

**Demographic Profile of Gharbia and Souhag
Governorates, Egypt: An Intra-Governorate
Analysis with GIS Support**

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Demographic Profile of Gharbia and Souhag Governorates, Egypt: An Intra-Governorate Analysis with GIS Support

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In this paper, the demographic profile of two Egyptian governorates is analyzed. These governorates are Gharbia and Souhag. The Geographical Information Systems (GIS) is utilized to create visual presentation of the data on maps. The study concluded that Gharbia Governorate is more developed than Souhag. The demographic characteristics of Gharbia governorate are much better than their equivalents in Souhag Governorate. The density of family planning services in Gharbia is higher than Souhag.

Key Words: Population Growth, Urbanization, Basic Education, Family Planning, REDATAM + , ARC/INFO, ARC/VIEW.

I- Introduction:

1.1 What is GIS?

A Geographic Information System (GIS) is a computer assisted system for the acquisition storage, analysis and display of Geographic data.

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Components of a GIS:

1- Special and Attribute Database:

A special Database describing the Geography of earth surface features, and an attribute database describing the characteristics or qualities of their features like REDATAM + database.

2- Cartographic Display System:

The Cartographic Display System allows one to take selected elements of the database and produce Map output on the screen, most GIS software systems provide only very basic cartographic output. In this study ARC/INFO and ARC/VIEW are utilized.

3 - Map Digitization:

With a Figure digitization system, one can take existing paper Figures and convert them into digital form.

4 - Geographic Analysis System:

Up to this point, we have described a very powerful set of capabilities. The ability to digitize spatial data and attach attribute to the features stored:

- 1) To analyze these data based on those attributes.
- 2) And to Map out the results.

With a Geographic analysis system, we extend the capabilities of traditional database (REDATAM+) query to include the ability to analyze database on their location.

1.2-Country Background:

Egypt occupies the north-eastern corner of Africa. Egypt is bordered in the north by the Mediterranean, in the south by the Sudan, in the east by the Red Sea, and in the west by Libya. Its eastern boundry stretches from Taba in the Gulf of Aqaba to Rafah in the Mediterranean.

The Western boundry extent from the Salum Gulf of the Mediterranean southwards to the Egyptian-Sudanese boundaries leaving the Oasis of Gaghboub in the Libyan territory. The total area of Egypt is 1,002,000 Sq.Km. The Egyptian coats have a total length of approximately 2.936 Km. of such 995 Km. on the Mediterranean and 1941 on the Red Sea.

Administratively, Egypt is divided into 26 governorates. Four of these governorates are totally urban (Cairo, Alexandira. Port-Said, and Suez). Nine governorates are found in the Nile Delta (Lower Egypt), which extends from Cairo to the Mediterranean, And eight are located in the Nile Valley (Upper Egypt). An additional five governorates are found on Egypt's western and eastern boundaries (see Figure1).

Gharbia Governorate:

Gharbia governorate is located in the Nile Delta in lower Egypt bordering Dakahlia in the East, Menoufia in the south, Behera in the west and Kafrel-Sheikh in the north (see Figure 2.A). The population of the governorate according to the 1986 census is 2,870,962 capita of which 50.6 percent are males and 49.4 percent are females. The population of the governorate comprise 5.9 percent of the total population of Egypt.

Administratively, Gharbia is divided into eight districts (Markaz). Each district composes one town which is the administrative headquarter of the district and a number of villages. These districts are Tanta (the capital of the governorate), El-Santa, Mahalla, Basion, Zefta, Samannoud, Qotour, and Kafrezzayat (see Figure 3.A).

Souhag Governorate:

In the other extreme of Gharbia, Souhag is located in the Nile Valley in upper Egypt. It is bordered in the east by Red-Sea Governorate, in the south by Qena, in the west by New-Valley Governorate, and in the north by Assiut.

According to the results of the 1986 census, the population of Souhag is 2, 465,134 capita of which 51.1 percent are males and 48.9 percent are females. The population of Souhag comprise 5.1 percent of the total population of Egypt.

The governorate is divided into eleven districts. These districts are Souhag (The capital of the governorate), Akhmem, El-Baliana, El-Maragha, El-Monsha, El-Salam, Guirga, Juhaina, Saqulta, Tema, and Tahta (see Figure 3.B).

1.1-Objectives of The Study

The main objectives of the study are to analyze demographic profile of Gharbia and Souhag governorates at the level of the district (Markaz) which is the second administrative level after the governorate level. The GIS is used to illustrate the presentation of the findings of the study. More specifically, the study aims to accomplish the following objectives:

- 1 - To analyze population growth at the district level between 1976 and 1986.
- 2 - To analyze levels and trends in urbanization between 1976 and 1986.
- 3 - To study differentials in household size and housing conditions by district.
- 4 - To study gender differential in basic education and class density.
- 5 - To study availability of family planning centers by district.

1.2-Methodology:

In addition to using simple mathematical, statistical, and demographic measures to analyze the available data, visual presentation of the findings using Figures that created using GIS is utilized.

1.3-Data Sources:

Two main sources of data are used in this study; first, the results of the 1976 census which was carried out by the Central Agency for Public Mobilization and statistics (CAPMAS); second the results of the 1986 census, which is the latest one, carried out by CAPMAS also.

Data on family planning centers come from the annual statistical reports of the National Population Council of Egypt.

The estimation of the number of married women in reproductive age was carried out by the authors.

VII-CONCLUSIONS AND RECOMMENDATIONS

An attempt is made in this study to analyze demographic profile of Gharbia and Souhag governorates at the level of the district using GIS to illustrate the presentation of the findings of the study. Data used in the study come from the population census of 1976 and 1986 and other sources of data.

The findings of the study can be summarized in the following conclusions:

First; fifty percent of the population of Gharbia are concentrated in two districts, Mahalla and Tanta. The concentration of population in the capital of Souhag is less than that of Gharbia. With respect to sex ratio, only two district with an excess females, El-Baliana and Guirga (93 and 99 respectively), while the highest sex ratio is observed in Juhaina (122).

Second; Gharbia districts have population growth rate lower than Souhag districts. This may be due to the fact that Souhag is less developed than Gharbia.

Third; the percent urban vary widely among districts in both Gharbia and Souhag, it ranges from 8.2. percent to 48.4. The highest percent urban is found in Mahalla as an industrial center; while the lowest one is found in Qotour. The percent urban in Gharbia district is higher than Souhag districts.

Forth; urban growth in Gharbia districts ranges between 3.4 percent and 1.6 percent, while it ranges from 5.2 percent to 1.2 percent in Souhag districts.

Fifth; the highest average size of household is found in Juhaina (6.6), while the lowest one is found in Tanta (4.6). Average household in Gharbia districts is lower than Souhag district.

Sixth; in Souhag district access to piped water is very low. Districts suffer too much from the unavailability of piped water. The percent of household with access to piped water in El-Salam district is only 5 percent.

Seventh; the sex ratio of the students in basic education ranges from 107 in Samannoud to its unexpected value in El-Salam district, where it is 443, that is there is more than four male student per one female students. Student/teacher ranges from 18 in Souhag district to 41 in Zefta district, class density ranges from 37 students in Juhaina to 49 in Qotour and Tahta districts.

Eighth; the number of family planning units belonging to the Ministry of Health comprise more than 75 percent of the total number of units in almost all the districts of Gharbia and Souhag. The number of women per family planning center in Souhag district is more than two-times its equivalent in Gharbia governorate (816 versus 405). Gharbia district have a number of women per center lower than Souhag district.

In view of the above conclusions the following recommendations seem to emerge:

- 1 - Given the high population growth rate in Akhmem, El-Salam, and Juhaina districts, more effort are required to slowing down population growth rate in these districts through decreasing birth rate and increasing family planning practice in these districts.

- 2 - Given the high urban growth rate in El-Salam, Qotour, and some other districts, strategies and policies to decrease rural-urban migration must be settled.
- 3 - Given the lowest percent of households with access to piped water, specially in El-Salam, El-Monsha, and Saqulta, more resources must be directed toward rising the percent of households with access to piped water in these districts to avoid health problems which may cost more than the cost of providing piped water.
- 4 - Given the gender differentials in school enrolment in basic education, female participation in school and social life must be encourages through mass media and public institutions.
- 5 - Given the high number of women served by a family planning unit in Souhag districts, more family planning units are needed to increase the quality of services and to decrease density.

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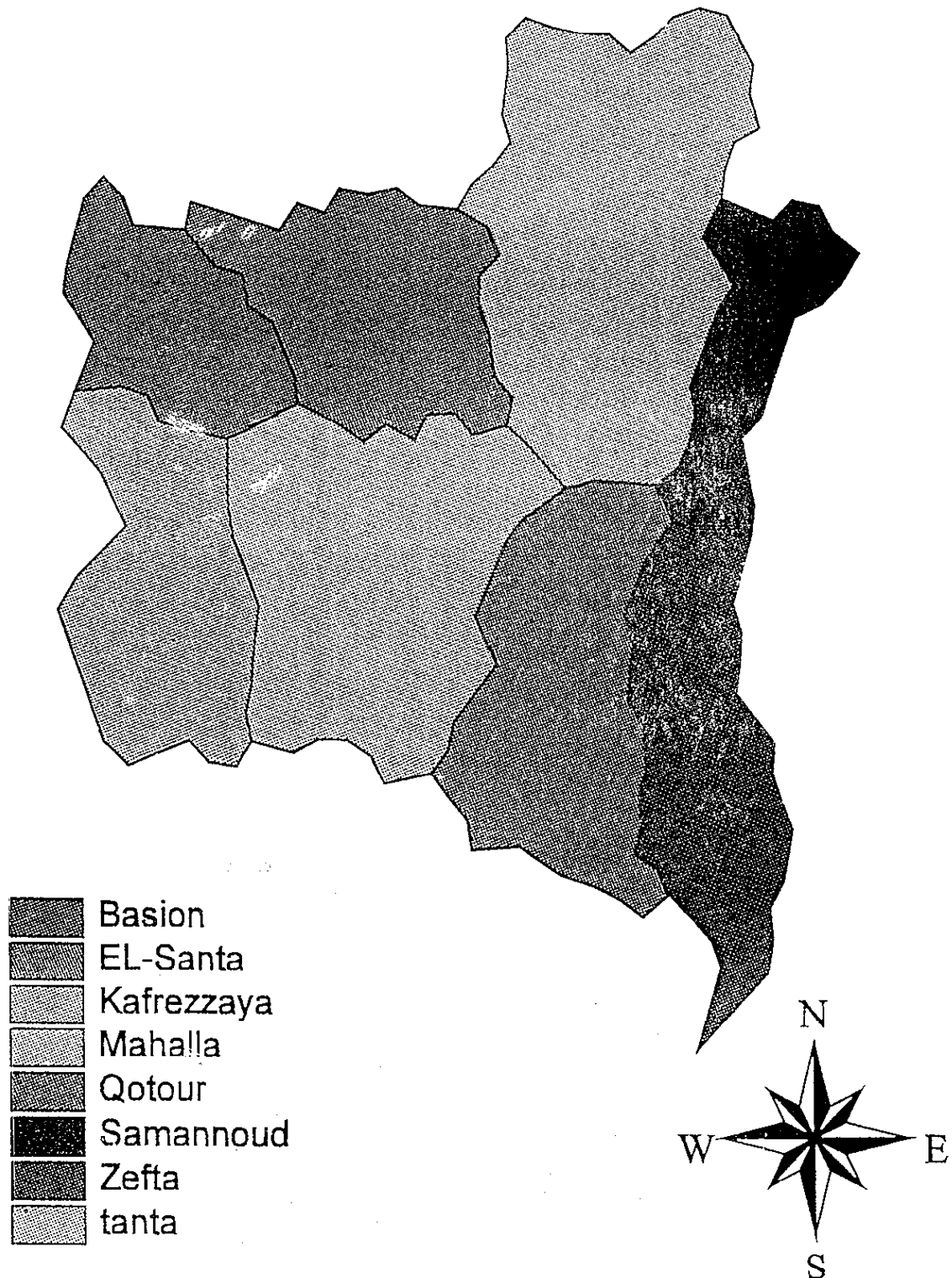
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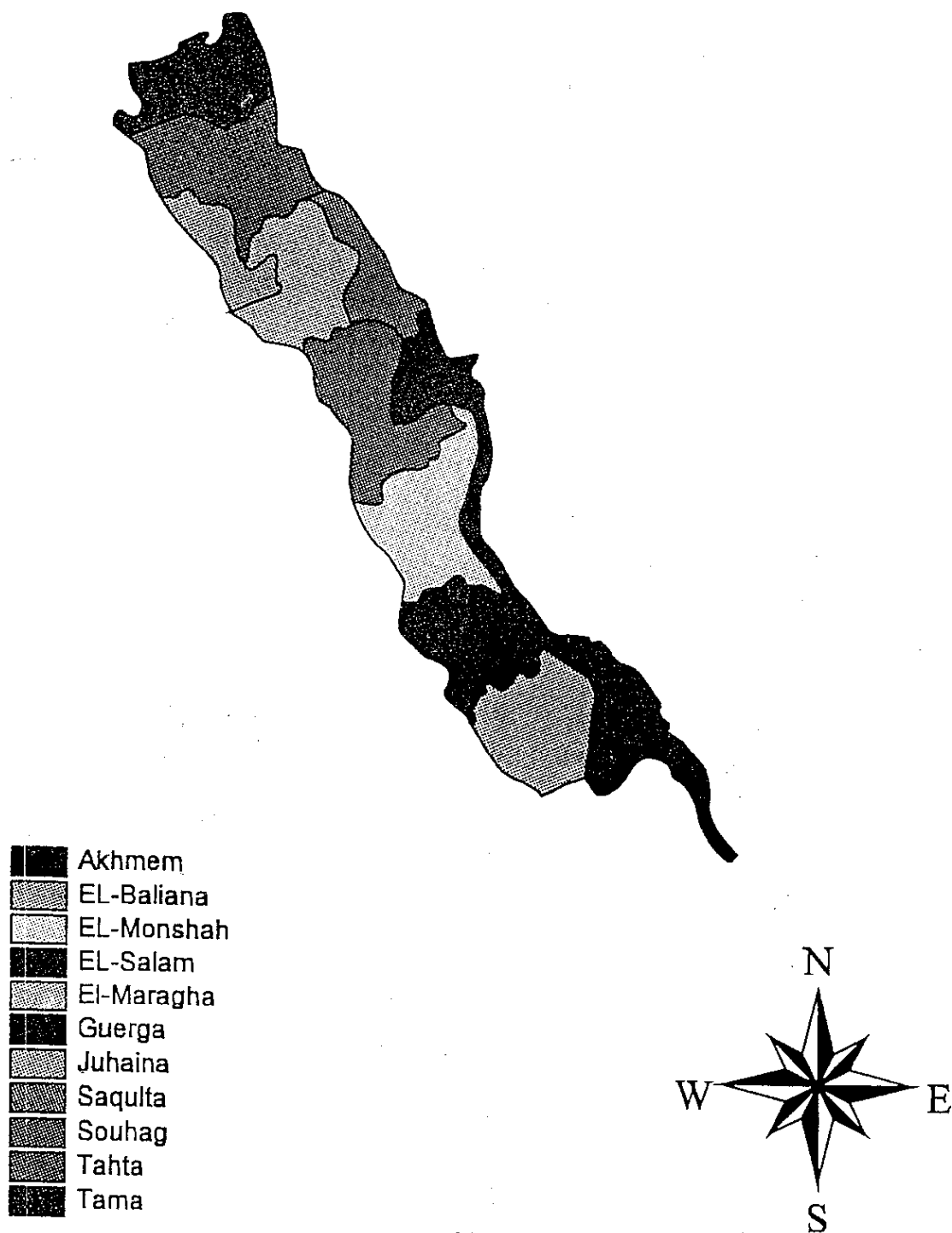
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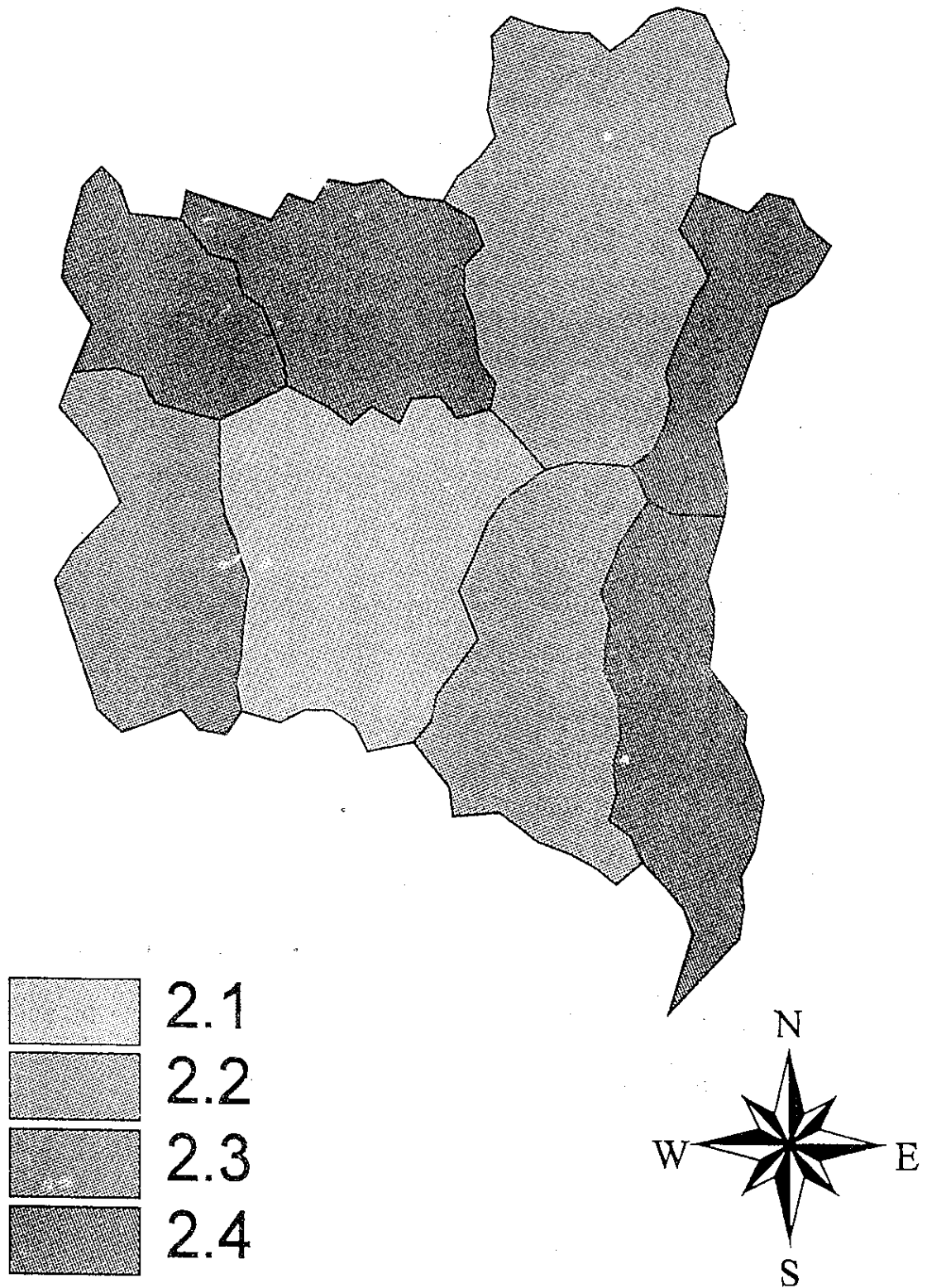
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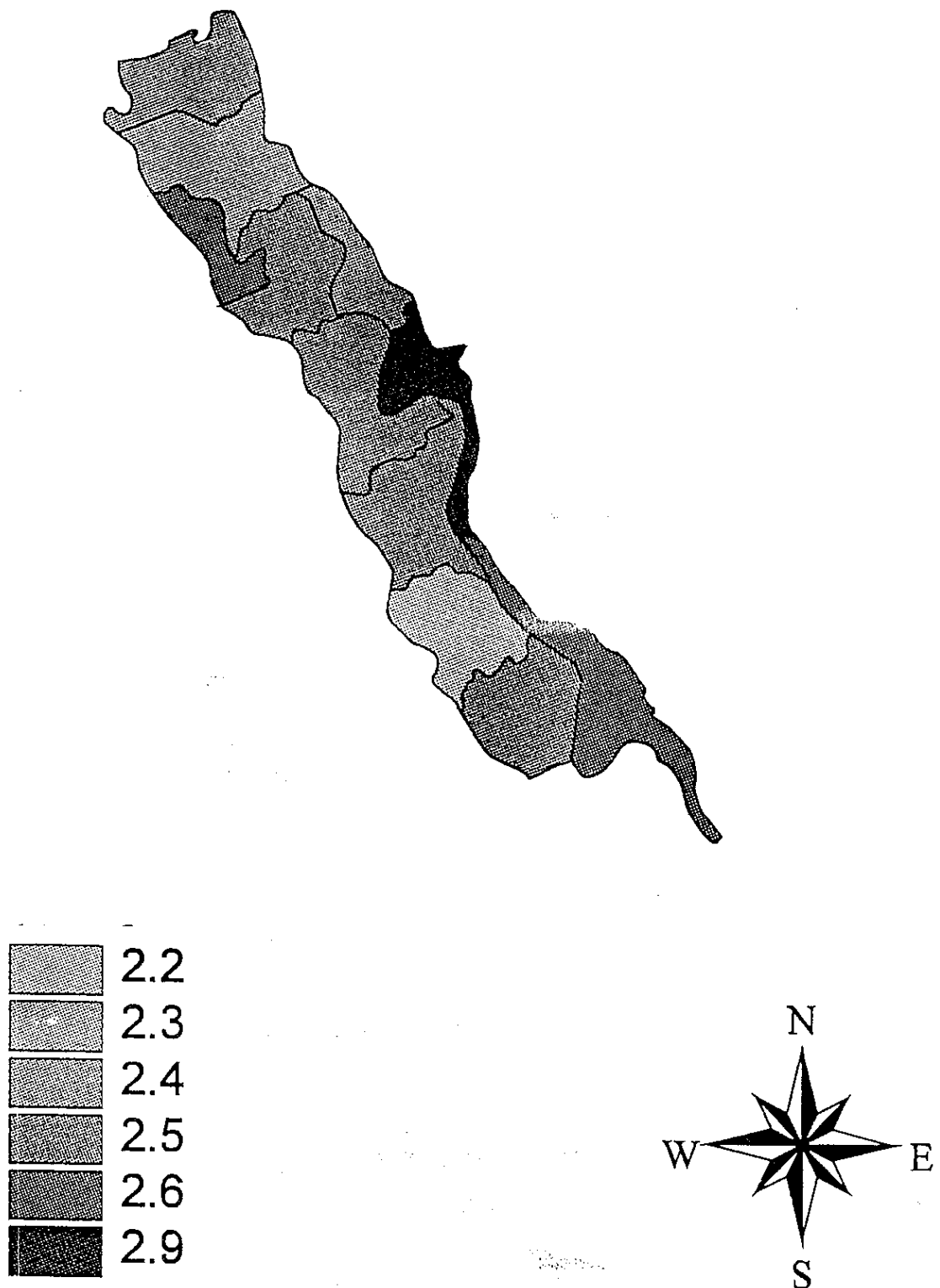
Districts of Souhag Governorate



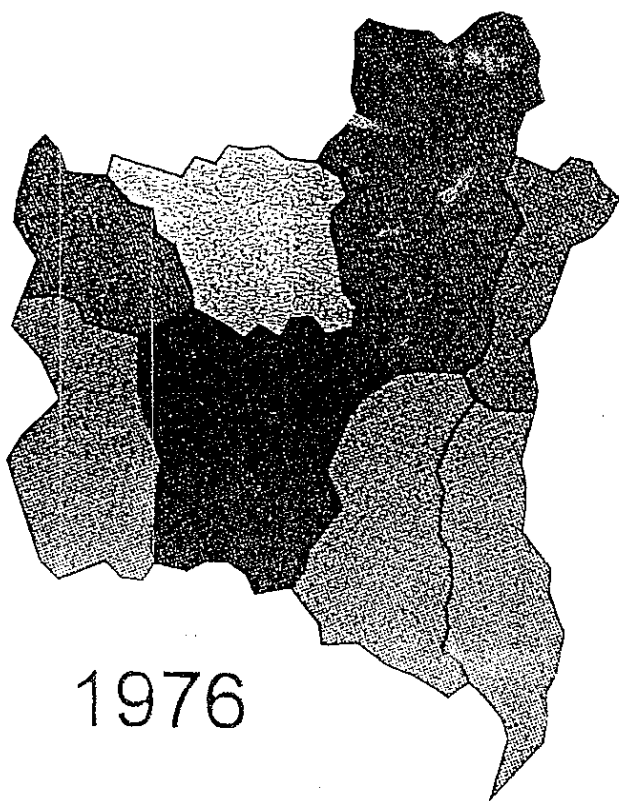
Population Growth Rate, Gharbia Governorate, 1976-1986



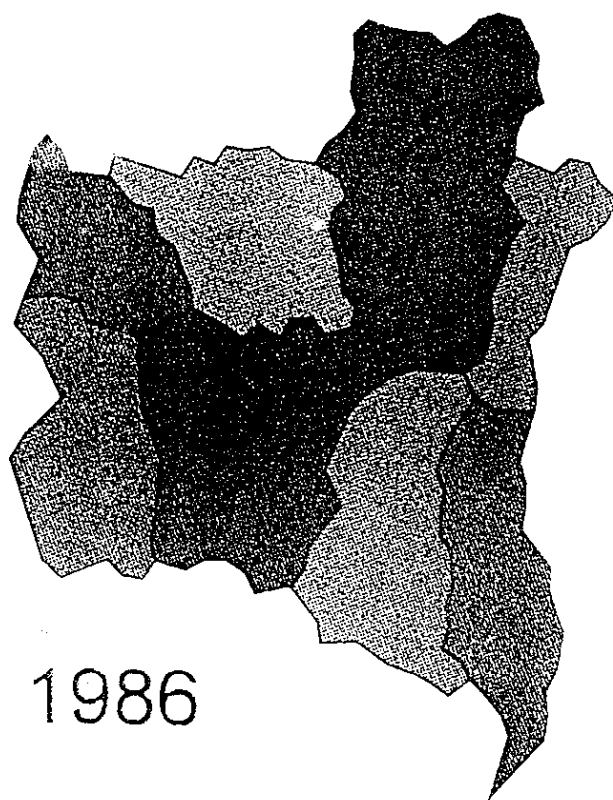
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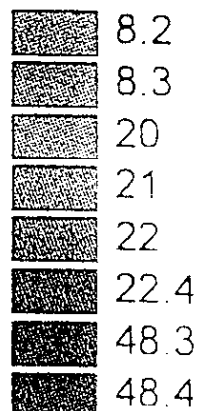
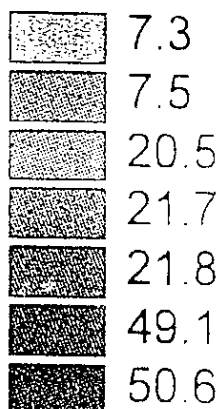
Percent Urban, Gharbia governorate, 1976-1986



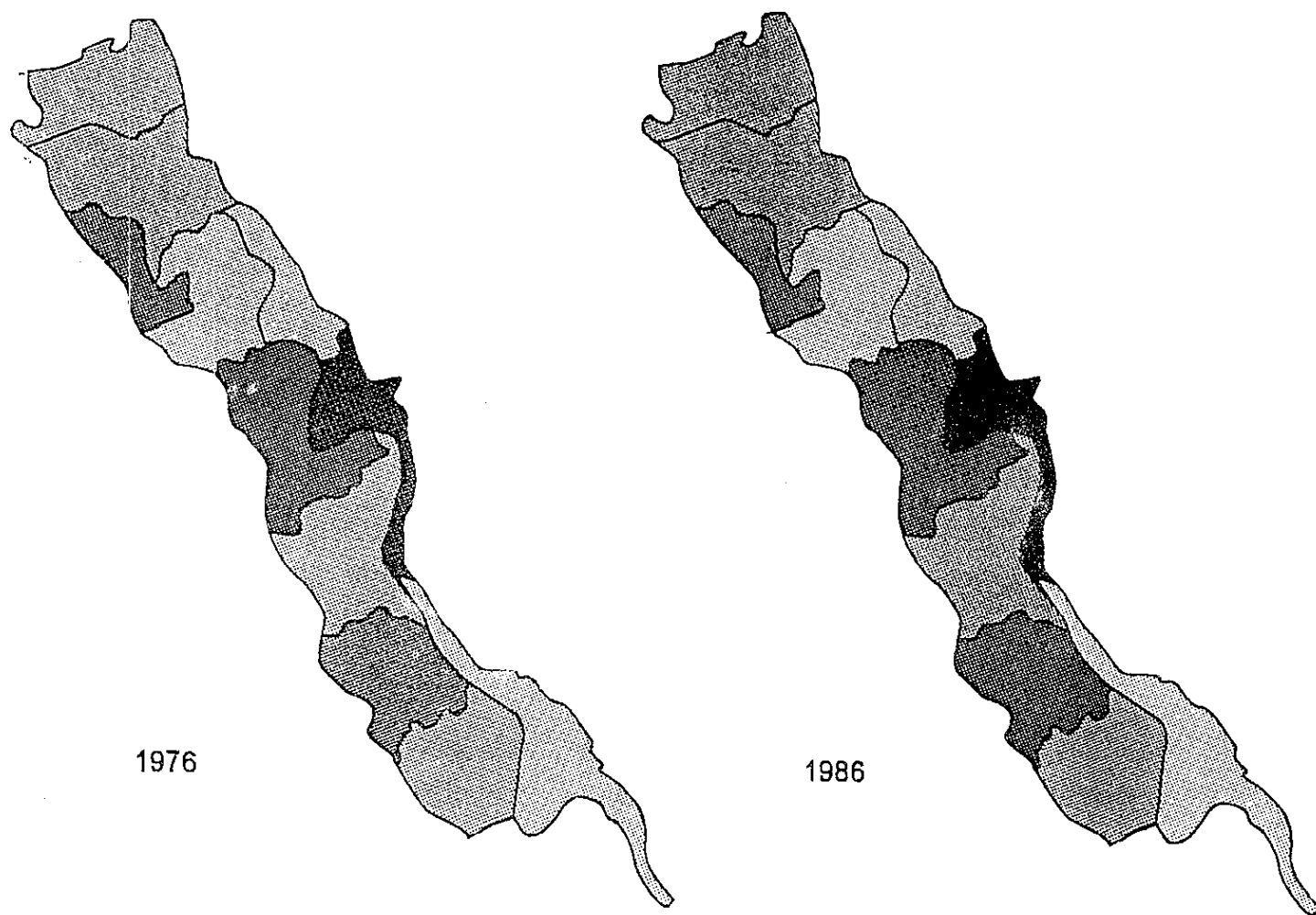
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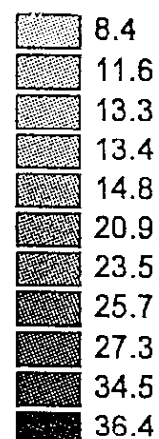
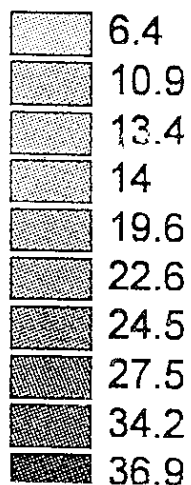


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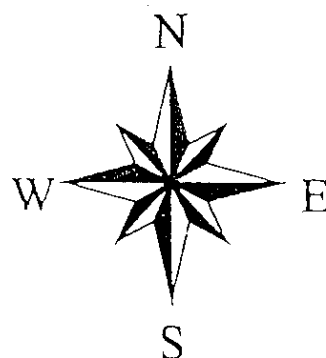
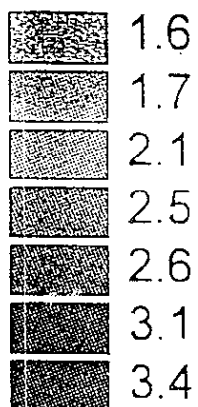
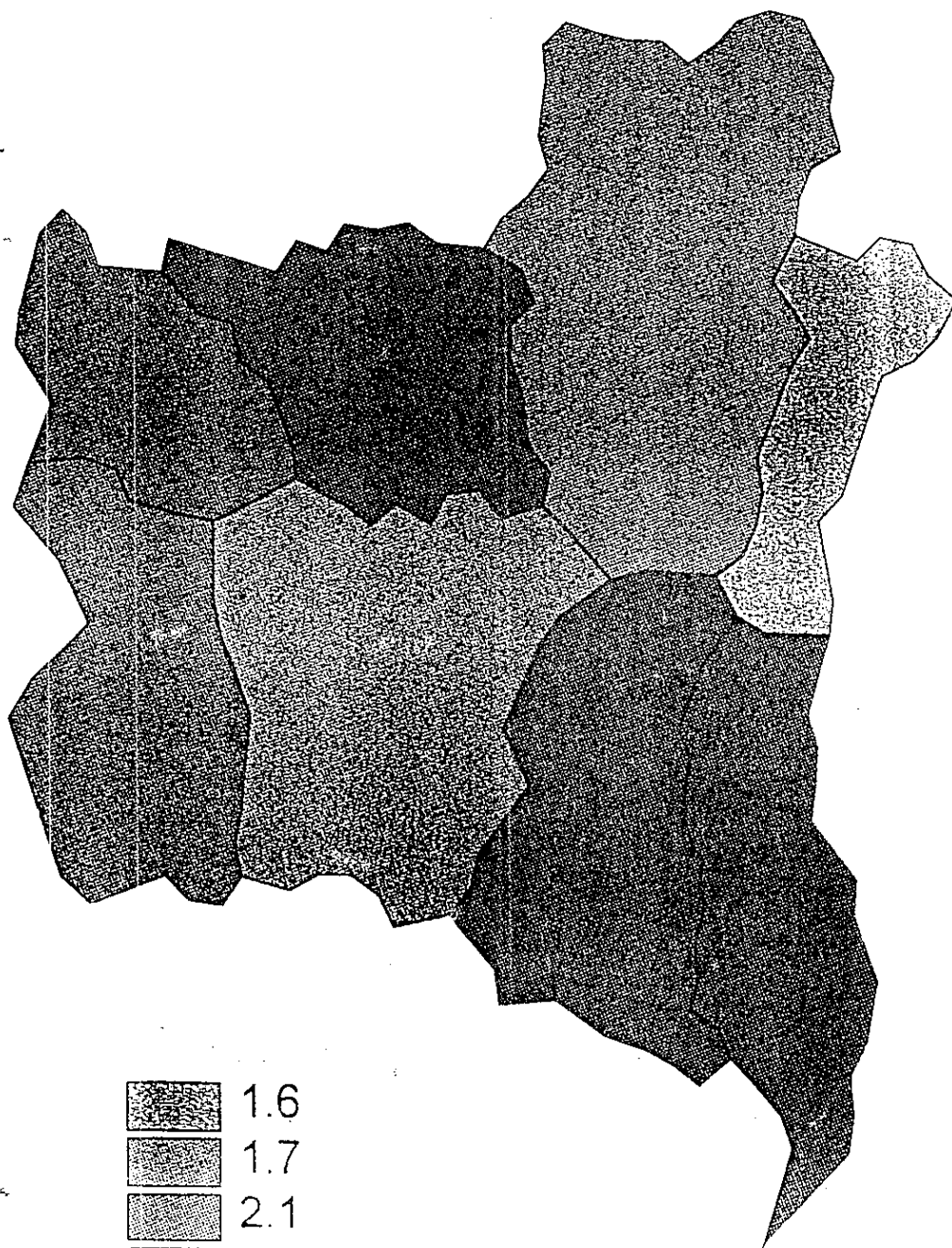


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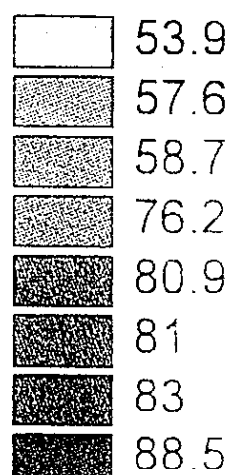
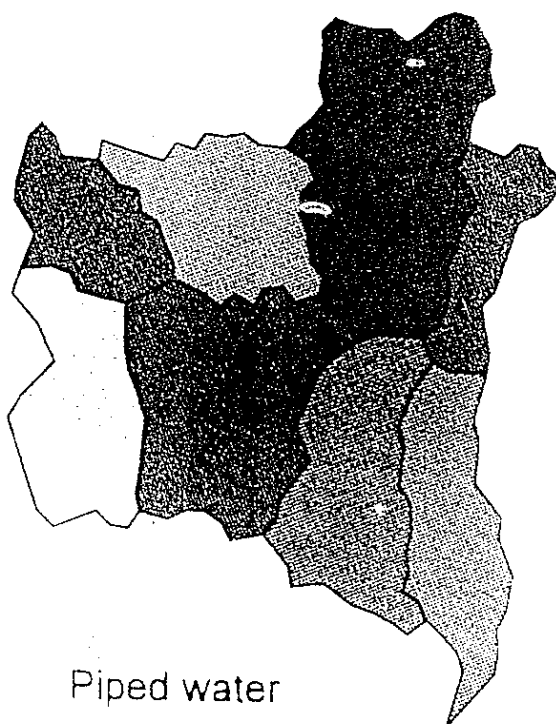
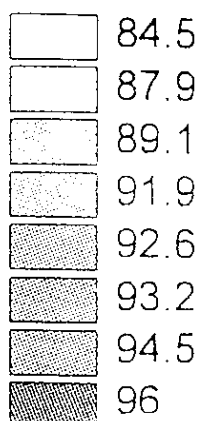
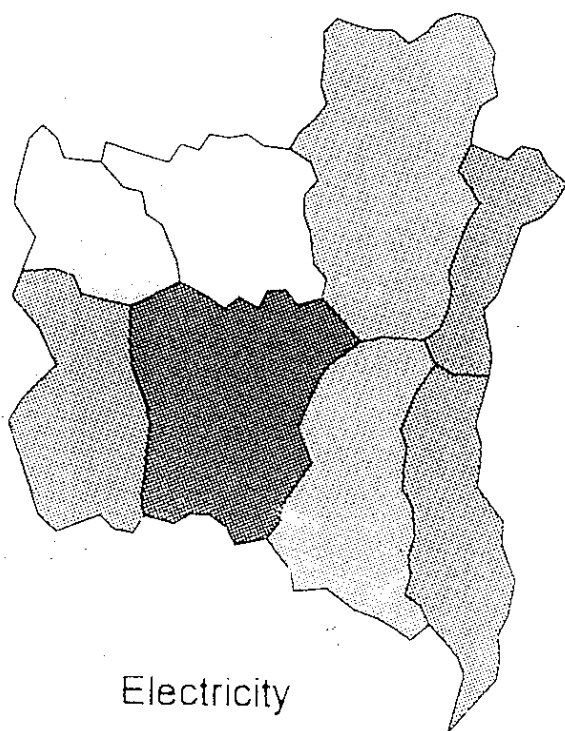
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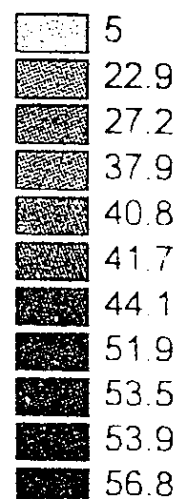
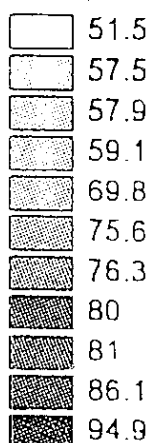
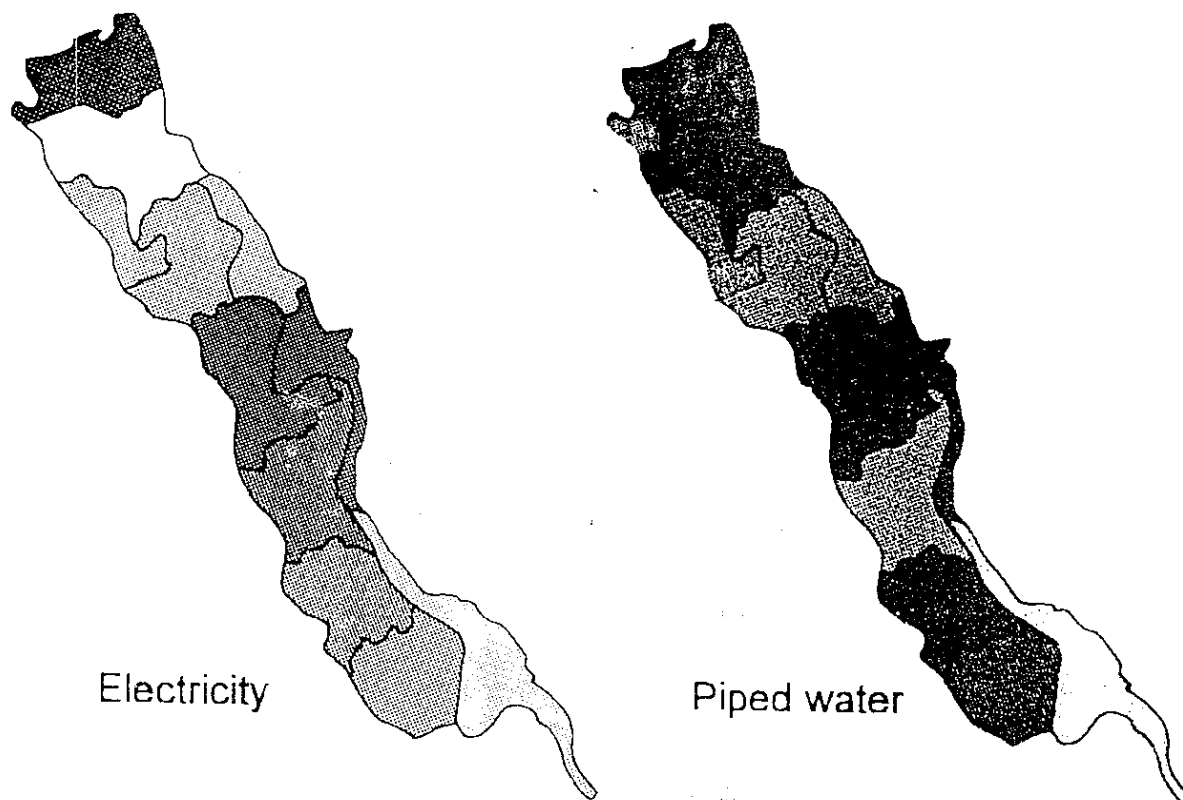
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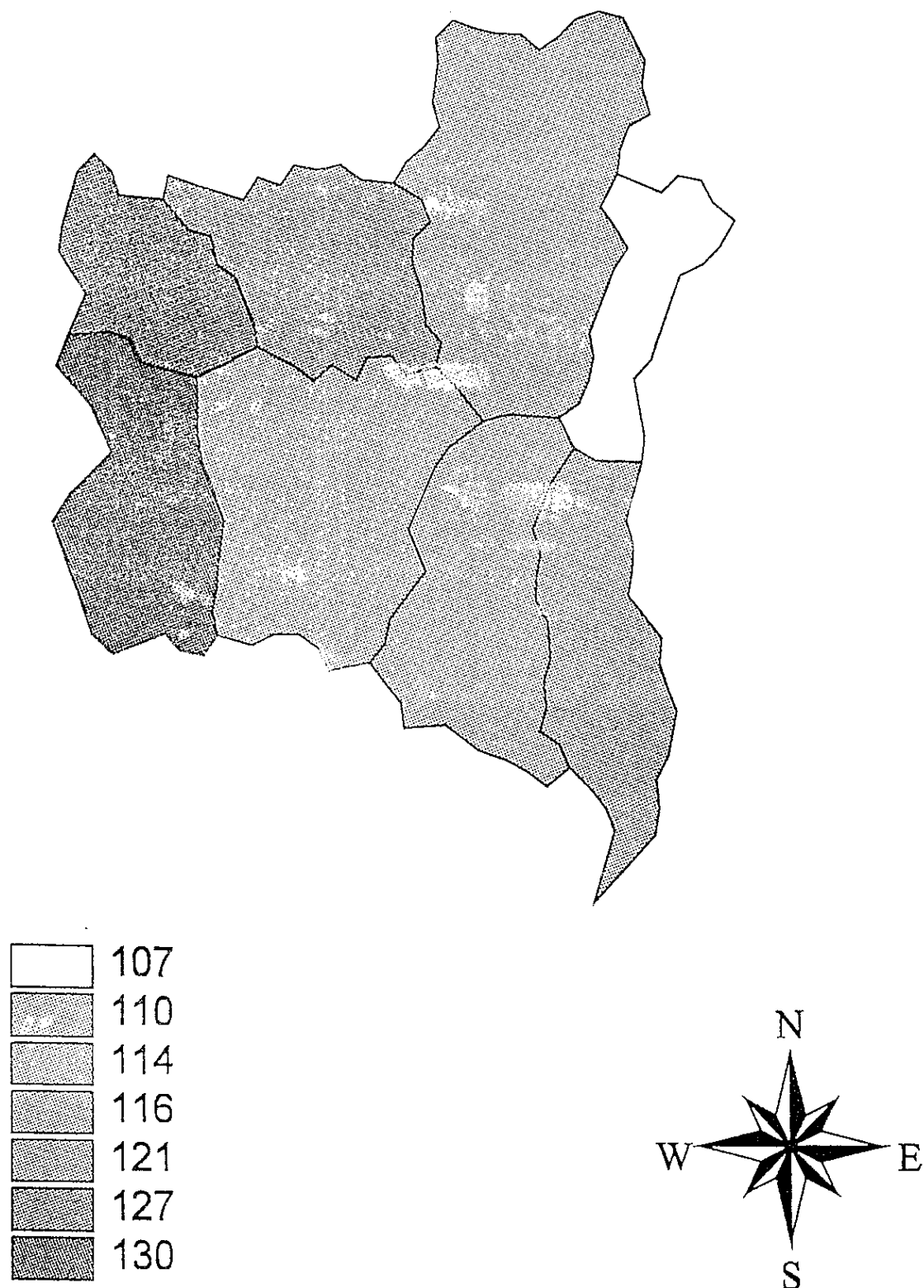
Access to Electricity and Piped Water Gharbia Governorate, 1986



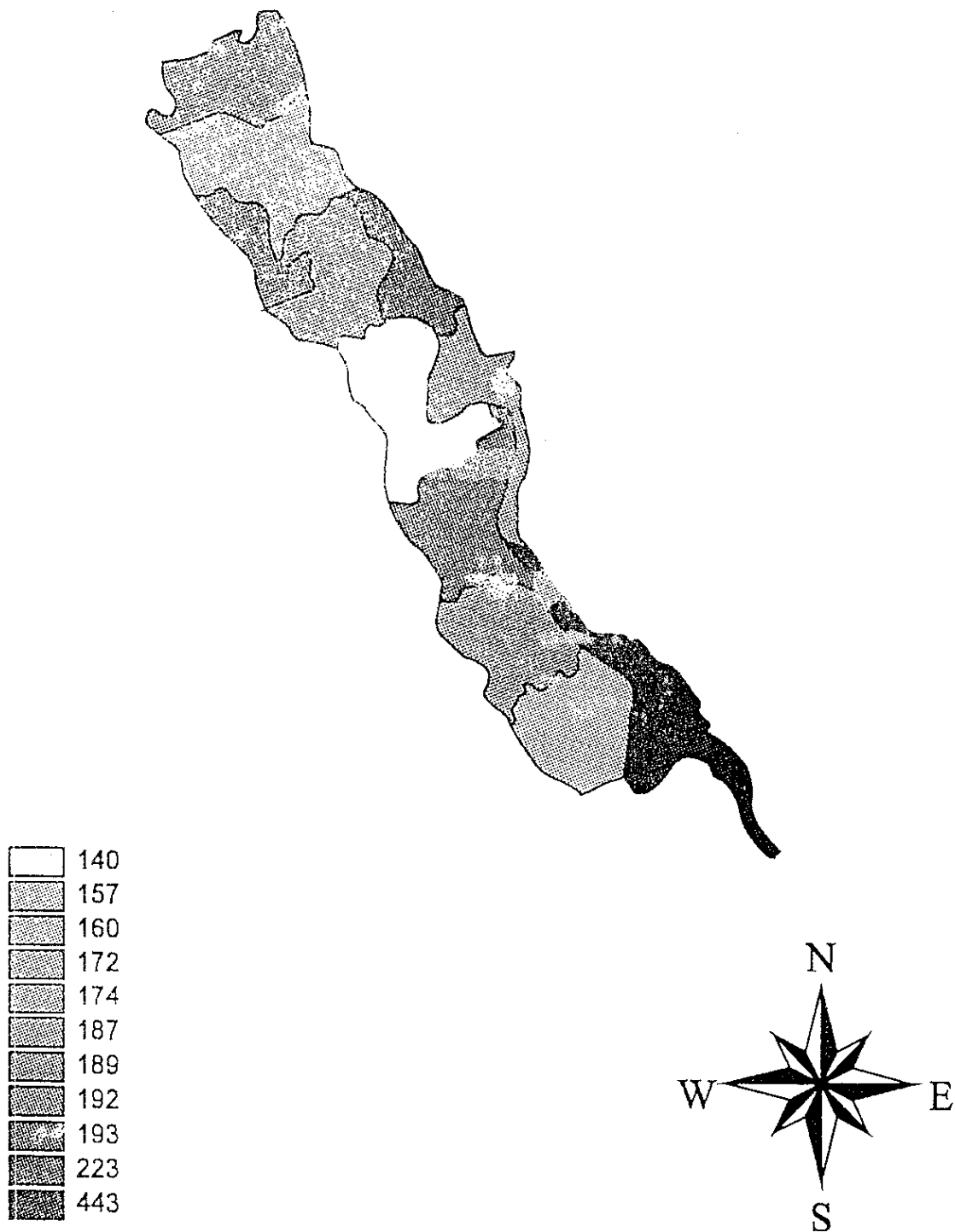
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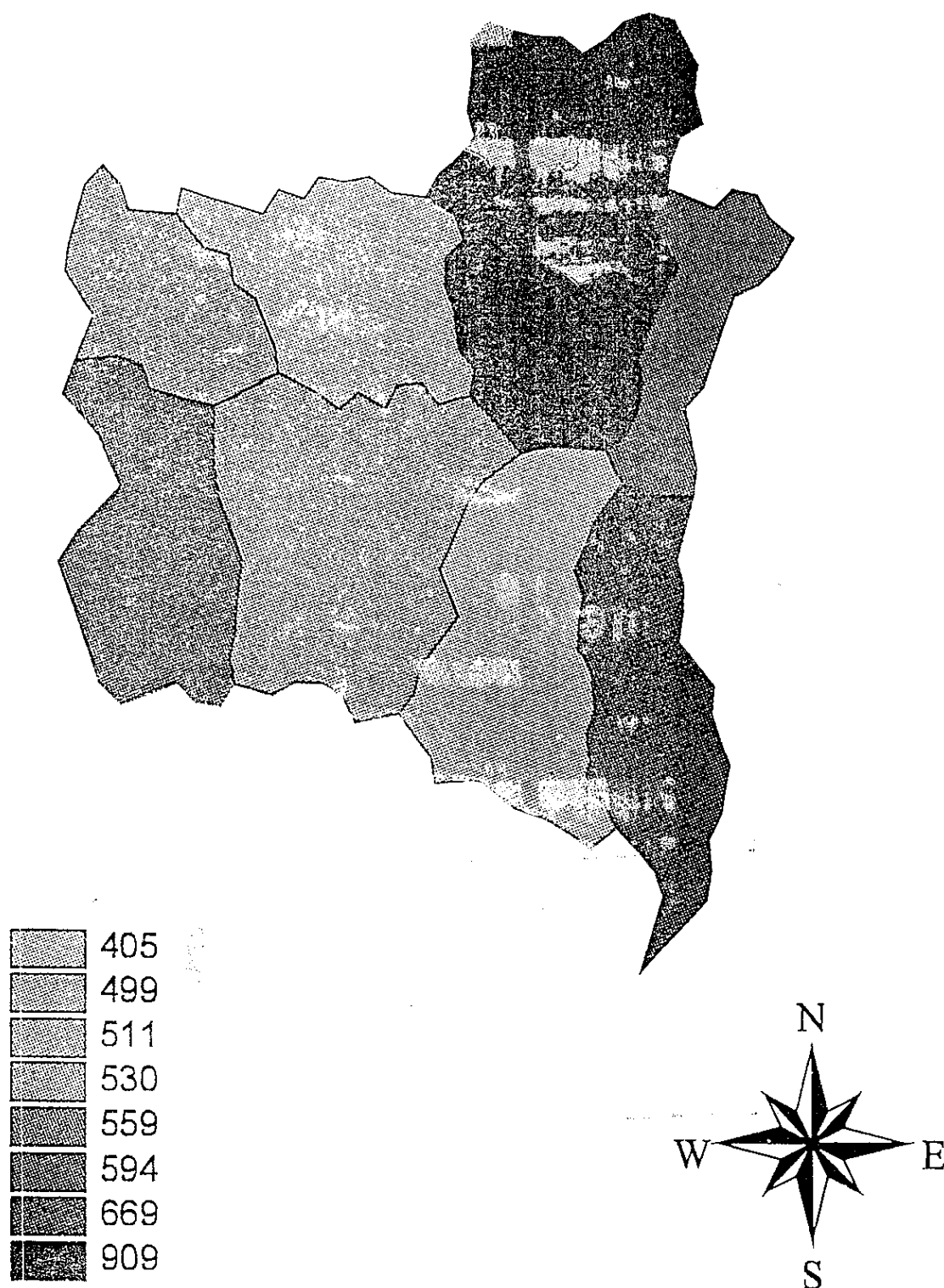
Sex Ratio of Students in basic Education, Gharbia Governorate, 1986/87



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