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The effects of Education and Urbanization on SAP¹

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Abstract

The aim of this paper is to evaluate whether Southeastern Anatolia Project is an integrated regional development project based on the concept of sustainable development. It was established to make regional socio-economic development policies, to increase the literacy level of native people, to develop infrastructure, agriculture, energy, industry, natural resources and transportation system. Furthermore, it made a great force for the socio-economic development of the region. Nevertheless, there is a strong relationship between the economic development, education and urbanization. As the level of economic development increases, education level and industrialization increase which yields to urbanization. On the other hand, in SAP region, there is strong tendency for migration from rural to urban areas. People who want to get a better education, housing, employment, health care and infrastructure start to change their places. Also, in the next thirty years, rural population will keep decreasing and the urban population will keep increasing in the SAP region. This is just because of having a better education level, job opportunities and livelihood.

1. Introduction

Turkey is a developing country with different standards of living across the regions. Up to 1980, Turkey had very serious economic problems like unstable growth, large balance of payments deficit and high unemployment rates. But with the beginning of 1980, it had started to make some structural and deep policy changes which were very interested in regional economic inequalities between the west and east of the country. In eastern parts of the country, agricultural and industrial potentials were low, natural and human resources were quite limited. Therefore, Turkish government must give a difficult decision between more market-oriented economy and less regional disparities².

Several factors are responsible for regional development disparities. Among these factors, inadequate infrastructure, inefficient human capital accumulation, the existence of socio-cultural structures hindering regional development can be regarded. In addition, the fact of relatively lower education level in Eastern and Southeastern regions than Turkey average becomes a barrier in front of development of these regions. A great importance should be given to education in order to eliminate regional development disparities. On the other hand, urbanization is one of the major steps of economic development followed by all developed countries. Industrialization and urbanization go together during economic development. In Turkey, there are great differences between regions in high population growth rates, socio-economic structures and shortage of lands in rural areas.

Considering high socio-economic potential, Turkish government had undertaken a mega project called Southeastern Anatolia Project in the least developed region of Turkey. It was the biggest project ever undertaken in Turkey and on the Euphrates and Tigris rivers. These two rivers would bring productivity into the region while energy generation would add to national economy. Nine years after the project had been put forward; SAP was converted as a "regional development project". Furthermore, when the project is fully utilized in 2010, a sustainable growth and socio-economic improvements are expected in the region³.

This paper focuses on the relationship between "education level" and "development level" of SAP and also the impact of SAP on urbanization is investigated. The paper is organized as follows. Section two looks at the social and economic structure of SAP. Section three explains

¹ SAP: Southeastern Anatolia Project.

² Şahabettin Güneş, "the Southeastern Anatolia Project and Regional Economic Growth of Southeastern Turkey", (AİBÜ, Faculty of Business and Economics), pp. 37-49.

³ SAP Regional Development Administration (1998), Current Stage in SAP, Ankara, Turkey, 52 pp.

SAP and its effect on the region's development level. Section four explains the relationship between education and development. It also presents the education level in the SAP region within the framework of "GAP Social Action Plan". Section five explains what urbanization is, why it is important and how urbanization in Turkey and in SAP region is. This section also presents why people in SAP region have started to migrate from rural to urban areas while section six concludes.

2. Socio-Economic Structure of the SAP Region

2.1. Social Structure

Turkey has a huge agricultural potential. Potential brings great responsibility and requires good management. With the government provision and guidance into the development of social services and compatible investment in the infrastructure and agricultural extension and research, a market-oriented approach to the agricultural sector and rural development areas seems to have great importance¹.

Compared to many other countries, agriculture still accounts for a relatively larger share of total output (13.5% in 1997) and employment (4.2%) in Turkey. However, this share tends to fall over time. Nevertheless, nearly half of the country's population still lives in rural areas. Low productivity levels and under-modernized agricultural practices still remain as primary issues. Turkish farms are usually operated by a family and sometimes employ hired workers. In general, agricultural output has increased rapidly within the past several decades. Many of this growth have been due to yield increases. Yields in some crops are currently comparable to the levels achieved in some other developed countries. Relatively abundant land endowment, improved farming techniques, and agro-climatic conditions in Turkey's various regions have contributed to this outcome. The region is also one of the major producers of tobacco in the world. Among the main industrial crops produced in Turkey, cotton and tobacco have been principle agricultural export-items. In vegetal production, perishables are the engine of the sector. The region produces about eighty types of fresh fruits and vegetables out of 140 agricultural products grown in the world. Out of 80 types of items, 50 are exported².

Even though migration to other countries has slowed down considerably, internal migration (mainly from rural areas to industrial centers) continues at a rapid pace, driven largely by income differentials between regions. The experience of many developed countries has shown that rural-urban migration is largely an inevitable consequence of industrialization³.

Before 1990s, in Turkey average annual population growth rate was well over 2%. In the period of 1990-1997, it was 1.5% for the country and 2.5% for the SAP region. In 1923 the country's population was about 13 million and by 2000 it surpassed 65 million, about half being under the age of 20. The population growth rate is almost three times faster than the average population growth rate of the OECD countries. In 1999, urban population share was about 72% in the country. In the SAP region, urban-, rural distribution of population was 64% and 36%, respectively. High population growth results in high migration from rural to urban regions.

On the other hand, as a result of the SAP investments, the living standards of inhabitants have started to increase. More and more people now will start to get the benefits of the project. Rural-urban interactions have increased with communication networks and constructions of transportation. The SAP region becomes more open to the outside world and attracts foreigners to make more investments. Population is expected to increase from 6 million to 9 million with 76% living in urban areas. Urbanization in SAP region has received a boom and rural migration will slow down. Also, more employment opportunities will be created by SAP in various sectors for 3.8 million people.

^{1,2} Şahabettin Güneş, "the Southeastern Anatolia Project and Regional Economic Growth of Southeastern Turkey", (AIBÜ, Faculty of Business and Economics), pp. 37-49.

³ Ayşe Gedik, "Differential urbanization in Turkey: 1955-2000", 43rd congress of the European Regional Science Association (ERSA), Jyväskylä, Finland, August 27-30, 2003.

2.2. Economic Structure

Economic structure in the SAP region obviously is based on agriculture, especially its main productions of cereals lentil, pistachio, cotton, grapes and tobacco. Although there is an accelerated industrial improvement throughout the region, the industrial sector required for processing agricultural products has not been developed yet. The expected increase in agricultural output is in cotton, oil seeds, pistachio and sugar beet. The Gross Regional Product (GRP) is expected to grow at an average of 7.7% per annum. This means a 3% increase in Gross National Product (GNP). The share of agriculture will drop from 40% to 23%, industry will rise from 15% to 24%, and services will also rise from 44% to 53%¹.

The regional population growth rate is higher in the SAP area than national average growth rate of population resulting out-migration to the other parts of the country generally for seasonal agricultural jobs. In the country as a whole, the active population is relatively small (50.8% in 1997). This is mainly because of the low female participation rate (43% in rural areas, 16% in towns). In the SAP region, these figures are even more drastic. One of the major problems in the region is high unemployment rate especially among the unskilled people. Some surveys show that the unemployment rate in the SAP provinces is around 20%. Despite these discouraging current conditions in the region, it is expected that the SAP creates jobs opportunities for both seasonal immigrants and about 1.4 million others. Therefore, the high potential of the SAP is projected to increase the income level of the region by fivefold and create employment for about 5 million people².

The increase in agriculture will result in promoting industrial development and services that in turn will create more jobs. The extra demand for labor will cause labor scarcity and therefore the region possibly will receive labor from other regions. Thus, it can be argued that upon the completion of the project, the region in particular, the country in general, will solve much of their unemployment problems³.

It is clear that the investment for the SAP project has, and will have, a stimulating effect in both private and public spending in the region. In ongoing and planned investment there has been a 47% real increase for the year 1998. The increase is 50% above the average of the country for the same year. Even though the growth rate has been 4.2% for the country on average for the years between 1987 and 1997, the growth rate in the region was 4.4% on average for the same years. As of 1997, the region's share in the country's economy increased from 3.9 to 5.2. In addition, there has been a great improvement in the transportation infrastructure in the region⁴.

3. SAP and Sustainable Development

Sustainable development is programmed for the present day and future life and development by observing the balance between human beings and the nature, without exhausting natural resources and thus making it possible for future generations to materialize their needs and fulfill their development. Sustainable development is a concept with social, ecologic, economic, spatial and cultural dimensions.

Initiated first as a project for the development of water and land resources, the Southeastern Anatolia Project (GAP) was then transformed by the GAP Administration into a multi-sector and integrated regional development effort. The Administration integrated social-human dimension to its economic growth targets in line with the concept of sustainable development. This means that the ultimate objective of the GAP is not only economic growth but also improving the life quality of people. All activities including those for infrastructure building, agricultural and

¹ Federal Research Division, Turkey, A Country Study, Ed. Halen Chapin Met: Library of Congress, U.S. Government Printing Office, Washington, DC, 1999.

² Şahabettin Güneş, "The Southeastern Anatolia Project and Regional Economic Growth of Southeastern Turkey", (AİBÜ, Faculty of Business and Economics), pp. 37-49.

³ Demir E., (2003) "Contribution of GAP to the domestic economy and its effect on the settlements areas", GÜ, Gazi Eğitim Fakültesi Dergisi, Cilt 23, sayı 3, 189-205.

⁴ Ali Kerem Saysel, Yaman Barlas, Orhan Yenigün (2001) "Long-term sustainability in an agricultural development project: A system dynamics approach".

industrial development, environmental protection, development of natural resources, social services etc. as well as other that directly contribute to economic growth are assessed in terms of their sustainability and contribution to improvements in quality of life.

Hence the ultimate objective of the GAP is to ensure sustainable human development in the GAP Region. Consequently, human being is placed in the focus of all development efforts. Physical structures that are already in the process of formation will lay the basis for human development. Sustainable development in the region will be achieved with the elimination of disparities within the region and with other regions, spread of equality and welfare, securing popular participation to the project and development of human resources.

The document "Agenda 21" had been adopted in the Earth Summit held in Rio in 1992. This document lays down some concrete principles on sustainable development that should be adapted to the specific circumstances of individual countries. These principles fully overlap with the principles of sustainable human development as adopted by the GAP, and early fruits of this approach are now being reaped.

Planning and implementation in GAP targeting sustainable human development uphold the following basic principles:

1. Participation
2. Equality and Fairness
3. Development of Human Resources

Participative approach should be understood as the presence of all parties affected by the project to all stages including early project design, implementation and monitoring-evaluation. This principle is observed in all projects. Success of individual projects is often safeguarded by raising the awareness of relevant parties, by observing the social feasibility of projects, reducing project costs and by solving problems stated by local people. This approach also contributes to the democratization of the society.

In the context of GAP, "equality and fairness in development" means the integration to the process of development of those sections of the population who are socially, economically and culturally disadvantaged. "Disadvantaged" groups in the GAP Region include women, children, landless peasants and small farmers, small-scale craftsmen and farmers living in non-irrigated areas. There are special programs developed with the participation of these groups.

To sum up, the sustainable economic development perspective of the GAP envisages following: Decent level of income for all; accessibility to social services including those in the fields of education, health and culture, sustainable utilization of natural resources; health environment; decent sheltering for all; mechanisms for ensuring the participation of people to decision-making and to create a sustainable society that can further develop on its internal dynamism.

This sustainable development approach adopted by the GAP has started to attract the attention of international organizations. For example, the UNDP has developed interest in the project and is now supporting it in various ways.

The GAP Administration and UNDP jointly organized the seminar "Sustainable Development and GAP" in March 1995. There were many participants from universities, governmental organizations, private sector and local governments. The seminar discussed the principles of sustainable human development in the GAP Region.

This seminar laid the basis of the joint GAP-UNDP Program for "Sustainable Development in the GAP Region", which was put in implementation starting from March 1997.

The program supports the implementation of 29 different projects that can be grouped under the following 5 headings ¹.

- Promotion of social sustainability and development of social services,
- Promotion of agricultural sustainability and improvement of agricultural productivity,
- Promotion of local entrepreneurship and industrial development for economic viability,
- Promotion of sustainable human settlements, and
- Ensuring optimal and sustainable utilization of natural resources.

¹ Taken from www.gap.gov.tr

4. The Relationship between “Education” and “Development”

“Economic growth”, “economic development” and “economic progress” comprise different meanings in literature of economics. The concept of “economic growth” usually expresses increase in income per capita while “economic development” and “economic progress” state positive changes in socioeconomic, cultural, and organizational structures besides income per capita. The notion of “economic development” is used to express situations of developing countries¹. But, it is seen that “economic development process” of a developed country continues when the situation of this country, which passed to “economic growth stage”, is examined. Therefore, the definitions of “economic progress” (economic development) and “economic growth” and borders of these concepts cannot be fully decided.

Education level is considered as one of the determinant of economic development. Literacy rate, enrollment rate, labor education level, and number of students per teacher are indicators of education level². These indicators are used as determinants of development level together with some other indicators; therefore, it is accepted that they are directly related with economic development. But, the relationship between education and economic development is much more than this, at the same time; it is also quicken economic development by creating economic effects.

Education process provides new technological discoveries or more effective uses of available technologies by affecting human capital. In other words, it can be concluded that education provides a contribution to qualified labor force which is the basic source and element providing continuity of economic development and economic growth³.

It is also expected that education ensures improvements in socio-cultural and organizational structures, besides its contribution to economic development and economic growth. Particularly, education has a substantial place in eliminating traditional structures hindering economic development. Some improvements which will be done via education are :

- More effective use of resources will be provided.
- Technological adaptations rather than traditional production techniques will be widely used.
- The negative effects of customs and traditions will be diminished in attempt to satisfy the needs including alimentation, health, education, culture, and residence, and consumption patterns will be closed to contemporary standards.
- Substantial developments which are related to decreasing population growth rate, increasing female literacy rate, and women’s integration to economic development process will be ensured.
- Besides agricultural activities, the industry sector based on agriculture or production of agricultural inputs will be improved.
- Education will create externality on production. Producers will change their priority on consumption of their incomes, and begin to invest more productive areas. Thus, increased production and productivity will arouse other producers.
- Rural poverty and inequity will be reduced, quality of life will be improved, and economic growth will be stabilized⁴.

Finally, it can be underlined that education’s characteristics of being “production good” and “consumption good” provide additional contribution to economic development process, because, education is an important good for service sector. Within this framework, if both public sector and private sector invest in education, these investment activities will increase income and employment levels. It is accepted that the most important elements of economic development are income and employment levels as well. In addition, education will constitute substantial effects on

¹ Öncel A.,(2001), “İktisadi Açıdan Eğitim”, Dumlupınar Üniversitesi Sosyal Bilimler Dergisi, Sayı 5, Kütahya, ss. 81-95.

² Çınar R. and Emsen S.Ö., (2001), “Eğitim ve İktisadi Gelişme: Atatürk Üniversitesi’nin Erzurum İl Ekonomisi ve Sosyal Yapısı Üzerindeki Etkileri”, Atatürk Üniversitesi İktisadi ve İdari Bilimler Dergisi, Cilt 15, Sayı 1-2, Erzurum, ss. 91-104.

³ Gürak H., (2000), “Verimlilik Artışları ve Eğitimli-yaratıcı İnsan Kaynakları İlişkisi”, Verimlilik Dergisi, ss. 7-36.

⁴ Demir E., (2003), “Güneydoğu Anadolu Projesinin Ülke Ekonomisine Katkısı ve Bölge Yerleşim Alanlarına Etkisi”, GÜ, Gazi Eğitim Fakültesi Dergisi, Cilt 2, Sayı 3, 189-205.

economic development by providing improvements in scientific research techniques, discovery of potential skills, training teachers and lecturers who will transfer required information to next generations.

4.1. Education in the SAP Region

Within the framework of sustainable development, “GAP Social Action Plan” was prepared in order to find solutions to the region’s social structure and problems¹. Strategies projected by this plan were constituted separately in terms of different sectors. Various projections related to education sector were assigned in this plan. These are:

- To take precautions in favor of education level, particularly female education in the region.
- To provide distribution of education opportunities to whole population.
- To improve functions of education in the region
- To increase pre-school education in order to boost productivity of general education level in the region.
- To give importance to vocational, and technical courses which make young people economically active.
- To increase social status of women have not contributed to development process yet, and improve their health conditions and social status.

But it is seen that policies are inefficient and desired education targets are not accomplished by the state, so far. As of the year 2000, the overall rate of literacy in Turkey is 85.6%. But this rate falls to 68.8% in the region. The region also lags behind country averages in terms of literacy by gender. While 92.4% of males and 78.7% of females in Turkey are literate, these rates are 81.8% and 55.6%, respectively, in the region (Table 1).

Table 1

Rates of Literacy by Gender in Turkey and in the Region (2000,%)

Province	Male	Female	Total
Adiyaman	87.33	67.45	80.6
Batman	79.77	45.12	62.80
Diyarbakir	78.96	49.59	64.17
Gaziantep*	88.24	70.10	79.21
Mardin	80.55	52.65	66.18
Siirt	77.17	40.86	59.30
Sanliurfa	84.29	59.36	71.71
Sirnak	65.80	23.92	46.25
Region	81.83	55.60	68.79
Turkey	92.40	78.71	85.60

Source: HÜNEE (Hacettepe Institute of Population Studies) Projection, 2001.

* The province of Kilis is included in Gaziantep.

In assessing the table below, it should be considered that students in higher education are not enrolled only to schools in their native provinces but move to other regions and provinces for education.

There are 71 public libraries in the region as of 1998 and the number of readers is 2,364,104. There are 556,585 books in these libraries. Kilis is the province with the least number of public libraries and books (1 and 15,723, respectively). Sirnak has the least number of readers (40,056). The number of libraries and personnel is limited in the region.

¹ State Planning Organization, 2000.

Table 2

Rates of School Enrollment in Turkey and in the Region (2000,%)

Levels of Education	Turkey	Region
Pre-school education (age 3 to 5)	9.8	2.1
Basic education (Age 6-13)	97.6	82.4
General Secondary Education (Age 14-17)	36.6	18.4
Vocational and Technical Education (Age 14-17)	22.8	6.8
Higher Education	27.8	4.3

Source: Anatolia University, Regional Development Plan, Education Planning Work, 2001.

4.1.1. Pre-School Education

Taking the issue from the perspective of equal opportunities in education, pre-school education institutions and schooling during this age is very important in terms of providing the children of low education and income status families' opportunities for development that they cannot find in their present environments.

Pre-school education is a particularly important issue in the region in terms of early childhood development and preparation for further levels in education. Yet, the number of pre-school education institutions in the region is below country averages. While the average figure for the country is 9.8%, it falls to 2.1% for the region. In terms of pre-school education, Gaziantep has the highest number of such institutions and Sirnak has the lowest. There is no pre-school education institution in the provinces of Adiyaman, Sanliurfa and Sirnak. There are 3 such institutions in Diyarbakir, 9 in Gaziantep, 1 in Siirt, 2 in Batman and 2 in Kilis (Table 3).

Table 3

Number of Public and Private Pre-School Education Institutions, Students, Teachers and Classes in the Provinces of the Region (1999-2000)

PROVINCE	PUBLIC				PRIVATE			
	School	Students	Teachers	Classes	School	Students	Teachers	Classes
Adiyaman	65	1 562	89	8	0	0	0	0
Diyarbakir	53	2 699	126	8	3	63	2	---
Gaziantep	73	2 788	131	19	9	326	20	14
Mardin	40	975	55	2	0	0	0	0
Siirt	20	694	37	5	1	13	1	---
Sanliurfa	43	1 508	94	19	0	0	0	0
Batman	18	657	33	8	2	30	1	---
Sirnak	4	177	8	10	0	0	0	0
Kilis	16	479	26	7	2	31	0	---
Region	332	11 539	599	86	17	463	24	14
Turkey	7 934	199 359	10 390	1 148	637	14 585	1 277	510

Source: MOE (Ministry of Education, data for 2000 and HÜNEE Projection).

4.1.2. Primary Education

The rate of schooling in primary education is 97.6% for the country and 82.4% for the region. The region remains below country averages in terms of the number of schools and student/teacher and student/classroom ratios. For example, while there is, on average, 1 teacher for 31 students and 1 classroom for 42 students in Turkey, the corresponding figures are 1 to 43 and 1 to 58, respectively, in the region (Table 4).

Table 4

Number of Public and Private Primary Education Institutions, Students, Teachers and Classes in the Provinces of the Region (1999-2000)

PROVINCE	PUBLIC				PRIVATE			
	School	Students	Teachers	Classes	School	Students	Teachers	Classes
Adiyaman	763	115 145	3 509	2 513	2	237	12	15
Diyarbakir	1 169	232 137	5 693	3 731	5	1 782	73	89
Gaziantep	723	239 015	4 809	3 864	10	2 898	145	114
Mardin	693	124 844	2 820	2 182	0	0	0	0
Siirt	278	44 594	1 301	1 195	1	213	13	12
Sanliurfa	1 348	230 422	5 424	3 420	2	661	44	35
Batman	379	90 574	1 930	1 479	4	670	37	45
Sirnak	219	60 747	952	911	0	0	0	0
Kilis	104	20 523	903	568	2	211	14	15
Region	5 676	1 158 001	27 341	19 863	26	6 672	338	325
Turkey	42 642	9 740 008	312 663	236 784	681	175 272	12 172	8 174

Source: MOE (Ministry of Education, data for 2000 and HÜNEE Projection).

The region also lags behind country averages in terms of gender enrollment rates in primary education. In Turkey the rate of schooling for female children is 92.3% while it remains at 75.2% in the region (Table 5).

Table 5

Rates of Schooling in Primary Education by Gender (2000)

Province	Rate of Schooling (%)		
	Female	Male	General
Adiyaman	70.2	83.5	76.89
Batman	63.6	86.2	94.5
Diyarbakir	66.6	88.7	78.21
Gaziantep	82.7	97.0	93.88
Kilis	77.5	91.7	96.65
Mardin	62.8	97.8	87.54
Siirt	65.6	89.3	78.75
Sanliurfa	65.4	84.2	73.29
Sirnak	67.6	86.4	82.24
Region	75.2	96.9	82.39
Turkey	92.3	98.4	97.60

Source: MOE, 2000 data and HÜNEE Projection.

In Turkey there are 203 regional boarding schools (RBS) and 45 of these schools are in the region. The total number of students enrolled to RBSs is 102,400 and 25,400 of these are in the region. Out of these RBS students 4,400 are girls (17.5%). There are also 8 Pension Basic Education Schools (PBS) with 4,200 students in the region.

4.1.3. Secondary Education

At the level of secondary education, the country figure for the rate of schooling is 36.6%. It is only 18.4% in the region. At this level of education, there is 1 teacher for 18 students and 1 classroom for 31 students (average figures for the country). Corresponding figures for the region are 1 for 15 and 1 for 40, respectively (Table 6).

Table 6

Number of Public and Private Secondary Education Institutions, Students, Teachers, and Classes in the Provinces of the Region (1999-2000)

PROVINCE	PUBLIC				PRIVATE			
	School	Students	Teachers	Classes	School	Students	Teachers	Classes
Adiyaman	23	13 073	449	225	2	55	4	15
Diyarbakir	28	21 939	906	445	3	424	51	47
Gaziantep	32	21 209	844	622	8	947	110	88
Mardin	12	7 364	317	192	0	0	0	0
Siirt	7	2 649	138	100	0	0	0	0
Sanliurfa	26	11 597	502	383	3	330	53	38
Batman	9	6 936	234	137	2	12	7	16
Sirnak	6	1 926	67	57	0	0	0	0
Kilis	5	1 852	149	87	1	32	7	4
Region	148	88 545	3 606	2 248	19	1 800	232	208
Turkey	2 216	1 120 904	60 880	35 822	446	54 633	9 243	7 704

Source: MOE, 2000 data and HÜNEEE Projection.

4.1.4. Vocational And Technical Secondary School

In this category, the rate of schooling that is 22.8% for the country falls to 6.8% in the region. 5.6% of all public vocational-technical schools in Turkey are in this region.

There are 33,500 students and 3,000 teachers-trainers in 178 vocational-technical schools in the region. There are, on average, 188 students and 17 teachers-trainers per school and there is 1 teacher-trainer for 11 students (Table 7).

Table 7

Number of Public and Private Vocational and Technical Schools, Students, Teachers and Classes in the Provinces of the Region (1999-2000)

PROVINCE	PUBLIC			
	School	Students	Teachers	Classes
Adiyaman	25	4 693	464	217
Diyarbakir	28	4 276	485	239
Gaziantep	38	10 318	620	360
Mardin	20	3 066	322	171
Siirt	9	1 646	122	99
Sanliurfa	34	5 506	573	391
Batman	8	1 567	148	91
Sirnak	7	1 075	72	70
Kilis	9	1 336	175	93
Region	178	33 483	2 981	1 731
Turkey	3 165	841 940	67 221	30 067

Source: MOE, 2000 data and HÜNEEE Projection.

Secondary level vocational and technical schools consist of Industrial-Vocational Schools, Girls' Vocational Schools, Commerce Schools and Religious Schools. Among 37 different curricula adopted by these schools, electricity is the most common one. This is followed by metal works, leveling, computer and electronics. The ratio of female students in total enrolment to these schools is 34.5%.

In Turkey there are 24 private vocational-technical schools and none of them is in the region. Despite the need for skilled intermediary workforce in the region, orientation to these schools is very limited. This situation can be explained by the limited availability of gainful employment and poor linkage between training institutions and employment in the region.

4.1.5. Higher Education

There are 74 universities in Turkey of which 53 are public and 21 run by foundations. In the academic year 1999-2000, there were 1, 793,000 students enrolled to undergraduate and post-graduate universities. 3 of public universities are in the region and there are 36,000 students in these 3 universities. In the same academic year 4,800 students graduated from their universities in the region.

As it is the case in the country as a whole, universities in the region also cannot properly promote community-industry cooperation and contribute satisfactorily to the development of the region. In spite of the existence of GAP research centers in all 3 universities in the region, their activities are not at desired level yet. Nevertheless universities and GAP research centers together constitute a promising potential for the future.

4.1.6. Extended Education (Adult Education)

This heading gains particular importance in the region due to the specific conditions of the region including the following: low rates of literacy, particular pattern of gender roles, existence of nomadic communities and seasonal workers, problems in the acquisition of business and vocational skills, high proportion of younger population and intensive rural-urban migration. Yet extended education programs in the region are far from responding to needs. Females in particular cannot adequately benefit from existing opportunities in extended education.

Although the main responsibility in this area rests with the MOE, there are many other organizations and agencies also active in launching skill building-vocational training courses. These include the Labor Placement Office, Ministry of Agriculture, Province and District Governorships, municipalities, GAP-GİDEM, ÇATOM, Youth and Culture Centers, SHÇEK Community Centers and civil society organizations (CSO).

In the period of 1999-2000, Adult Training Centers of the MOE conducted training programs in various fields. There were 59,600 trainees (8,800 females and 50,200 males) benefiting from literacy training, 72,100 trainees from vocational courses and 13,500 trainees from other courses in social fields (Table 8).

Table 8

Number of Adult Education Centers, Institutions and Trainees in the Provinces of the Region (1998-1999)

PROVINCE	INSTITUTIONS	NUMBER OF TRAINEES			
		Total	Vocational courses	Socio- cultural courses	Literacy courses
Adiyaman	9	12 584	9 425	2 347	812
Diyarbakir	14	23 138	15 317	2 908	4 913
Gaziantep	9	15 001	9 806	2 908	2 287
Mardin	10	14 590	11 037	501	3 052
Siirt	7	12 601	3 685	1 593	7 323
Sanliurfa	11	7 404	3 318	117	3 969
Batman	6	7 897	3 951	730	3 216
Sirnak	6	4 195	1 281	266	2 648
Kilis	3	3 722	3 141	458	123
Region	75	101 132	60 961	11 828	28 343
Turkey	920	961 044	637 458	220 690	102 896

Source: MOE, 2000.

Problems relating to apprenticeship training are more acutely felt in the region. Furthermore, despite the fact that 10% of the total population of Turkey are at the level of secondary education and 11.6 percent of these students are in the region, the region has only 6.1% of all apprenticeship training centers (ATC) in the country and 3.7% of all (228,800) who benefit from apprenticeship training programs (Table 9).

Table 9

Number of Apprenticeship Training Centers and Trainees in the Provinces of the Region (1998-1999)

PROVINCE	INSTITUTIONS	NUMBER OF TRAINEES				
		TOTAL	PREP.	APPRENTICES	JOURNEY MEN	MASTER TRAINER
Adiyaman	4	685	4	497	184	---
Diyarbakir	2	471	---	317	122	32
Gaziantep	5	4 003	---	2 803	904	296
Mardin	1	749	8	419	191	131
Siirt	1	291	197	---	37	57
Sanliurfa	4	1 134	186	324	608	16
Batman	1	448	---	193	190	65
Sirnak	1	---	---	---	---	---
Kilis	1	632	---	516	79	37
Region	20	8 413	395	5 069	2 315	634
Turkey	330	228 844	10 383	14 016	58 019	14 426

Source: MOE, 2000.

5. Urbanization and Sap Region

5.1. Urbanization in Turkey

Urbanization is redistribution from the countryside to the city. Therefore, urbanization is measured as the percentage of the population residing in an urban area. Urbanization is a function of population size, population space and ratio of population to space. It is measured by urbanization rate. It has an important role in understanding the region's urbanization situation in the country. Today people still emigrate from rural areas to urban areas. Because there are less mortality and fertility in urban areas because of the high levels of education, improved health services and more chance to find out a job.

As Mills and Hamilton (1994) states, one of the important characteristics of the developing countries is that they are inevitably less urbanized than developed countries. The reason is that urbanization is a concomitant of development. A less developed country has almost an agricultural economy. So, urban share of the population interacts so strongly with the level of economic development. There are some steps for a country to follow on the urbanization of economy. First of all, food is the first requirement for life and in poorest countries most production effort is devoted to agriculture. As economy starts to develop, inputs and outputs shift from agriculture to manufacturing and services. Such as, in low-income levels, most income is spent on food. However, the income elasticity of demand for manufactured products and services are large and income shares spent on them will increase as income rises¹. As Amos (1999) said, people are attracted by the resources used to increase their well-being. Natural resources attract people and they start to produce capital. These produced capitals attract more people. So these differentials of capital and people become reinforcing and leading people to migrate to the cities. So there is a strong relationship

¹ S. Milles and B.W. Hamilton, "Urban economics" Harper Collin Collage Publishers, New York, 1994.

between the level of urbanization and the level of economic development. As less urbanized country or region becomes more urbanized, it leads to an indication of more economic development.

As known, urbanization is an important step in the process of development and also followed by all developed countries. In Turkey, the great difference among the regions, high population rate, and shortage of land in rural areas, socio-economic attractions of cities and especially, construction of roads after 1950s made people move from rural areas to urban areas. Since 1950s, Turkey has been experiencing a rapid population increase and urbanization process. The main reason for rural-urban migration that began 1950 was high population growth in rural areas and these pushed large numbers of small farmers and sharecroppers to urban centers. Also mechanization of agriculture, which reduced the demand for labor, played a significant role in pushing people from rural to urban areas. Urban share of population increased between 1965 and 1990. In these periods, the total population increased from 31,391,421 to 56,473,035. Also, urban population increased from 10,805,817 to 33,326,351 and urban to total population ratio rose from 34.42% to 59.01% and the total number of cities went from 178 to 450. So while the increase for rural population was 5.45% per thousand, it was 33.83% per thousand for urban population in 1990s. So the highest urban population growth was 62.61% per thousand between 1980 and 1985 in Turkey¹.

Table 10

Annual growth rates of Urban and Rural population (thousands)

Census years	Urban	Rural	Total
1965	39.71	17.14	24.63
1970	47.33	13.51	25.19
1975	41.75	13.79	25.01
1980	39.47	13.29	20.65
1985	62.61	-10.58	24.88
1990	33.83	5.45	21.71

Source: State Planning Organization of Turkey, Various Indicators, Ankara-2000.

Table 10 shows that there has been a great increase in the urban areas compared to rural ones. That is just because of the migration from rural to urban because of the rapid raise in the industrial and manufacturing sectors in urban areas.

Urbanization and urban-centered industrialization did not only attract the rural populace, but also a large number of town people who began to move cities, particularly after 1960s. Investors from both Turkey and foreign countries wanted to be near the client numbers and labor numbers instead of being near to the raw materials while choosing industrial places. As a result of this, industry became expanded in big cities and these cities became more wanted². As pointed out by Cakılcıoğlu (1997), increased number of places in the institutions of tertiary education and professional opportunities has pulled many people to cities. This is why the middle and lower middle class families migrated to cities with an aim of providing a better future to their children. So the increase of urban population is mainly due to migration from rural to urban places. Migration as a process restricted rural growth and as a result growth rate in rural areas became less than 5% per thousand. Unlike in developed countries, urbanization in Turkey has occurred as a migration phenomenon in which urban poverty is preferred into rural. On the other hand, employment capacities have become not enough for the immigrant population and this causes unemployment problems in economic aspects. It leads people to work in marginal sectors and unregistered employment. Also, this inefficiency in employment, infrastructure and social services and limited skills of people with lack of knowledge lead to depreciation of rules and value of judgments in urban areas. However,

¹ Vedat Dökmeci and Erdem Erbafl "Spatial Analysis of Energy Consumption in Turkey", European Regional Science Association, 36th European Congress ETH Zurich, Switzerland, August 26-30, 1996.

² Prime Ministry SAP Regional Development Administration, "Population movements in SAP region", executive summary, Ankara, Turkey.

internal migration dominating population dynamics of the country has been caused by regional income differences. It is expected that with the completion of SAP project, a major factor causing out-migration will be eliminated¹.

Turkey is divided into seven different geographical regions in terms of topography and climate conditions. These are the Marmara, Aegean, Mediterranean, Central Anatolia, Black Sea, Eastern Anatolia and Southeastern Anatolia regions.

There are significant economic and social differences between regions in terms of socio-economic indicators such as GDP per capita, unemployment rate, literacy rate, mortality and fertility, education and urbanization. Inter-regional differences in terms of development arise from the inadequate distribution and inefficient use of resources, severe climate conditions, neutralization from domestic and foreign markets and insufficient investments. This will force people to immigrate to get a better life in urban areas than in rural areas. However, immigration causes many problems such as unemployment, inadequate infrastructure and superstructure, shanty suburbs and environmental problems in the developed regions, especially in metropolitan areas.

Urban centers are classified by the size at the beginning of the decade and are followed over the interval by looking at growth. Different classes of cities have shown different growth patterns. The large cities have grown more rapidly than those with only quasi-urban settlements².

There are important regional differences in the urbanization patterns. The Marmara Region, which is in the North-West of the country, is the most developed and urbanized area in Turkey. The largest city of Turkey, Istanbul is located in this region and this region has the highest share of the total urban population like 76.26%. Urbanization ratio has increased from 48% to 76.26%.

The Central Anatolian Region comes second in the urbanization rank. Urban population increases from 35% to 64.53% between 1945 and 1997. Ankara, the second largest city and also the capital city of Turkey, is located in this region and plays an important role on its urbanization rate. It has the highest urbanization rate of 87.64%.

The Mediterranean Region, which is the South of Turkey, comes third in terms of urbanization. The east part of the region is an agriculturally and industrially developing area. Rich agricultural hinterlands play an important role for the industrial and economic development of this region. The urbanization ratio increased from 31.1% to 57.46%.

The Aegean Region is in the west part of Turkey and is the fourth urbanized area. The region is the second highest industrial sector. Agricultural products of the rich hinterland are used as an input for the development of industry. The urban population ratio has risen from 25% to 57%.

The Southeastern Anatolia Region is the fifth urbanized area. The rural Southeastern Anatolia is undergoing rapid urbanization in large part due to the SAP (GAP) Development Project which contains dams for the economic development of the region. The urban population has increased from 24% to 65.65% with the effect of SAP project.

The Eastern Anatolia Region is the sixth urbanized area. This region is Turkey's least industrialized region and agriculture plays an important role. The reasons for this slow development are the regions rugged topography, isolation from major markets and harsh climate. Although government tries to encourage investors to invest in this region, private sector prefers to invest in the Western Part of the Turkey. But with all these disputes, urbanization ratio has increased from 21% to 42.57%.

The Black Region is the least urbanized area. Its livelihood depends on agriculture although it is the most important steel industry in Turkey. Narrow hinterlands of the cities between the Black Sea and the mountains ranges prevent the growth of the cities. So it effects the migration. The region has the highest out-migration rate in Turkey. Also urbanization rate has risen from 23.3% to 40.20%³.

¹ N. Çakılçioğlu, T. Tekkeoğlu, F. Cebeci and M. Çakılçioğlu (2003). "İkibinli yıllarda yerel yönetimler ve schiriçi ulaşım, sorunlar ve çözüm yolları".

² Bülent Açma, (2000) "Economic consequences of migration: Case Study of Turkey".

³ Vedat Dökmeci and Erdem Erbafl "Spatial Analysis of Energy Consumption in Turkey", European Regional Science Association, 36th European Congress ETH Zurich, Switzerland, August 26-30, 1996.

Table 11

Urbanization rates in the regions of Turkey (1960-1990)

Regions	1960	1990
Marmara	48%	76.56%
Central Anatolia	35%	64.53%
Aegean	25%	57%
Mediterranean	31.1%	57.46%
Southeastern Anatolia	24%	65.65%
Eastern Anatolia	21%	42.57%
Black Sea	23.3%	40.2%

Source: State Planning Organization of Turkey, Various Indicators related to Provinces and Regions, Ankara -1998.

As seen from the above table, the highest urbanization share of Turkey belongs to Marmara region with nearly 77%. Southeastern Anatolia follows this with the second highest percentage which is almost 66%. That means the SAP project has a great impact to increase the urbanization in the region with all its alternatives like education, health, housing, industry, agriculture, mining, energy, transportation etc.

5.2. Urbanization in SAP Region

In terms of agricultural products, industry and services, it is obvious that a significant increase in urbanization is taking place in the SAP region and it will increase further in the future.

Currently, rural population is quite high (36%) in the region, but there is a strong tendency towards urbanization. Also, forecasting results show that from 1997 to 2010 urban population growth will be 28.6% in the SAP region and 38.8% in the rest of the country. So this shows that a high rate of urbanization will take place in the SAP region¹.

Table 12

Population of rural and urban areas in SAP region and Turkey

	1985		1990		2005	
	SAP	Turkey	SAP	Turkey	SAP	Turkey
Population						
Total Population (millions)	4.3	50.5	5.2	56	10	71.7
Urban population (millions)	2.14	26.8	2.9	33	6.6	
Rural population (millions)	2.15	23.7	2.3	2.3	3.4	
Percentage urban	49.9	53	55.7	58.9	66	

Source: Prime Ministry SAP Regional Development Administration, Ankara-1997.

Other interesting results of Table 12 show that the urban and rural populations in 1985, 1990 and 2005. Compared to rural areas, urban population has started to increase in SAP region and it will be twice more in 2005. This high urban growth rate in 2005 will be for a result of rural to urban migration. This population increase has great impact on economy, infrastructure and environment fabric of the region.

In the urban areas, agricultural-based manufacturing industries, which provide input for the agricultural sector, are being developed. Metropolitan areas attract people to migrate from rural to urban areas. So there are needs for housing, employment, health care and infrastructure. It is

¹ Seminar for Doctoral Students at the ETH Zurich, (2001), "Sustainable management of International rivers; Case study: GAP in Turkey".

assumed that the construction sector will improve as employment expands and as the socio-economic development leads to urbanization in the metropolitan areas. The construction sector will create employment for people who are complaining about unemployment in the region and it is also estimated that by 2005, employment in the region will have a boom.

Furthermore, in the next thirty years, rural population will keep decreasing and the urban population will keep increasing in the SAP region. According to estimations done by Saysel and Barlas (2001), rural population decreases down to 1.5 million and the urban areas increase to 7.25 million by 2010. This is a result of the increasing job opportunities in the urban regions and decreasing food production in rural areas. As more industries are opened in urban areas, more people tend to migrate from rural to urban areas. However, job availability increases from 0.55 to 0.65 jobs / labor¹.

It can be said that the SAP is an urbanization project and the region will have a higher urbanization rate for the next decade and may be even higher thereafter. Because urbanization has begun later in the SAP region than the rest of the country and also, the project is affecting population movement in the region. As a result, urbanization gap between SAP region and the rest of country is diminishing and when the project is fully utilized, the SAP project will reach its aim. It can be also supported with higher negative rural population growth rate in the SAP region (-0.36) compared to rest of the country (-0.18). However, from positive side-effects, infrastructure, education, health, services and industry of the project come into existence and a higher growth-rate makes urbanization in the region will be in the process by next decade.

6. Conclusion

In the beginning of the project, SAP was planned to remove the socio-economic disparities in the country's less developed southeastern region. Nearly 10% of the country's population lives in the SAP region and it contributes less than 5% of the country's GDP. Therefore, expectations from this project are very high. People in the region are expecting positive results from the project for themselves.

With the implementation of the SAP by the year 2005, the amount of agricultural land will rise with an increase of about 400%. This increase will bring an associated rise in agricultural output in the region corresponding to a 50% increase in the whole country's agricultural production. Also, electricity production of hydroelectric power plants in the SAP region will be increased as of the project is completed.

On the other hand, findings showed that the GAP region lags behind country averages in terms of both socioeconomic development and education level. Lower education level, of course, is not sole factor in the region's lower development level. But, it is considered that education is one of the most important factors affecting socio-economic development in the region. The rates of school enrollment in the GAP Region are well below country averages. There are shortages of school buildings, personnel and education materials in primary education, which depress the rate of schooling.

However, persistence of some traditional and paternalistic patterns and preferences also play an important role in withholding children from school. There are still some people believing that there is no need to send girls to school and many families regard the girl child nothing more than a help hand for mothers at home.

Besides these, Turkey started to give great importance to economic growth and urbanization after 1980s. People started to migrate from rural to urban areas to get a better education for their children, health services, infrastructure and employment. Urbanization, which is seen as the result of industrialization in many European countries, has developed very late in Turkey with different policies. It is accepted as a factor of industrialization and has been supported with developing plans.

SAP has started to yield the expected outcomes. Many industrial and service sectors choose the development centers to maximize their profit. So, SAP region was also affected by this

¹ Ali Kerem Saysel, Yaman Barlas , Orhan Yenigün (2001) "Long-term sustainability in an agricultural development project: A system dynamics approach".

migration. Rural population started to migrate to urban areas and the population living in rural areas start to decrease and will in the future. The SAP region will experience a very high urbanization due to the implementation of the project. It is expected that by the year 2010, 76.8% of the people will live in urban areas in the region. It indicates that there will be 12.8% increase in urbanization.

It can be concluded that SAP is very close to a better life standards, education, growth, prosperity and urbanization than ever before.

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