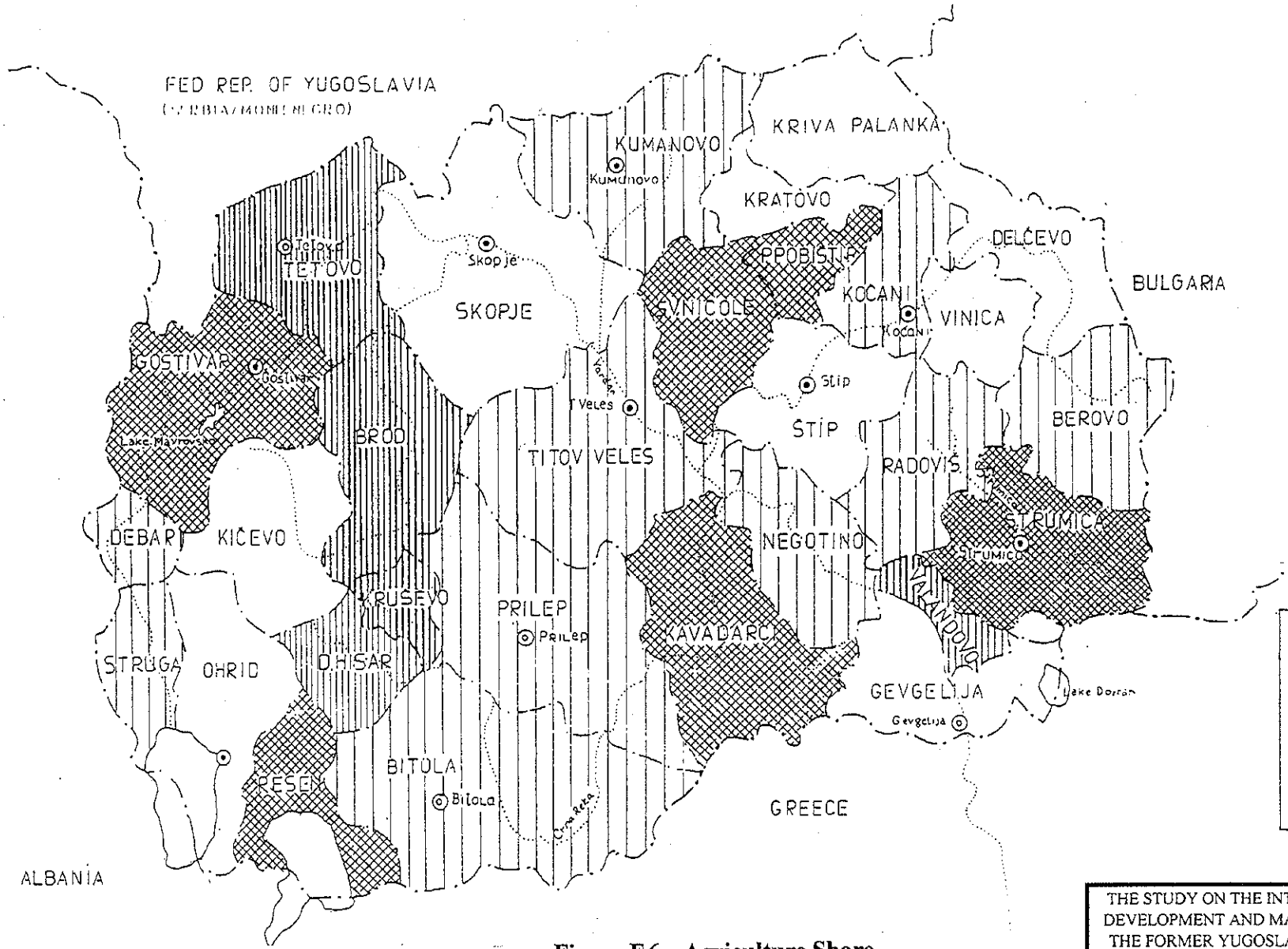

Figure F.6 Agriculture Share

THE STUDY ON THE INTGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT MASTER PLAN IN THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

JAPAN INTERNATIONAL COOPERATION AGENCY

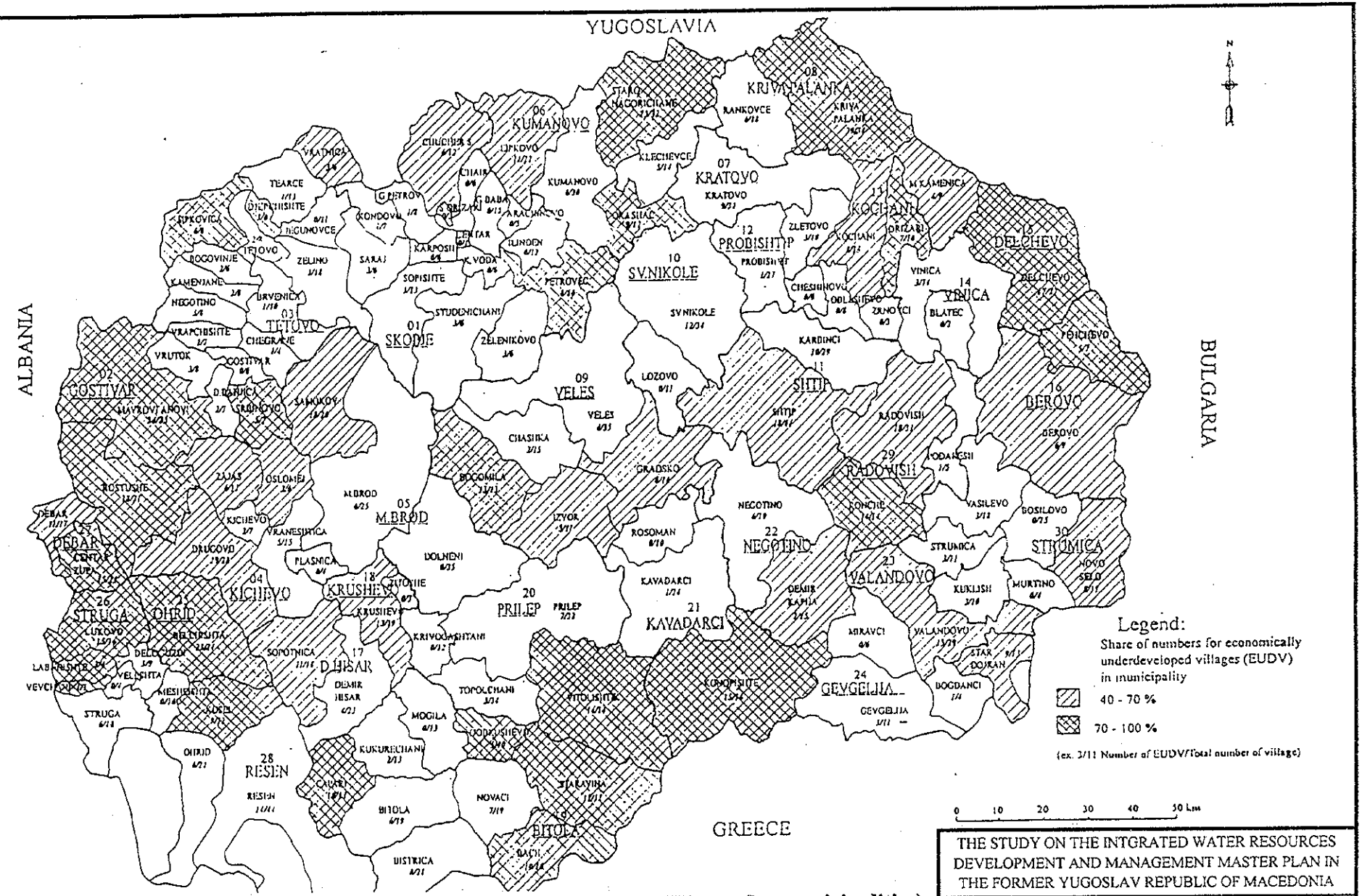

Figure F.7 Economically Underdeveloped Villages (by municipalities)

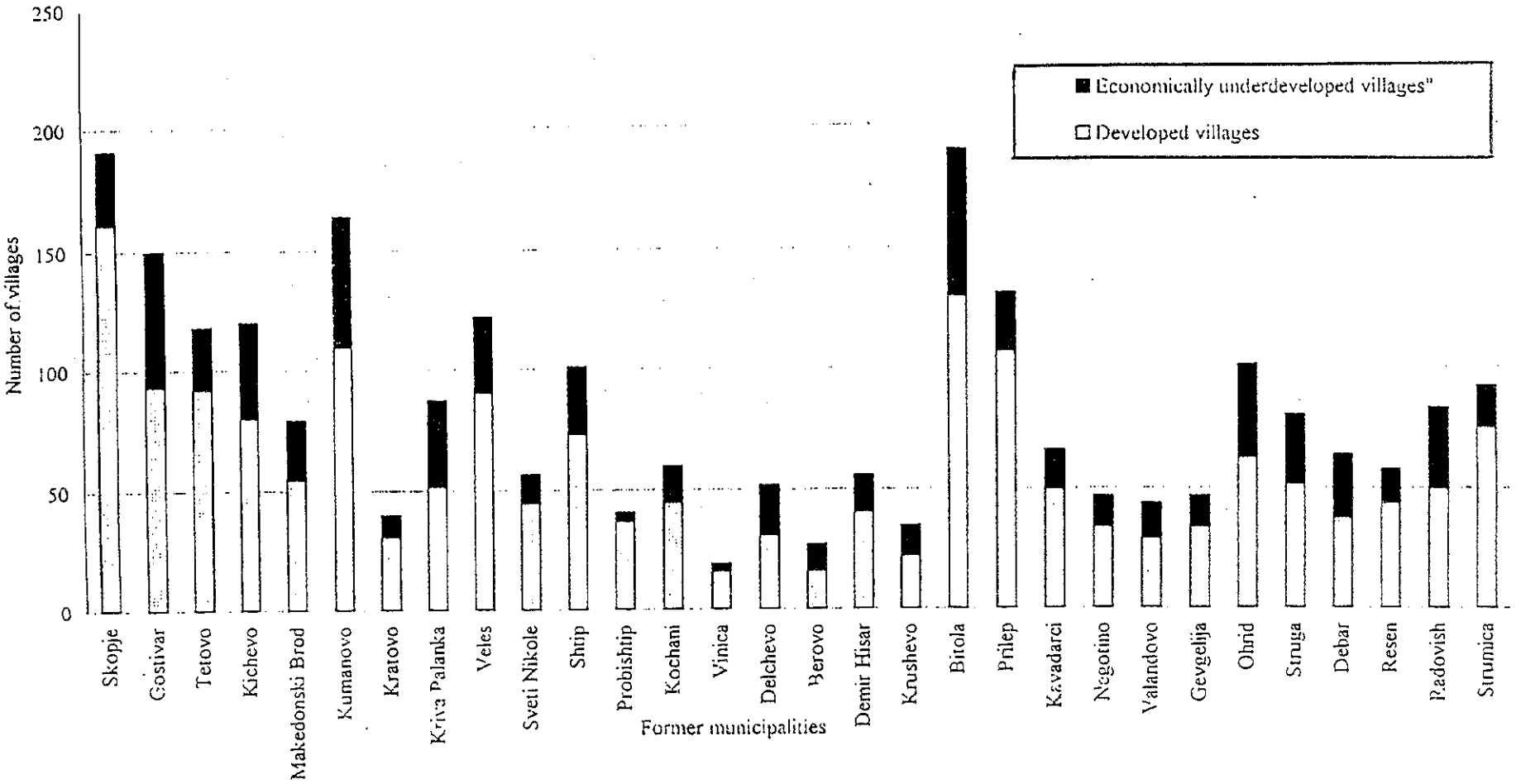

Figure F.8 Economically Underdeveloped Villages by Former Municipalities

THE STUDY ON THE INTGRATED WATER RESOURCES DEVELOPMENT AND MANAGEMENT MASTER PLAN IN THE FORMER YUGOSLAV REPUBLIC OF MACEDONIA

JAPAN INTERNATIONAL COOPERATION AGENCY

Appendix G

Law and Institution

Appendix G LAW AND INSTITUTION

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Appendix G LAW AND INSTITUTION

G.1 Present Legal and Regulatory Framework

Law on Water (or "Water Law") was issued in January 1998, replacing the Law on Water of 1981. It functions as a framework law on water resources issues in Macedonia. Water Law provides comprehensive provisions on water resources development and management. The important new provisions are the following:

- Water Fund will be established in order to cover expenses for water resources development and management activities for public interest. The Water Fund receives its income from a tax levied on income, power generation and industries using water, water pollution charge and the annual state budget;
- Public Water Management Enterprise ("PWME") is established by the Government Decision on "Establishment of Public Water Economy Enterprise" (Official Gazette No.22/98). Organizations formerly called as Water Management Organizations now are considered as the branches of PWME;
- Establishment of Water Users' Associations is promoted to encourage farmers to participate in operation and maintenance of irrigation facilities;
- Wastewater standards are to be established. Water Pollution Charge is applied based on the standards;
- Water Management Inspectors will be assigned for enforcing compliance with the stipulations of the Law.

The following describes the legal and regulatory framework set in the Water Law and other legislation and standards regarding water related issues in Macedonia.

G1.1 River Administration / Water Management

Water - along with other natural resources – is defined as a national asset under the Constitution of the Republic of Macedonia (1991). The Government of Macedonia assumes the responsibility of managing its use and its quality.

All water resources (rivers, water flows, lakes, ground water, etc.) in Macedonia are considered as wealth of common interest and are owned by the state (Article 2[1]).

Ministry of Agriculture, Forestry and Water Economy (MAFWE) is the responsible ministry for water resources including surface water, ground water, spring water and any other waters development and management issues (Article

[1] Article number in bracket is the article number of the Water Law unless otherwise stated.

158).

In Macedonia, the terms "Water management" or Water resources management" are used instead of river administration.

Similarly the term "River structure" does not exist. "Water management structure" is used instead. Article 18 of Water Law provides the definition of water management structures.

The operation and maintenance of the water structure is the responsibility of the Public Water Economy Enterprise and its local branches i.e. organizations currently called Water Management Organizations and other legal entities (e.g. agro-kombinats) (Article 98). The scope of activities of PWME is described in "Government Decision on Establishment of Public Water Economy Enterprise (Official Gazette 15 May 1998)". Such activities include: construction, operation and maintenance of water structures. 26 WMOs are now considered as local branches of PWME. Activities, organizations and other issues are to be stipulated in detail in the Statute of PWME.

G.1.2 River Area

The river area in not inhabited region is considered as the area of 50 m from each river bank, while the river area in the settlements is determined by the concerned municipality (Article 69).

MAFWE issues the Regulation for Determination of the Protection Zones (Article 52) for water resources. The construction in the protection zones is forbidden, except for water structures (Article 54).

G.1.3 Design/Structural Standards of Water Facilities

A design and structural standard for a civil structure of the Socialist Federative Yugoslavian Standards (JUS) had long been applied in Macedonia. After the independence of the country, JUS was transformed to Macedonian Standards (MKS) by Law for Standardization of 1995.

G.1.4 Water Right

The right on water in Macedonia is categorized into two groups.

The Water Resource Agreement is the right to construct water structures or the right to make investment for water structures (Article 27).

The Water Right is the right to use water. It is required for any kind of water utilization (potable water, irrigation, industrial water supply, recreation, etc.) (Article 35). The Water Right is issued for certain period of time, but not longer than 10 years (Article 39).

Both water rights are issued by the Administration of Water Management, MAFWE (Article 30 for right to construct and Article 35 for water use right). Local branches of PWME present its required amount of water to its headquarters and then MAFWE approves the request.

No water use license is required for the purposes of fire extinguishing, sanitation activities and/or water used in natural disasters (Article 44).

G.1.5 Priorities of Water Use and Water Allocation

The priority of water utilization in Macedonia is the following (Article 11):

(1) Domestic water use including water use in hospitals, veterinary stations, defense, food processing industry,

(2) Agricultural water use,

(3) Industrial water use,

(4) Hydro - power generation, and

(5) Other uses.

The water allocated for purposes for agricultural water use, industrial water use, hydro-power generation, and other water use can be re-allocated for domestic water use, upon a decision of the Minister of MAFWE (Article 11). PMME or other legal entities responsible for water structures have the right to temporarily limit or forbid water use in accordance with the priority set above (Article 42) when water quantity can not fulfil the demands of water users.

G.1.6 Water Quality and Pollution Control

The National Environmental Action Plan (NEAP) determines the plans and programs for protection and promotion of the environment and nature. The Water Law requires all the polluters to construct their own, or to connect to collective facilities for wastewater treatment. The penalty for untreated wastewater discharge is determined by unit of pollution, defined by the Minister of MAFWE (Article 133).

MAFWE in collaboration with MUPCE sets waste water standards (Article 88).

The water quality monitoring is carried out by HMI (Article 92). Water polluters are classified into Book of Polluters (Article 91), prepared by HMI. However, water quality monitoring by HMI has not been sufficient due to its financial constraints.

Water is classified into four classes by quality of possible utilization (SFRY

Ordinance for Water Classification[2], Official Gazette[3] No. 9/84, Article 2, and SFRY Ordinance for Categorization of Water flows and Lakes, No. 9/84, Article 1).

G.1.7 Irrigation

Water for irrigation is provided by PWME, through its local branches. The operation and maintenance of the irrigation systems and other water structures is a responsibility of the PWME, its local branches and other organizations which deal with water management (Article 98).

Agricultural water users have to report the list of crops to be planted in the coming year not later than 30 October to PWME (Article 118). PWME prepares the annual irrigation plan for the next year not later than 30 November. In case of drought year, PWME adjusts the annual irrigation plan not later than 1 March of the current year (Article 119).

G.1.8 Resettlement

Exploitation of land for construction of water structures is made according to the stipulations of Law for Expropriation (Article 16).

G.1.9 Groundwater

Groundwater is classified into four categories by quality of possible utilization as stipulated in the following Socialist Federative Republic of Yugoslavia Laws and Regulations.

(1) Socialist Federative Republic of Yugoslavia Law on unification of the methods for determination, recording and data collection for the reserves of minerals and groundwater and its water balance (No. 53/77);

(2) Socialist Federative Republic of Yugoslavia Rules of Procedure on classification of groundwater resources issued in 1979, No. 34/79; and

(3) Law on geological research and mineral resources exploitation No.18/88

G.1.10 Sand mMining and Other Excavation Activities

The excavation activities can be undertaken only with prior permission. The

[2] Law and any other legislative measures enacted by Socialist Federative Republic of Yugoslavia and by Socialist Republic of Macedonia are considered valid until the Government of Republic of Macedonia declares it invalid (Article 5 of the Constitutional Law of Macedonia, Official Gazette 52/91).
[3] Law number is expressed by the number of Official Gazette unless otherwise stated.

permission for excavation of sand, gravel and stone from the riverbeds is issued by the Administration of the Water Management. For excavation from natural lakes, the permission is also issued by the Administration of the Water Management with prior approval from Ministry of Urban Planning, Construction and Environment (MUPCE) (Article 80). Each excavation activity requires payment of excavated material charge by the requested party.

The Water Law mentions that PWME and other legal entities having a permission on sand mining and other excavation activities, are obliged to keep the record of the mining activities and location of mining. The right of mining can be transferred in accordance with the Water Law. MAFWE shall establish the procedure of record keeping of mining activities (Article 83).

The excavation material charge is not paid for structures for constructing water structures and defense (Article 84).

G.1.11 Flood Control

Each municipality and the city of Skopje are obliged to prepare the program for prevention of floods, with a prior agreement from the Minister of MAFWE and Minister of Defense (Article 58). The municipalities and the city of Skopje prepare a Plan of Operation for Flood Control. PWME and other organizations from the endangered area participate in implementation of the Plan (Article 59).

Dam and reservoir section of the Water Law (Article 104) stipulates that every reservoir must have an additional reservoir capacity to retain the flooding waters.

HMI should be informed regularly about conditions in every water structure (Article 63). In cases of possible danger, HMI is obliged to inform the Republic Center for Information and Alert (Article 65).

The maintenance of the flood control facilities is carried out by, PWME and other legal entities in charge of water management, and local self-governments and the city of Skopje (Article 66).

G.1.12 Soil Erosion and Conservation

Legal entities and individuals which undertake any activity that can cause condition of erosion, are obliged to undertake the countermeasures and cover the costs of the damage (Article 78).

The protection measures, considered in the Law include forestation, restriction of sand, gravel and soil excavation and prevention of deforestation (Article 75).

The forests grown for protection purposes are managed in accordance with the Law of Forestry (Article 77).

G.1.13 Water Service Fee Determination

Article 144 of the Water Law empowered PWME to establish water service fee for raw water. PWME is required to formulate water service calculation method. The calculation methodology must be approved by the Government.

Agricultural water charge consists of two parts (Article 141):

(1) Fee for distribution of water (constant fee) and

(2) Fee for delivered water in volume

Constant fee consists of 10% of the average agricultural water charge. It aims to recover some portions of fixed costs for water supply structures.

Fee for delivered agricultural water is charged based on the type of crop and hectare. As mentioned above, PWME is required to establish water service charge (Article 144).

G.1.14 International Agreements on Water Use

There are international agreements on water use between the Socialist Federative Republic of Yugoslavia and the three countries: Greece, Bulgaria and Albania. These agreements are recognized by FYROM. There is no agreement with the Federal Republic of Yugoslavia on the waterway with an upper stream of a tributary which flows into the Vardar River.

(1) Agreement with Greece

Socialist Federative Republic of Yugoslavia and Greece signed the agreement on the water use of Vardar ("Axios" in Greece) River and Dojran and Prespa Lakes in 1959. The agreement stipulates cooperative water use of the Vardar River and Dojran and Prespa Lakes. For projects on water use in the above international waterway, notification is required. The Government of Macedonia informed the Greek government of Tikvesh, Bregalnica and Polog irrigation schemes in 1996 and in 1997.

(2) Agreement with Albania

Socialist Federative Republic of Uuogslavia and Albania signed the agreement on rivers, lakes and any hydrosystem which are divided by the border in 1956. Names of Ohrid Lake, the Crn Drim River, the Bel Drim River, Skadar Lake and Bojana Lake are mentioned in the agreement. Rational use of water and water facilities is stipulated. Mutual agreement is required in case of any change on current situation of such facilities.

(3) Agreement with Bulgaria

Socialist Federative Republic of Yugoslavia and Bulgaria signed the agreement on rivers, lakes and any hydrosystems which are divided by the border in 1958. The agreement stipulates that both sides shall maintain water flows crossing over the state border of mutual interest. Mutual agreement is required in case of any change on current situation of water flows and water facilities.

G1.15 Summary

As seen above, current Water Law and regulations are mostly well designed. Enforcement of provisions into practice needs more effort. The following measures should be taken immediately:

(1) Preparation of Public Water Economy Enterprise Statute ;

(2) Preparation of Decision for Establishment of Water Fund;

(3) Preparation of wastewater standards and pollution charge;

It is important to monitor the progress of the new provisions mentioned above.

G.2 Present Water Resources Management Organizations

G.2.1 Ministry of Agriculture, Forestry and Water Economy (MAFWE)

MAFWE has overall responsibility for water resources development and management. It is responsible for planning and construction of river facilities. It has 264 staff. The organization structure of MAFWE is shown in Figure G.1.

G.2.2 Ministry of Urban Planning, Construction and Environment (MUPCE)

MUPCE had been responsible for municipal and industrial water supply, wastewater treatment and environment. It had 503 staff.

Since the end of 1998, the department of the environment conservation was independent from MUPCE and became the Ministry of Environment (MOEn). Therefore, MUPCE was divided into two new ministries; one is the Ministry of Urban Planning and Construction (MUPC) and the other is the Ministry of Environment (MOEn). The detailed responsibilities of each of new municipalities have not been announced yet.

The organization structure of the former MUPCE is shown in Figure G.2.

G.2.3 Ministry of Health (MOH)

MOH is responsible for municipal water quality control through standard setting and monitoring. It has 137 staff. Republic Institute Health Protection (RIHP) is also associated with the MOH. The Institute has ten regional branches.

G.2.4 Ministry of Economy (MOE)

MOE is responsible for water use by hydropower generation. It has 371 staff. The organization structure is shown in Figure G.3.

G.2.5 Ministry of Development (MOD)

MOD is responsible for coordination and reviewing various ministries' activities from macro-economic point of view, and regional development planning. It has 75 staff including 10 staff from Agency for Economically Under-Developed Area and 27 from Industrial Property Protection Office within the Ministry. The organization structure is shown in Figure G.4.

G.2.6 Republic Hydro-Meteorological Institute (HMI)

HMI is a public enterprise financed by the Government. It is responsible for monitoring water resources, collection and record of river discharge, sediment, water quality and pollution. It has approximately 160 staff.

G.2.7 Geohydroproject

Geohydroproject is a private enterprise similar to HMI but its responsibility is for groundwater. There is 25 staff. Their estimated annual budget is approximately DM480,000 (US$265,333).

G.2.8 Public Water Management Enterprise (PWME)

Article 136 of the Water Law stipulates the establishment of PWME. PWME was established by the Government Decision on 4 May 1998 (Official Gazette No. 23/98). Establishment of PWME can be considered as the separation of service/operation functions (by WMOs) from regulatory functions.

Prior to the establishment of current PWME, the 26 main WMOs formed the Water Management Association to provide technical advice with its members and represent its interest to the government under the Water Law of 1981. Water Management Association, being an association to represent the interests of individual water management organizations, somehow could not fully support the activities of individual water management organization. The new Water Law thus stipulates that all WMOs shall be merged into a single enterprise. PWME is established to incorporate responsibilities and assets of all WMOs, which would become branches of PWME.

The headquarters, PWME-Skopje was established in Skopje as the national-level agency on May 4, 1998. It is to supervise the branches comprising the current

23 WMOs and WDI and hold all the assets of existing WMOs and WDI.

The Statute of PWME-Skopje was issued in September 1998, which regulates the activities, responsibilities, organizations, and financial resources of the headquarters and the branches. PWME has the current role of WMOs, however, its responsibilities cover much wider range for sustainable, environmentally sound management on the national water resources.

The purpose of introduction of a central-level agency is to improve the water supply and management services for meeting users' requirement through unifying water management activities, through clarifying and simplifying the responsibilities in the water sector, and through making up more transparent financial system. The activities of the headquarters focus on the coordination, plan development, standard setting, monitoring maintenance activities, and technical support for the regional branches.

PWME is an independent organization, while its sector ministry is MAFWE. It is not directly supervised by MAFWE; representatives of the ministry are the members of the Management Board of PWME, which decides the policies and plans as well as supervises the financial situations.

The headquarters has 1 Director, 1 Assistant to Director, 5 Managers, and 27 staff members; their salaries are paid by the ex-institutions, which they used to work before, until the new financial sources are established.

The Statute specifies that financial sources for operation and development of PWME are Water Fund, water charge for irrigation and drainage, water charge from the hydrosystems for domestic and industrial water supply, credits, and other incomes. WMOs have been financially independent since their establishment. However, under the new system, incomes of the branches are to be once collected by the headquarters and then distributed to each branch office according to the business size.

Currently, after the completion of establishing the headquarters, all of WMOs and WDI are reviewed about their activities, financial status, human resources etc. of each in order to identify the optimum way of conversion into the branches of PWME. All the future branches have still functioned as before.

Many of WMOs have had financial problems, poor maintenance services, and limited human resources. Concentration on their side businesses such as hotel operation, aquaculture etc. is also pointed out as one of the causes to reducing the quality of their water management services.

The Statute does not regulate the detailed, concrete points of institutions under the new PWME. Reviews and restructuring work promoted by the headquarters will take long time and have various constraints before it functions. The branches should solely provide services in water sector for consumers in

order to improve the service quality. However, their financial status will become more critical when the collection rate of water charge is not increased.

WMOs have been financially independent for long time and have experienced and qualified expertise in the local water sector. They have already established their own status and business relationship in the local water sector. These points may contribute to realization of better water management system in the country. However, at the same time, they can be the constraints for the headquarters to make them unified and to implement the new system smoothly.

Suitable services meeting consumers' actual requirement can be provided by the regional branches, which are located in the exact areas and have much knowledge about the local situation. It is anticipated that too much centralization might produce new negative points in their water-related services.

G.2.9 Communal Enterprises

There are 34 water supply companies, Communal Enterprises, in Macedonia. The Communal Enterprises supply municipal and industrial water; while many of them also provide public services such as garbage collection, watering in the public area, management of cemeteries etc. The companies are public enterprises established by former municipalities[4]. The Communal Enterprises formed the Association for Water Supply and Sewerage (MAKKOM) to represent their interests.

In order to clarify the current organizations, functions, services, and facilities of the Communal Enterprises, the interview survey was conducted in the Study. The output is summarized in the Annex 9, which is attached to this chapter.

G.2.10 Water Users' Association

The idea of establishing associations of agricultural water users was supported in the Water Law of 1981 as well. The associations were called "SIZ". SIZ had two functions. One is to receive funds from the government for their water structures development and management activities. The other is to represent the interests of farmers in negotiation WMOs in particular in irrigation water charge setting. However, the SIZs were considered not effective and were abolished in 1991. It deteriorated the relationship between farmers and WMOs due to decreased communication between them.

Again the current Water Law has a stipulation for establishment of Water Users' Association. Agricultural water users can form water users' association. The association can construct and manage small-scale irrigation networks (Article

[4] Currently there are 123 local self-governments and the Grand City of Skopje instead of 30 municipalities (Law for Self-Government No.1/11 1995)

148). Several pilot water users' associations were established.

Establishment of WUAs has been initiated through the irrigation rehabilitation projects of the World Bank in order to encourage farmers to participate in irrigation management by operation and maintenance of facilities. The projects have a component of institutional strengthening in the national and regional level, which is considered as essential for increasing the project sustainability.

A few pilot WUAs were organized and leaders were nominated in the project areas. Under the supervision and guidance of WMOs (the branches of PWME-WEM), operation and maintenance of irrigation facilities, mainly secondary and tertiary canals, are to be allocated to farmers. The use and responsibility for these facilities are handed-over to them, however, the ownership will remain in the WMOs.

Actual activities by the pilot WUAs will start from this irrigation season. However, the pilot WUA formation work has faced several constraints as follows:

(1) Incentives to form a WUA or to be a leader of a WUA are not attractive;

(2) Farmers have bad memories about working in a group during the socialism period;

(3) Concrete idea about the organization and functions of WUA has not been provided by World Bank yet;

(4) The project will mainly rehabilitate the main canals; financial resources for rehabilitation of secondary and tertiary canals have not been prepared.

G2.11 Water Fund

Under the new Water Law, the Water Fund was newly established as one of the financial sources of PWME. The Fund receives its income from water charge, fee for water pollution, fee for sand, gravel and stone excavation, rental fee for state-owned land, financial subsidiary from the government etc.

The Fund will be used for reduction of water pollution, preparation of water management plans, contribution to maintenance of irrigation facilities and water management facilities etc. The Fund has its own management board for operation, supervised by MAFWE. The preparation period was over and the frame of the Fund has been established. The Fund is expected to function in accordance with the progress of institutional strengthening of PWME.

The actual activities have not started yet, however, the following items need to be solved to secure its smooth and effective operation.

(1) Increase of collection rate of water charge

(2) Establishment of a transparent and proper way of water charge calculation

(3) Preparation and enforcement of wastewater standards

(4) Strengthening of monitoring and inspection system of wastewater discharge and water quality

G.3 Water Supply System

The current system of supplying water in various uses can be summarized as in Figure G.5. The agricultural water is supplied by PWME, while the drinking water is supplied by the Communal Enterprises, who buy the treated water from the PWME. MAFWE is responsible for guiding PWME as the sector ministry for water resources development and management and irrigation water supply. MUPC is the sector ministry for drinking water and industrial water supply and the Communal Enterprises are under the municipal governments.

G.4 Water Service Fee

The following presents the summary of water charges paid by the major water users.

G.4.1 Domestic water users

Domestic water charge varies by region. In case of JP "Vodovod i Kanalizacija" (Water Supply and Sewerage Company of Skopje), it applies a flat tariff not progressive tariff. It charges MKD11.77/m^3 since June 1996. The average water tariff of 14 water companies is MKD13.0/m^3 (US$0.23). Average collection rate is 60%. As flat tariff rate is applied, the current charging rate does not seem to encourage domestic water conservation.

If water supply and sewerage company wants to increase its tariff, they first have to get approval from the municipality. Then MAKKOM provides them with its opinion on tariff, then the MUPC finally approves the tariff increase. The Companies thus do not have much room to decide the price of water they supply.

G.4.2 Agricultural water users

Agricultural water users include agro-kombinats and individual farmers. WMO charges the water users for their water consumption based on the type of crop and by their cultivating area. Collection rate of water charge varies by region. Most WMOs do not have many problems in collecting water charge from agro-kombinats while collection rate from individual workers is lower. Interviews with WMOs revealed that there were wide differences in farmers payment for water. Farmers in economically affluent regions are more willing to pay.

The government made its policy on cost recovery from agricultural in the Water Law. Article 141 stipulates that some portions of capital cost for water structures shall be borne by water users. It supports the idea of two-part tariff. The first part of tariff is constant fee aiming to recover capital cost. The second part of charge is made based on volume of water consumed. PWME is required to specify the charging methodology.

When this volumetric charge is applied, it would be effective for demand control. It is supposed to work as an incentive for farmers to reduce their water consumption.

G4.3 Industrial water users

Higher rate of water tariff is applied for industrial water users. The average water charge of 14 water salpply companies are MKD21.3/m^3 (US$0.38). This tariff applies to the industries who receive water supply from water companies. Different water tariff applies to the industries that have their own intake from rivers. No tariff data is available for those industries.

G4.4 Summary

The following presents the summary of water service fee in Macedonia.

Summary of Payment for Water Service Fee by Water Users

Water users	Basis of water charge			
	Volume	Area	Others	Remark
Domestic	Yes			Difficult to increase
Agricultural		Yes	Crop	Two-part tariff is also considered
Industrial	Yes			

Water charge determination methodology varies by region at present. Unified methodology for water service determination shall be prepared by PWME. In determining the methodology, "Beneficiaries to pay", and "Polluters pay principle" can be recommended as the basic principles of water resources management. Those principles are proposed in view of application of sound economic principles of water.

Water resources development and management activities can be classified into the two categories: one is the activity which can identify beneficiaries easily. This type of activities includes water supply for domestic, agricultural and industrial users. It is more difficult to define beneficiaries for municipal or communal water use like fire brigade and water use for park.

The second activity is which we can not identify direct beneficiaries. It includes river protection or flood control work and watershed conservation work.

Beneficiary to pay concept shall be applied for the expenses required for water supply including agricultural waters use. Water shall be clearly understood as economic goods. Water users should be well award of the cost of water, that is, capture, storage, and delivery costs.

The government has to bear the expenses necessary for the water works which beneficiaries are not defined. Beneficiaries of flood control and any river protection works can not be clearly identified. Thus the government -- either central of local self-government -- has to be responsible for such works. Funding, therefore, shall be made by general taxation.

In the analysis of public finance, public goods and utilities are categorized by using the criteria of subtractability, whether joint consumption of service is available, and excludability -- whether consumption/usage can be excluded. The following presents characteristics of some public goods.

Classification of Public Goods

Subtractability	Excludability	
	Low	High
Low	(pure public goods) Traffic signaling, air traffic control, primary roads, clean air fire brigade, national defense	Street sewer, wastewater treatment plant
High	(congested) urban roads, aquifer	(closer to private goods) Port equipment, power generation, piped water supply

According to the above table, water supply has a nature of high excludability and a high subtractability. Water supply can prevent users from consume water when it is not piped to the users. The consumption of piped water by one user has an impact on total water available to the other users. It is therefore relatively easy to charge cost of water supply to water users compared to capital cost of reservoir construction.

National Development Strategy admits that "Water for any sort of use, did not, and still does not, have appropriate prices" in Macedonia. It also stresses the importance of market determination of water price due to its increasing population and the growing demand for clean and high quality water.

As the National Development Strategy states, cost of water shall be recognized by all water users. It would contribute to efficient use of water.

G.5 Problems with Institutions and Legal Systems

G.5.1 In the Policy-making Level

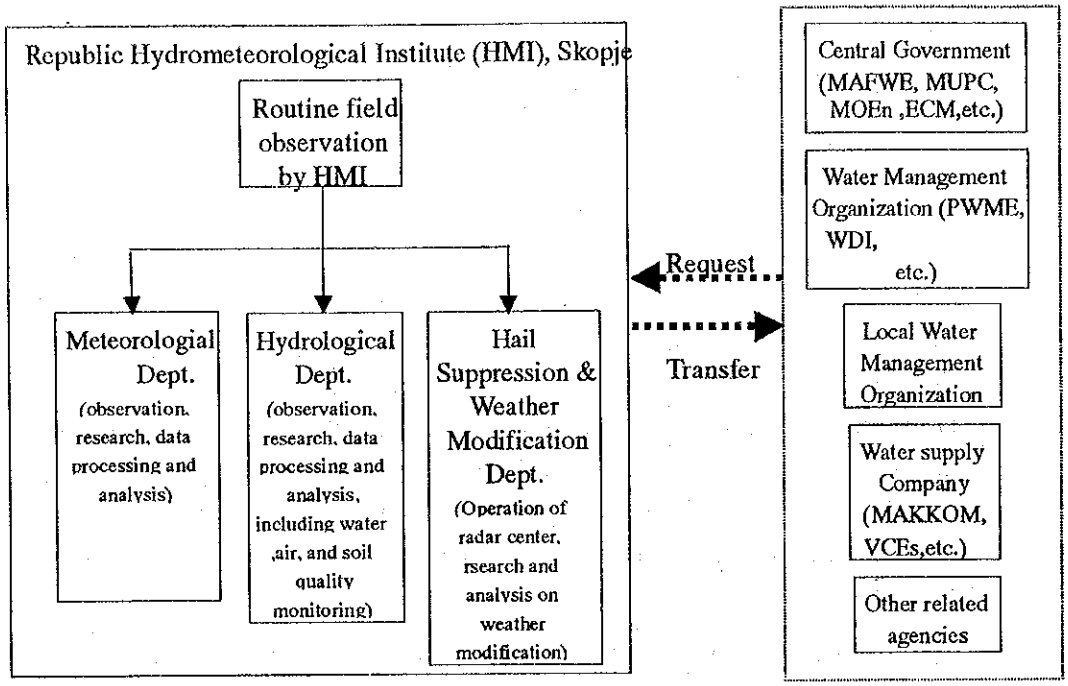
(1) Limited coordination system

In the sector of water resources development and management in Macedonia, several ministries are involved including three major executing ministries: MAFWE, MUPC, MOEn, and MOE. MOD has made coordination among these water-related ministries and agencies in planning development projects. However, the coordination system has not practically functioned yet. Each ministry and agency has made a development plan and implemented a project separately, although harmonization among them is essential for effective and efficient development and management of limited water resources in this country.

No ministries or agencies have grasped the entire picture of the development projects being planned and/or implemented in the water resources sector. Follow-up and monitoring activities about budgeting and construction progress for individual projects have not been well organized and then the information on the projects is not being gathered or managed in a system. In some projects, large-scale construction had started before guaranteeing the entire budget and the construction has been suspended due to lack of fund in spite of the strong needs from the inhabitants. Comprehensive guidance in the planning stage needs to be provided about planning of project implementation and budget management. In addition, monitoring system for project implementation should be established.

(2) Lack of practical and effective standards and regulations

As for the new Water Law, it might be too soon to discuss about the effectiveness. However, preparation of practical and effective standards and regulations for wastewater discharge, water quality, environment protection etc. as well as establishment of a strong enforcement system are strongly and urgently required. The Law specifies that MAFWE is responsible for river basin management, control of water quality of water sources, and water quantity management, MUPC/MOEn for control of wastewater discharge and environment conservation, and MOH for control of drinking water quality. However, there are not concrete measures pointed out for promoting economical use of water resources.



Hydro-meteorological Data Distribution System in HMI

(3) Disorganized technical information system

No effective system of technical data collection, processing and utilization has been established yet. Each data have been collected and kept by individual agency. For example, as for the hydro-meteorological information, the Republic Hydro-Meteorological Institute (HMI) is the sole responsible agency in the country to perform monitoring of climate, river flow, and water, air, and soil quality. There are three departments, i.e. Meteorological, Hydrological, and Hail Suppression & Weather Modification Department, which have responsibility of the routine observations over the national territory.

All of the observed data are gathered and stored at HMI main office in Skopje. Data processing and converting to the digital records into the computer system as well as scientific analyses are one of their main tasks. No regular publishing and disseminating system of compiled data has been established yet. Thus, any kind of annual or monthly review of climate and hydrology is not in public.

In case that other Ministries or Agencies require the hydro-meteorological data for certain purposes, they must inform their intention and extent/details of necessary data to HMI. After receiving the request, HMI will confirm availability of the data and release them if the request is acceptable. The system can be summarized as in the figure in the following page.

Considering no existence of data dissemination system on hydro-meteorological

information, it should be noted that, firstly, publishing of the annual/monthly reports on main climatological/ hydrological parameters by HMI is quite essential. Secondly, it is recommended that formation of data dissemination system between concerned Ministries/Agencies is to be organized immediately. Without such kind of system, keeping consistency of the planning criteria and timely updating of the specific development projects become difficult.

G.5.2 In the Executing Agency Level

(1) Needs of early functioning of the PWME system

Since the establishment of the PWME headquarters in Skopje in May 1998, a new water resources management system has been formed. Restructuring of regional water management systems is still under consideration; especially about how the current decentralized WMO system should be converted into the new PWME centralized system. It may take another couple of years before the PWME system will fully function.

The Statute of PWME describes the functions, however, it does not specify the exact roles of PWME in water resources development and management, background and objectives of its establishment, and concrete activities. Additionally, provisions prepared from the aspects of improvement of services for water users are not included. Water charges from water users and Water Fund are expected to become major financial sources of PWME, although the branches continued to be allowed to conduct their diversified profit-making activities, which have no direct relationship with water supply.

(2) Many constraints of Communal Enterprises

Drinking water supply have been provided by Communal Enterprises, which are supervised by the municipal governments. The quality and contents of their services are quite diversified. They have promoted their businesses individually in cooperation with the municipal governments and the WMOs in the same coverage areas. Most of Communal Enterprises have faced various problems with seasonal water shortage, polluted water quality of drinking water, aged water supply facilities, and financial constraints due to low collection rate of water charges.

(3) Low collection rate of water charges

There are differences by area in the collection rate of the water charges. Many areas have suffered from low collection rate of agricultural water charges, which is mostly less than 50%, since the independence of the country. This is firstly because sufficient irrigation water is not provided due to the aged and deteriorated facilities, and secondly because reduced income of farmers due to

loss of big market in the Former Yugoslavia.

The reasons of the low collection rate of domestic water charge, which is around 50%, are; a) water supply services are not stable due to the seasonal shortage; b) a system for water charge collection has not been well established; and c) regulations for non-payers of water charges have not been developed.

The low and still decreasing collection rate of water charges has negatively influence on the financial status of WMOs and Communal Enterprises, which leads to reduced quality of facility operation and maintenance. These circumstances have formed a vicious circle.

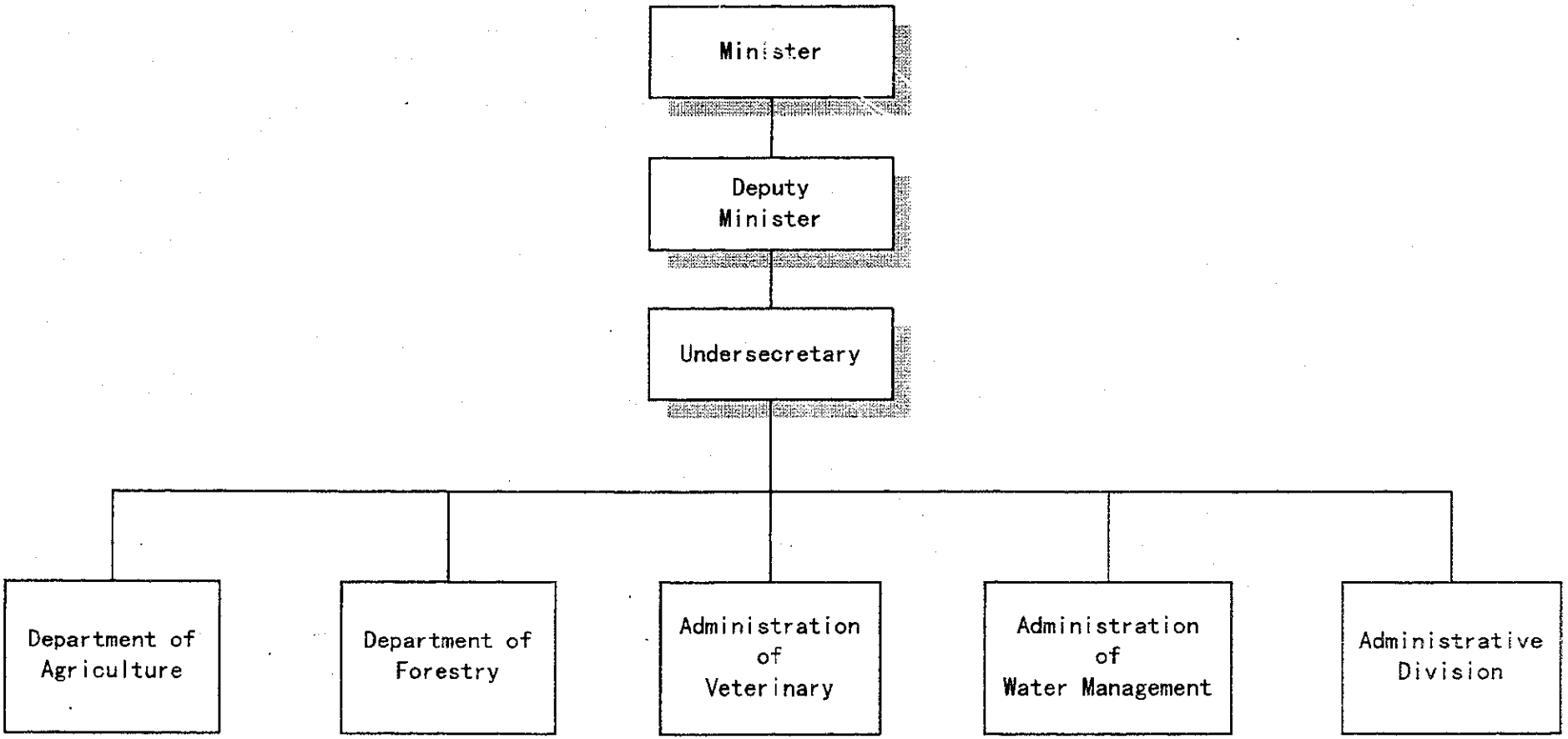


Figure G.1 Organization Chart of Ministry of Agriculture, Forestry, and Water Economy

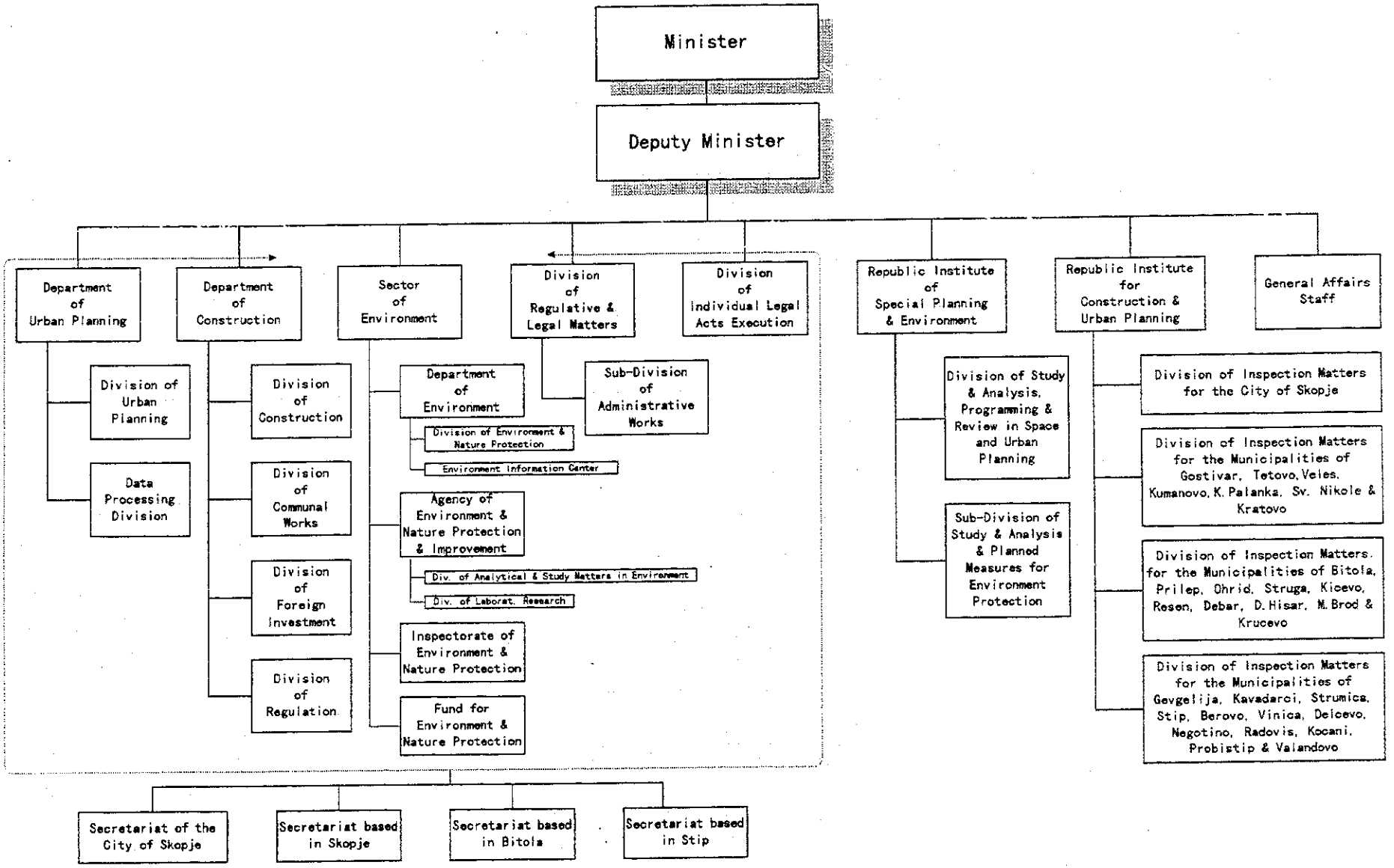


Figure G.2 Organization Chart of Ministry of Urban Planning, Construction and Environment

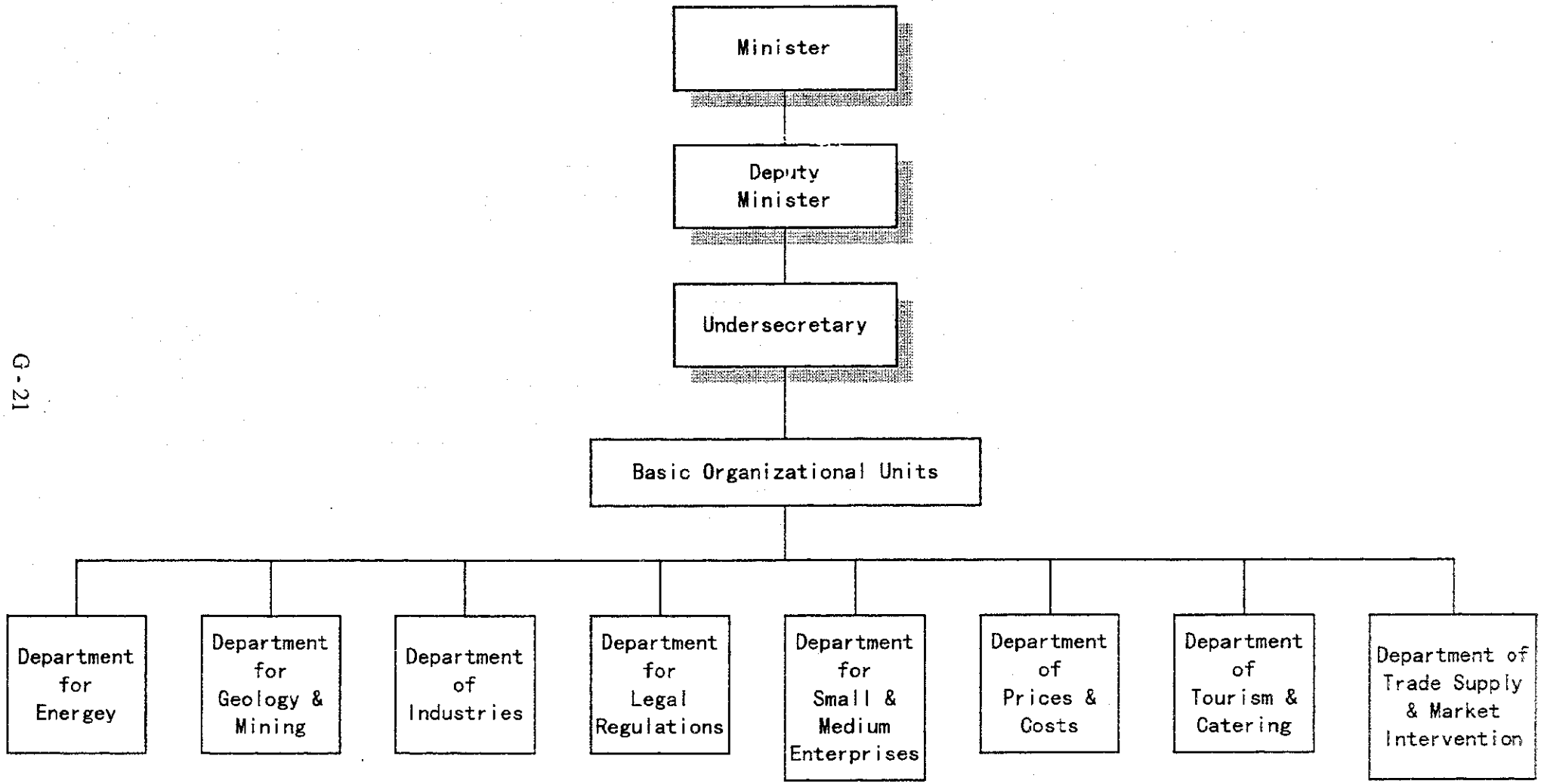


Figure G.3 Organization Chart of Ministry of Economy

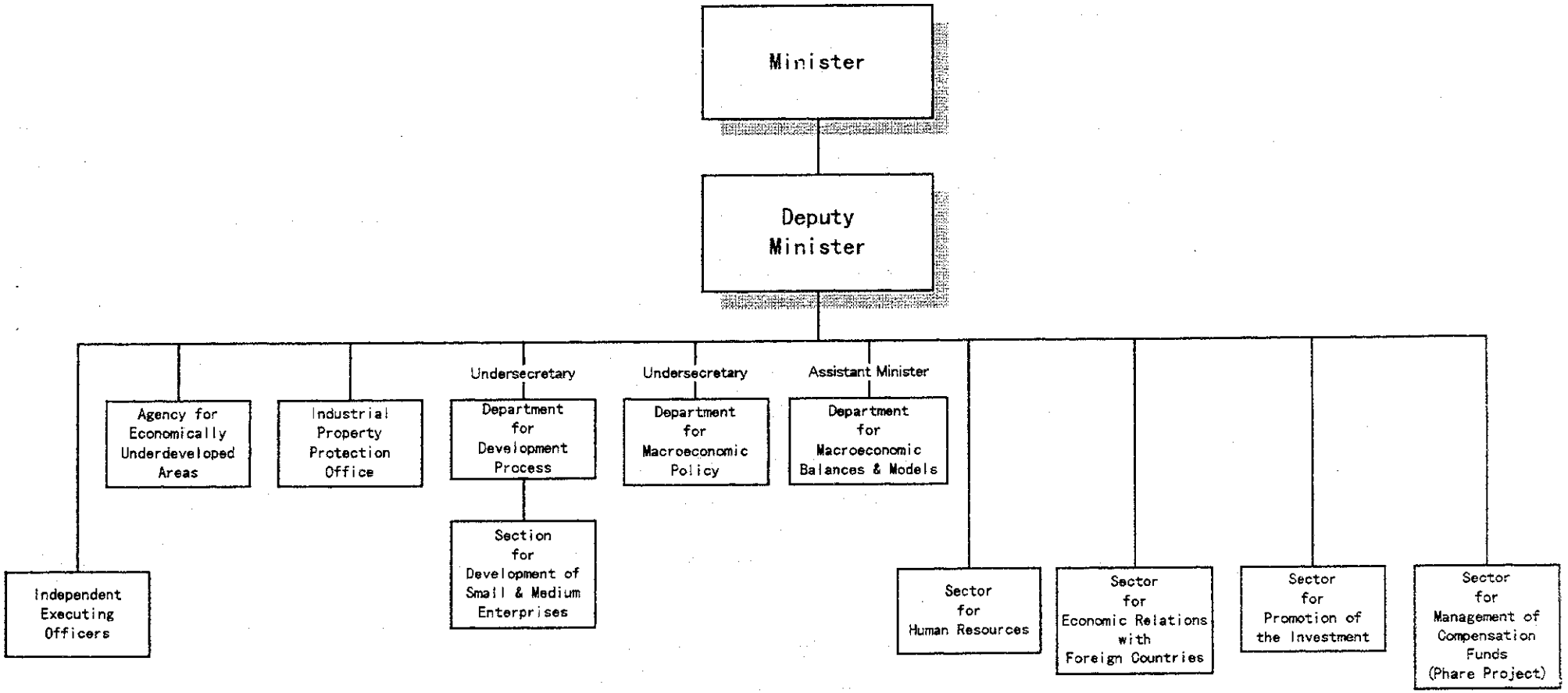


Figure G.4 Organization Chart of Ministry of Development

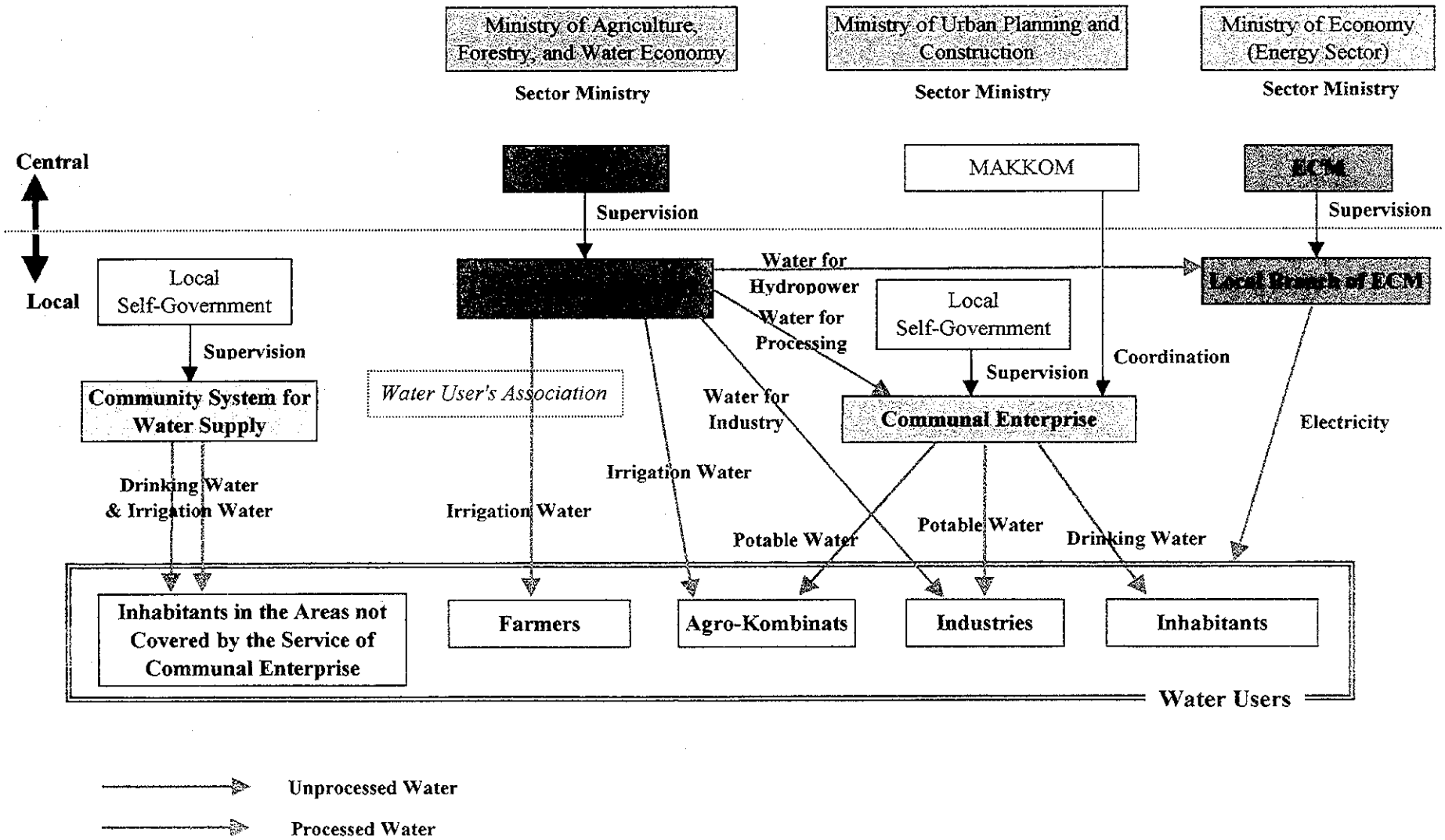


Figure G.5 Basic Flowchart of Water Supply Service in Republic of Macedonia

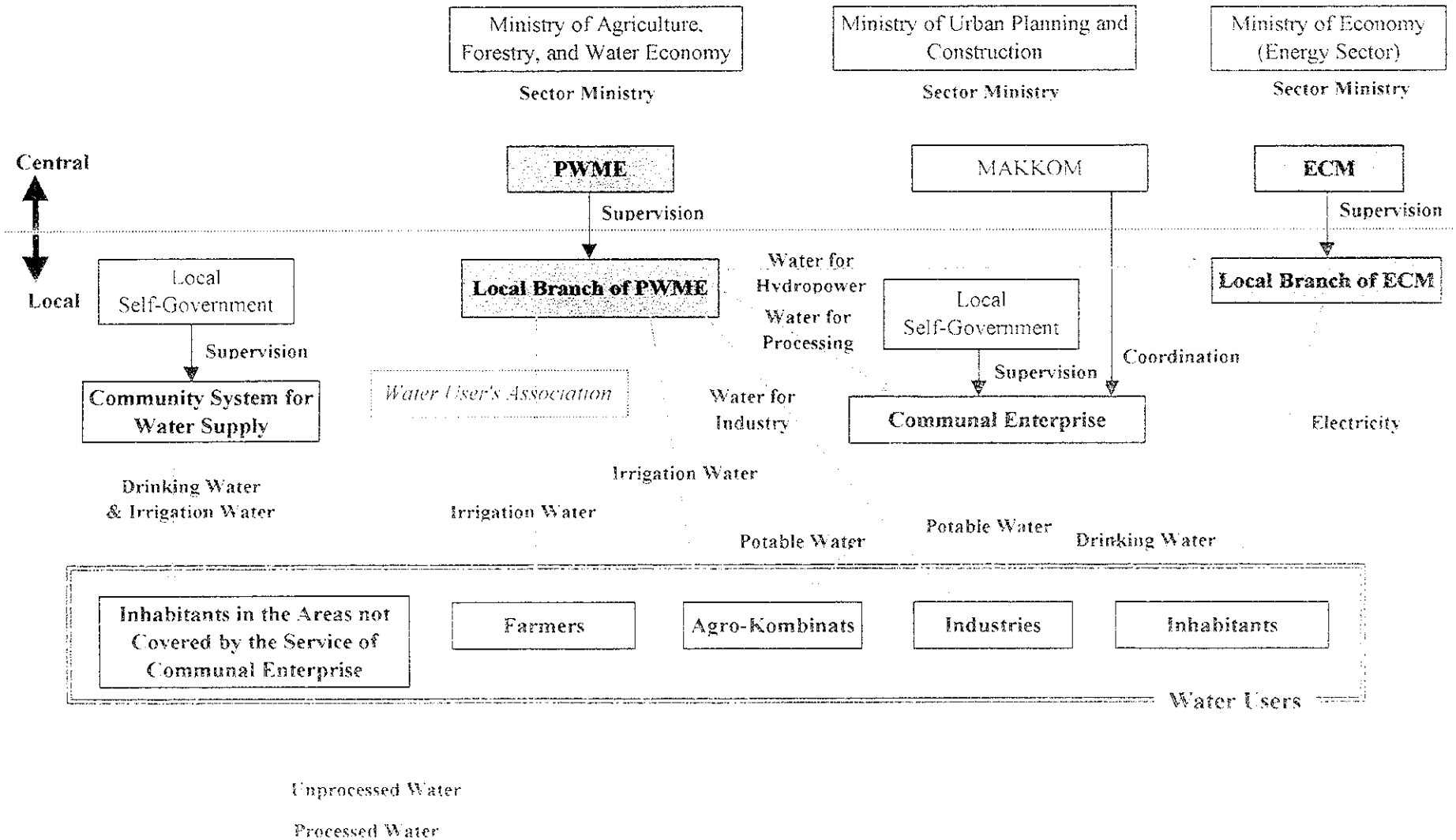


Figure G.5 Basic Flowchart of Water Supply Service in Republic of Macedonia