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RECENT URBAN GROWTH PATTERNS
AND MIGRATION.

A CASE STUDY OF CONSTANTINE, ALGERIA

BY

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Thesis submitted for the Degree of Doctor of Philosophy
in the Department of Geography
University of Glasgow

August, 1983

To

My husband,

my father,

and my brother .

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ABSTRACT

The present thesis examines urbanisation in a framework that relates it to population growth, socio-economic development and rural-urban migration, with special reference to the city of Constantine. The study is organised in three parts. Following the introductory section, the first chapter focuses on the high population growth rate and reviews the main causes and consequences. It defines the setting of the problems in a national and regional context. Chapter Two discusses the historical trends of urbanisation and urban growth and offers some hypotheses to be tested. A review of fundamental conceptual and methodological issues, which must be considered when dealing with the process of population movement, is found in Chapter Three. Chapter Four puts the study area into its regional setting and examines links between urbanisation and development. Considering that these four chapters would serve as a basis for a clearer understanding of the factors underlying population movements, Chapter Five attempts to define the role of migration in Constantine's growth and the possible reasons for its markedly changing population growth rate over time. Based on the census results, Chapter Six identifies the major internal streams to Constantine in a framework that relates them to the regional development patterns. Here a spatial interaction model is used to measure the salient factors that enhance and impede regional migration; while Chapter Seven presents the demographic and socio-economic characteristics of the migrant population. To conclude the analysis of migration to Constantine, Chapter

Eight analyses the spatial growth of the city and examines the distribution of the migrant population within the city. Finally, the concluding section offers an overall summary, conclusion and implications, stressing the view that if regional disparities are to be reduced and thus a slow-down in urbanward migration to a more manageable dimension, the solution to these various problems associated with urbanisation is not a simple policy but a package of policies integrating urban development policy, judiciously selected complementary policies in the area of rural development as well as a population policy.

ABBREVIATIONS

AARDES	:	Association Algérienne pour la Recherche Démographique, Economique et Sociale.
APC	:	Assemblée Populaire Communale
CADAT	:	Caisse Algérienne D'Aménagement du Territoire
CICRED	:	Comité International de Coordination des Recherches Nationales en Démographie.
CNI	:	Code National des Investissements
CNRA	:	Commission Nationale de la Révolution Agraire
CNRES	:	Commissariat National aux Recensements et Enquêtes Statistiques
CNRP	:	Commissariat National au Recensement de la Population.
ECOTEC	:	Bureau National d'Etudes Economiques et Techniques
ESNP	:	Enquête Statistique Nationale de Population
GDP	:	Gross Domestic Product
ID	:	Index of Dissimilarity
INEAP	:	Institut National d'Etudes et d'Analyses pour la Planification
IPN	:	Institut Pédagogique National

LNG	:	Liquified Natural Gas
MPAT	:	Ministère de la Planification et de l'Aménagement du Territoire
ONALAIT	:	Office National du Lait
ONAMO	:	Office National Algérien de Main d'Oeuvre
PCD	:	Plan Communal de Développement
PMU	:	Plan de Modernisation Urbaine
RGPH	:	Recensement Général de la Population et de l'Habitat
SEP	:	Sécretariat d'Etat au Plan
SMK	:	Sidi Mabrouk
SNS	:	Société Nationale de Sidérurgie
SNTA	:	Société Nationale des Tabacs et Allumettes
SONATIBA	:	Société Nationale des Travaux d' Infrastructure et du Bâtiment
SONATRACH	:	Societe Nationale de Transport et de Commercialisation des Hydrocarbures
SONITEX	:	Société Nationale des Industries Textiles
STR I	:	Sans Travail ayant déjà travaillé (a person of working age who had previously a job and is seeking work again).

STR II	:	Sans Travail n'ayant jamais travaillé (a person of working age who seeks work for the first time).
TRC	:	Tableau Récapitulatif Communal
U.N.	:	United Nations

I N T R O D U C T I O N

This thesis is set against a national background offering several highly individual characteristics. Serious structural and spatial problems that were inherited from the colonial period were further aggravated by several specific circumstances. Above all, by virtue of its population growth rate, Algeria ranks amongst the youngest and the most rapidly expanding populations in the Third World. Similarly, Algeria proclaims itself as a socialist country and thus operates with a highly centralised model of political decision-making.

Such an option offers both advantages and risks. The primary advantage of having a strong central authority is the ability to direct resources, both physical and financial, into sectors and locations seen as national priorities. However, the other side of the coin is that once made, decisions are difficult to change because they have become part of the institutional structure. Another major weakness associated with the socialist option is that, at least initially, the decision-making tends to take place at the macro-scale, which in turn overlooks the regional and local impacts of national policies. This is particularly true in Algeria where the uneven resource base over the national space, the nature of the colonial heritage, the distorting effects of warfare and the sheer size of the country combine to give Algeria a high potential for socio-economic spatial disparity, which can only be tackled by a sophisticated analysis of problems, an appropriate planning strategy and effective administrative machinery at all levels.

Although Algeria has approached its development problems with vigour since independence and has some impressive achievements to its credit, its planning strategy, which by aiming to maximise growth as rapidly as possible, totally neglected the spatial aspect of development, and has led to overcongestion of the coastal cities, the acceleration of inter-regional migration, the economic stagnation of many of the provincial and interior towns and the general neglect of the rural sector. The kind of development strategy adopted by Algeria inevitably accelerated urbanward migration because the more investment in large cities, the more attractive they become and thus the greater the migration to them is likely to be, which in turn perpetuates if not heightens the existing urban problems, namely overcrowding, housing crisis, unemployment and inadequate infrastructure services. These problems associated with urbanisation have become so acute that they have drawn the attention of social scientists and policy-makers. Indeed, since independence in 1962, Algeria has shown a great deal of interest in the size, characteristics and behaviour of its population for reasons of social and economic planning. This interest is largely because of the increasing awareness that possession of accurate and up-to-date information on the composition and patterns of change of population is crucial to effective decision-making. Such interest was manifested by the taking of two elaborate censuses in 1966 and 1977 and the subsequent publication of a series of volumes recording their findings, as well as the undertaking of various surveys on demography, family consumption ...etc. Also, the recording of vital statistics has been made compulsory.

Another manifestation was the mushrooming of empirical studies carried out by academic staff and students on the diverse facets of the demographic field based both on census results and supplementary work. However, up to now, these efforts have not been put to the best use because in most cases the studies were designed such that no findings could be integrated, and remained fairly descriptive. The explanatory side of the problem has been too often omitted. With regard to the understanding of migration, few publications can be cited concerning internal migration studies, as compared with the many studies on international migration (MICHEL, 1956; CHEVALIER, 1959; TAPINOS, 1965 and 1971; BATTESTI, 1967; LAWLESS, 1978; ADLER, 1980). The great majority of studies on Algeria have dealt with urban growth and urbanisation in very broad terms. But few strictly demographic works based on internal migration have been carried out. The main emphasis in demographic research has been placed on the construction of population accounts at the national level and on the analysis of the fertility and mortality regimes that are associated with these accounts. Consequently, knowledge on patterns and process of population movement is very limited in the Algerian context. Faced with the well known variety and complexity of these phenomena, there has been an understandable reluctance on the part of many research workers to tackle the subject. Accordingly, the present thesis, the main concern of which is the analysis of migration to Constantine, has little empirical research to refer to. Thus, this thesis is not by any means a finished product, but rather represents a preliminary step in specifying the interrelation between migration and development, with particular

reference to Constantine, the third largest Algerian city. One should also mention that because of time and financial limitations, it was not possible to investigate every single aspect of the topic fully in a research project done single handed, it was necessary to limit the scope by establishing a selective range of hypotheses that would serve as a migration model to be tested. The thesis, treating recent urban growth patterns and migration, is divided into three parts. In Part One, the relationship between urbanisation and development strategies is examined. In addition to an overall assessment of urbanisation trends and problems, the thesis in Part Two concentrates on the analysis of urban growth of the case study, discusses the changes in magnitude of in-migration to Constantine over time, and tries to identify the major internal streams to Constantine in a context that relates them to regional development patterns. Here a spatial interaction model is used to measure the salient factors that enhance and impede migration to Constantine. Finally, the demographic and socio-economic characteristics of the migrant population, and some spatial aspects of Constantine's demographic growth are presented in Part Three.

During the stages of this research many major difficulties were encountered. An obvious difficulty was that being based on Glasgow, frequent visits to the study area were impossible. Nevertheless, a number of visits were made to the case study area as well as to Algiers and Oran. Another difficulty concerns the consistency of data, especially on a temporal basis in view of changes in boundaries, definitions

and classification in the census data. With these constraints in mind, the case study was mostly based on the most recent and reliable source available, the 1977 census; but historical background material whenever available was taken into account since it is a major factor in any analysis of internal migration because of the necessary interrelation between recent and past trends. The entire data on the recent migrants to Constantine were initially compiled in a disaggregated form, the 'fiches ménages' of individual households. Collection of these types of data required time consuming work in the Census Bureau at Oran and subsequent computer filing at Glasgow. Fieldwork was concentrated in Constantine and visits to various institutions at Constantine were made. Thus, several separate sources were at the basis^{of}/this thesis. Much of the first four chapters is a 'desk study' based on published work available at Glasgow in the Newbigin collection of the Geography Department and in the University Library. The Library of the Documentation centre for Middle Eastern and Islamic studies at Durham was also consulted. A great deal of information for the 'desk study' was obtained in Algeria from the CNRES in Algiers, Oran and Constantine CNRP libraries, the Archives centre at the Constantine wilaya and the CADAT at Constantine. Because this 'desk study' was primarily founded on secondary sources, an effort was made to rework and recalculate published data so as to be most relevant to the thesis. Valuable information was also drawn from unpublished 1977 census data, studies by Bendjelid(1976), Meskaldji(1975, 1979), Prenant(1976) and Lawless(1981). Secondly, the thesis contains original work based on census extracts which were regarded as crucial in the field of migration since the

1977 census, although rich in detail, is only available in coarse aggregated form in published reports. Since migration was considered to be a crucial element in Constantine's growth, individual household records totalling over 35 000 migrants were extracted from the Census Bureau in Oran, requiring three months work in Oran and a further three months in coding in Glasgow. The mass of data collected on the migrant population was subsequently re-aggregated so as to be comprehensible and mappable, but it represents a major original contribution of the thesis. It is very much hoped that future researchers will find this work useful in exploring further paths of research and that this work, by combining 'desk study' data and original data will provide some meaningful information for the planner.

Part One

Part One

Chapter One

THE SCALE AND PACE OF URBANISATION IN ALGERIA

1.1 Size and Growth of the Urban Population.

Contrary to Morocco and Tunisia where urban life has been of long tradition, Algeria, characterised for centuries by a weak urban network, has today a higher level of urbanisation than either of her two neighbours (LAWLESS and BLAKE, 1976,p1). Since the end of the nineteenth century Algeria has experienced three major phases in urbanisation which were summed by Santos (1971, p731) as "une longue période d'urbanisation coloniale, une assez breve urbanisation nationale démographique et une période d'urbanisation nationale économique". Firstly, up to 1954 and corresponding to colonial urbanization, settler colonisation implying expansion of commercial agriculture and mineral exploitation led to the creation of many new towns by the French and the expansion of pre-colonial centres. Between 1830 and 1934, some 972 centres de colonisation had been constructed or expanded (TABLE 1.1) and about 1 648 677 hectares of fertile land were wrested from the Algerian producers and allocated to the colons by the colonial state (BENACHENHOU, 1972, p39).

In addition, after 1930 and particularly after 1945, the high rate of population growth among the Muslim community, and an increase in rural-urban migration resulted in a quickening of the rate of urbanisation. The second phase

(1956-1966) namely traumatic urbanisation, was characterised by a rapid acceleration in rural to urban migration as a result of the insecurity and hardships which the Algerian population suffered during the War of Independence (1954-1962), particularly the regroupment centres policy of the French and the departure of the majority of the European population in 1962.

TABLE 1.1 Evolution of the centres de colonisation,
1841-1933

Period	Number of Centres created or expanded
1841-1850	126
1851-1860	85
1861-1870	21
1871-1880	264
1881-1890	107
1891-1900	103
1901-1920	199
1921-1933	67
Total	972

Source: Benachenhou, A.(1972) Formation du sous-développement en Algérie, p39

Finally, the third phase (1966 onwards) has been described by Vaidyanathan and Farès (1973, p59) as emergent urbanisation, which has begun under more settled political and social conditions and was viewed as a kind of response to changes in the Algerian economy. During this period the Government has embarked upon a policy of planned economic development and is using its growing oil revenues to finance a large industrialisation programme. Industrialisation has reinforced urbanisation by being a powerful factor in attracting

prospective labour to urban centres emerging as development poles. As a result, Algeria is experiencing social and economic change at a pace never before experienced. The interactions of historical process, technological and economic advances and increasing government control over economic activity have contributed to an accelerated urbanisation process since the Liberation War in 1954. Thus, although Algeria ranks amongst the least urbanised countries of the world, its urban population growth has recently been, and is estimated to continue, to be one amongst the most rapid in the world. Until the early 1950's much of the increase was probably more apparent than real and due mainly to the greater accuracy of the census; but since then Algeria has been experiencing widespread and rapid urbanisation which has resulted in a change in the rural-urban ratio (TABLE 1.2).

TABLE 1.2 Actual and Projected Urban Population in Algeria

Date	Total Population	Urban Population	% Urban
1830	3,000,000	150,000	5
1886	4,000,000	600,000	15
1948	7,679,000	1,996,540	26
1966	11,801,817 *	4,251,540 *	36
1977	16,948,000 *	6,889,362 *	40
1986	23,000,000	14,500,000	63

* Census figures excluding Algerians living abroad.

Source: Le Coz, J.(1972) De l'urbanisation "sauvage" à l'urbanisation intégrée , Bulletin de la Société Languedocienne de Géographie, No.6,1 (janvier - mars), p.5-9

As Cote (1978,p9) stated "l'urbanisation très régulière jusqu'en 1954 a subi brusquement une forte accélération lors de la guerre de Libération et de l'immédiate après-guerre. Le taux d'urbanisation de 36% qui par simple prolongation de la tendance ne devrait être atteint qu'en 1986, l'a été en 1966. La guerre a donc accéléré de 20 ans le processus d'urbanisation".

In 1977, the urban population accounted for 40.6 per cent (of which 14.7 per cent attributable to the urban metropolises) against 26 per cent in 1948. Such an urban population growth is not only the result of the natural increase (balance of births over deaths) but also of migration from mainly rural areas. As was mentioned by Blake (1971,p190), the urban population is at present growing at 4 or 5 per cent per annum as a result of high rates of natural increase and strong rural-urban migration, whereas at the national level natural population growth is the major factor. The total residential population of Algeria was estimated at 16.9 millions in 1977 against some 11.8 millions in 1966, giving thus an increase of 43.6 per cent in eleven years equivalent of an estimated annual rate of growth of 3.96 per cent (Ministère de la Planification et de l'Aménagement du Territoire, 1979a). This pace of population growth has accelerated due primarily to the decline in mortality (present mortality rate: 1.4 per cent) reflecting the growing control over diseases and general improvement in public sanitation, especially in urban areas, and due as well to continuing high birth rates - 4.6 per cent - (Bulletin d'Informations

Economiques, 1980, p11-13), giving therefore a natural increase of 3.2 per cent (TABLE 1.3). On the basis of

TABLE 1.3 Algeria: Estimated average birth, death and natural increase rates, 1901-1979.

Period	Crude birth rate	Crude death rate	Natural increase rate
	o/oo	o/oo	o/o
1901-1905	37.8	32.8	0.50
1906-1910	35.5	30.5	0.50
1911-1915	35.3	27.4	0.79
1916-1920	34.9	31.4	0.35
1921-1925	37.2	29.4	0.78
1926-1930	42.3	26.6	1.57
1931-1935	43.4	25.3	1.81
1936-1940	42.1	25.1	1.70
1941-1945	42.9	43.1	-0.02
1946-1950	42.2	32.1	1.00
1951-1955	47.4	20.6	2.68
1956-1960	45.6	na	na
1961-1965	48.5	14.6	3.39
1966-1969	47.8	14.9	3.29
1970-1975	48.8	15.4	3.34
1976-1979	46.0	14.0	3.20

Source:

1901-1969 : Negadi, G; D.Tabutin and J. Vallin (1974)
 "Situation démographique de l'Algérie",
Population de l'Algérie, CICRED, p19

1970-1975 : Europa and Middle East Publications, 1981-82 ,
 p255.

1976-1979 : Bulletin d'Informations Economiques, 1980,
 Vol.3, No.59,pp 11-13.

these figures it has been hypothesised that population in Algeria will double during the next 23 -24 years to 34-35 millions. The population totals presented here are not, in themselves, very meaningful unless they are assessed in terms of potentials and limitations of the different categories of population in relation to the country's economy (TABLE 1.4).

TABLE 1.4 Age and Sex Structure of Algeria's population in 1977 (in percentage of total population).

Age Groups	Males	Females	Total
0-5	11.2	10.8	22.0
6-14	13.2	12.7	25.9
15-17	3.3	3.1	6.4
18-59	19.1	20.8	39.9
60 & over	2.9	2.9	5.8
Total all Groups	49.7	50.3	100.0

Source: Secrétariat d'Etat au Plan, 1978 'Résultats préliminaires par commune et par dispersion', mars 1978, p7.

TABLE 1.4 reveals an extremely youthful age structure of Algeria's population; in 1977 the total population under 18 years old accounted for 54.3 per cent while the working age population was relatively small and represented only

39.9 per cent. As the percentage of elderly population is concerned, it is insignificant, that is to say a little less than 6 per cent. The discrepancy between male and female age structure in TABLE 1.4 reflects on the one hand emigration of adult males to Europe (mainly France) and on the other hand omissions in enumerating of elderly women. In sum, such population implies heavy youth dependency perceivable through requirement of huge investments in new means of production and in social and economic infrastructures, and suggests strong potential for demographic growth. At the present time the real occupied population (including full-time occupied population plus women in part-time employment) accounts for only 14 per cent of the total population, meaning that the Algerian working man has to support an average of 6 or 7 people (TABLE 1.5). So the rapid decline in death rates have on balance contributed to an expansion of the size of the labour force while continuous high birth rates create present dependency ratios and a rapidly expanding future labour force.

In the case of towns and cities, population pressure is compounded by migration. Todaro (1976,p.10) rightly stated that whatever measure is used,urban growth in most developing countries, resulting from rapid migration, has been substantial; it accounted for anything between 40 and 65 per cent of urban population between 1960 and 1970. In fact, by the early 1970's, 75 per cent of the internal migration was absorbed by the ten largest Algerian towns (TREBOUS, 1970,p.17). This unprecedented increase of urban growth in the recent past has no doubt emphasised

TABLE 1.5 Structure of the Population according to Category and Sex, Algeria 1977.

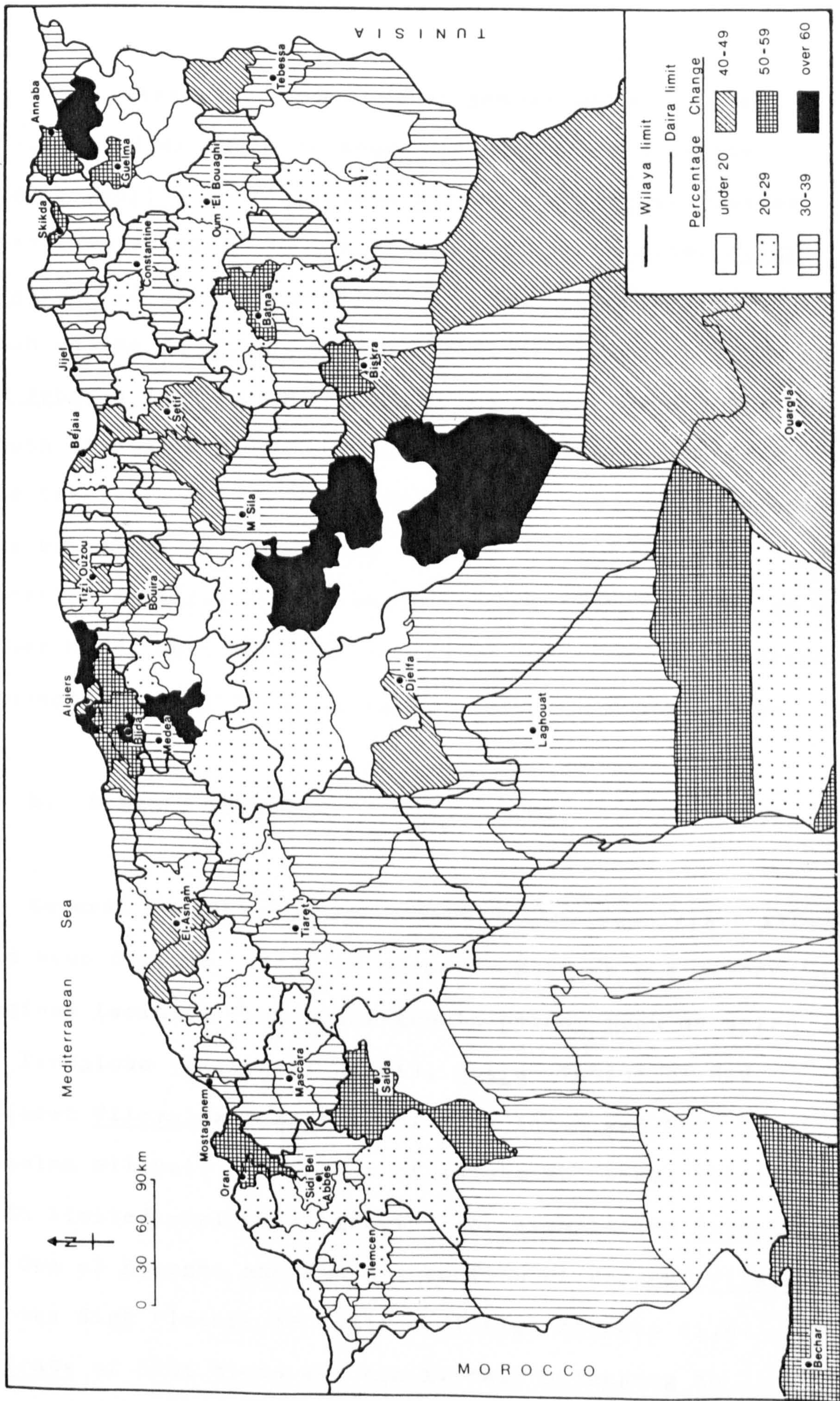
Category	Male	Female	Total
Occupied persons *	2,198,738	138,233	2,336,971
Unemployed persons who have previously worked*	320,901	4,859	325,760
Unemployed persons who* have not yet worked	326,616	18,451	345,067
Women in part-time* employment	-	42,153	42,153
School Children & Students	2,073,577	1,344,728	3,418,305
Housewives	-	3,613,406	3,613,406
Retired persons	62,604	4,294	66,898
Disabled persons	145,359	83,618	228,977

*Correspond to the basic active population

Source: Ministère de la Planification et de l'Aménagement du Territoire - "2^e RGPH - Population active, 1977", Vol.3, Serie B, p.35, 1979c.

the interregional imbalances. Analysis of regional patterns of population change (1966-1977) in Algeria permits the distinction of three major regions for which population dynamism is well differentiated, namely regions with average population growth, regions of strong out-migration and regions of strong in-migration (Fig.1.1).

Fig.1.1 ALGERIA: POPULATION CHANGE BY DAIRA, 1966-1977



a Regions with average population growth
(30-40 per cent).

This category covers a heterogenous collection of regions: Overpopulated mountain regions such as the Grande Kabylie or Tizi-Ouzou Wilaya (dairate of Draa el Mizan and Azazga) and the Petite Kabylie or Jijel Wilaya (dairate of El Milia and Taher), less populated mountains such as the Monts de Freneda (Wilaya of Tiaret) and the Monts de Tebessa (Wilaya of Tebessa), the Steppe-Sahara fringes south of Djelfa and Biskra and the High Plains (M'Sila and Constantine regions). This ability to retain population may be explained, on the one hand, by their peripheral location relative to the major economic regions, and on the other hand, have been the object of important socio-economic projects leading to major concentrations of population.

b. Regions of strong out-migration

Several regions display markedly slow population growth and even decline. Some of these localities are either in regions isolated from major growth poles, such as daira of Ferdjioua (Wilaya of Jijel), daira Teniet el Had (Tiaret Wilaya) and dairate of Souk Ahras and Oued Zenati (Guelma Wilaya); or regions of extensive cereal cultivation with limited employment growth, for example the dairate of Oum el Bouaghi and Ain M'lila (Oum el Bouaghi Wilaya) in the High Plains; or regions of high steppes (i.e. dairate of Sidi Aissa and Ain El Melh belonging to M'Sila Wilaya) or others that are fairly close to the major

cities with their attraction of industrial or other employment, for example the dairate of Zighout Youcef (Skikda Wilaya) and Mila (Constantine Wilaya) located close to Constantine and daira of Mers el Kebir situated nearby Oran .

- c. Regions of strong in-migration: Growth rate over 40 per cent.

By way of contrast, numerous regions are experiencing very high population growth. This category includes all the coastal urban centres and much of their hinterlands, and a large number of small and medium-sized inland urban centres. A high percentage of 50 and in some cases above 60 was recorded in the Algiers region and particularly in the Mitidja and Sahel dairate (Blida, Boufarik, Rouiba), reflecting the growth in employment mainly in industrial jobs. As for the Oran region, a strong axis of population growth is formed by the rapidly industrialising Arzew together with Oran dairate. In Eastern Algeria, Annaba and Dréan (Annaba Wilaya), with the nearby industrialising urban centres of Skikda and Guelma form a focus of in-migration. Indeed, adjacent to Annaba, El Hadjar with its steel mill was the fastest growing area (154 per cent).

If such rapid population growth was to be expected of the three coastal metropolises, it was not so elsewhere in the interior of Algeria. TABLE 1.6 reveals that the main cities such as Algiers, Oran, Constantine and Annaba

TABLE 1.6 Population Change of Selected Communes
1966-1977

Commune	Total Population in 1966	Total Population in 1977	Rate of Growth (%)
El Hadjar	15,557	39,642	154.81
Mécheria	11,985	26,930	122.19
Bou Saada	25,529	50,193	96.61
Arzew	12,993	22,171	70.63
Greater Algiers	930,003	1,523,000	63.76
Batna	68,438	112,095	63.79
Guelma	38,779	60,059	54.87
Skikda	70,248	107,717	53.33
Annaba	167,245	255,938	53.03
Oran	321,945	491,901	52.79
Sétif	95,627	143,511	50.07
Constantine	249,411	354,261	42.03

Source: Ministère de la Planification et de L'Aménagement
du Territoire (1979a) 'Répartition de la population
par commune et dispersion, évolution 1966-1977',
avril 1979, Alger.

were growing more slowly than the urban population as a whole (whose rate of growth for the period 1966-1977 is estimated at 81.5 per cent). It is claimed that the 1966-1977 period has been instead the demographic expansion of the medium and small urban centres to which urban functions had recently been imparted by industrialisation (for example Skikda, Guelma and Sétif), decentralisation (Oum el Bouaghi, M'Sila) and by the wider provision of services. The strong growth of smaller centres near large cities was also noted (i.e. Hamma Bouziane, 10 km north of Constantine, Souk el Ténine east of Bejaia and Bou Saada south of M'Sila). The present fact of the more rapid growth of many smaller and medium-sized towns than of those of the metropolises represents a trend away from the allometric growth situation which Abu-Lughod (1976,p.200) regarded as dominant in the Maghreb on the basis of pre-1975-1977 census data, stating that "the tendency for the larger cities to be growing at higher rates than the smaller ones is still the dominant pattern, no matter how we may evaluate this". This regional patterns of population change characterised by restrained population growth in most large-cities and the faster growth of smaller urban centres as shown in TABLE 1.7 may well result from the government policy attempts at decentralisation, whereby the existent imbalances between large and small cities in terms of infrastructure and services are weakened.

Urban population figures in TABLE 1.7 are slightly lower than previously advanced in TABLE 1.2 because of differences in definition of urban function. In the latter, the line

TABLE 1.7 Rank Size of the urban chef - lieux in Algeria (1966 and 1977)

Size Class	1966 (1)		1977 (2)		% Change 1966-1977	
	Number of		Total Urban		Number of	
	Urban centres	Population	Urban centres	Population	Urban centres	Urban Population
Over 500 000	1	884 200	1	1 473 800	-	66.7
100- 500 000	3	719 000	7	1 528 500	133.3	112.6
50- 100 000	9	616 900	16	1 051 700	77.7	70.5
20- 50 000	28	868 400	39	1 259 300	39.2	45.0
10- 20 000	32	457 100	69	974 600	115.6	113.1
Under 10 000	21	165 100	81	445 800	285.7	170.0
All classes	94	3 710 700	213	6 733 700	126.6	81.5

Source : 1 - Bardinet, C. 1974, "la répartition géographique de la population", in la Population de l'Algerie, CICRED, p.85

2 - CNRES - 2^e RG PH - Tableaux et premières analyses globales (extraits), Serie B, Vol. I, September 1978, Alger.

of division between 'urban' and 'rural' was generally taken in Algeria, as in France, as 2,000 : Communes with 2,000 or more were classed as urban, those with less as rural. Such a distinction is however purely arbitrary and serious differences arise whatever figure is chosen. By contrast, in TABLE 1.7 the division between 'urban' and 'rural' is based upon both the distinction between close and scattered population and the occupational structure of the labour, as it was recommended by Bardinet and Cabot (1973). In 1978, the Commissariat National aux Recensements et Enquêtes Statistiques (CNRES) defined 222 urban agglomerations ranging from the four metropolises to 'potential' semi-urban centres : 31 chef-lieux de Wilaya, 125 chef-lieux de daïra, 50 chef-lieux de commune and 16 agglomérations secondaires (See Appendix A). Out of the 16 secondary agglomerations only seven were taken into account in establishing TABLE 1.7 since for the remaining nine no information on their occupational structure was available. The sub-metropolis urban centres are defined by the CNRES (1978, p6-7) as follows:

- 109 urban agglomerations having at least 75 per cent of their total active population employed in the non-agricultural sector,

- 50 semi-urban agglomerations for which between 50 and 75 per cent of the active population are non-agricultural,

- and finally 59 'potential' semi-urban centres which following the completion of a local project or from development forecasts or from pressure of a high concentration of population are about to acquire urban status. It follows

that not all centres that qualify for the census definition of urban do exhibit a distinctive town life.

1.2 Factors Influencing Population Redistribution

Although physical or environmental factors are important, they generally provide no more than a partial explanation of any population distribution; and various historical, political and socio-economic factors must also be considered. In the specific case of Algeria four major factors decisively influenced the population distribution and originated demographic imbalance, mainly emigration, regroupment centres policy, rural exodus (increasingly intense since the wartime disruption) and the colons departure in 1962, and finally economic development policy of the Independent Government based upon decentralisation.

a. Emigration

Unlike its neighbours, Algeria has very high proportion of its population living abroad, the great majority in France. In 1977, the CNRES estimated 950 000 Algerian emigrants which represented 5.6 per cent of the total population. Emigration to France is not a new phenomenon of Algerian demography. In fact Algeria became a labour exporting country at the beginning of the century, and throughout the colonial period emigration movements were dominated by French decision-making. Among historical and economic reasons for the outflow of Algerians to France were, on the

one hand, the conversion of arch land (belonging to the community) into individual ownership and, on the other hand, the needs of the French economy. The introduction of new legislation (cantonement, Sénatus-Consulte and Loi Warnier) establishing private forms of land tenure, destroyed the prevailing traditional structure of the rural society and inevitably enabled the settlers to expropriate most fertile land from the native population (BOURDIEU and SAYAD, 1964, p15-22). Destruction of tribal structures combined with the tremendous population explosion amongst Muslims (an average population increase of approximately one million every ten years since 1876) directly led to poverty well exemplified by either exodus of peasants from their lands towards the commune centre, where many became seasonal labourers or by emigration. This process of the collapse of traditional rural structures under the impact of colonial exploitation is convincingly described by Mabogunje (1980, p79) in the following words : "The collapse of traditional rural structures was achieved through the extension into and penetration of the rural structure by the capitalist mode of production. The attempt to separate or alienate land from natives took two forms. The first was to individualise its ownership. Individualisation of land tends to eliminate all claims on land originating in kinship or neighbourhood organisations. In this way, all social restraints on land are removed and individuals can give way, mortgage, sell or alienate a piece of land at will. Correspondingly this means that society must recognise a new and contradictory phenomenon : Landless peasants.

The second form which overlaps with the first, arose out of the consequent subordination of alienable land to the needs of a swiftly expanding urban population created by the market economy". The high rate of population increase among the Algerians further aggravated pressure of population on resources and the poorest and the most populated regions were the traditional departure areas and still provide the bulk of the migrants : 68 per cent of the total international migrants are from the area overlapping the regions of Tizi-Ouzou, Sétif, Constantine and Batna (TREBOUS , 1970, p17).

The evolution of Algerian emigration closely reflects the requirements of the French economy (TABLE 1.8). If until the First World War emigration was severely restricted by a decree of the Governor-General in 1876, which required a travel permit for those wishing to leave, during the First World War 120,000 Algerians were recruited against their will directly by the French Government, especially the Ministry of War, to work in munitions factories, army service workshops, transport and mines (LAWLESS , 1978, p72). Similarly, during the phase of reconstruction following the Second World War, the French again turned to the Algerian labour market to prevent delays in national development due to labour shortages, whereas immediately after the end of the First World War most Algerian workers were repatriated and by 1919 only a few thousand Algerians remained in France. In the final year of Algeria's struggle for Independence (1961-62) emigration figures almost matched those of the early fifties. Economic necessities in France coincided with the year of greatest terror in Algeria provoking a large

TABLE 1.8 Movement of Algerian migrants between Algeria and France (1920-1977).

Periods	Entries into France	Exits from France	Balance
1920-24	213 000	156 000	57 000
1925-29	178 000	175 000	3 000
1930-34	105 000	122 000	-17 000
1935-39	146 000	85 000	61 000
1940-44	34 000	20 000	14 000
1945-48	186 000	87 000	99 000
1949-54	763 000	621 000	142 000
1955-62	893 405	792 510	100 000
1963-69	1714 150	1521 869	192 281
1970-74	2196 898	2025 847	171 051
1975-77	n.a	n.a	n.a
Total emigrants in 1977			950 000*

Source:

1920-1954: Dellouci B. and M.Mehani (1974) "L'émigration algérienne", in La population de l'Algérie, CICRED, p87

1955-1962: Augarde J. (1970) "la migration algérienne", Hommes et Migrations n°116, p14-15

1963-1974: Adler S. (1980) Swallows' children. Emigration and development in Algeria. Working Papers, May 1980, ILO, Geneva, p34

*1977 Census figure.

outflow after 1958. In summary, France regarded Algerian labour as a reserve supply which could be tapped to meet the requirements of the French economy. After the mid 1960's the policy of the Independent Algerian Government, supported by the Evian Accords, was marked by the emergence of a centrally planned economy which incorporated emigration as an essential strand of development. Therefore emigration was regarded as an important safety valve for surplus labour and was controlled by the Office National Algérien de Main d'Oeuvre (O.N.A.M.O.) whose task was to apply selective criteria to prospective emigrants and check the outflow. The freedom of circulation guaranteed by the Evian Accords soon came under attack from French officials who felt that a renewed influx of Algerians seeking for work in France would strain the absorptive capacity of the French economy. So an objective in the negotiations leading to the 1968 Accord was therefore the establishment of a fixed multiannual contingent. Then in 1973 the decision of suspending all new emigration to France by the Algerian Government followed a series of racist incidents in the South of France directed against Algerians. The ban on new worker emigration has remained in force and the Algerian position is that large scale emigration to France will never be resumed but that some future agreement on sending workers for professional training is not ruled out. Since these incidents, reinsertion, the return and the reintegration of the emigrant community were the major principles of future policy. To this end a 'service de réinsertion' has been established by the O.N.A.M.O. in each wilaya together with four offices

in France at Paris, Marseilles, Lyon and Lille. They receive requests for repatriation and centralise offers for employment in Algeria from various state companies (SIMON, 1976, p11). New measures, such as new finance law allowing migrants returning permanently to Algeria to import a car and bring back their families' belongings free of customs dues and local authorities being instructed to allocate a quota in all their new housing projects to returning migrants, have been introduced by the Algerian Government to ensure the successful reintegration of those workers returning to jobs.

b. Regroupment centres and forbidden zones.

Of all the hardships to which Algerian rural society was subject between 1954 and 1961 none was more brutal than the massive regroupment of the rural population by the French army ostensibly to protect it but in reality to put down rebellion (Lawless and Sutton, 1978). Although a few regroupment centres were established by the French army as early as 1955, it was not until 1957 that the creation of regroupment centres became a definite policy. They were the direct consequence of the Zones interdites (forbidden zones) policy and they intended to complement it. In most cases, hamlets of varying remoteness were depopulated and their inhabitants moved to centres located at lower altitudes, by a road and usually surrounded by barbed wire fences and dominated by one or more watch towers occupied by guards armed with machine guns (LESNE, 1962, p531). Given the scale of the regroupment and hardships which refugees suffered, a number of writers have spoken of this period as the "genocide

era" (HEGGOY, 1972, p.223). One estimate for 1961 that 2380 regroupment centres existed of which 1217 were temporary and 1163 permanent commonly called "new villages", but accurate statistics are shrouded in doubt and military secrecy, involving approximately 2 157 000 people accounting for a quarter of the overall population (Service de Statistique Générale de l'Algérie, 1960). However, Cornaton (1967, p.122-123) argued that a more valid 1961 estimate would be 2350 000 people, equivalent to a third of the rural population. If all those people who fled or were moved to recasement and resserrement centres as defined by Planhol (1960, P357-358) are included, it is estimated that some 3 525 000 Algerians had been displaced from their residence, accounting for 50 per cent of the Algerian rural population. In the Eastern part of Algeria alone, 24 per cent of the total population was displaced and forced to move into 91 regroupment centres, comprising 145 000 people (LEKEHAL and RAHAM, 1979,p26-27). With the 1962 ceasefire, the authorities anticipated considerable movement out of the regroupment centres back to the old farms and hamlets, but in fact many stayed in the centres. Pierre (1966) observed that dégrouperment was low in centres situated in the plains; in the Western Mitidja 30 out of the original 50 centres still survived in 1966,accommodating 20 000 out of their peak population of 35 000. However, in mountainous regions a great number of people returned to their homes, especially in the Grande Kabylie and the Ouarsenis. As a result of moving and regrouping the scattered population of rural areas, the dispersed, loose clustering settlement pattern before the War of Independence, was replaced by a

tendency towards relatively more compactness and closeness of the settlement pattern, derived from the regroupment centres policy.

c. Rural exodus

The move to the cities has been dramatic but not smooth. It should be remembered that in Algeria during the 1954-1966 intercensal period, spontaneous and massive migration from all rural areas and particularly from mountainous regions, such as the Petite Kabylie, Aurès and Nemenchas, occurred to the towns during the fighting and immediately after Independence. As a result, and in spite of the departure of approximately one million Europeans, the total population of towns and villages increased by 63 per cent in the Algiers and Constantine regions and by 40 per cent in the Oran region, between 1954 and 1960. It meant that half of the Algerian towns grew more rapidly from migration than natural increase (BLAKE, 1971, p.193). For example, the population of Algiers doubled during that period, that of Constantine more than doubled, while the population of Sétif increased fourfold (TREBOUS, 1970,p.17). Hence, migration occurred to large cities but many small and medium-sized towns also attracted migrants, usually from their immediate hinterland (PRENANT, 1976,p.7). Although urban growth and the scale of rural-urban migration has declined relatively since 1964-1966, the intensity has still remained high. Rural exodus is estimated at 130 000 per year in 1978, increasing to about 154 000 by 1980, with the result that a 50 per cent urban

ratio will be achieved by 1990 (SANSON, 1979,p.45). Such an observation is well confirmed if one looks at the population change (1966-1977) according to the types of settlement (TABLE 1.9) and at the evolution of the active population structure (TABLE 1.10).

TABLE 1.9 Population change in Algeria (1966-1977)
according to types of Settlement

Types of settlement	Total Population in 1966	Total Population in 1977	Increase %
Agglomération Chef-lieu	5,156,433	8,135,040	57.76
Agglomération Secondaire	1,460,354	2,254,084	54.35
Scattered	5,165,030	6,558,876	26.98

Source: Ministère de la Planification et de l'Aménagement du Territoire: Répartition de la population par commune et dispersion, évolution 1966-1977, avril 1979a, Alger, p.6.

TABLE 1.10 Percentage of the active population in Algeria
by economic sectors for 1966 and 1977.

	1977	1966
Primary Sector	31.1	58.2
Secondary Sector	32.8	15.1
Tertiary Sector	32.6	23.8

Source: Bulletin d'Informations Economiques (Algérie Presse Service), Vol.3, No.59, fev 1980, pp.11-13.

It is obvious that the nucleated population of the Chef -lieux and the agglomérations secondaires have considerably increased

while the scattered population, characteristic of rural regions, tends to decline. Similarly, the active population structure markedly changed since 1966 in the way that both the proportions of the secondary and tertiary sectors considerably increased at the expense of agriculture.

As for the causes behind this intense rural influx towards the cities, broadly speaking familiar 'push' factors are most often responsible for the rural-urban migration, including poor systems of land tenure, mechanization of agriculture and local population pressure (PRENANT, 1968, p.195-197). The expropriation of the most fertile land by the European settlers combined with the rapid growth of the Muslim population has resulted in acute population pressure on resources, which in turn has seriously disrupted traditional rural economies. By uprooting people from their social environment, the socio-cultural system of the peasantry was overturned and depeasantisation promoted, reinforced by the discovery of wages and the replacement of the traditional barter-exchange system by a monetary economy. Between 1930 and 1954, the number of landowners dropped by 20 per cent whereas the number of seasonal and permanent farm labourers increased by 29 per cent (BOURDIEU and SAYAD, 1964, p.17). In addition mechanisation of agriculture, which contributed to contraction of employment, made the unoccupied rural population go and swell the urban labour force.

The direct consequence of this excessive and anarchical swelling of the urban population, which thereafter abstracted to the towns a part of their urban characteristics described by

J. LeCoz (1972,p.5-9) as "urbanisation 'sauvage' et physiologique due à la pénétration du rural dans l'urbain avec la masse de néo-citadins mal assimilés", seemed to be the non-adaptation of towns and cities to accelerated growth, and demographic and socio-economic imbalances within urban places. Accretion of bidonvilles (Shanty towns) on the periphery of cities, very marked under-employment and unemployment are the components associated with the rapid rural-urban migratory movements (BOUMAIZA, 1976, p.34-37). The spontaneous characteristic of these flows made difficult any attempt at an overall development policy aiming at integration in the 'modern' world marginal areas and proletarianised populations living on the outskirts of the cities.

Contrary to the 1954-1966 period, where urbanisation merely resulted from a massive demographic drift from the countryside towards the urban centres, the following period (1966-1977 and especially since 1972) marked a new phase in the urbanisation process which this time was mostly correlated to economic development.

d. Decentralisation Policy

Aiming to weaken regional disparities, rural-urban imbalances and improving living conditions, Algeria embarked on a development policy based upon decentralisation. To this end the framework of the country's economic development was set by national development plans seeking to diffuse production activities more widely through measures of regional industrialisation and agrarian reform (FRANCHET, 1972). The pre-plan

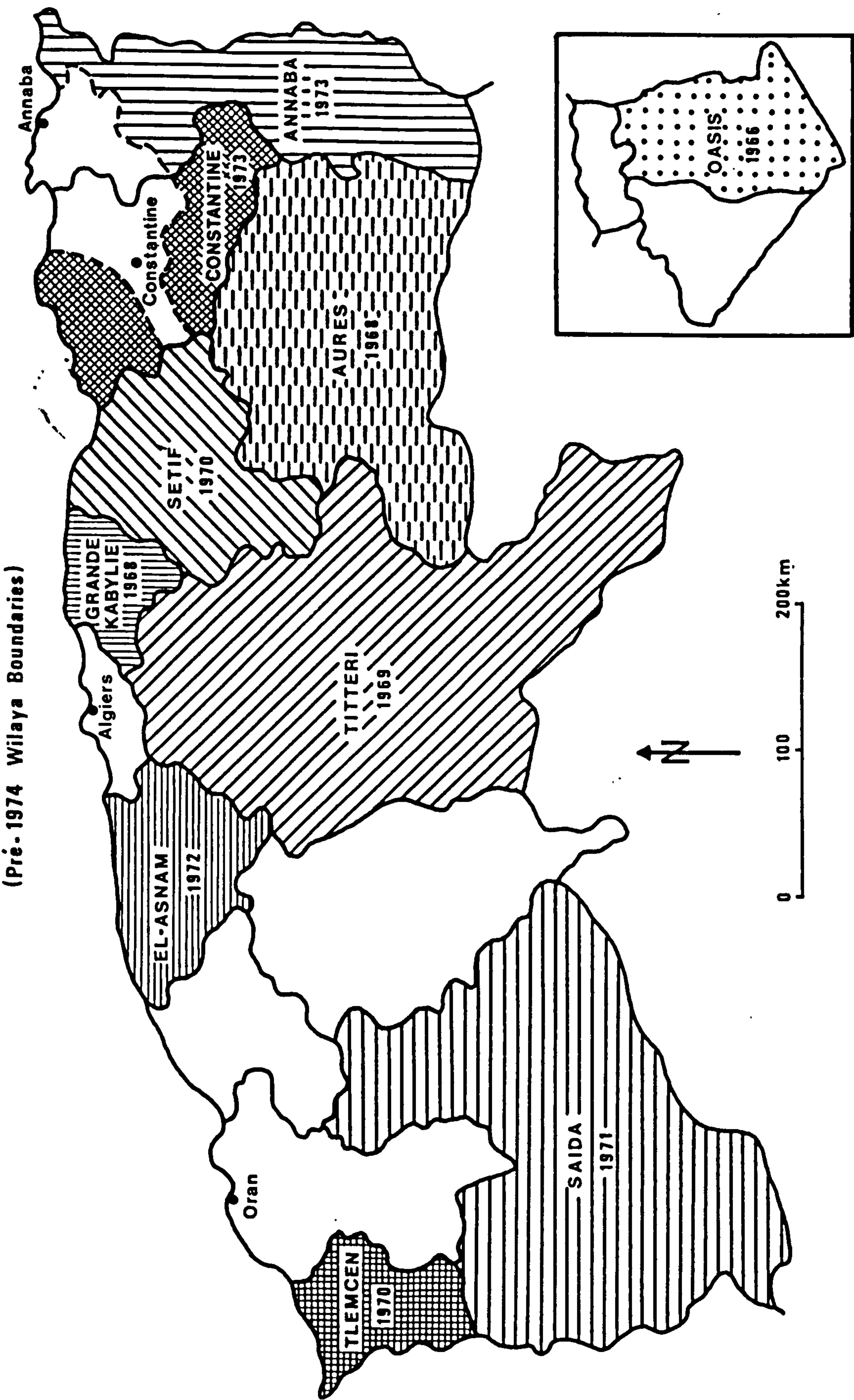
(1967-1969) allowed the organisation of the economic structure by state control of the main resources and the creation of National Companies while new local authorities were set up. The first four-year plan (1970-1973) sought for economic take-off which would make Algeria a developed country, which was aimed through the creation of a base of industrialisation and the improvement of the education and training system. The second four-year plan (1974-1977) aimed to consolidate the effort made during the previous plan and to start a process of participation of the local authorities in the formulation of objectives of local importance. It also contained regional policies expressed in population terms so as to stabilise the interior and mountain zones and so as to limit further migration to the coastal towns. Finally a new five-year plan (1980-1984) has been recently adopted. It places less emphasis on industry and stresses that almost one-half of overall expenditure should be earmarked for the completion of industrial and housing projects and of infrastructural developments left over from 1970-1973 and 1974-1977 plans (Africa Research Bulletin, 1980). Thus the 1966-1977 period has seen some regional developments often with population and migration objectives. In an effort to reduce the flow of peasants to the towns, the Government undertook a far-reaching programme of land reform and redistribution - the Agrarian Revolution - which sought for the adaptation of its traditional agricultural sector to the requirements of society, a fair and efficient distribution of means of production and an improvement of the living and working conditions of the rural population (SCHLIEPHAKE, 1973). An ultimate step to reorganise the rural landscape was the building up of new Socialist Villages provided with all necessary central

institutions such as schools and dispensaries (CNRA, 1972). Furthermore, since 1966 most of the lagging regions of Algeria have been granted 'special programmes' (Fig. 1.2), which aimed to lessen regional disparities in infrastructural, social and education provision and to promote agricultural and industrial development appropriate to the regions' potentiality (BAKOUR, 1972). To increase decentralisation efficiency, administrative reforms were introduced in 1974 which led to an increase in the number of wilayate and dairate and also in the number of centres of tertiary activity. In addition, further financial credits have been available since 1977 to local authorities for extremely localised development plans, the Plans Communaux and the Plans de Modernisation Urbaine (P.M.U.).

Nevertheless, and in spite of the Government's enormous efforts to achieve rural-urban balance through numerous and various measures at different levels, one must be aware that the country's problems still remain serious.

For Algeria, as for many other countries, unprecedented increase of urban population and prospects for further increase in the near future have immediate economic and social implications concerning employment, housing, education and health. At the present time the spatial distribution and especially the rate and pattern of urbanisation is regarded as a very serious population problem since recent rural-urban migration has added to pressure because, on the one hand, it exceeds the employment and residential capacities of the cities, and, on the other hand, contributes to a dramatic fall of the

Fig.1.2 REGIONAL DEVELOPMENT PROGRAMMES 1966-73
(Pré-1974 Wilaya Boundaries)



agricultural output. As a whole, it comes up against the time factor and its demographic expression, which to a certain extent, compromises the economic growth effort since the latter is inevitably slower as it depends more on training men for technology than on sources of capital, which are of course also indispensable especially with a view to providing this training. Thus, unless more positive comprehensive planning measures are taken, this rapid growth of urban population in Algeria is likely to aggravate the present urban pathology.

Chapter Two

FORMULATION OF HYPOTHESES

In the preceding chapter it was observed that, since the war of Liberation, one of the most significant changes that occurred in Algeria has been urban growth and expansion chiefly through rural-urban migration. The present chapter is devoted to the investigation of why migration occurs and of who migrates, by establishing assumptions that will be tested later on in the thesis, with the intention of providing a better understanding of the causes and determinants of internal migration and the relationship between migration and relative economic opportunities in the areas of both origin and destination.

2.1 Causative Factors of Migration.

Most significant migratory movements have their origin in economic developments, though the influence of these developments may be exerted through the medium of political, social or even demographic pressure of some kind or another. Governments often take steps to encourage or discourage migration, and thus influence the prevailing flow (COX, 1976, p.143-144). Accordingly, a historical-structural perspective would be fruitful to locate the migration process in the overall context of national and regional socio-economic change. An understanding of the way in which productive structures affect migration would be incomplete without an analysis of the political and ideological forces that support or attempt to change those productive structures, especially in Algeria where the government has historically

had a profound effect on social and economic change. In this perspective, it is thought necessary to trace briefly Algerian economic history before establishing a selection of hypotheses to be tested.

An examination of Algerian economic history broadly reveals two major and distinct types of development which were adopted, one during the colonial era and the other since Independence. Throughout the colonial period, Algeria was essentially an agricultural country and was regarded more as a market and an outlet for the product of French industry than as a potential industrial "region". So at that time, any development undertaken by the French Administration was not to serve the "national" economy, but instead had as its principal objective to attract European settlers and consolidate their hold on the Algerian national economy and to organise the market according to the needs of the "metropole" for agriculture and raw minerals as well as a labour force (BENNOUNE, 1980, p.37). Therefore this pre-independence era was above all marked by the dualistic shaping of the economy with regard to agriculture, industry, mining and trade, in such a way as to serve the interests of France and the European minority in Algeria (NORBYE, 1969).

With respect to agriculture, it is worth mentioning the dualism in land ownership. The land owned by Europeans, the most fertile in the country and the most intensively cultivated, was located almost totally in the littoral, the nearest to urban population. Such a location accounted for the advantages of markets, savings in transportation

costs and the convenience of exportation of agricultural produce. Colonial agriculture, based mainly on viticulture, citrus cultivation and cereals, had a speculative character in the sense that it attempted to obtain the maximum profit rather than the maximum output. Consequently, its production inevitably turned towards the French market as the mass of the Algerian population was too poor to constitute a worthwhile internal market capable of providing rich profits. To further maximise profits, all the crops were labour-intensive despite the gradual mechanisation of colonial agriculture, suggesting that production depended mainly on cheap Algerian labour. Thus the colonial sector developed a very profitable agriculture on large farm units with an average farm size of 100 hectares while the Algerian sector was predominantly traditional consisting of small holdings (seven hectares) located on extensive and accidented land which reduced the potential output.

This distortion was also reflected in the income distribution. In the 1950s the annual income per capita in the agricultural sector was £20 for the Algerians against £730 for the Europeans (SAYIGH, 1978, p.526). Similarly, by practising a policy of obstruction towards industrialisation, the rapid expansion of population among the natives permitted the maintenance of wages at a very low level.

As far as the industrial sector was concerned, it was very small being confined chiefly to food processing, building materials, textiles and minerals. Once again, these types of industries were designed to remain of limited importance

in order to allow wide scope for the French industry to sell substantial quantities of its products in Algeria. As a result of protection measures, financial investment in both agriculture and industry during the colonial period did not benefit the development of Algeria but rather the enrichment of the colons since all the profits were transferred to France (BOUKHEMIS, 1979, p.16). Moreover, these distortions in the allocation of resources, distribution of available land and incomes, resulted in massive unemployment and in the pauperisation of most Algerians, which was expressed in a major rural exodus chiefly towards the littoral towns. It was not until the late 1950s that the Government recognised the need for official action to favour a more balanced expansion of the country when it presented a five-year plan (1958-1963) the so-called Plan de Constantine (MARTENS, 1973,p.6). The realisations of the Plan were severely disrupted because of the conditions of widespread warfare. Simultaneously, in 1961, contrary to the objectives of the Plan and the colonial development policy, a significant flight of capital and a disinvestment process occurred: 85 per cent of the savings were transferred to France, as compared with 26 per cent in 1954, because of the atmosphere of political uncertainty (AMIN, 1970, p.118). As a consequence, industrialisation and agricultural development which should have been the basis of the economy did not take place.

At the dawn of independence (1962), the Algerian economy was in total collapse. To recover from chaos, the economic policy of Algeria was geared, between 1962 and 1965

primarily to the re-activation of the industrial, service and mining sectors and to the restructuring of the formerly colonial agriculture. Aiming to construct an independent national economy and to weaken the regional disparities inherited from the colonial era, Algeria chose the implementation of an industrial strategy seeking global industrial development in which petrochemicals and iron and steel (basic industries) constituted the backbone (BOUKHEMIS and ZEGHICHE 1983). The objective looked for was the construction of a cohesive industrial structure stemming from industries creating further industrial growth, so called "industrialising industries", a concept advocated by the French economist Destanne de Bernis (1971). The creation of this dynamic industrial base was intended to permit the exploitation of energy and mineral resources "upstream", and the creation "downstream" of a wide range of consumer goods industries. Furthermore, to counterbalance the industrial concentration of Algiers, the industrial development model adopted was based on the creation of "growth poles" (Arzew, Skikda, Annaba) situated on the coast.

At the national level the positive results of such a development strategy are undeniable. Economic growth of Algeria has grown impressively over the past 15 years, progress to which rise in oil prices contributed considerably. An analysis of the evolution of G.D.P. per capita indicates that living standards of the average Algerian were slowly improving until 1971, and rapidly and consistently since (TABLE 2.1). The slow growth was from 1138 current Dinars per head in 1964 to 1591 current Dinars per head in 1971,

then accelerating to 3740 current Dinars in 1976 (SUTTON, 1981a, p.368). In the educational field, the government has also played a positive role. By 1977 more than 70 per cent of the primary school age children were in school against 47.2% in 1966 (Ministère de la Planification et de l'Aménagement du Territoire, 1979b, p.46).

TABLE 2.1 G.D.P. per capita in Algeria,
in current Dinars (1964-1976)

1964	1138	1971	1591
1965	1182	1972	1794
1966	1193	1973	2036
1967	1239	1974	2979
1968	1385	1975	3206
1969	1475	1976	3704
1970	1578		

SOURCE: Sayigh (1978) 1963-1973 Statistics, International Financial Statistics, XXXI(10), Oct. 1978 (1974-76 statistics and GDP per capita statistics - Extracted from Sutton, K., 1981a, "Algeria : Centre-down development, state capitalism, and emergent decentralisation", in W.B. Stöhr and D.R. Fraser Taylor (eds): Development from above or below ?, London, p.368.

Educational expansion reflects the success of the country in raising the enrollment rate at a time when the school age population was itself increasing rapidly. The number of

schools, colleges and universities continues to increase. Improvements have been made as well in the health sector by introducing disease control campaigns, by increasing the number of health services and above all by installing a National Health Service.

Nevertheless if one focuses on development by sectors of activity, the results seem more contrasted. In the programme of Algerian development, a harmonious development of agricultural and industrial sectors has always been claimed, but in practice matters are different. In the drive to industrialise quickly it has been easy to overlook the critical role of the agricultural sector in development and to neglect the interrelation between policies to encourage the growth of domestic industry and the performance of agriculture. Subordination of agricultural interests in the course of industrialisation can be depicted by various indicators such as allocation of public investment, proportion of GDP and distribution of labour force by activity sector.

The breakdown of public expenditure shows that industry has always received the lion's share, as TABLE 2.2 indicates. Low productivity and near stagnation have typified the agricultural sector. The role of the agricultural sector in development was very much weakened, not only since the percentage of investment allocated to it was almost insignificant but also because the great majority of industries located in urban areas, especially in larger cities where they can benefit from capital, labour, as well as specialised needs

such as technical support services. When rapid industrialisation began, the rural infrastructure was neither developed nor evenly distributed to encourage the dispersion of industrial activities across the country. The result is a heavy concentration of economic activities and wealth in a few large urban centres and in an economic stagnation and much lower average income in many of the peripheral regions, thus reflecting marked regional inequalities in development, i.e. greatest development along the coast with high concentrations in and around the principal cities, as opposed to relatively poorly developed areas away from the coast.

TABLE 2.2. Algeria : Allocation of Public Investment in the Development Programmes (1967-1977), in %

Sectors	1967-69		1970-73		1974-77	
	Forecast	Actual	Forecast	Actual	Forecast	Actual
All						
Industry	38.7	55.3	44.7	55.0	43.6	n.a.
Agriculture	16.9	16.4	14.9	13.4	11.0	n.a.
Infra-structure	34.4	28.3	40.4	31.6	45.4	n.a.
Overall Total	100	100	100	100	100	n.a.

SOURCE: 1967-69 and 1970-73 : Bennoune M. (1980) "Causes and Consequences of Urbanisation in Algeria", in H.A.B. Rivin and K. Helmer (eds): Changing Middle Eastern City, p.52 and 54.

1974-77 : Nacer M. (1979) Regional disparities and development in Algeria : A case study in a transitional and central planned economy. M.A Thesis, Sheffield University, p.29.

As output and income grew there were substantial changes in economic structure, with industry increasing its share of total output at the expense of agriculture (TABLE 2.3). Although agriculture employs 32 per cent of the nation's workforce (TABLE 2.4), it accounts for only 7 per cent of the GDP. Agricultural output fell by an average of

TABLE 2.3. Algeria : GDP per activity sector (in%)

	1960 ⁽¹⁾	1976 ⁽¹⁾	1978 ⁽²⁾
Agriculture	21	7	7
Industry	24	57	59
Services	55	36	35

SOURCE: 1) World Development Report 1978-79

2) World Development Report 1980-81

TABLE 2.4 Algeria : Distribution of labour force by activity sector (in%)

	1960	1979
Agriculture	67	32
Industry	12	24
Services	21	44

SOURCE : World Development Report 1978-79

8.7 per cent annually in the period 1970-76 against an average annual decline in 1960-70 of 1.6 per cent. Algeria was only 30 per cent self sufficient in food in 1980,

compared with 73 per cent in 1969 (EUROPA PUBLICATIONS, 1981-82, p.247). In this manner, the development strategy failed to achieve intersectoral integration of the national economy and exacerbated the problems of structural adjustment. On the one hand the development priorities led to the total disorganisation of agriculture in favour of industry, and on the other hand, had accelerated the growth of urban centres without rigorous planning. By virtue of its capital-intensive character, the Algerian development model is merely re-enforcing the problems of under- and unemployment. It attracts the highly qualified section of the workforce and therefore tends to widen the gap between the labour demand and the labour supply, in that the supply of skills and qualifications still remain scarce within the Algerian labour force. As a consequence, it reduces dramatically the capacity for employment absorption in the national economy and forces Algeria to employ foreign experts at the expense of the abundant local unskilled labour force (BENNAMANE, 1980).

It was only in the early 1970s that the government became conscious of the extreme imbalanced results of agrarian and industrial policies (a retarded agriculture and a highly dynamic industrial sector), which derived from a situation of competition and a lack of effort of coordination. Measures such as land distribution to landless peasants, housing schemes and training, that could improve the agricultural sector and enhance rural welfare have been introduced but with little success.

Given these circumstances, the shift in the balance

between the rural and urban sectors was closely linked to industrialisation and changing patterns of employment and to rapid changes in social and political conditions. Nonetheless, it may be questioned whether the kind of urban growth experienced by the country is economically and socially desirable; for most of the time demographic growth of the cities has not been matched by a corresponding growth of employment opportunities. Accordingly, the reason why rural-urban migration occurs does not seem wholly explained by the "push-pull" theory which many authors favour. In the areas of departure, population pressure, modernisation, methods of commercial production and stagnant economy have been the push factors while the rapid increase of employment with better working conditions and high urban wage rates are the major "pull" factors (CLARKE, 1972, p.137). According to this theory, the push comes from deteriorating conditions in rural areas forcing migrants to seek a livelihood in towns, and the pull is exerted by the towns to attract rural migrants because of desired and increasing opportunities. But a widespread general view is that the earlier urbanisation of the industrially advanced countries in America and Europe was mainly activated by the pull factor whereas the current urbanisation in the less developed countries is mainly by the push factor (UNITED NATIONS, 1969). It is commonly argued that rural demographic pressure has "pushed" people to the cities even though there is considerable unemployment there, (MCGEE, 1971; SCHULTZ, 1971; KOSINSKI and PROTHERO, 1970) for modern industry is capital-intensive contrary to the labour-intensive industry of the nineteenth century. Thus the "push-pull" approach much favoured by Lewis, Fei

and Ranis and Thomlinson does not seem relevant in this instance. Lewis (1954) and Fei and Ranis (1961) saw internal migration, and in particular rural-urban migration, as a desirable process in which surplus rural labour was gradually withdrawn from traditional agriculture to provide cheap manpower to fuel a growing modern industrial complex. In a similar view, Thomlinson (1965) stated that "people move from farms to cities and from areas of limited opportunities to places offering a greater potential for economic gain". More recently, "numerous studies have now documented that migration is no longer viewed by economists as an unambiguous beneficial process necessary to solve problems of growing urban labour demand. On the contrary, migration today is being increasingly looked upon as the major contributing factor to the ubiquitous phenomenon of urban surplus labour and as a force which continues to exacerbate already serious urban unemployment problems caused by growing economic and structural imbalances between urban and rural areas because rural-urban migration continues to exceed rates of urban jobs creation and to surpass greatly the capacity of both industry and urban services" (TODARO, 1976, p.2). Willis (1974, p.2) made a similar point when suggesting that "recent in-migration to towns has caused severe strain on urban services and labour markets, in the sense that many services have to be operated at increasing costs to a scale beyond optimum capacity". One might therefore postulate that in the Algerian case, "rural-urban migration is due less to "attractions" than to "expulsions" (ABU LUGHOD, 1977). However, it could be strongly argued that such a statement could not be totally vindicated unless a detailed, multi-faceted approach

study, including the behavioural changes of the people towards values of life were undertaken in both sending and receiving areas; an approach whereby the scores obtained would by themselves define the decisive determinants of the moves. Unfortunately, the present study is far from being able to fulfil such an objective, since it is research conducted by a single person with limited time. As it was not possible to fully and satisfactorily investigate every aspect of the topic, it was indispensable to limit the scope by establishing a selective range of hypotheses that would serve as a migration model to be tested.

2.2. Formulation of Hypotheses

a. Migration as Cause and Effect of Population Changes and as a Component of Urban Growth

As it has already been noted, the major source of urban growth is not natural increase, rather the continuing in-migration of rural people. Internal migration produces changes in distribution by reducing population growth in the areas of origin and expanding that of towns and cities, and therefore can have profound effects on the spatial patterning of human activity.

Migration also produces changes in population composition. Sending areas become depleted of young adults while receiving areas show a high proportion of population in this age group. Bogue (1959,p.504) argued that the bulk of the migration

begins at age 16 and is over by age 30. Similarly, Caldwell (1969), Brigg (1971) and Yap (1975) proved that the principal demographic profile of urban migrants in Third World countries tend to be the young, single male between the ages of 15 and 25. However, Connell et al (1975) and others indicated that the proportion of migrating women seems to be on the increase as their educational opportunities expand. Consequently, migration is a selective process affecting individuals with certain demographic, social and economic characteristics. Todaro (1976) suggested that migrants are not a random selection from the population of the place of origin and do not form a random cross-section addition to the population of the place of destination. Of course these two generalisations exclude certain migration events such as forced migration for which the element of differentiation does not exist. For instance, a complete population may be removed from its place of origin, as was experienced in Algeria during the war of Liberation (1954-1962), with the delimitation of forbidden zones and the creation of regroupment centres. (SUTTON, 1981c, p.381).

- b. Volume of Migration tends to vary inversely to the distance migrated which in turn is related to the educational level.

Like many other studies, this study employs distance and literacy measures. They serve essentially as correlation factors so that the relation between migration propensity and explanatory variables can be detected; especially since they incorporate both the economic and psychological costs of moving (ISARD, 1960). As Lee (1966) and Stouffer (1960)

pointed out, the level of migration between any two locations, defined as a migration field by Hägerstrand (1957), has been seen as a reflection of the intervening obstacles and opportunities between an origin and a destination as well as that of the socio-economic and environmental characteristics of both the origin and destination. So in general, the net effect of these properties may be viewed in terms of the functional distance between the two places (BROWN and HORTON, 1970). In this context, it is understood that lesser functional distances indicate a greater level of interaction and vice versa; the inverse distance law, expounded in 1946 by Zipf, stating that the volume of migration (M) between any two communities (i and j) is directly proportional to the product of their populations (P) and inversely proportional to the distance travelled (D) by the migrants and expressed by the following formula:

$$M_{ij} = k \frac{P_i \cdot P_j}{D_{ij}} \quad (k \text{ is the proportionality constant}).$$

Similarly, nearby communes provide disproportionately large proportions of illiterate people; more distant ones involve, in absolute figures, a smaller proportion of migrants with respect to the overall volume of migration but relatively a higher proportion of skilled and professional population who have contracted for a job before moving (BYERLEE, 1974).

c. Migration as the Aggregate Result of Economic Motives and Personal Perceptions.

There seems to be common agreement that three key variables: employment, income and rapid population growth,

determine the extent and pattern of migration flows (PREMI, 1976). Migrants flow from areas where employment opportunities are stagnant, where income is low and where the rate of population growth is high. Sorre (1955), while accepting that the greatest cause of migration is economic, believes that the demographic factor almost invariably lies behind the economic reasons and ascribes migration to a response to population pressure.

But if economic incentives may be a necessary condition they are not a sufficient one to migrate because of the presence of psychic costs and benefits (BOGUE, 1977). That is to say that objective push factors (low wages, restrictive land tenure, lack of services) and pull factors (urban jobs, higher wages, amenities) are conditioned by the subjective interpretations of individuals in a position to migrate. Harris and Todaro (1970) argued that migration proceeds in response to origin and destination differences in expected rather than actual earnings. Consequently, perception is an important factor in the decision to migrate since the migrant usually responds not to the reality of the city but to his conception or image of it, implying that the decision to migrate may not necessarily be a rational one. That is how many people in agriculture are seeing migration to urban centres as an alternative to or outlets from, miserable conditions (BEAUJEU-GARNIER and CHABOT, 1967) because they feel that the agricultural returns are insufficient, while the spreading of education in rural areas leads to rejection of agricultural pursuits in favour of "easier" and more prestigious urban jobs. That amounts

to saying that migration affects two contrasted economic classes, the very poor and the relatively well off; as has been demonstrated by Lipton (1976). The very poor, landless and illiterate are predominantly "pushed" to migrate whereas the relatively well off, better educated are more likely to be "pulled" into larger towns by attractive economic opportunities. It implies that potential migrants take into account not only rural-urban income differentials but also the probability of securing employment. That is why the migrant may well accept a standard of living below the one that he had in the rural economy, hoping to be better off in the future. With respect to behavioural aspects of the decision to migrate, Wolpert (1965) considered that the decision to migrate is, in the majority of cases, identified with the concept of "place of utility". Perceived utility of a new place has to be greater than the utility in the existing place for a migration to take place. Furthermore, the choice of destination is largely influenced by the presence of relatives and friends already in towns. Caldwell (1969), by means of a detailed questionnaire, proved that these relatives and friends will act as a source of support while searching for a job. Unfortunately, it was not possible in the present research, for various reasons, to carry out a questionnaire establishing that these external linkages which, beyond doubt, play an essential role in the decision-making to move. They will, therefore, be examined indirectly, using the dissimilarity index, which helps to assess the spatial separation or clustering of individuals and groups in certain areas of the city according to the

place of origin.

- d. Modern migration arises from the growing inter-regional differences in the rate of the socio-economic development and in the availability of labour along with the growing pressure upon resources in rural areas.

By making urban places the principal centres for the location of the modern sector of the economy, the Algerian development model shaped the migration flow and re-enforced regional disparities, which was contrary to its objectives to reduce them to a minimum. Strong incentives to expand economic activity in urban rather than rural areas have encouraged people to move to urban centres, hoping to get higher paid jobs and better access to services; all the more so since the government failed to deal adequately with rural deteriorating conditions despite an impressive agricultural reform policy. The financial incentives in rural regions since the early 1970s paradoxically did not succeed in creating viable economic opportunities sufficient to refrain people from moving to urban areas (ABU-LUGHOD, 1977).

The agricultural sector cannot absorb anymore a growing rural labour force in the sense that besides its increasing mechanisation (which reduces the demand for employment) it is losing land and water in favour of urban and industrial growth. It results in accelerated migration whereby far more people migrate to urban areas than could be absorbed, thus putting strain on urban services and labour markets. Such a strain is reflected in the highly dualistic urban system where "islands of modernity" coexist with shanty towns and slums,

as well as in limited employment opportunities in destination areas, forcing in-migrants to become either unemployed or engaged in the traditional urban economies of petty trading, domestic service, household crafts and many other marginal activities (FRIEDMANN and SULLIVAN, 1974), described by Spengler (1967) as 'parasitic' urbanisation rather than a 'generative' one.

In the specific case of Constantine, the issue posed is either that the economic base of the town must be expanded by industrialisation since tertiary sector is already highly developed or migration must be braked by applying a positive policy on migration-control. But unfortunately in either case Constantine's problems still remain serious because of the young age of recent migrants. Therefore would not it be more effective objective to seek a regional strategy which could, if not reverse rural-urban migration, reduce the movement to more manageable dimensions and alter the spatial requirements for infrastructure and other services?

Chapter Three

DEFINITION, METHODOLOGY AND OBJECTIVES

Data and methods are of vital importance in any study of spatial and social structure for the pattern that emerges from the analysis largely depends on the nature and consistency of the data, the aeral unit they relate to and the methods and techniques used in their spatial analysis. Obviously before stating methods and techniques that will be used, it is very necessary to define the conceptual framework.

3.1 Definition of Internal Migration, Sources and Methods of Measuring Migration.

a. Definition and its problems

Internal migration did not receive such early attention as international migration but has been the subject of increasing study in recent decades. It is manifest that policy makers are increasingly taking into account the major role of migration in balanced economic growth and the innumerable social, psychological, ecological and political ramifications of present and projected patterns of population distribution. As a result, literature on migration has much increased over the last few decades sharing a wide range of concerns over various social problems associated with migration. But despite this burgeoning literature on migration, it should be pointed out that terminology in the field of migration is not yet as well standardised, as in the cases of natality and mortality, although the present definitions are mostly supported by the consensus.

Giving his definition of migration, Eisenstadt (1954,p.1) wrote: "We define migration as the physical transition of an individual or a group from one society to another. This transition usually involves abandoning one social setting and entering another and different one". A similar definition, but with emphasis on residential change involving adjustments to habitat and establishment of new set of bonds in location, was put forward by Bogue (1959, p.489) when suggesting that "theoretically the term of 'migration' reserved for the changes of residence that involve a complete change and re-adjustment of the community affiliations of the individual". To rule out the numerous types of spatial mobility which involve temporary absences from "home" such as commuters, tourists, visitors and other similar movements, the notion frequently associated with migration is the intention to move "permanently" to another place of residence; and hence Knowles and Wareing (1976,p.72) defined migration "as a movement of population involving a change of permanent residence of substantial duration". In addition to the distinction between "temporary" and "permanent" moves, an additional definitional constraint is often imposed in the requirement that the mover crosses some administrative boundary. Accordingly, Thomlinson (1965,p.211) argued that "in order to be considered a migrant one must make a move of some consequence... (by changing) place of normal habitation for a considerable period of time, crossing a political boundary".

A more precise and improved definition was provided by Mangalam and Schwarzweller (1970) when they formulated that

"migration is a relatively permanent moving away by a collectivity, called migrants, from one geographical location, preceded by decision-making on the part of the migrants on the basis of hierarchically ordered set of values or valued ends and resulting in changes in the interactional system of the migrants". Despite the numerous and various definition attempts and the continuous improvement in the field, there is yet no generally accepted definition of migration. Compared with fertility and mortality, population movement is a very difficult process to define in a manner which has uniform meaning and relevance in a wide range of spatial, temporal and cultural contexts (Bedford, 1980,p.31). As Arriaga (1977, p.103) rightly noted "the concept of migration is easily understood in general terms, but it represents certain problems of definition. Since migration depends on several aspects and characteristics of a population, such as region of residence, distance separating inhabited places, time of settlement, individual motivations, purposes of move, and other economic and social characteristics, it is impossible to have an accurate and all-encompassing definition of what constitutes an internal migration". Without doubt it has been considered that 'population studies' is not a single 'theoretical discipline' with a coherent frame of reference of its own. It is therefore, hard to think of 'population studies' as a subject matter for which an integrated but comprehensive theory could be expounded (Hauser and Duncan, 1959,p.3). Therefore no typology satisfactorily incorporates all types of human migration and the problem is exacerbated by the lack of uniformity in terminology (Clark, 1972). Furthermore, there

rests upon the investigator a responsibility for precise statement and definition. That is the reason why "a large number of investigations have been carried out into migration but these studies are often directed at different aspects of the phenomenon, which means that the term 'migration' has been used in widely different senses" (Willis, 1974,p.3). Willis (1974,p.3) noted that "the most striking feature of all migration studies is their diversity, not only in terms of scale coverage and data but also in the use of the data, aims and methods of research". A similar observation was made earlier by Jackson (1969, p.6) when writing: "The amount of empirical evidence available in the field is enormous and the range and coverage of the statistical data is constantly improving. In spite of this there has been only a relatively slight attempt to order the confusion with the development of theoretical proposition and models which would lend both elegance and understanding to this large and important subject. In part this is due to the wide range of disciplines for which migration is a relevant, but not necessarily a central factor". Thus,since various facets of migration have been examined under the general rubric "migration theory", diverse conceptualisations of migration have emerged as the different puposes for which migration studies have been designed. Demographers have attempted to formulate a theory of selective migration; economists, like Lewis (1954) and Fei and Ranis (1961), have typically examined migration at a macro-scale as an adjustment to the labour market mechanism and tried to model decisions to migrate in terms of a cost-benefit framework; sociologists have focused on the study

of motivation, the relation of migration to social mobility and assimilation of migrants; while geographers are concerned with the study of relocation of people and hence have described the spatial patterns of mobility and attempted to relate these to broad social, economic and environmental changes.

In fact, the definition of migration studies owes much to interdisciplinary efforts and it is impossible to draw sharp divisions between different contributions (Kosinski and Prothero, 1975, p.1 & 2). As early as 1938, Thomas (1938) suggested that the accepted definition of internal migration is a change of residence from one community or other clearly defined geographical unit to another within national boundaries. But what is the definition of community? Even sociologists, for whom migration definition would be a change in residence coupled with a break in community ties, could not agree on what a community is. Hillery (1955) was able to collect some 94 different definitions of a community. Hence, one of the difficulties involved in measuring migration is the lack of a perfect delineation of what internal migration is. Therefore, in general terms, the definition of migration that is operated for the purposes of data collection is that migration is any residential movement which occurs between administrative units over a given period of time (White, and Woods, 1980, p.5). So the relevant question in the field of migration becomes as to whether it is possible to formulate an explanatory theory general enough to cover the whole process. The points of view on this particular issue seem well divided.

Price (1966) argued that we are not ready for a general account expressed in terms of formal theory, whereas Lee (1966) has attempted to present a general theory on migration.

Because of the lack of systematically accumulated knowledge on migration, of the fragmentary and largely un-integrated character of migration knowledge, the policy maker can only answer partially to questions such as who is a migrant?, how can migration be stimulated or impeded?, what are the true effects of migration on both areas of origin and destination?. As for the student of migration, it means beginning to do the hard work of conceptualisation of the phenomenon before being able to make any formal statement of theory. As a result, it seems obvious, in the near future at least, that many researchers will continue to focus on empirical description of migration or the relevance of particular kinds of variables in defined spatial and temporal contexts.

b. Sources and Methods of Measuring Migration

The problem of migration definition has inevitably been associated with the problem of measuring migration. The latter is the one related to the difficulties in collecting information on the subject. Of all the components of population change, internal migration has been the most difficult to measure. Nonetheless both indirect and direct methods have been gradually introduced and refined so that there is a variety of approaches from which to choose (JONES, 1981, p.203-204). A direct measurement of migration

requires counting persons who change their residence across migration-defining boundaries. Such information is available only in 18 nations (Denmark, Finland, Norway, Netherlands, West Germany etc...) where there is a system of residence registration or where a direct question has been asked at a census enumeration (U.N. 1973, p.621). The remaining countries of the world lacking statistics of this type have to call upon indirect methods. There are three principal sources of information from which migration can be indirectly estimated, namely population register, sample survey and population census (BARCLAY, 1963). It must be admitted that although these indirect methods do not yield the best estimates of total number of migrants during a particular period of time, they can offer valuable and useful insights into migration process. Apart from some drawbacks, the continuous population register can form an important methodological tool and produces some useful statistics where they operate (estimation of the net migration through the 'vital statistics methods'). Unfortunately, the migration data drawn from population registers have shown limited uses in the analysis of differential socio-economic and demographic characteristics of migrants and non-migrants.

Surveys can be a good procedure for estimating migrants to particular areas and principally for obtaining the characteristics and motives of migrants and the purposes of the move. If they are truly representative of the population under study, surveys are probably the best source of studying migration.

Census data has, and continues to be, the most widely used source of information on migration for both calculating net migration (census survival rate method or residual method) and exploring gross migration (REES, 1977). If adequate information on migrants is tabulated, censuses can be an excellent source of estimating migration. The problem, however, is one of the reliability. For instance, censuses may have different degrees of enumeration completeness in different areas and they contain error or biases because the interviewee does not respond properly or because the interviewer does not have proper training or both reasons. The chief defects, however, result from the varying size and form of the administrative units for which data are provided and from the frequent boundary changes of these areal units (ROBERTSON, 1969,p.173). Delay between enumeration and publication and omission of certain topics of current importance also contribute to the general imperfection of the census for research purposes (CLARKE, 1972). Of course, the ideal solution would be to combine both census and sample survey data because although census information is adequate for a variety of migration studies, they really need to be supplemented with data from carefully conducted sample surveys which allow the exploration of the migration process in greater depth by means of a larger set of questions.

c. Review of the Chief Demographic Data Sources in Algeria

A brief examination of the available demographic data sources and the problems involved in the collection of vital statistics and census data will be helpful in assessing the

validity of the available data. Algeria has a long record of census taking (since 1856) and vital registration system dating back to 1925. Also a limited number of sample surveys have been undertaken mostly after 1952, the most important being the Enquête Statistique nationale de Population (ESNP) carried out between September 1968 and February 1971 to overcome the inaccuracy and incompleteness of both censuses and vital statistics (PRADEL, 1977).

Vital Statistics

Reliable statistics were first available only for the European population which accounted for less than 14 per cent of the total. Then registration was made compulsory in 1882 for the natives as well as Europeans and vital statistics have been published since 1901, except for the period 1954-1962 when vital statistics were affected by conditions of war and therefore demographic information was very scarce and irregular. Up to the early 1960s registration of male births in northern Algeria is believed to be reasonably complete, at least in many urban centres, but numerous female births were not registered. Deaths of infants were known to be inadequately recorded throughout the country. This meant that there has been little systematic recording of births and deaths amongst the native population except in towns and cities. Nowadays, despite a remarkable improvement in the registration system and its extension to the whole country, the registration rate does not reach 100 per cent yet. It varies from one region to another according to the quality of the existing administrative

infrastructure. It evidently implies that demographic information is better in urban places than in rural ones and that the registration rate decreases from the north to the south of the country. That is to say, the Etat Civil still exists, but to a lesser degree inadequacies exist;

- frequent under-registration of female births,
- no systematic recording of infant deaths,
- causes of infant deaths are still not well established,
- omission of the declaration of a number of divorces, many persons separate after repudiation before a cadi without an official pronouncement of divorce,
- non declaration officially of some marriages which take place before the cadi.

So incompleteness of registration of births, deaths, divorces and marriages by the Etat Civil in Algeria still remains a problem in analysing demographic trends.

Sample surveys.

To overcome such incompleteness of demographic data several sample surveys have been carried out but only one dealt directly with demographic aspects, namely the Enquête Statistique Nationale de Population (ESNP). The size of the ESNP sample was 400,000 which accounted approximately for 3 per cent of the total population (NEGADI, 1974,p.9). It analysed population distribution and redistribution, internal and international migration; the results were published in two series totalling 16 volumes. The originality of this particular survey has been the use of the method of

'repeated scrutiny', which has been considered by Vallin as an efficient tool for both collecting demographic information and analysing evolution and changes in characteristics among the population under study (VALLIN, 1975). The ESNP survey was preceded by another one conducted by the Association Algérienne de Recherches Démographiques Economiques et Sociales (AARDES) in 1967-1968 for which the main purposes were to apprehend the differential behaviour, in term of fecundity, of socio-professional groups and their attitudes toward birth control. In addition to these two surveys securing direct information on population, there have been other surveys made on employment, family consumption and education from which more indirect information can be drawn. Accordingly Bardinet underlined "dans la société algérienne, la rapidité des mutations et l'insuffisance des données statistiques imposent que soient multipliées les séries d'études portant sur des phénomènes concrets d'évolution" (BARDINET, 1972).

Censuses.

Although census taking in Algeria date back to 1856, only those of 1911, 1948 and 1954 were thoroughly exploited and contributed to publications. Those of 1921 and 1926 were not at all processed whereas that of 1931 was partially compiled and that of 1936 led to published results for only the department of Oran. In this manner there is little doubt that census data prior to 1936 has little significance and the 1948 and 1954 censuses distorted reality by either over-or under-estimation for which the margin of error reached

2 per cent in both cases (KAHOUADJI, 1976, p.23). Far better results were given by the first ever comprehensive 1966 census undertaken by the independent Algerian Government. The 1966 census was taken at a threshold period between the phases of 'demographic urbanisation' and 'economic urbanisation' so as to record a major socio-demographic fact and permitted a definition of the problems to be resolved. However, the major criticism was that it was conducted at two different periods: Saharan population enumeration took place in January 1966 while population^t of Northern Algeria was enumerated in April 1966. Contrary to censuses prior to 1966 of which the aim was mainly ascertaining the size and growth of population, the last two censuses (1966 and 1977) added information on other aspects of society such as age, sex, marital status, place of residence, level of education, profession and so forth. The most recent census (1977), which is of very acceptable quality, offered answers to some 25 questions asked of each individual and a detailed description of each dwelling.

During the preparation and execution of the 1966 and 1977 population censuses in Algeria, two groups of problems were encountered; in the first group were the problems common to all population censuses, the second contained a question of special interest to developing countries.

With regard to the first group of problems, one may point out that any attempt to ascertain the evolution of the Algerian population seems difficult to achieve since Algerian censuses provide tabulations of population for various

administrative divisions at different points in time. Prior to 1954, there were the 20 arrondissements (plus the Sahara) whereas in 1966 the division of the country consisted of 15 wilayate as against 31 wilayate in 1977. Thus data inflicts several adjustments before it can be made comparable.

Another serious problem is one of the time required for processing data. The results being so delayed in publication lose much of their practical value. While publication of detailed results of the 1977 census will take several years,¹ priority was given to publishing population and household totals at the level of communes (Sécretariat d'Etat au Plan, 1978a) together with a range of national socio-economic parameters calculated from a 10 per cent sample (Sécretariat d'Etat au Plan, 1978b).

The degree of completeness of enumeration has to be investigated. Immediately after the 1977 census was completed, a control survey covered a sample of about one in a hundred of the 24,000 districts, on the basis of which the degree of completeness was estimated at 95.7 per cent nationally and the statistics adjusted. This degree was lower in the wilaya of Algiers where only 89.5 per cent of the population was enumerated (Ministère de la Planification et de l'Aménagement du Territoire, 1979a). It must be stressed that data at daira and wilaya level has not been adjusted yet and so contains a varying margin of error.

Finally, there is the problem associated with the measurement of the quality of editing, because although a

great many errors appearing on census questionnaires are detected in the process of editing by no means all are eliminated.

As regards the second group of problems, one may mention the uncertainty and reliability of the census figures which are mostly associated with organisational and interviewing problems. Reliable census data demands recruitment of an adequate number of qualified enumerators. Unfortunately in the case of Algeria, a non-negligible proportion of the enumerators were either unskilled or did not take a real interest in the conduct of the censuses. As far as interviewing problems were concerned, these were due to the lack of understanding by persons being enumerated, stemming largely from illiteracy and an average low level of educational achievement, but also reflecting suspicions that the census was being taken or would be used for purposes detrimental to the respondent. These problems are aggravated by use of vague definition concepts such as occupied population, close settlement, householder and literacy. With respect to the latter problem, Bouisri (1975) indicated that "certains concepts et définitions ne permettent pas de saisir certaines caractéristiques de base telles l'activité, la notion d'habitat aggloméré, la notion de chef de ménages, et les langues lues et écrites". The first three parameters were defined by the Sécretariat d'Etat au Plan (1976) as follows:

- occupied person = 'une personne qui a travaillé
(ou a eu une activité rémunératrice en argent ou
en nature) au moins 6 jours consécutifs pendant le

mois précédent le premier jour du recensement. This number is arbitrary and is not a particularly significant norm.

- close settlement = 'groupe de plus de 90 constructions distantes les unes des autres de 200 mètres'. This distance of 200 metres between constructions has not necessarily the same significance in mountainous areas as compared with lowland plains.

- householder = 'personne (homme ou femme) résidente qui commande et décide en général de l'utilisation de l'argent'. This notion is complicated and difficult to grasp. The idea of head of household as being the person with a job or who has the highest income is an over simplification because in general in Algerian society the most senior member is the decision maker in the household.

- literacy = considering that no definition was given by the Sécretariat d'Etat au Plan of what literacy is, individual statements on literacy were merely the reflection of personal opinions as to what literacy is.

3.2 Objectives and Methodology.

a. Objectives.

A major problem in Algeria is that of excessive

population growth which crucially affects the future in that it has a direct impact on social and economic development. In general terms, the aim of this research will be the study to what extent population growth is a drag on economic expansion and the consequences of such growth, but in more specific terms the primary contribution of this work, based on the collection of statistical information on the migratory stream, tends to be the understanding of immigration to Constantine chef-lieu during the last decade (1966-1977) by:

- establishing and measuring the demographic and socio-economic differentials of the in-migrants with respect to the natives of the area,
- assessing the level and historical trends of the migratory flow,
- investigating the adaptation of the in-migrants to the environment of the city through detailed study of spatial distribution of migrant population vis a vis non-migrant population,
- testing the model of internal migration associated with urbanisation and industrialisation processes.

The fulfilment of these objectives are sought in three stages: firstly to state the definition of migration adopted for the specific purpose of this research, secondly to collect data on internal migration and finally to process

the data so as to test the hypotheses advanced in Chapter Two and to establish a model of internal migration.

b. Methodology

For the specific purpose of this work, migration is simply defined as any residential change which occurs between administrative units over a given period of time (in this case 1966-1977) and because the present study is only concerned with so called 'permanent' in-migrants to Constantine, it will consider "all persons who enter the migration defining area by crossing its boundary from some point outside the area but within the same country" (U.N. 1973,p.618), with the exception of people born in Constantine commune, nomads, tourists, temporary absentees, commuters, visitors, Algerians living abroad, foreigners living in Constantine and population counted separately which consists mainly of military personnel and persons in hospitals and boarding schools.

As stated earlier, the present survey deliberately gathers information on the true migrants settled in the chef-lieu de commune whose population accounted for 97.0 per cent of the total population of the commune in 1977. In other words, the survey does not include information on migrant population living in the secondary agglomeration of Bekkeira and scattered settlement within the commune itself. Another restriction has been made: the study deals only with recent migrant population, namely that settled in Constantine between 1966-1977 and consequently any migrant

who came and lived in Constantine before 1966 is not taken into account. Administrative boundaries have been chosen because they are the easiest available source of material movements. As far as the period of time is concerned, it is thought that the study must not consider too long period because it results in more non-response and reporting errors, so the period chosen for the case study is the decade 1966-1977. The reasons for such a period choice are three-fold: firstly 1966 is justified by virtue of post dating Independence and thus eliminating 'enforced' migration; secondly, it meant dealing with a purely 'Algerian problem' for the colons departed; and thirdly, because the migration period, as defined, coincides with the last intercensal period, allowing therefore a comprehensive intercensal analysis of the phenomenon.

Thus, the case study of in-migration to Constantine is primarily based upon the collection of data derived from 1966 and 1977 census returns. Nevertheless, it does not exclude other sources such as articles, notes, development plans suggested by the Caisse Algérienne d'Aménagement du Territoire (CADAT), BSc dissertations, archives documentation and so forth.

For 1977, census data will comprise the major source of information on the migrant population and it is necessary to describe briefly its operation and content.

The 1977 census planned by the Algerian Census Authorities Commissariat National aux Recensements et Enquêtes Statistiques

(CNRES), was carried out in a single period extending from the 12th to 27th February 1977 and required some 28,000 agents to undertake the inquiry. Contrary to most cases where any analysis of spatial and social patterns using census data leads to generalisation, since the census authorities impose restrictions on access to household forms and supply, as a consequence, aggregated data for the purpose of maintaining confidentiality about individuals and households, the Algerian 1977 census has exceptionally been made available to researchers at the very basic scale of each household and individual. Needless to say that this different attitude taken by the Algerian authorities toward secrecy of census information enables researchers to investigate problems at whatever scale of aggregation is appropriate and even allows analytical work at a micro-scale rarely possible without considerable fieldwork (SUTTON 1981b, p.45). This statement is further asserted if one glances at the 1977 census content. The basic household form, fiche de ménage, is divided into four major sections (Fig. 3.1). The first section provides a geographical code and the details of the address, allocating therefore to every household and every dwelling a unique locational reference, as well as the enumeration date, the name of the enumerator and controller.

The second section, entitled 'Construction', ascertains whether the building pre-or post-dates 1966, the type of building, the building's physical state, the number of storeys and the nature of the walls and roof.

The third section offers a wide range of information on

Fig. 3.1 Example of a 'fiche ménage'

التعداد العام للسكان و السكنى Recensement Général de la Population et de l'Habitat						1976	
IMPRIMERIE N° 1						MÉNAGE ORDINAIRE OU COLLECTIF	
<div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">1 <input type="text"/></div> <div style="text-align: center;">3 <input type="text"/></div> <div style="text-align: center;">4 <input type="text"/></div> <div style="text-align: center;">6 <input type="text"/></div> <div style="text-align: center;">9 <input type="text"/></div> </div> <p style="margin-top: 5px;">Wilaya Daira Commune District Etat</p>	N° d'ordre du logement dans le district : <input type="text"/>			N° d'ordre du ménage dans le logement : <input type="text"/>			
- N° de construction : <input type="text"/> Ménage : - Nombre de feuilles utilisées : <input type="text"/> - N° de feuille utilisée : <input type="text"/> - Adresse de la construction : - Localisation du logement : - Date de passage :							
(16) LA CONSTRUCTION EST-ELLE SITUÉE EN ZONE : - 1 <input type="checkbox"/> Agglomérée chef lieu de commune - 2 <input type="checkbox"/> Agglomérée secondaire - 3 <input type="checkbox"/> de Hameau - 4 <input type="checkbox"/> Eparée							
CONSTRUCTION (18) Avez-vous déjà inscrit les caractéristiques de cette construction sur un questionnaire identique ? 1 <input type="checkbox"/> OUI 2 <input type="checkbox"/> NON (19) DATE D'ACHEVEMENT DE LA CONSTRUCTION : 1 - Avant 1966 <input type="checkbox"/> 2 - Après 1966 <input type="checkbox"/> (20) TYPE DE CONSTRUCTION : A - ORDINAIRE : 1 <input type="checkbox"/> Immeuble d'habitation 2 <input type="checkbox"/> Immeuble à usage professionnel exclusivement 3 <input type="checkbox"/> maison individuelle 4 <input type="checkbox"/> maison traditionnelle comprenant plusieurs logements 5 <input type="checkbox"/> hôtel et annexe 6 <input type="checkbox"/> autre, à préciser : B - SONNAIRE : 7 <input type="checkbox"/> gourbi, baraque 8 <input type="checkbox"/> autre, à préciser :	LOGEMENT ET MENAGE (26) Avez-vous déjà inscrit les caractéristiques de ce logement sur un questionnaire identique ? 1 <input type="checkbox"/> OUI 2 <input type="checkbox"/> NON (27) UTILISATION ACTUELLE DU LOGEMENT : 1 <input type="checkbox"/> habité 2 <input type="checkbox"/> inhabité 3 <input type="checkbox"/> à usage professionnel exclusivement (28) COUR INTERIEURE : 1 <input type="checkbox"/> le logement a une cour indépendante 2 <input type="checkbox"/> le logement a une cour commune à la constr. 3 <input type="checkbox"/> n'existe pas (29) CUISINE DANS LE LOGEMENT : 1 <input type="checkbox"/> réservée seulement à la préparation des repas 2 <input type="checkbox"/> réservée à d'autres usages 3 <input type="checkbox"/> n'existe pas (30) SALLE DE BAIN UTILISÉE : 1 <input type="checkbox"/> OUI 2 <input type="checkbox"/> NON NOMBRE DE PIÈCES AUTRES QUE LA CUISINE ET LA SALLE DE BAIN... (31) RESERVÉES À L'HABITATION → <input type="text"/> (33) À D'AUTRES USAGES → <input type="text"/> (34) CABINET D'AISANCE ET ÉVACUATION DES DÉCHETS : 1 <input type="checkbox"/> rattaché à un égout 2 <input type="checkbox"/> rattaché à une fosse 3 <input type="checkbox"/> cabinet d'aisance hors de la construction 4 <input type="checkbox"/> n'existe pas			(35) ALIMENTATION EN EAU : 1 <input type="checkbox"/> rattaché au réseau de distribution 2 <input type="checkbox"/> n'est pas rattaché mais il y a un puits 3 <input type="checkbox"/> l'eau provient d'une source ou d'une citerne 4 <input type="checkbox"/> autre provenance à préciser : (36) ÉLECTRICITÉ : 1 <input type="checkbox"/> OUI 2 <input type="checkbox"/> NON (37) GAZ : 1 <input type="checkbox"/> utilisation du gaz de ville 2 <input type="checkbox"/> utilisation du gaz en bouteille seulement 3 <input type="checkbox"/> le gaz n'est pas utilisé (38) PROPRIÉTAIRE DU LOGEMENT : 1 <input type="checkbox"/> H.L.M., et organismes publics d'habitation 2 <input type="checkbox"/> entreprise publique (s ^t e nationale, office,...) 3 <input type="checkbox"/> administration 4 <input type="checkbox"/> biens de l'Etat (ex. biens vacants) 5 <input type="checkbox"/> personne ou société privée (logement privé) (39) STATUT D'OCCUPATION DU MÉNAGE : 1 <input type="checkbox"/> locataire 2 <input type="checkbox"/> propriétaire ou copropriétaire 3 <input type="checkbox"/> logé gratuitement (40) AIDE EN ARGENT AU MÉNAGE : 1 <input type="checkbox"/> de fils ou autres parents résidant en Algérie et n'habitent pas avec le ménage 2 <input type="checkbox"/> de filins ou autres parents résidant à l'étranger 3 <input type="checkbox"/> de l'Etat (pension de retraites ou autres...) 4 <input type="checkbox"/> aucune aide			
SI C'EST UNE CONSTRUCTION ORDINAIRE : (21) ÉTAT DE LA CONSTRUCTION : 1 <input type="checkbox"/> bon état 2 <input type="checkbox"/> mal entretenu 3 <input type="checkbox"/> délabrée, impropre à l'habitation (22) NOMBRE D'ÉTAGES → <input type="text"/> (24) MURS : 1 <input type="checkbox"/> dur ciment 2 <input type="checkbox"/> pierres sèches 3 <input type="checkbox"/> toub ou terre torchée 4 <input type="checkbox"/> autre, à préciser : (25) TOIT : 1 <input type="checkbox"/> dur en terrasse 2 <input type="checkbox"/> dur en tuiles 3 <input type="checkbox"/> chaume							
RECAPITULATION DU MÉNAGE R.P. + <input type="text"/> R.A.T. + <input type="text"/> R.P.+R.A.T. + <input type="text"/> EMIG. → <input type="text"/> VIS. → <input type="text"/> Nombre de familles → <input type="text"/>							

كتابة الدولة للتخطيط

SECRETARIAT D'ETAT AU PLAN

ATTENTION !

N'OUBLIEZ PAS :

- De recenser les bébés et les jeunes -
- De recenser les personnes âgées -
- De recenser les visiteurs (VIS) les résidents absents temporairement (R.A.T.) et les émigrés (EMIG.) -
- De recenser les domestiques habitant dans le logement -
- De lire les instructions -

"Ne rien écrire dans la partie grise"

Nom et prénom(s) du recenseur :

Nom et prénom(s) du contrôleur :

Visa du contrôleur :

Visa statistique N° 75-08

Fig. 3.1 (Continued)

[illegible]

[illegible]

the dwelling and household, 'Logement et Ménage'. It inquires whether the dwelling is inhabited or whether it has a non-residential function; whether the dwelling is provided with an interior courtyard, independent or communal; whether there is a kitchen and a bathroom in the building; the number of rooms and those used for dwelling purposes; whether there is an inside or outside toilet and its type. It reveals also the water source (piped, well, spring, etc.), electricity and gas supply, and whether piped or bottle gas is used. After this description of the physical conditions of the dwelling, the ownership of the building is stated (local authority, private etc); whether the household rents or owns the dwelling or whether it is accommodated there free of charge; and whether the household receives any money from relatives living elsewhere in Algeria or abroad, or from state or other pension. Finally, the membership of the household is divided into four categories: residents present (R.P.), residents absent for less than six months (R.A.T.), emigrants abroad (EMIG.), visitors having stayed for less than six months (VIS) and the number of families sharing the dwelling.

Finally, the fourth section supplies data on demographic and socio-economic characteristics of each individual member of the household. This last section may be subdivided into three sub-sections, namely demographic aspects, education, and employment and economic activity.

- Demographic aspects.

This sub-section secures information on the name, relationship to the head or other member of the household, sex, date of birth, place of birth, marital status, residential status, place of residence of absentees and visitors, place of residence in 1966, year when each individual moved to the commune, previous place of residence and finally the nationality.

- Educational information

This covered languages which could be read and written, the final class attended at school or college and the highest academic diploma achieved.

- Economic situation

This last sub-section encompassed those in work (OCC), out of work (STR), studying (ETU), housewife (FEM), female employed part-time (FEMAID), retired (RET), invalid (INF) and other inactif category.

For the unemployed, data were sought on their previous job and the length of time without work.

Further employment details covered a precise job description, crude indication of whether skilled or not, the occupation status (employer, independent, co-operator, permanent or seasonal employee, apprentice) and the length of time in the present job. For the place of work of each individual data were sought on its main economic activity, its location

by commune and its sector status (administration, public, autogestion, co-operative or private).

It must be noted that similar socio-economic data had been provided by the 1966 census although less detailed; and the previous residence information was restricted to the place of residence in July 1962, rather than at birth and at the time of the previous census. So in the 1977 census, additional reference points have been included to generate more precise data on internal migration. With respect to its content, the 1977 census really offers a rather unique collection of data allowing the maximum use of this immense and valuable set of data. Therefore, in my view, the criticisms made by Robertson (1969), regarding the quality of the census as a basis for research study, are not valid regarding the Algerian 1977 census. As such, it saves researchers from establishing sample questionnaire surveys which generate organisation problems linked with time and money available for fieldwork and allows precise study or extract of samples without the problems of generalisation.

Focusing on internal migration analysis which is the main concern of this work, the 1977 census structure will permit the analysis of the migratory flows, which can be examined through three items of information: firstly the individual's place of birth, secondly his residence in 1966 and finally his place of residence prior to his present address. It means many migrant paths would be covered by these three items, bearing in mind nevertheless that there is a strong possibility that more intermediary moves are not recorded.

Information on the moves, combined with the existing characteristics of dwelling and population, will amply aid migration analysis evaluating the shape of migration in time and space, the spatial patterns of migration as well as the role of shanty towns in the migration process.

Having given the definition of migration as used for this research and specified the major sources, one should also make mention of the methods of information extraction and techniques of analysis. The original hand-written household questionnaires were readily made available at the Oran office where the census results are being processed. This meant, of course, it allowed collecting data at the individual level. Needless to say data gathering at that scale was a very long and tedious job since this meant the necessity to go through every single household form, systematically select the migrant members of the family according to the definition adopted and then take down nearly all the demographic and socio-economic information on that particular population plus a sample regarding the physical aspects of the dwellings; in the view of computerising the data. This documentary stage involved three months of data extraction in Oran. Beside the data provided by the fiche ménage, two other sources have been used, namely the plans districts and census publications. The plans districts consist of a detailed locational series of maps of the commune securing limits of districts and ilôts. The district refers to the aeral unit defined by the Sécretariat d'Etat au Plan (1976) as a "portion de terrain découpé dans le territoire d'une commune de taille convenable pour qu'un recenseur

puisse l'enquêter entièrement pendant la période d'exécution du recensement (15 jours maximum)". The size of the district is fixed at approximately 1050 people in close settlement zone (agglomeration) and at 550 in dispersed one. In close settlement area, ilôt is defined as a "portion de terrain entouré par des voies (rue, voies ferrées, cours d'eau) et qui n'est pas traversée par aucune d'elles".

Finally the census publications at the commune level on various aspects of population are very useful in the sense that it helps comparison between migrant and non-migrant population characteristics.

The fulfilment of the above objectives, which consist in the appraisal of migratory movements magnitude and their characteristics, is achieved in two major steps. Firstly descriptive methods will be used whereby migration streams are described verbally. This explanatory approach will tend to rest more heavily on subjective judgements than often desirable. Therefore it is thought necessary to complement it by a quantitative type of approach. This second method, based on quantitative techniques analysis, is of vital importance since it enables a far more accurate and objective assessment and establishes the relationships between variables, expressed in term of an equation used to obtain a score which will define the magnitude and major characteristics of internal migration. The precise techniques that will be used together with their merits and weaknesses will be discussed in the second part of the thesis, which concentrates on the analysis of the pattern of migration flows in time and space.

Part Two also attempts to establish the relationship between the magnitude of migration to Constantine and the current regional patterns of economic opportunities.

Part Two

PART TWO

Chapter Four

THE GEOGRAPHICAL FRAMEWORK OF ALGERIAN REGIONAL DEMOGRAPHY

The present chapter devotes itself to locate Constantine within its geo-economic context. Description of the physical and socio-economic conditions of Constantine's environment in comparison with the rest of the country seemed of capital importance. Indeed, a general geographical outline is much favoured here, for although broad relationships between environment, man and his activity are obvious, it is apparent that human groups and modes of life do not always coincide precisely with physical regions. It is commonly observed that the various natural components such as physical configuration, water supplies, need for defence, traditions and local economy, operate with differing intensity from one region to another (CLARKE, 1964, p.698). Thereafter, a comprehensive regional analysis of the country based upon physical, social and economic criteria has to be adopted. The advantages of such an approach are twofold. Firstly, it enables us to point out the variations in the degree of regional development, which in turn had been largely determined a century ago by the suitability of land for European settlement according to its fertility, climate and communication (ISNARD, 1961, p.24). Secondly, in accordance with both Constantine's location and Eastern Algeria's degree of development, the approach will elucidate the subsequent chapters on the factors that have influenced the growth of Constantine and the reasons why Constantine

still remains a central place for its surroundings, despite its relatively little commercial and industrial growth.

Constantine, the third largest Algerian city after Algiers and Oran, lies on the Monts de Constantine, 90 kilometres south of Skikda and 170 kilometres south-west of Annaba, its principal outlets to the Mediterranean Sea (Fig.4.1). In contrast with the other Algerian metropolises, Constantine directs a poor rural region (Eastern Algeria) which paradoxically is overpopulated. Indeed, as it will be demonstrated throughout this chapter, interregional imbalances are very marked in the Algerian context, and stem from combined and complex effects of natural and historical factors in the socio-economic development. As far as Eastern Algeria is concerned, it has been described as being the less urbanised, industrialised and modernised region of the country (IPN, 1970,p.175). This disadvantage becomes explicit when analysing the interacting relationships between human distribution and activities and the physical environment (TABLE 4.1 and Fig. 4.2).

4.1 Eastern Algeria or the Constantine Region (Constantinois)

a. The Tell zone

The northern part of the country is occupied by the Tell Atlas, a mainly mountainous region where the average population density exceeds 95 inhabitants per square kilometre. The Tell represents the country's heartland, containing most of its cities and approximately 76 per cent of its total population. The eastern section of the

Fig.4.1 LOCATION OF CONSTANTINE

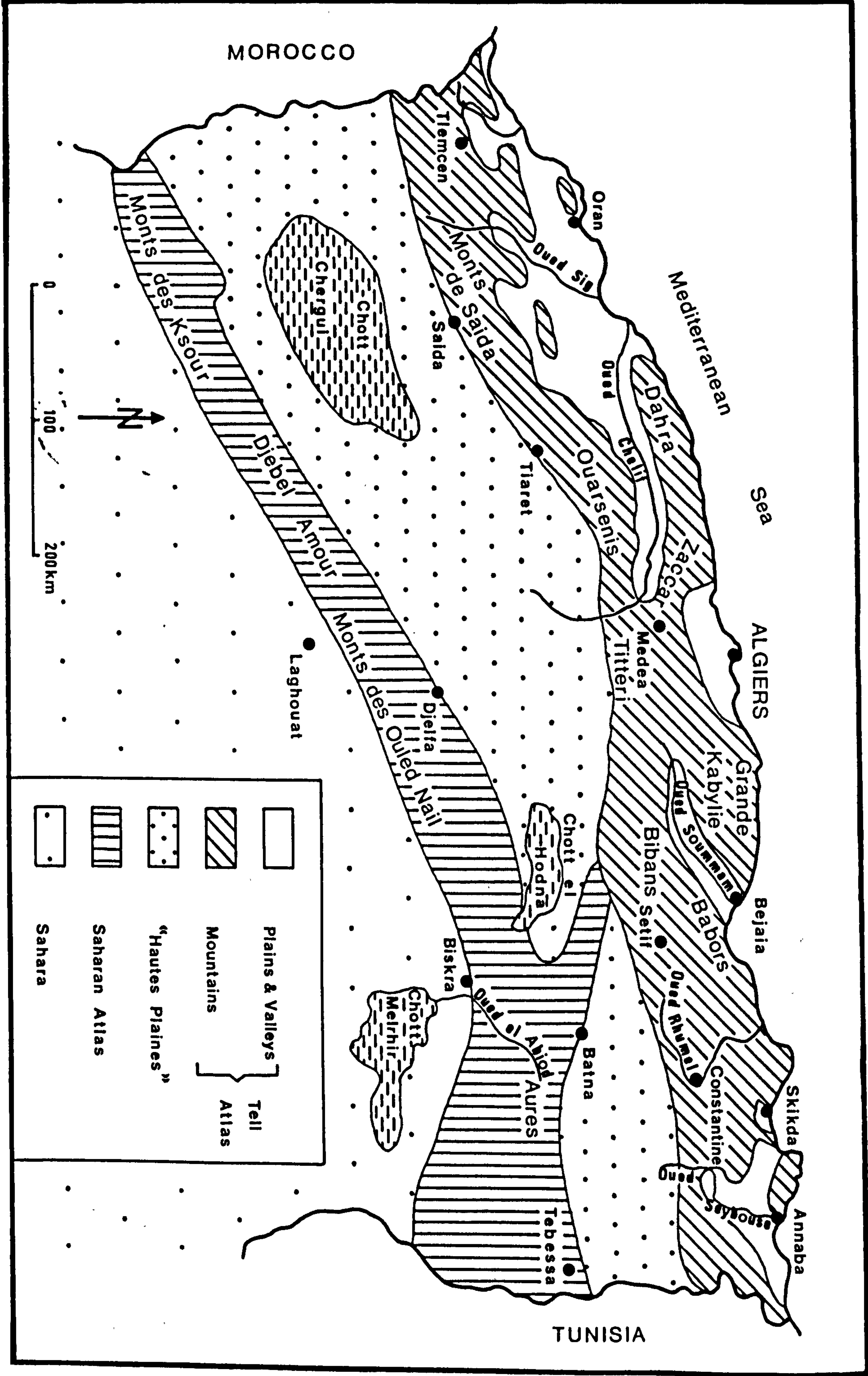


TABLE 4.1 General Characteristics of Algeria's Environment

Physical Unit	Unit Area in km ²	%Total Area	%Population	Average Density (inhabitants/km ²)	Climatic Conditions	Major Economic Activity
Tell (made up of hills and plains of the narrow littoral, the several Tell Atlas ranges and intermediate valleys and basins)	99400	4.17	76	>95	Humid, Sub-humid;	In mountain areas: Cork-oak forestry, olives, figs & livestock and cereal cultivation, on a traditional basis
					Rainfall exceeds 800 mm	
						In plain areas: Intensive cropping system commercially orientated
High Plains (consisting of undulating steppe-like plains)	179800	7.55	18	between 15 and 60	semi-arid, Rainfall between 400 and 200mm	Extensive cereal cultivation under dry farming methods and Semi-nomadic livestock rearing
Sahara (vast area of plateau)	2102800	88.28	4	<15	Arid, Rainfall under 100mm	Cultivation of date palms and irrigated gardens with vegetable, tree and fruit trees on micro-pieces of land in oases

Fig.4.2

ALGERIA : MAJOR PHYSICAL FEATURES

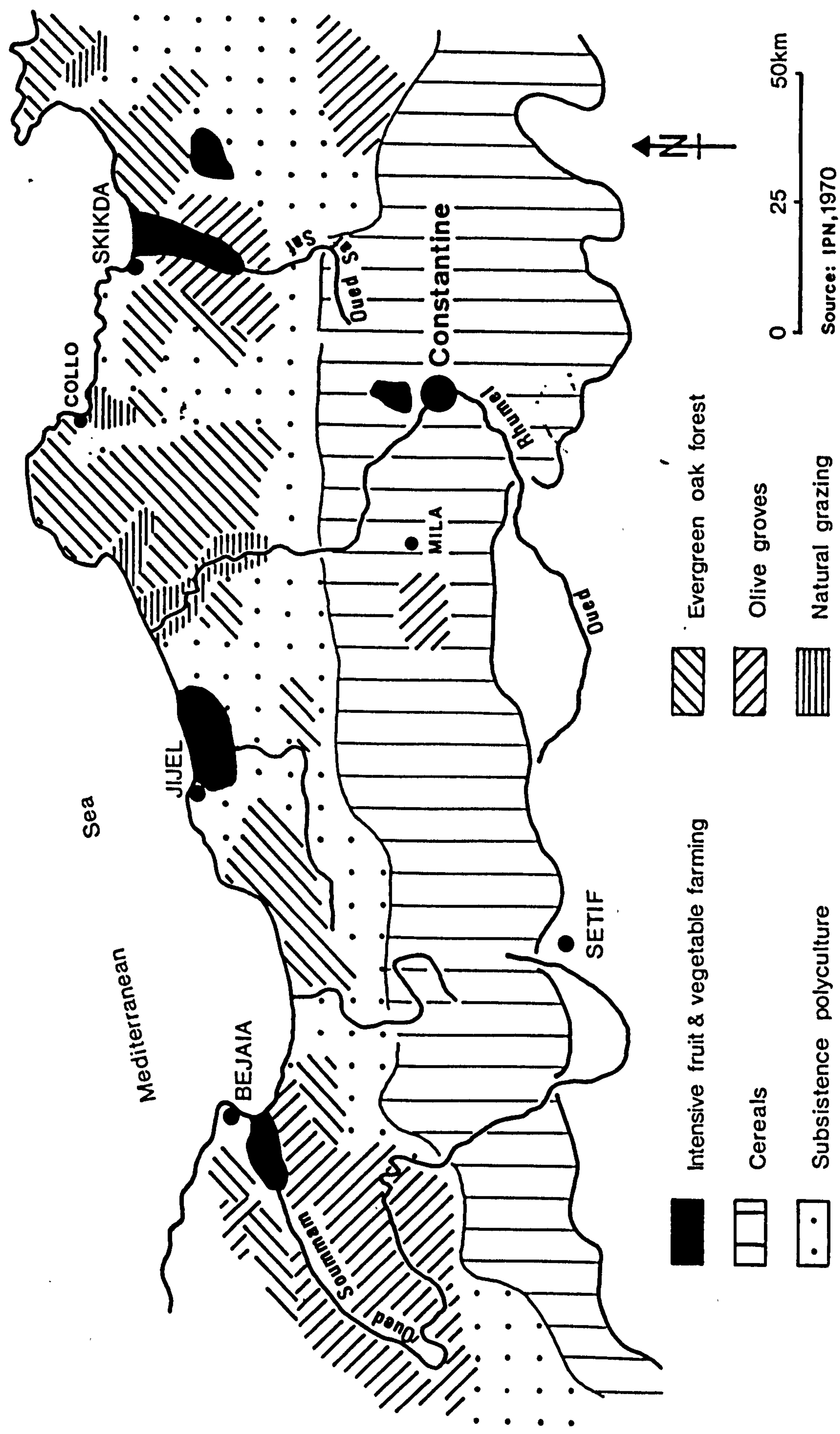


Source : Gauthier, A. 1976

Tell zone or Tell Constantinois corresponds to a compact mountainous region with high rainfall. It is, in fact, the most-watered area in Algeria and has a mediterranean climate. The annual rainfall is over 800 millimetres, with maxima exceeding 1200 millimetres at numerous Kabyle stations (1773 millimetres in the Massif de Collo). This is mainly due to the presence of high mountains near the coast in the area where the westerly winds have crossed the Mediterranean at its widest. The coastal ranges are characterised by cool but mild rainy winters and hot, rainless summers; whereas the inner Tell has cold, rainy winters often with considerable snowfall (in Kabylie des Babors and the Kabylie de Collo) and agreeable summers with cool nights, though heat may be excessive about midday during July and August (SELTZER, 1946). But if the climate does not act here as a constraint, the physical configuration, on the other hand, plays a decisive role. The eastern Tell consists of individual ranges, plateaux and massifs, which, varying in height from about 500 to 2500 metres, are frequently separated from one another by deep valleys and gorges and which consequently divide the area into self-contained topographic and economic units (Fig. 4.3).

The plains and valleys, which unfortunately are very restricted in extent as Fig. 4.2 illustrates, are the domain of modern intensive cropping system commercially orientated. These lowlands (Annaba and Jijel plains, Saf Saf and Soummam valleys) form some of the most productive parts of the country after the Mitidja plain and Chélif valley where crops of cereals, fruits, vegetables and vines are grown.

Fig.4.3 AGRICULTURE SYSTEMS OF THE EASTERN TELL



In contrast, mountains together occupy around 70 per cent of the land area, whose soils are unsuitable to agriculture because of their broken and gullied relief. Nevertheless, these mountains which are the most dissected, are also the most humid. They are the domain of cork-oak forest with the population isolated in clearings and practising small-scale livestock rearing as well as cereal and wood cultivation on a traditional basis. Here, land fragmentation and primitive arboricultural techniques hinder progress.

Thus, handicapped by the relief, the Eastern Tell Atlas has overall remained a rural region with a self sufficient economy except in the case of the valleys and lowlands. The humid and forested mountains have remained in the hands of Berber communities who have retained the essentials of their traditional ways of life. Moreover, European colonisation hindered by the elevated relief and resultant difficult communications, were only installed in small number and only partially controlled the economy. As a result, little capital or infrastructure was installed. Until independence, the region, apart from its lowlands and valleys, constituted an under-equipped and under-administered indigenous reserve. But surprisingly enough, the mountain area is more populous than that of the plains. For example, the Annaba plain displays a much lower population density than the Kabyle mountains, despite its high economic potentialities. Such a paradoxical population distribution reflects historical conditions and social organisations, factors which must be invoked in any consideration of present population densities. Expropriation of fertile land

by the colons from the native population had driven a large proportion of the Algerian peasantry back to the mountainous areas. Accordingly, this population shift from lowlands to uplands generated a noticeable change in the settlement pattern. Another important factor that accounts for such high densities in mountain areas is that of the cohesiveness of the population (COTE, 1975, p.176). The overpopulation results from the accumulation of families descended from the same tribal ancestors. In the Kabyle mountains, the average population density reaches 300 inhabitants per square kilometre, with maxima surpassing 500 locally. Such heavy human impact on low agricultural potential areas causes imbalances between population numbers and resources available and therefore implements considerable problems of overpopulation. The pressure is partly relieved by migration to the Algerian towns and cities and to Europe.

b. The High Plains (Hautes Plaines)

In the interior of the country lie the extensive High Plains which consist of almost featureless undulating steppe-like plains averaging between 1100 and 1300 metres in elevation in the west and 400 metres in the east. The eastern High Plains, namely those of Setif and Constantine, are bounded by the Tell ranges to the north, by the abrupt rampart of the Saharan Atlas to the south, by the Monts de Tebessa to the east and finally by the Monts du Hodna to the west. Given this relief of an enclosed basin they escape from the Mediterranean influences and have a semi-arid or

steppe climate, characterised by very marked seasonal contrasts: a very long dry hot season lasting from five to seven months and rather short but cold winters. The mean annual rainfall varies between 400 millimetres in the northern limit of the High Plains and 200 millimetres in the southern margin. Here, rainfall tends to occur in spring and autumn rather than in winter. Another feature of the High Plains is the presence of several vast basins of internal drainage, known as Chotts; the largest of which is the Hodna Chott. During the rainy season water accumulates in the Chotts to form extensive shallow lakes which give way, as the water is absorbed and evaporated, to saline mud flats and swamps.

By virtue of the flatness of the area as well as the semi-arid climatic conditions, the High Plains are the principal centre of extensive mechanised cereal cultivation under dry farming methods and semi-nomadic livestock rearing; and thus the point of contact of sedentary farmers and pastoral nomads. The limited economic activities in the High Plains were not profitable enough to have fixed large number of European colonists in the past. Such restricted means of livelihood greatly restrain the human impact on the area. The total population of the High Plains, as a whole, represents only 18 per cent of the country's population. The average population density varies between 60 and 15 inhabitants per square kilometre.

c. The Sahara

Beyond the southern margin of the High Plains (the Saharan Atlas) lies the Sahara, a vast arid desert accounting for the five-sixths of the total area of the country. It forms a distinctive environment unit and falls within the confines of the Territoires du Sud; and therefore is excluded from the Eastern Algeria region. Indeed, the southern limit of Eastern Algeria is Biskra. However, it is described here because the percentage of migrant population from saharan areas such as Ghardaia and Laghouat to Constantine is far from negligible.

The Sahara is characterised by extremes of temperatures, wind and aridity. The amount of rainfall is everywhere below 100 millimetres per annum. The climatic conditions are severe and explain the extreme sparseness of the vegetation and the division of the population into settled cultivators who occupy the oases dependent on permanent supplies of underground water and nomadic pastoralists who make use of temporary pastures which become available after the winter and spring rain. Although the Sahara occupies about 90 per cent of Algeria's area, it only totals a very small population (4 per cent) contrary to northern strip of Algeria which has less than 10 per cent of the area but concentrates 96 per cent of the overall population.

From the above geographical outline, it can be concluded that Eastern Algeria is made up of regions which have long remained the site of traditional ways of life, because one sufficiently humid region (the Kabylie) is too mountainous for development, and a relatively flat area (the High Plains)

which has too little humidity. As a result, Eastern Algeria's economy, as a whole, is mostly dependent on extensive activities such as cereal and wood cultivation and livestock rearing. The share of intensive farming (citrus fruits, tree crops, vine...) is trivial as compared to that of Western and Central Algeria (TABLE 4.2).

4.2 Western Algeria or the Oran region (Oranie)

The Western Algeria is the most geographically open in Algeria but also the driest (Fig.4.2, Fig.4.4). Contrary to Eastern Algeria where the relief plays a capital role, here it is the climatic transition from the Mediterranean to the Sahara that is most influential. The coastal belt receives less than 600 millimetres per annum (except for few higher areas inland such as the Massif de Tlemcen and Ouarsenis) whereas in the sub-littoral plains the annual amount of rainfall drops well below 400 millimetres. Such a small rainfall is explained by the fact that the coastal mountains are low and the region lies in the shadow of the mountains of Spain and Morocco, on which the west and north-west winds deposit the bulk of their moisture. But due to much unbroken relief (mostly plateaux and hills) as well as its warm plains and its sandstone plateaux, the region is par excellence the domain of the vine, a crop well adapted to withstand dry summer conditions. The publication in 1955 and 1956 of the Algerian Agricultural Census demonstrate very clearly the importance of the vineyards of the Oranie. In Western Algeria, there were 224004 hectares of vineyards against 102575 hectares in Central Algeria and only 21830

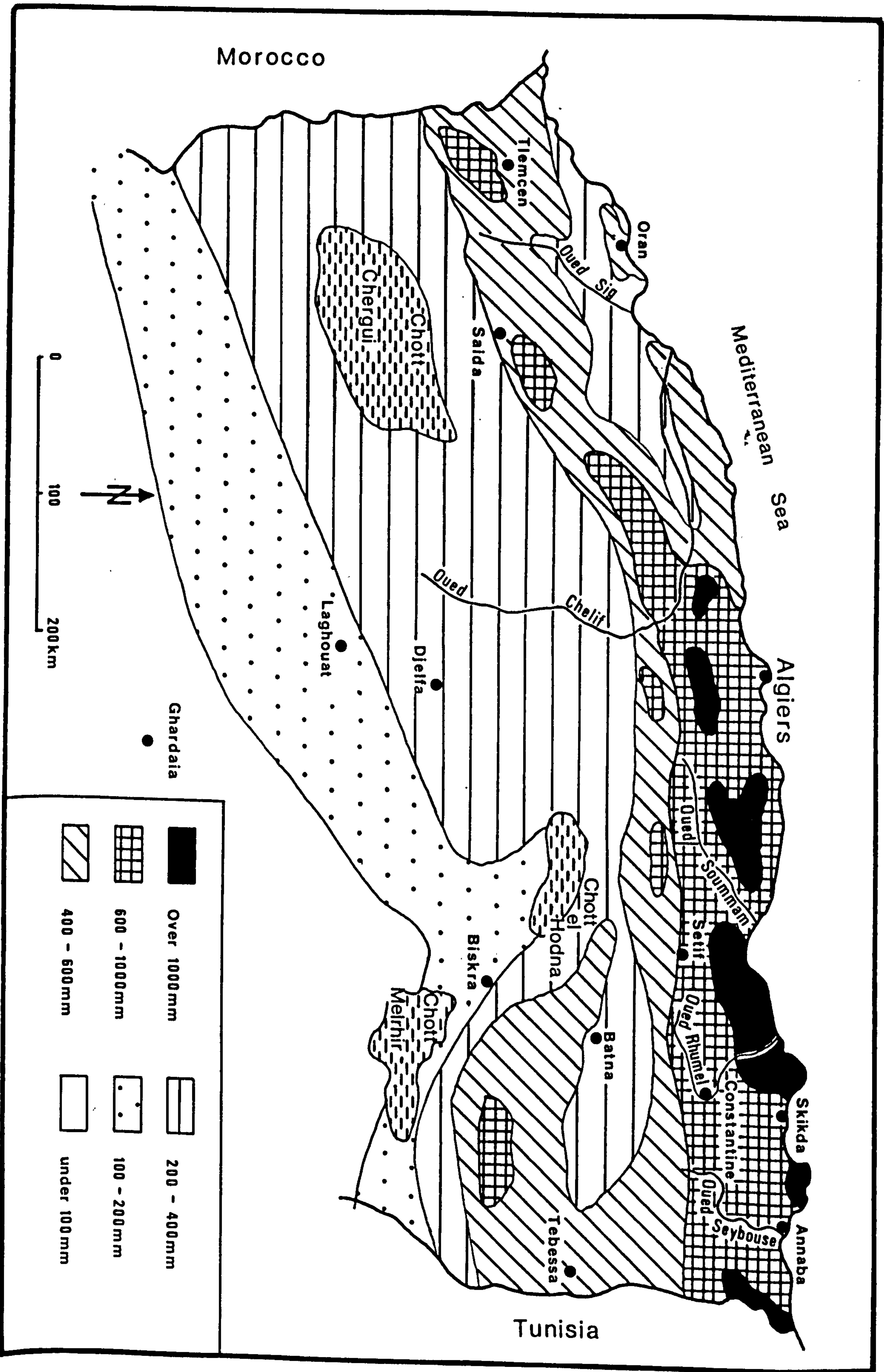
TABLE 4.2 Algeria : Agricultural Structure by Major Region (in hectares) in 1958.

Major land use Categories	Eastern Algeria Central Algeria Western Algeria Total Algeria									
	Total area		%		Total area		%		Total area	
	Total area	%	Total area	%	Total area	%	Total area	%	Total area	%
Cereals	440 858	55.4	253 890	49.9	840 374	63.1	1 535 122	58.2		
Pasture	147 326	18.5	84 486	16.6	158 339	11.9	390 151	14.8		
Wood	160 079	20.1	32 569	6.4	76 892	5.8	269 540	10.2		
Vines	21 830	2.8	102 575	20.2	224 004	16.8	348 409	13.2		
Industrial Crops	8 654	1.1	6 195	1.2	8 429	0.6	23 278	0.9		
Market Gardening	3 411	0.4	10 029	2.0	7 120	0.5	20 560	0.8		
Fruit Trees	13 248	1.7	18 962	3.7	17 334	1.3	49 544	1.9		
TOTAL	795 406	100	508 706	100	1332 492	100	2 636 604	100		

Source: Isnard, H. (1958) "Structures de la colonisation agricole en Algérie à la veille de l'insurrection", Bulletin de Géographie d'Aix-Marseilles, No.4, pp85-118.

Fig.4.4

ALGERIA : RAINFALL



hectares in Eastern Algeria (ISNARD, 1958). Europeans were settled here in very large numbers, especially since the region was only sparsely occupied by indigenous population. In 1936, the European population settled in Western Algeria accounted for 76 per cent of the total population against 48 per cent in Eastern Algeria (TABLE 4.3). The heavy European concentration in the region, which remained very high until the dawn of Independence, was directly associated with the distribution of vineyards within the region. Vineyards stretching to the furthestmost bounds of the steppe as well as extremely high gross incomes provided by the vine (five to six times that of cereals) determined both the economic organisation and urban expansion.

During the colonial period, Western Algeria's economy was chiefly based upon a monoculture of vine growing whose production was exported solely to France. Vineyards provided over a quarter of the gross agricultural production and the overwhelming majority of exports (DUMONT, 1973, p.272-273). Such a prosperous economy attracted a considerable number of Europeans who, for the most part, settled in urban areas, which in turn explained why Western Algeria accounted for 44 per cent of the country's total urban population in 1954, the date of the outbreak of the War of Liberation. However, since independence onwards, it came apparent that this urban dynamism has faded away with the colons' departure.

The current urban ratio for the region is 39 per cent and therefore ranks slightly below that of the national average.

TABLE 4.3 Native and European Populations of Selected Algerian Towns at the 1936 and 1960 censuses.

	1936 Census (1)				1960 Census (2)			
	Total Population		Percentage of		Total Population		Percentage of	
			Natives				Natives	
ALGIERS & SUBURBS	264 232	31	69		870 000	64	36	
ORAN & SUBURBS	200 671	24	76		430 000	51	49	
CONSTANTINE	113 777	52	48		217 000	83	17	
BONE (Annaba)	86 332	47	53		144 000	70	30	
PHILIPPEVILLE (Skikda)	66 112	49	51		85 000	70	30	

(1) : Geographical Handbook Series (1944): Algeria , Vol.II, p.39
 (2) : Depois, J. (1964) L'Afrique du Nord, p.211

But a more striking feature is the substantial decrease of Western Algeria's urban population compared to the country's total urban population. It decreased from 44 per cent in 1954 to 24 per cent in 1966 and finally to 22 per cent in 1977 (BRULE and MUTIN, 1982,p.43). That is to say that the urban centres of the region, as a whole, were subject to a very moderate growth for the last 23 years: 3.2 per cent per annum for the 1954-1977 period. Reasons behind the decline are the departure of a large European population and to some extent the disorganisation of the region's economy, as a consequence of the former. "Structurées au temps de la colonisation en un réseau lié à la viticulture, les villes oranaises avaient attiré une population européenne très importante. A l'indépendance, la substitution des Européens par des Algériens s'était effectuée à des rythmes plus lents que dans le reste du pays car l'Ouest correspondait à une région où l'impact colonial a été le plus fort, le réseau urbain le plus complet et les réservoirs ruraux les plus limités" (ADAM, 1969,p.43), à l'exception de certaines localités telles Saida et Arzew où les implantations industrielles ont fait sentir leurs effets démographiques" (PRENANT, 1979; SEMMOUD, 1979).

Another factor that may explain the decline is the economic disorganisation of the area since Independence. Indeed, France decided to reduce progressively her wine imports, a decision that raised serious problems of commercialisation on Algeria's part. Difficulties in finding a reliable partner forced Algeria to go for a technological conversion of wine vineyards to the production of table

grapes and grape juice devoted to the national market and a deliberate uprooting of approximately 35,000 hectares of vineyards (DUMONT, 1973, p.272-73). Wine production fell sharply from 18.6 million hectolitres in 1960 to about 7.5 million hectolitres in 1975 and 2.7 million hectolitres by 1979 (EUROPA PUBLICATIONS LIMITED, 1981-82, p.248). In the late 1960s, Algeria signed a seven year agreement with the USSR whereby the latter would buy five million hectolitres yearly and the former would be supplied with capital goods for industry and agriculture.

Thus, the Western Algerian model of development was consequent on the strategy of the colonial policy which implemented an outward orientation of the national economy and therefore a dependency situation upon the metropolitan country, France; and provides the perfect illustration of the Algerian economy's dependence and vulnerability, as a whole. However, by way of compensation for decline in the agricultural economy, the industrial sector has been expanded and modernised. In Oran, the regional metropolis of Western Algeria, the industrial sector is mostly confined to small-scale plants such as a small iron and steel mill and small metal-processing shops. Not far from Oran is Mostaganem with its small industrial complex dominated by sugar refinery and paper pulp processing. But much of the industrialisation programme has been devoted to the Arzew area, in which a substantial proportion of the country's investment capital has been injected. As a result, Arzew, located only 48 kilometres east from Oran, has grown in no time from a small fishing port to the biggest petrochemical

complex in the country. It houses several liquefied natural gas (LNG) plants, ammonia and fertilizer factories and an oil refinery operating since 1972.

So in the near future, the economic situation of the region could greatly be improved for the set up of major industrial plants constitutes an "industrial germ" which will have an impact throughout the West.

4.3 Central Algeria or Algiers region (Algérois).

In the Algiers region, the orientation of the Tell chains permits the existence of lowlands between their folds. Abundant rain (between 700 and 800 millimetres on the coast) together with rareness of late cold spells allow vineyard cultivation to extend up to the very southern margin of the Tell. Algiers' hinterland (the Sahel of Algiers and plain of the Mitidja in particular) forms the richest agricultural area of the country, thanks to the most favourable physical, climatic and soil conditions.

The Sahel of Algiers consists of a plateau and lies between the sea and the Mitidja plain. Generally speaking, it is a prosperous Sahel combining market gardening at the foot of the hills and vineyards on the gentle slopes. But much more prosperous is the Mitidja plain which lies just behind the Sahel of Algiers. It is a plain of about 90 kilometres long from west to east and 15 kilometres wide, sloping gently to the sea and the Sahel. Its southern margin rests against the Blida Atlas and the Massif de Tablat.

Colonisation here flourished and was based on a highly profitable system of polyculture, so much so that the Mitidja was regarded as a show-piece of French Colonisation in North Africa : it is well adapted to cultivation including vineyards, market gardening, fruit-trees, tobacco and flowers for scent making (MUTIN, 1975).

While Central Algeria is the most prosperous agricultural area of Algeria, it is also the country's most urbanised and industrialised region. Forty five per cent of its population is urban. The region accounted for 39.4 per cent of the overall population in 1977, but represented 44 per cent of the total urban population as against 36 per cent in 1954 (TABLE 4.4). This strong urban concentration in the region

TABLE 4.4 Population and Urbanisation Characteristics of the Three Major regions, at 1954 and 1977 censuses.

	Per cent of total population	1977 Urban Ratio	% urban Population/ Overall Urban Population	
			1954	1977
Algiers Region	39.4	45	36	44
Oran Region	23.5	39	40	22
Constantine Region	37.1	35	21	32

is due to the presence of the capital Algiers, which acts as an overriding polarization factor. Algiers with its 1.5 million inhabitants in 1977 accounted for 8 per cent of the country's population and 22 per cent of the overall urban

population. The coastal, Mitidja and Sahel areas together account for 80 per cent of the Algerois urban population.

In terms of industry, the Algiers region is the country's principal industrial centre. It provides employment for about 45 per cent of the total industrial labour force (NELSON, 1978, p.150). Accordingly, rather than encouraging further industrialisation in the region, which would only cause greater regional disparities, a policy of expansion and modernisation of older plants has been adopted.

Thus, in pursuit of profit, colonisation had re-enforced the regional disparities that stem from natural conditions by intensively developing already rich areas and deliberately ignoring the poor ones (ISNARD, 1961). Such a development strategy therefore led to the highly selective distribution of Europeans and capital within the country. Simultaneously, it dictated a regional pattern of urbanisation and a system of differential urban growth that has created disparities which are full of political, economic and social consequences. As a result of the striking uneven geographical distribution of Europeans and capital within Algeria, the Oran and Algiers regions with their modern agriculture became very like European provinces whereas the Constantine region with its traditional agriculture and its massive rural population remained an indigenous preserve facing serious overpopulation problems.

Symptoms of population pressure in Eastern Algeria may be better perceived by at least three indicators, namely

population density, changes in the relative proportion of inhabitants of the region as compared with the overall population and finally changes in the rural-urban ratio, changes which respectively suggest interregional and intraregional population redistribution.

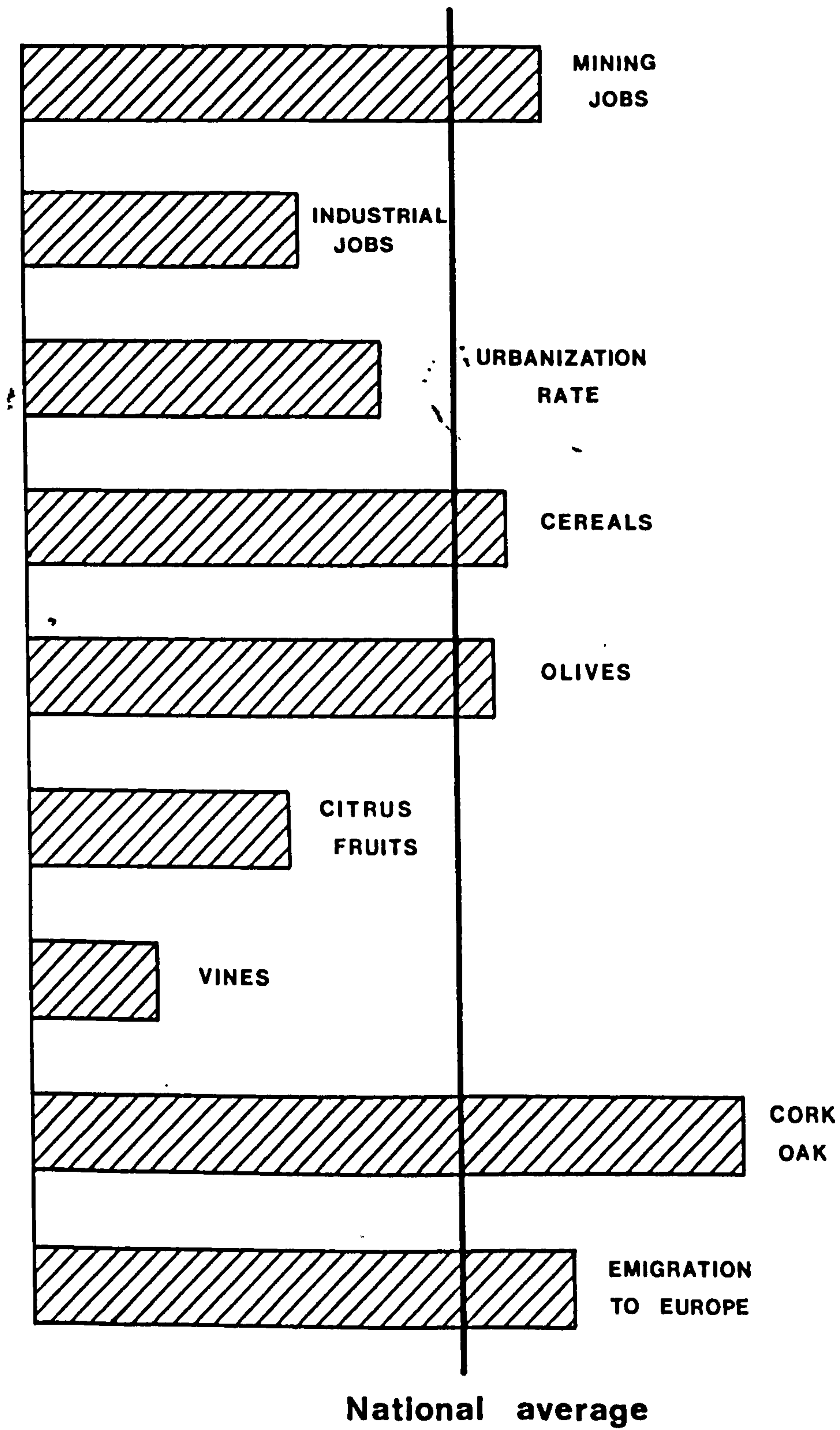
In the Constantinois region, the human impact is striking and population densities abnormally high. For instance, the average population density in the Tell are often well above 100 while the national average density excluding the Sahara is 40 inhabitants per square kilometre; and yet its natural resources are well below that of the national average (Fig. 4.5). Hence, Eastern Algeria encounters considerable problems of overpopulation originated in the pressure of population numbers upon inelastic sources of livelihood.

A much more significant indicator of this phenomenon is that of change in population proportion. The region holds, from a demographic point of view, an important position, considering that by occupying only a third of the total area of Northern Algeria, it accounted for nearly half of the country's total population in 1906 or 45.2 per cent. However, its proportion declined to 39.4 per cent in 1954 and to 37.1 per cent in 1977 (TABLE 4.5). Such a relative population decrease therefore underlines outward migratory movements (either interregional or international migration or both) as to partly relieve the population pressure.

Within the region itself, population redistribution can easily be depicted by changes in the rural-urban ratio. As

Fig.4.5

SELECTED INDICATORS OF THE CONSTANTINOIS
RELATIVE TO THE NATIONAL AVERAGE



Source: IPN, 1970, p.178

TABLE 4.5 Evolution of Eastern Algeria's Population as
compared to that of Total Algerian Population
(1906-1977)

	Algeria ⁽¹⁾	Eastern Algeria ⁽²⁾	Eastern Algeria's Population as % of Algeria's Population
1906	4 478 000	2 025 000	45.2
1931	5 588 000	2 460 000	44.0
1936	6 201 000	2 701 000	43.7
1948	7 460 000	3 091 000	41.1
1954	8 545 000	3 368 000	39.4
1966	11 801 817 ^(a)	4 544 000	38.5
1977	16 948 800 ^(b)	6 292 000	37.1

(1) Negadi, G; D.Tabutin & J. Vallin (1974 "Situation
démographique de l'Algérie, CICRED: La Population
De L'Algérie, p.17 .

(2) Lekehal, A. (1979) Répartition et évolution de la
population dans l'Est Algérien (1954-1966-1977),
Mémoire de Fin Coursus, Institut des Sciences de
la Terre, Université de Constantine.

(a) : 1966 census figure

(b) : 1977 census figure

TABLE 4.4 and TABLE 4.6 show, Eastern Algeria is the less urbanised region of the country, and this despite an accelerated increase in its number of people living in towns and cities. The urban population accounted for 35 per cent in 1977 of the Constantinois total population as compared with only 21 per cent in 1954 (LEKEHAL, 1979). Between 1954 and 1966, Eastern Algeria experienced an annual urban growth rate of 7.8 per cent. TABLE 4.6 shows that urban population has expanded much more rapidly than the rural population during the 1954-1966 intercensal period, this leading to an increased urbanisation although the proportion living in towns in Eastern Algeria is still much lower than in the other two Algerian regions. Over the same period, the urban growth rate was also higher than that of the total population. Indeed, the growth rate of urban population was 2.6 times that of the total population.

Since 1954, massive desertion of rural areas towards towns and cities reveals evidence of not only the imbalances between population numbers and resources availability but also the ill-effects of the regroupement policy during the War of Liberation which in fact drastically disorganised the rural life. Consequently, rural population, very much influenced by expected conditions at points of destination, migrate to towns, especially to larger centres, which in turn resulted in depopulation of many rural areas. Rural depopulation was particularly marked in the Petite Kabylie, especially its northern communes which have declined substantially. Most of its communes saw their population decreased by half or more. The perfect example is the

TABLE 4.6 Population Growth and urbanisation in Eastern
Algeria (1906-1977)

	Total Population	Rural Population	Urban Population	Urbanisa- tion Rate
1906	2 025 000	1 809 000	215 000	10.6
1931	2 460 000	2 101 000	358 000	14.5
1936	2 701 000	2 282 000	419 000	15.5
1948	3 091 000	2 585 000	506 000	16.3
1954	3 368 000	2 653 000	715 000	21.2
1966	4 544 000	3 107 000	1 437 000	31.6
1977	6 292 000	4 058 000	2 234 000	35.5

Source: Lekehal, A. (1979) Répartition et évolution de la
population dans l'Est Algerien (1954-1966-1977).
Mémoire Fin Coursus, Institut des Sciences de la
Terre, Université de Constantine, Constantine .

commune of Taourirt Ighil which declined by 55 per cent during the 1954-1966 period (LEKEHAL, 1979).

This unprecedented shift of rural populations to urban centres caused an accelerated urbanisation which is reflected in both the steady increase of urban population and in numbers of urban places (TABLE 4.7). Nevertheless urban areas did not have uniform patterns of growth (COTE, 1968). Villages and smaller towns of 5- 10,000 inhabitants as a whole have decreased by 31 per cent between 1966 and 1977 in favour of larger centres, as shown in TABLE 4.7. Coastal towns such as Skikda and Jijel increased relatively slowly between the 1954-1977 period (3.2 per cent per annum), by contrast the inner urban areas such as El Khroub and Chelghoum Laid were subject to a much higher increase rate of respectively 5.8 per cent and 4.3 per cent per annum for the same period (BRULE and MUTIN, 1982, pp.43-44). The extreme example is that of Batna whose population expanded from 18504 in 1954 to 55751 in 1966 and to 102 756 in 1977. Thus, Batna experienced an excessively high growth rate of 455 per cent in 23 years or 19.8 per cent per annum. The reason why the dynamism of the inland urban centres has been greater is that they are the receptacle of rural exodus from the Tell and Saharan Atlas (LEKEHAL, 1979, p.33). However, it is certain that a new equilibrium in favour of the coast is now taking place as a consequence of its belated industrialisation.

Thus, the interactions between a vast land area serving little agriculture purposes, a high proportion of rural

TABLE 4.7 The Evolution of the Urban System in Eastern Algeria (1954, 1966 and 1977)

		1954		1966	
				1977	
Category	Number	Population	Number	Population	Number
					Population
100 000	1	111 315	2	443 000	4
50-100 000	2	141 431	5	344 500	7
10- 50 000	13	371 740	21	479 000	29
5- 10 000	13	90 514	23	170 500	15
Total	29	715 000	51	1 437 000	55
				2 234 000	

Source : Lekehal, A (1979) 'Répartition et évolution de la population dans l'Est
Algerien (1954-1966-1977)', Mémoire Fin Coursus, Institut des Sciences de la
Terre, Université de Constantine, Constantine.

population (almost two-thirds of the Constantinois' total population) and a weak industrial network made Eastern Algeria the most underprivileged and the least economically attractive region of Algeria. Despite the obvious depressing conditions, little was done to diminish the striking interregional disparities. First commitments to improve the welfare of Eastern Algeria were made by the late 1960s. Following the massive investment provided for by the various national plans in the industrial sector since 1967 (BENNOUNE, 1980, p.52 & 54), three major industrial development poles have emerged: the Skikda-Constantine-Annaba triangle (BENDJELID, 1976) and more recently Sétif, from which further growth must generate (SARI, 1972, p.56-57).

Skikda was, up to 1965, a town controlling a very rich agriculture hinterland (Saf Saf Valley) and serving as the port for Constantine. Its industrial sector was very small and limited mostly to food processing, building materials, textiles and minerals. But since then, due to sudden but substantial capital investment, Skikda has become, in eight years or so, a major oil and gas terminal possessing a vast oil refinery, liquefied natural gas (L.N.G.) and petrochemical plants, which have been installed under the management of SONATRACH (Société Nationale de Transport et de Commercialisation des Hydrocarbures). Paralleling the Skikda petrochemical complex, there is a large iron and steel mill at El Hadjar near Annaba, which is under the direction of the National Steel Company (Société nationale de Sidérurgie or SNS). The Annaba industrial zone also houses phosphate fertilizer plants and chemical factories (AARDES, 1979b).

In the interior a motor and tractor plant controlled by the SONACOME (Société Nationale des Constructions Mécaniques), has been installed at Constantine. In addition to producing motors and tractors, it has a foundry and forge large enough to service other industries on a contract basis.

In the intention of avoiding an excessive industrial polarization on the Skikda-Constantine-Annaba triangle the government established in 1970 an important plastics complex at Setif.

Unfortunately, it seems that government intervention to develop Eastern Algeria occurred too late to reverse the migration impetus; the moreso that by promoting industrial development in towns and cities and neglecting rural development, the outcome could only be an encouragement of even higher potential rural-urban migration whose direction, however, would be now better established according to these industrial locations (BRULE, 1979). In connection with these weaknesses of the Algerian development strategy, Gauthier (1976, p.141-142) wrote: "L'industrie, essentiellement localiséedans les villes, crée des pôles de développement isolés dans un monde rural resté traditonnel. Ces pôles représentent autant d' "îles" qui, réunies, forment "l'archipel algérien". Mais ces îlots de modernité restent noyés pour le moment dans un océan rural qui se développe d'autant moins vite que l'essentiel des investissements sont affectés à l'industrie". This, in turn, precipates urbanisation at a rate that is too rapid for any effective planned response.

Excessive urban growth, which occurs in a short period, inevitably raises many serious problems such as difficulties in increasing functional equipment, finding land for city expansion, providing housing and various collective facilities for the new and swelling population.

The above observations on the varying degrees of regional development and urbanisation together with their implications lead to the core of the thesis. Indeed, the aim of the succeeding chapters is to examine these aspects in greater detail and to illustrate their importance on the city of Constantine.

Chapter Five

COMPONENTS OF URBAN GROWTH

In the first part of the thesis, it was observed that Algerian urban places and cities have been growing largely as a consequence of rural-urban migration; a phenomenon experienced likewise in many other developing countries. The notion of rapid urbanisation related to rural exodus has been evident, for example, in the works of Murphey (1966) and Myrdal (1968) on Asia; or in those of Durand and Pelaez (1965) on Latin America; or in those of Zachariah and Condé (1981) on Africa.

Considering that the four previous chapters would serve as a basis for a clearer understanding of the factors underlying population movements, it is now equally important to attempt to define in greater detail the role of migration in urban growth, with reference to Constantine city. Accordingly, this chapter is specially devoted to an analysis of trends in population growth over the 1851-1977 period and to examine the interactive contribution of natural increase and migration to its overall population growth at the last two intercensal periods, namely 1954-1966 and 1966-1977, for which more demographic data is available. In other words, the object of the chapter is threefold: firstly to summarise trends in population growth, secondly to describe Constantine's salient demographic characteristics and finally to try to determine the possible reasons for its markedly changing population growth rate over time.

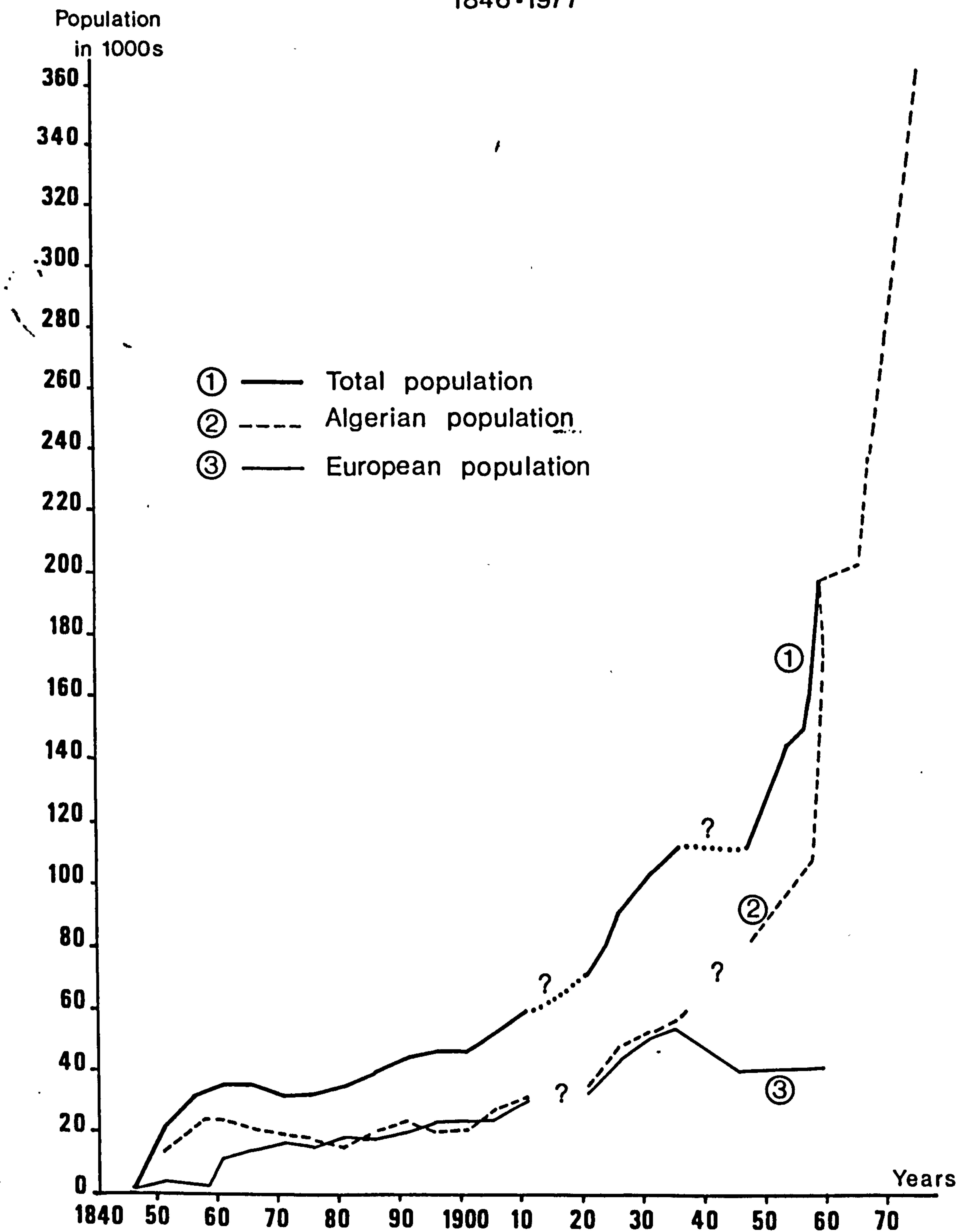
5.1 Trends in Population Growth of Constantine.

This first part of the chapter defines some overall dimensions of urban growth. However, the evolution of population and its interpretation must be attempted with caution since the data are taken from different sources of varying quality. Indeed, for the 1851-1926 period, population totals for Constantine have been drawn from the Recueil Officiel des Actes de la Préfecture de Constantine compiled by Alquier (1927) after the various five-year censuses. Since this date and up to 1966, it was possible to gather population totals with difficulty since very few census results had been completed, as already indicated in Chapter 3 when discussing availability and accuracy of the demographic data in Algeria. Consequently, population figures for the latter period essentially derived from index notebooks and monographs available at the Constantine Archives. Undeniably, the most reliable data was those produced by the two recent full censuses (1966, 1977).

In connection with Constantine's urban growth pattern, Cote (1979) wrote: "la ville de Constantine, capitale traditionnelle de l'Est Algérien traduit les éléments de croissance urbaine sans précédent". Constantine commune, with its current total area of 185 square kilometres, houses some 356 119 people at the time of the 1977 census was taken, in February, as against an estimated 23 308 in 1851 (Alquier, 1927). The population increase was far from being uniform, as Fig. 5.1 illustrates. In 1856, the

Fig.5.1

POPULATION GROWTH OF CONSTANTINE
1846-1977



total population of Constantine commune amounted to 33 593 (including 5800 Europeans), which represents just over a tenth of its current size. Between 1861 and 1876, its population declined from 37 092 to 34 726. Of the major reasons for this decline were the cholera outbreak of 1867 causing large number of deaths and the famine of 1868. It is noteworthy that the decline was more significant for the muslim population, which decreased by almost 29 per cent, than in European population which remained stationary.

Since 1881, however, there has been a constant increase in population totals, and of both the native and European sections. The increase in each five-year period has generally been slow until the beginning of this century.

Since 1900 a sequence of five major stages in population growth may be defined. Between 1901 and 1936, population grew steadily without interruption, and this despite the lack of census in 1916. For this period, the population increase rate was 117.4 per cent and the 1936 population size was 2.3 times larger than that of 1901. The second phase in population growth, corresponding to the 1936-1948 period, is mainly characterised by a very slow population increase. After this very slow increase, the rate of increase had more than recovered in the following period, 1948-1954. Population expanded by 84.6 per cent in six years. By 1954, the population size of Constantine was threefold that of 1901. This second boom was accounted for by the post-war demographic explosion of both muslims

and Europeans. Between 1954 and 1966, Constantine experienced a sharp increase in population, despite the departure of many colons, who totalled approximately 37000 at ^{the} dawn of independence. On the basis of these two censuses, Constantine's Algerian population grew excessively by an estimated 138 096, at the rate of about 10.3 per cent per annum, a much higher increase rate than any other of the three metropolises, as shown in TABLE 5.1. TABLE 5.1 gives the urban growth of the four largest cities for the 1954-1977 period and their differences from the country's national rate. According to this

TABLE 5.1 Algerian Population of the Four Metropolises at the 1954, 1966 and 1977 Censuses.

	Population Size			Per cent Growth		
	1954 ⁽¹⁾	1966 ⁽²⁾	1977 ⁽²⁾	1954-1966	1966-1977	1954-1977
Greater Algiers	449 929	930 003	1523 000	106.6	63.7	238.4
Oran	274 772	321 945	491 901	17.1	52.7	79.0
Constantine	111 315	249 411	356 119 ⁽³⁾	124.0	42.7	219.8
Annaba	88 920	167 245	255 938	88.0	53.1	187.8
Algeria	8545 000	11801 817	16948 000	38.1	43.6	98.3

Source: 1) Fiche Documentaire, Annales Algériennes de Géographie, No.2(4), July/Dec 1967, p.122

2) Ministère de la Planification et de l'Aménagement du Territoire, 1979a. : Répartition de la population par commune et dispersion; évolution 1966-1977, Avril, 1979, Alger.

3) Unpublished 1977 census data.

measure, the highest growth rate for the 1954-1966 period was attributed to Constantine where the urban growth rate exceeded the national average rate by 7.2 per cent points, and the lowest was Oran.

Finally, the 1966-1977 intercensal period marks a considerable slow-down in Constantine population expansion. Indeed, the summary TABLE 5.1 clearly suggests this discrepancy in population evolution. During this latter period, Algiers, Annaba and Oran have grown rapidly while Constantine expanded at a slower rate (3.8 per cent). However, an annual increase by 11000 inhabitants allowed Constantine to retain her place as third largest city.

5.2 Components of Urban Growth.

A breakdown of urban growth by natural increase and migration will determine the role of both natural population movement and migration in Constantine's overall population growth rate for the last 23 years.

Before starting to analyse population dynamics, it is necessary to remind very briefly of the reliability of the data. With respect to the reliability of the vital statistics, it is believed that registration of births are reasonably complete because, in Algeria, a validated birth certificate is required for obtaining the obligatory identity card, admission into the school system or for claiming child

allowances. On the other hand, deaths and especially those of infants are known to be still inadequately recorded; therefore the crude death rate may be somewhat higher than the registration figures indicate.

On the basis of the civil registration system, Constantine possesses a high natural increase fuelled by high birth rates and relatively low death rates (See Appendix B). As Fig. 5.2 suggests, there has been a significant increase in births and steady decline in deaths, leading to high natural increase. Decline in mortality rates accounts for improvements in both curative and preventive medicine whereas high fertility is mainly associated with the limited education of women, who have few options other than raising a family (IKRAM, 1980, p.107).

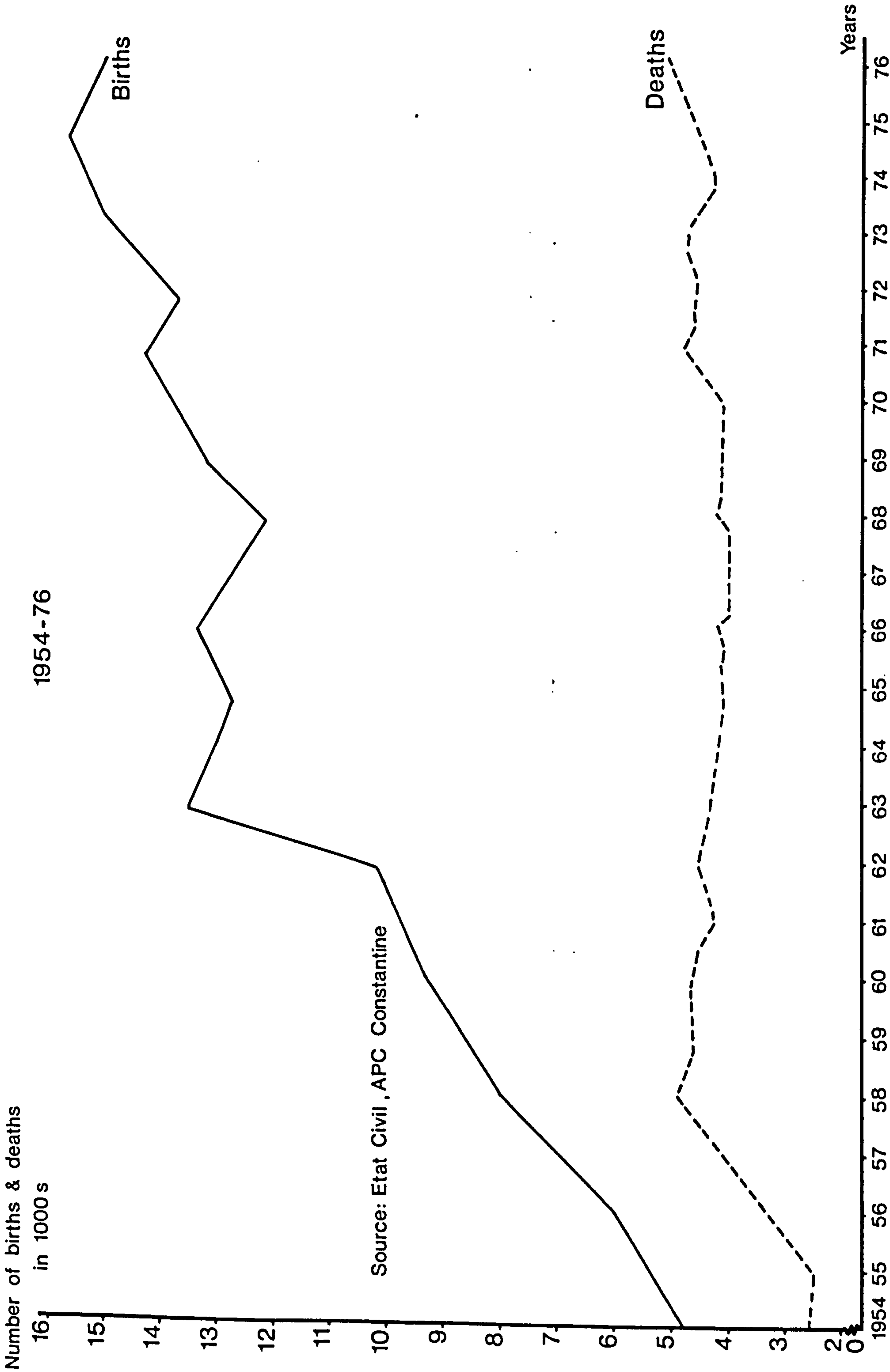
Worthy of note is the marked change in birth rates since 1960. While in absolute figures, fertility has increased, in relative figures it has decreased significantly from 50.9 ‰ in 1960 to 43.5 ‰ in 1977, as indicated in TABLE 5.2.

TABLE 5.2 Constantine: Crude Birth and death Rates and Natural Increase Rates, 1954-1977.

	Crude birth rate o/oo	Crude death rate o/oo	Natural increase rate %
1954	43.6	22.1	2.15
1960	50.9	25.8	2.51
1966	50.9	17.0	3.39
1977	43.5	12.5	3.10

Source: Etat Civil, APC. Constantine

Fig.5.2 CONSTANTINE:NUMBER OF BIRTHS AND DEATHS



A glance at TABLE 5.1 and TABLE 5.2 suggests that Constantine evinced annual growth rates well above its natural increase for the 1954-1977 period, and especially for the 1954-1966 period for which the growth rate is so excessive that a great deal of the growth could not be explained merely in terms of urban natural increase. Constantine doubled its size in a 12 year-period (1954-1966). Such expansion could have occurred only if massive in-migration had been under way (TABLE 5.3).

Migration data available do not yield the amount of in-and out-migration so as to draw a precise picture of net migratory flows over time. Nevertheless, by using the so called vital statistics or residual method, it is possible to provide valuable insights into the nature of population growth and give some indication of the comparative 'attractiveness' of Constantine at particular periods. Thus, by comparing successive census totals, one is able to measure indirectly net migration by subtracting natural increase from the total intercensal change. But "this method can only provide an estimate of net migration because registration systems do not distinguish births and deaths in the original population from those among migrants" (JONES, 1980, p.205). With respect to Constantine, over the 1954-1977 period, the population increase was estimated at 244804 of which 174927 was accounted for by natural increase. Consequently, a little less than 30 per cent of the increase in population was due to migration. However, it is worth mentioning that the role of migration in Constantine's growth varied substantially within this period, as is suggested in Table 5.4.

TABLE 5.3 Constantine Commune : Lifetime Migration by Periods.

Period	Numbers of Migrants	%	Cumulative %
1974-1977	10 517	8.0	-
1970-1973	10 847	8.2	16.2
1966-1969	15 800	12.0	28.2
1962-1965	28 611	21.8	50.0
1954-1961	33 659	25.6	75.6
Before 1954	31 941	24.4	100.0
	131 375	100	

Source : Unpublished 1977 Census Data

TABLE 5.4 Constantine Commune : Per Cent Growth due to Migration.

Period	Total Population Increase	Natural Increase	Migration Cal culated from residuals	% Growth due to migration
1954-1965	138 096	59 370	78 726	57.01
1966-1977	106 708	115 557	8 849	- 8.29
1954-1977	244 804	174 927	69 877	28.54

Indeed, on the basis of the calculation of residuals, Constantine exhibited considerable gain by migration in the 1954-1965 period, for migration contributed 57 per cent to Constantine's population increase. On the other hand, Constantine's population growth during the 1966-1977 period was due essentially to natural increase, since Constantine had become an area with migration loss which implies some outward migration. Accordingly, population growth seems to have been promoted to a large extent by migration during the former period, while later the natural component

became increasingly more prominent. This, therefore, implies that the nature of population growth was very differentiated during these last two intercensal periods and that we are dealing with two distinctive phases in urban growth, in terms of both growth rate and causes of growth.

After this purely descriptive analysis of Constantine urban growth, the next step is to try to investigate the possible reasons why such temporal variability in the rate of natural and migrational components took place.

5.3 Some Possible Reasons for Change in the Urban Growth Pattern.

The movement of rural-agricultural people to Constantine is not a new phenomenon. It dated back from the colonial period, as TABLE 5.3 indicates. Colonisation initiated migration by developing proletarianisation in the agricultural sector; which gradually contributed to the destruction of the existing equilibrium of social and economic forces of the traditional Algerian society (IPN, 1970, pp.61-72). For half a century, the progressive impoverishment of the bled due to geographic and economic as well as demographic factors and the disintegration of traditional structures led to exodus. The migratory waves which were almost insignificant up to 1930, expanded and changed into a rural landslide of the disinherited toward the city. Consequently, this reflects deterioration of the living conditions in the countryside pushing rural-agricultural population towards the city. This hypothesis is further demonstrated when

looking at the professional origin of Constantine's migrants. Accordingly to a study undertaken by I.N.E.A.P. (1982), 47 per cent of the total migrants were employed in agriculture before settling in Constantine, 24.6 per cent in non-agricultural activities while 28.4 per cent were unemployed. Since 1954, further dramatic disruption has been caused as a consequence of the War of Liberation. However, from that point onwards, it is necessary to distinguish three phases in urban growth (namely 1954-1961; 1962-1965 and 1966-1977) for which the circumstances and motives are quite different.

a. The 1954-1961 period.

Since the outbreak of war in 1954 "normal cultivation in the traditional sector was completely disrupted. The French, for purely military purposes, relocated vast numbers of the population in so-called regroupment centres. Fellahs and their family were transferred miles away from their property, placed in artificially created villages and left to manage as best they could " (GRIFFIN, 1973,p.400). During the last years of the war struggle, forced migration was widespread, resulting from the actions of the French army through the "forbidden zones" policy and the creation of regroupment centres (LESNE, 1962; SUTTON, 1981c). Poor socio-economic conditions combined with lack of security in rural areas had the consequence of pushing whatever population could move toward the city. As a consequence, rural to urban migration rapidly accelerated and Constantine's population greatly swelled. Of course, for this period, the

major reason for the migration phenomenon was historical since migration to Constantine started well before the take-off which did not occur, in Algeria as a whole, until 1967-1968.

b. The 1962-1965 period.

Chaos and insecurity following independence had also a traumatic impact on Constantine population growth. This period is, likewise, associated with an explosive urban growth. The significance of growth, however, is very different from that of the previous period.

Constantine's demographic explosion immediately after independence stemmed from three major events. Firstly, as TABLÉ 5.2 illustrates, there has been a significant increase in fertility and a decline in mortality, giving a high natural increase which in turn was fuelled by a considerable number of in-migrants. Between 1962 and 1965, Constantine housed some 28600 in-migrants.

Secondly, within the six months following independence, the bulk of European residents left Constantine; an event that marked the start of a major substitution movement : the "Algerianization" of the Algerian cities, in Algeria as a whole. The Colonial settlers departure was accompanied by a vast influx of Algerians from the countryside into the city. As it happened, only a small proportion of the population displaced during the war moved back to their mechtas of

origin. Demoralisation, the enforced absence and destruction of capital such as houses, livestock and water-points were such that the fellahs' roots in the soil were ruptured (BOURDIEU and SAYAD, 1964). Consequently, they fled in massive numbers to the city abandoned by Europeans, which resulted in a sudden stampede of rural population in the direction of the major city of Eastern Algeria: Constantine. The scale of population transfer was far from matching that of the European departure because European residents in Constantine only represented 17 per cent of the overall population. Houses and apartments abandoned by Europeans or bien-vacants were evaluated as only 3304 (MESKALDJI, 1979). The provision of such a small housing stock could not have met the need of the large population which moved to the city. This has been reflected in the proliferation of numerous spontaneous settlements (MESKALDJI, 1975). By 1962, over 60 per cent of Constantine's population lived in bidonvilles. It is of interest to note that the housing crisis did not result only from the vast population transfer but also from very restricted housing programme schemes. With respect to the appropriation process of the biens vacants by the local population, Bennoune (1980,p.51) observed that it was effected along social class lines. He notes that the Algerian bourgeoisie took over the quarters of former settler bourgeoisie, the Algerian petty bourgeoisie the habitat of the middle classes while the Algerian working class occupied the apartments belonging to the departed European proletariat and new migrant working class located itself in the Casbah and slums that had been occupied by the Algerian proletarian families.

A third factor, of much less impact was the return of Algerian refugees. By 1966, some 1733 refugees resettled in Constantine, of whom 1298 were from Tunisia, 75 from Morocco and 360 from France (Unpublished 1977 Census data).

Thus, as a whole, migration during this period largely contributed to Constantine's growth and was more the reflection of rural population deserting their land rather than being attracted by Constantine which was ill-equipped to receive them. It seems, therefore, that urban growth accounted merely for the transfer through in-migration of rural population. Similarly, Dwyer (1966, p.196), states that urbanisation of the underdeveloped world "has primarily been the result rather of 'push' factors arising from the low level of rural development and sometimes from conditions of physical insecurity in the countryside". Under these circumstances, migration occurred without the prospect of accommodation or employment.

c. The 1966-1977 period

Contrary to the preceding intercensal period, the annual urban growth rate of Constantine drastically declined from 10.3 per cent to 3.8 per cent and ranged slightly below that of the national average. So in this case, natural increase clearly accounted for an appreciable share of Constantine's growth. Indeed, during this last period, the volume of in-migrants has been reduced by almost three. Constantine received approximately 3378 migrants yearly between 1966-1977, as against about 9537 for the preceding (1962-65)

period. Such a slow-down in growth process and variation in-migration scale call for some explanations. Many forces have suggested as influential in determining Constantine's growth pattern during this last intercensal period.

Internal forces (mainly the economic base of the city) and external forces including the post-independence national development policy, the Communal Development Plans and the 1974 administrative reform, seem to be the chief explanatory factors.

. Internal Forces : the occupational structure of the
city.

The functional importance of the city can be gauged from the proportional place which an employment group takes in the whole range of groups; for it has been universally reckoned that there is a clear link between an employment group and a city's function. Examination of the occupational structure of the city by defining the proportion between different kind of activities or general character of the city, will explain, to some extent at least, the size and the growth of the city. Therefore, occupational structure also gives the key to the understanding of growth (or decline) of cities (OLSSON, 1966). It is customary to recognise three groups of occupation: the primary activities concerned essentially with agriculture and mining, the secondary activities embracing the production of manufactured goods and finally the tertiary activities that are concerned with provision of services of all kind (CLARK, 1951, p.401). A glance of the distribution of labour force by

sector of activity (TABLE 5.5) allows us to classify Constantine as the service city type par excellence for it is characterised by concentration of employment in government offices and other institutions, business offices and retail shops.

TABLE 5.5. Distribution of the Labour Force by Sector of Activity in Constantine Commune, 1977.

	Number	%
Agriculture	1803	3.1
Manufacturing Industry	10963	19.3
Hydrocarbons	351	0.6
Other industries	1281	2.2
Construction and Public Work	8632	15.2
Transport, Communications	4407	7.8
Commerce	6441	11.4
Administration	16487	29.0
Other services	4387	7.8
Not Declared	2075	3.6
Total all activities	56827	100

Source: Unpublished 1977 census data.

A relatively small proportion of the working population is dependent on agriculture. Nevertheless it is worth mentioning that Constantine employs slightly more people in the primary sector than any of the other three metropolises (TABLE 5.6).

TABLE 5.6 Percentage distribution of the working population by sector of activity of the four Algerian metropolises.

	Algiers	Oran	Constantine	Annaba
Agriculture	0.9	1.5	2.1	1.9
Industry	36.4	40.5	36.7	49.6
Service	62.7	58.0	61.2	48.5

Source: Secrétariat d'Etat au Plan, 1978c. Données abrégées par wilaya, Oct 1978, Alger .

With respect to the secondary sector of activity, the proportion engaged in industries accounts for 22.1 per cent. Constantine is equipped with few large state-owned industrial plants, such as SONACOME, SONITEX, SNTA and ONALAIT, offering some 8500 jobs and numerous small and medium-sized private units profit based and employing 3741 people. The construction and public work branch is also represented by many firms of extremely varied size and diverse activity. The state-owned establishments such as SONATIBA and ECOTEC hold the biggest share of employment in the branch with their 10.9 per cent as against only 4.3 per cent for the private sector. Both state and private sectors employ a high proportion of unskilled, relatively low paid workers, who are geographically mobile. The non-negligible proportion of labour force engaged in this sector (15.2 per cent) can easily be explained by the urgent need for housing. This need for a massive increase in housing stock acted as a major stimulus to the expansion of this sub-sector of activity.

As far as the tertiary sector is concerned, it seems that it performs a prime role in Constantine commune for it accounts for almost three-fifths of the overall employment, on the basis of the national census definition of tertiary occupations. The tertiary activities are defined by the census as including transport, commerce, finance, utilities, professional and domestic services. According to this definition, only in Algiers is the proportion of tertiary activities slightly higher (62.7 per cent) which is explicable on the ground that Algiers is the national capital of the country (Secrétariat d'Etat au Plan, 1978b). Indeed, in accordance with the 1977 census published material, the proportion of gainfully occupied in services was 62.7 per cent in the national metropolis and 61.2 per cent in Constantine city. So there is every indication that the tertiary services have constituted the most rapidly increasing section of the employment. During the pre-industrialisation phase, Constantine was predominantly performing the role of a service city servicing its agricultural hinterland. Constantine was considered the headquarters of trades and institutions, due to its location at the confluence of routes and traffic flows. Consequently, the most important factors responsible for its growth throughout time have been the central services of trade and institutions. But since 1966 onwards, the chief change in the economic development orientation of Algeria affects Constantine's role as the capital of Eastern Algeria in the sense that strong emphasis on industrial development increasingly required industry to become the primary determinant of urban growth. Urban growth associated with industrial development is well

illustrated by the Annaba region case (AARDES, 1979c).

Given Constantine's specific occupational structure, the expansion of labour opportunities appears an impossible task. The tertiary sector is already highly developed and can hardly be further expanded. This implies that any integration into this sector would seem very difficult. The alternative would be to increase industrial activities. Unfortunately, Constantine constrained by its site, provide little suitable terrain for construction. So much so, that the few latest industrial plants (belonging to public companies) had to be peripherally located, at approximately 10 to 12 kilometres away from the city centre.

The drawbacks of such an economic base, namely Constantine's failure of manufacturing to activate the overall economy and provide employment opportunities in different sectors, are becoming even more relevant as one considers the population structure. Just like Algeria's population as a whole, the prominent feature of Constantine's population is its remarkable youthfulness. The section of the population under 20 years of age represents 55.6 per cent of the overall population. Such an age structure, therefore, suggests a heavy dependency ratio, which is defined as the combined total children and aged population as a percentage of the adult population. A division of the population into the three chief age groups (0-14, 15-59 and 60 and over) matching with young, adult and aged population will give a more detailed picture of the dependency ratio (TABLE 5.7).

TABLE 5.7 Distribution of Constantine's Population by Broad Age-group. 1977.

Age Group	Population Total	%
0-14	157 944	44.4
15-59	178 563	50.1
60 & over	19 612	5.5
All ages	356 119	100

Source: Unpublished 1977 census data.

On the basis of the 1977 census figures, the dependency ratio is evaluated at a very high percentage or 49.9 per cent. But in this instance, the burden proceeds from the large proportion of children and not from aged section of the population. Indeed, the number of aged people as a percentage of the adult population or Old-age index corresponds only to 10.9. Here we are dealing with a progressive population characterised by a very large proportion of youngsters and a very limited section of aged people. Under these circumstances, as one may rightly expect, the economically active proportion of the population is relatively small and must support a large non-active population. The economically active population is defined by the national census as all those who are engaged in remunerative occupations and those who seek a livelihood in such occupations. Within the unemployment section, two types of unemployed people are considered: those who had previously jobs and are seeking work again (STR 1) and those seeking work for the first time (STR 11). According to that

definition, the size of the economically active population is estimated at 65 176 which represents 18.3 per cent of the total population (TABLE 5.8).

TABLE 5.8 Distribution of the Economically Active Population by Sex, Constantine 1977

	Males	%	Females	%	Total	%
Working Population	46900	72.0	5660	8.7	52 560	80.7
S.T.R. 1	4203	6.4	151	0.2	4 354	6.6
S.T.R. 11	6710	10.3	1552	2.4	8 262	12.7
TOTAL	57813	88.7	7363	11.3	65 176	100

Source: Secrétariat d'Etat au Plan 1978b. "Quelques indicateurs par wilaya", Oct.1978, Alger.

But it is of interest to note that the proportion of active females is very restricted. Out of the 18.3 per cent, females contributed only 2 per cent. As far as the working population is concerned, it accounts for only 14.7 per cent of the total, which implies that every working individual has to support an average of 6.7 people. Since the working population as a percentage of the economically active population represents 80.7, it means that 19.3 per cent of the potentially active population is out of work. Compared with the other three metropolises, Constantine possesses the highest unemployment rate (TABLE 5.9). But this unemployment rate figure must be approached with caution, as one knows that unemployment takes many forms and that it is by no means easy to attribute a precise definition nor to enumerate accurately. Accordingly, the unemployment

TABLE 5.9 Selected Indicators for the Four Metropolises, 1977

Indicators	Constantine	Algiers	Oran	Annaba	All urban places
Total population	356 119	1259 407	475 011	217 907	6 889 362
Economically active population	65 176	271 846	105 372	47 138	1 271 741
Working population	52 560	249 423	94 117	42 392	1 100 193
Unemployed population	12 616	22 423	11 195	4 746	171 548
Occupied rate	80.7	91.8	89.4	89.9	86.5
Activity rate	18.3	21.6	22.2	21.6	18.4
Unemployment rate	19.3	8.2	10.6	10.0	13.5
Dependency Ratio	6.7	5.0	5.0	5.1	6.3

Source: Secrétariat d'Etat au Plan 1978b.

Quelques indicateurs par wilaya, Oct 1978, Alger.

rate would be much higher than portrayed if one substracts the marginal activities from the working population section. In effect, marginal activities, mostly associated with unstable jobs, comprising numerous owner-operated activities including crafts, petty trading and small-scale repair services, hold a non-negligible 4.7 per cent of the overall employment (AARDES, 1979d). This shows the impressive size of the informal sector in Constantine.

So, in spite of the notable brake on urban growth since 1966, Constantine still faces critical demographic problems because of the increasing gap between economic growth and population growth and concentration, reflected in the very high unemployment rate.

. External Forces.

There is no doubt that the post-independence economic development policy fostering industrial growth and the 1974 territorial division had a negative impact on Constantine's growth.

On the eve of independence, the Algerian economy was oriented to private enterprise. But since 1962, however, the government progressively gained total control of the economy through nationalisations and therefore reduced the private sector participation in the economy to a minimum. So, by 1978, the only parts of the economy that remained within the private sector were, for practical purposes, the traditional agriculture, some small consumer manufactures and small-scale

retail trade. Such a strategy directly affected Constantine for the private sector was well developed there. As a result, although the private sector, once flourishing in Constantine, still holds a greater number of industrial plant units than the state-owned sector (SEP, 1977), its contribution to the economy nonetheless became minimal. This stems from the government's close control on private sector expansion by placing numerous restrictions on importation of goods and materials since 1963; restrictions which were defined by order in 1963 and revised in 1966 in the country's investment code, the Code National des Investissements - C.N.I.-(PENEFF, 1981, p.15-26); and relegating import and export monopoly to the public sector. So, it is only in consumer-oriented light industry such as textile and leather sectors and commerce that the private sector has a notable role (TABLE 5.10).

TABLE 5.10 Distribution of Working Population by Sector of Activity
and by Juridical Sector, Constantine Commune, 1977.

Juridical Sector Sector of Activity	Public & Private Sector	Public Sector		Private Sector	
		N	%	N	%
Agriculture	1803	1369	75.9	434	24.1
Manufacturing Industry	10963	6896	62.9	4067	37.1
Hydrocarbons	351	350	99.7	1	0.3
Other industries	1281	1210	94.4	71	5.6
Construction & Public Works	8632	6172	71.5	2460	28.5
Transport, Communi- cation	4407	3381	76.7	1026	23.3
Commerce	6441	1516	23.5	4925	76.5
Administration	16487	16229	98.4	258	1.6
Other Services	4387	1585	36.1	2802	63.9
Not declared	2075	1045	50.4	1030	49.6
Total all activities	56287	39753	70.0	17074	30.0

Source: Unpublished 1977 census data.

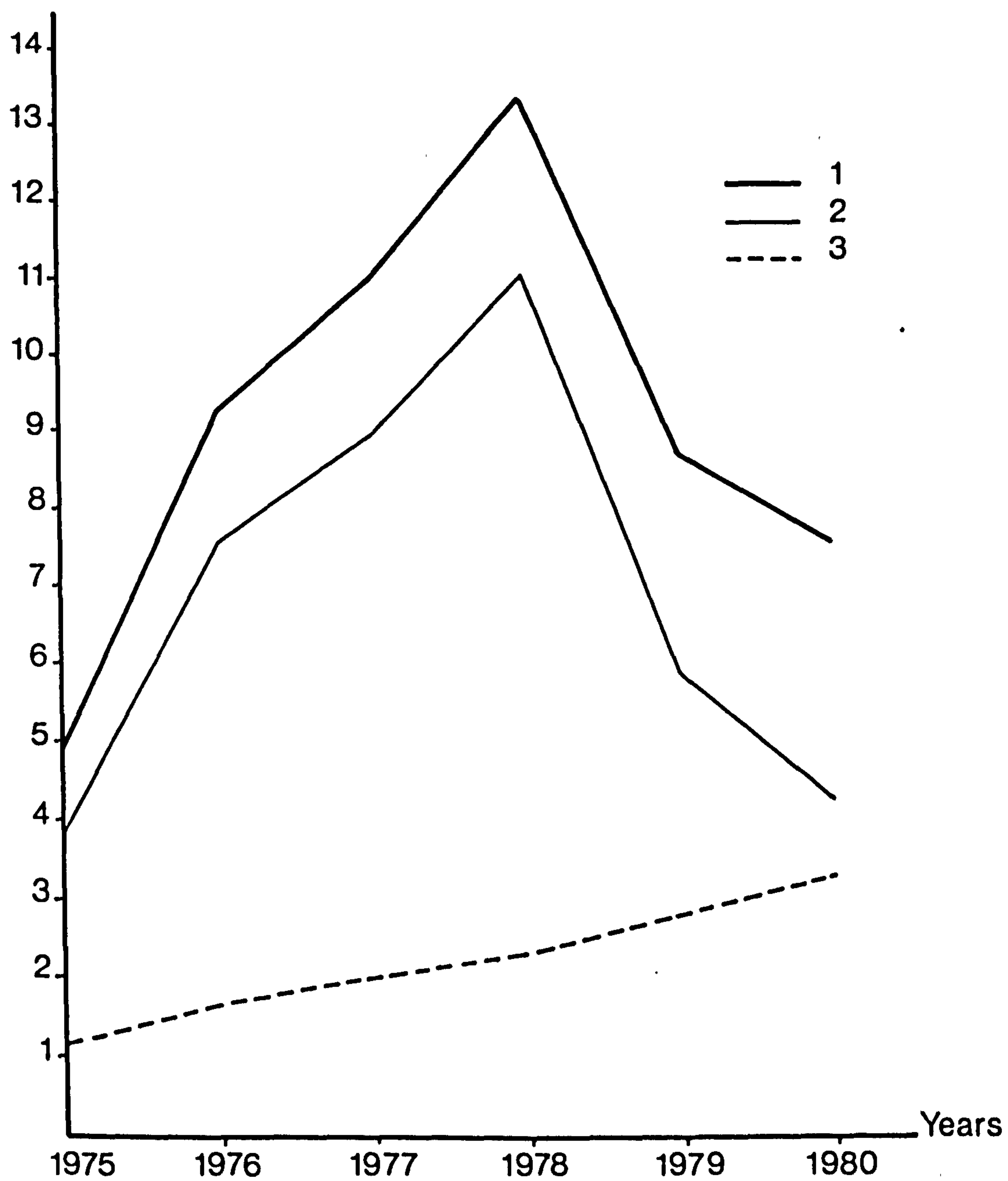
But, while the national development strategy has very much disfavoured Constantine, it has promoted significant development at Annaba and Skikda, closely situated to Constantine. Indeed because industrialisation is the keynote of Algeria's economic policy, major financial credits were devoted to this end. Simultaneously, by the mid-1960s, allocation of national funds to industrial development in the cities, especially those located on the coast, permitted the creation of two major complexes (a petrochemical complex at Skikda and iron and steel at Annaba), offering higher employment opportunities particularly at the construction stage for which a vast number of casual labour was needed. At Skikda alone, the manual workers accounted for an average of 75 per cent of the overall workforce employed at the industrial complex between 1975 and 1980 (Fig. 5.3). The consequence of fostering industrial development was that Annaba and Skikda were transformed, in a few years time, from rich agricultural areas to prime industrial centres acting as important attraction centres at the expense of Constantine.

So contrary to the previous period, migration rather than being a merely population transfer, becomes more and more the reflection of industrial and commercial development. The migratory stream has been re-oriented towards the industrial poles. As a result, Constantine has lost its "attractiveness" and even experienced significant out-migration (BENDJELID, 1976). Constantine's "attractiveness" has been further reduced for the national planning policy was supplemented by the so-called Plans Communaux de Développement (P.C.D.) or Communal Development Plans.

Fig.5.3

EMPLOYMENT VARIATION IN THE INDUSTRIAL ZONE

SKIKDA 1975-80

Number of
Workers
(1000s)

1: Total work force

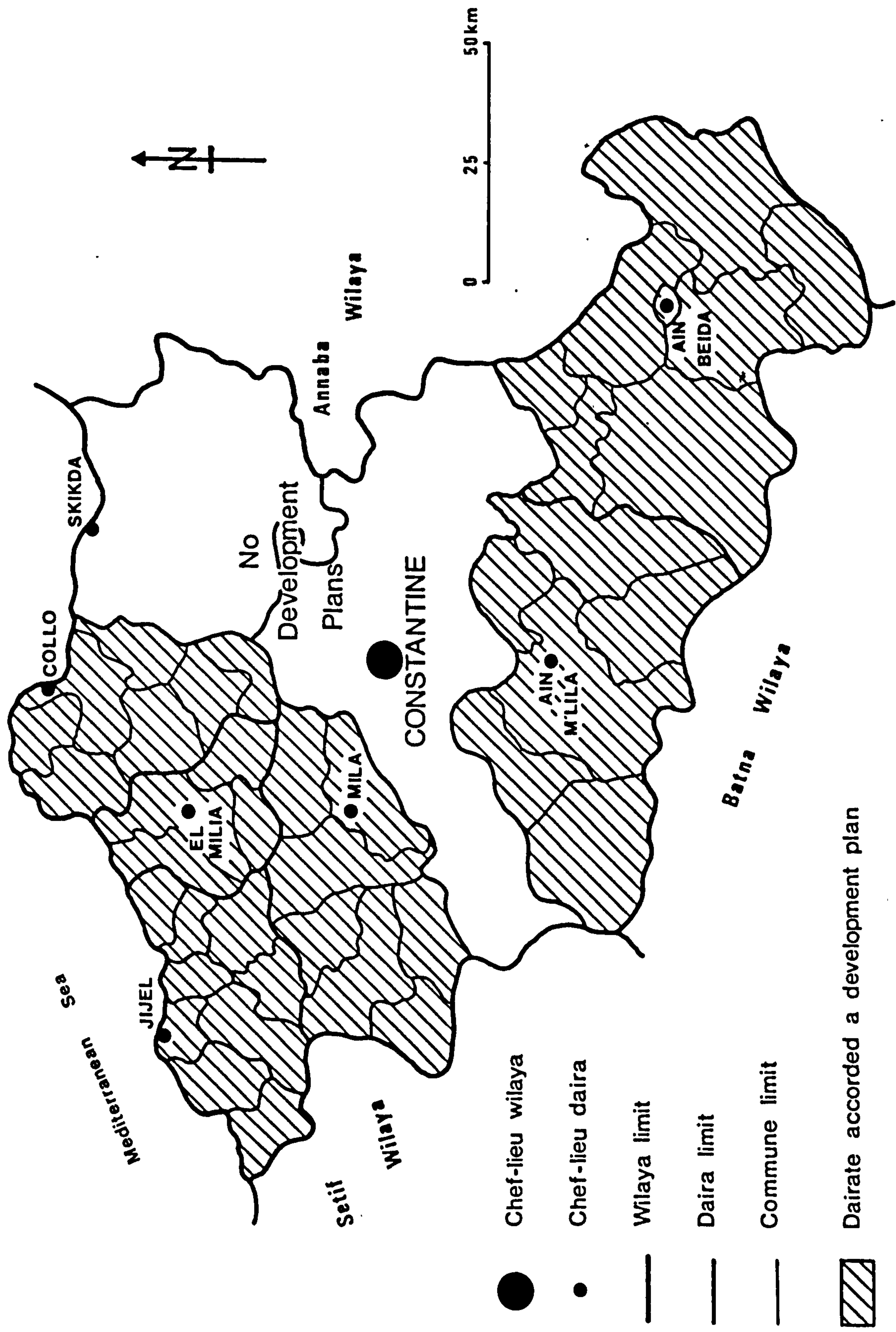
2: Construction work force

3: Permanent industrial work force

To prevent further regional disparities and to brake rural exodus towards the urban places which are not ready yet to receive these migratory flows, the Secrétariat d'Etat au Plan (SEP) instructed the launching of studies and actions named the Plans Communaux de Développement, means of determining the main sector of intervention in each case. At the broadest level, these plans were elaborated for both rural and urban areas and were designed to be formulated by local authorities. This was presented as an attempt to widen the development efforts and to initiate involvement of these authorities in the development planning process for the Secrétariat d'Etat au Plan defined the Communal Plan as "le processus d'élargissement de la planification aux échelons locaux en fonction du niveau économique actuel de la commune et de sa transformation progressive en une entité économique véritable conforme à l'objectif inscrit dans le code communal" (REPUBLIQUE ALGERIENNE DEMOCRATIQUE ET POPULAIRE, 1974). These plans which replaced the Programmes Spéciaux or Special programmes applied to all but the most urbanised communes of the country, with special emphasis according to the level of development of each of them. Accordingly, the 200 most lagging communes have benefited from these programmes (INEAP, 1979). The total financial credits for these plans represented approximately 6 per cent of the overall investments of the second four-year plan (1974-1977). The main sectors of intervention were agriculture and economic infrastructure which accounted for more than 82 per cent of the total expenditure (NACER, 1979). Out of around 69 communes that formed the 1966 wilaya of Constantine, 41 rural communes (Fig. 5.4) with a total

Fig.5.4 COMMUNAL DEVELOPMENT PLANS IN CONSTANTINE WILAYA

(Pre-1974 boundary)



population of 851686 benefited in 1973 from these Communal Plans (MIGNON, 1974, p.389). Intervention through fund allocations to northerly-situated communes of Constantine Wilaya (communes comprised in the dairate of Collo, Jijel, Mila and El Milia), was aimed to solve serious problems related to employment and income expressed by significant international and internal migration whereas in the southerly-located communes (dairate of Ain Beida and Ain M'lila) emphasis was put in agriculture and irrigation so as to fight against the deterioration of agricultural sector and against the fall in agriculture production.

With regard to these plans, it is certain that they had some positive impacts on the communes concerned and therefore braked to some extent the migratory flow towards Constantine. Nonetheless, it appears quite difficult to evaluate their effectiveness since little study has been done to indicate as to whether the Communal Development Plans succeeded in promoting important effects away from the chief urban centres.

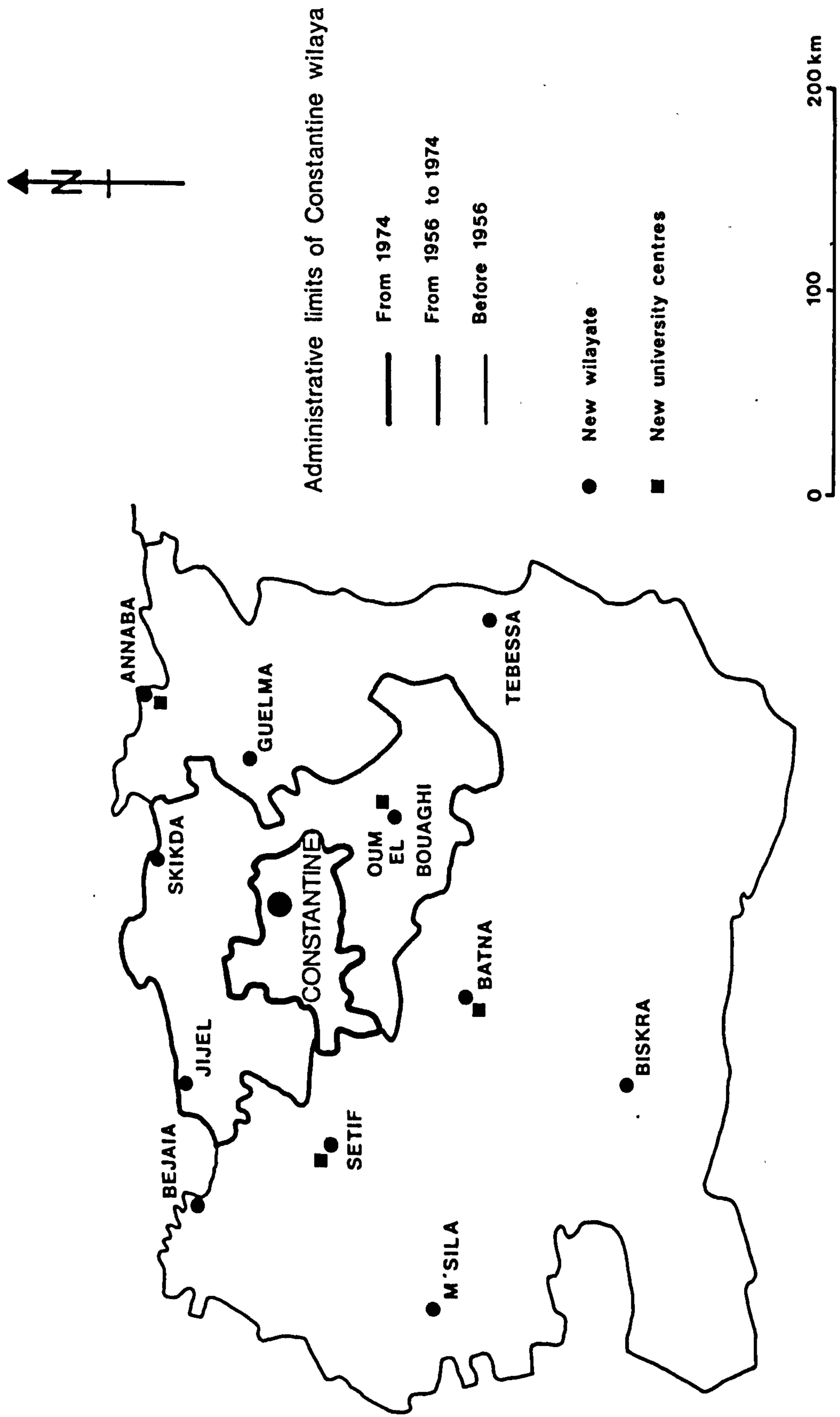
Finally, beside the national planning programmes and the Communal Development Plans, the 1974 administrative reform has also been depicted as an influential factor in Constantine's recent urban growth pattern.

Constantine's influence on its region has been progressively reduced over time. Until the early 1950s, Constantine was the regional capital of Eastern Algeria, owing its importance to its population size, its prosperity and to

its historical reputation. As such, Constantine held the leadership over neighbouring tributary towns and controlled the whole of Eastern Algeria; that is to say a third of the northern fringe of Algeria. Although Bône (now Annaba) was promoted as a chef-lieu de préfecture (or departmental Capital) following the 1955 administrative division, this did not alter a great deal Constantine's role. It remained the major attraction centre of Eastern/^{Algeria} despite the fact that Constantine department had lost 92 per cent of its total territory since 1955 (Fig. 5.5). However, the latest administrative reform, combined with allocation of huge financial credits to formerly small towns, made a great impact on Constantine's diminishing role. Indeed, by 1974, some secondary cities such as Oum El Bouaghi, Béjaia, Jijel and Skikda, which were directly dependent before on Constantine, were promoted to the chef-lieu de wilaya rank and were consequently granted the same financial means and freedom in the decision-making process as Constantine. It therefore entails a dramatic change in Constantine's role and in fact, these new chief-lieux de wilayate enter now into competition with Constantine (SCHNETZLER, 1981, p.218). Following this reform, Constantine also lost much of its intellectual influence. Up to 1974, Constantine was the only university for the whole of Eastern Algeria and as a result drew a large number of students from all parts of the region. Since the reform, there has been the creation of a university centre at Annaba and university colleges at Sétif, Batna and Oum el Bouaghi.

Thus, as a whole, the changes that occurred in the last

Fig.5.5 CHANGES IN THE EXTENT OF CONSTANTINE WILAYA



Source: LOEW, G. 1979

15 years or so altered fundamentally the relationship between Constantine and Eastern Algeria. These changes contributed to the establishment of a new pattern whereby Constantine's role has been drastically weakened while dynamic towns like Annaba, Skikda, Sétif and Batna, which have been recently endowed with increased power and significance, are developing into serious rivals. The functional links between Constantine and Eastern Algeria have become increasingly less apparent. Nowadays, Constantine plays an ambiguous role. In terms of population size, it is still the biggest city of whole Eastern Algeria but in terms of economic development, cities such as Annaba, Skikda and Sétif play a more important role.

Chapter Six

SPATIAL PATTERNS OF MIGRATION FLOWS

The main purpose of this chapter is to consider the patterns created by migration flows so as to indicate the functional links within the migration system between areas of origin and destination. Therefore, it is attempted here to introduce spatial aspects into the description and explanation of migration as functions of structural parameters such as volume, direction and distance of migration flows and interconnectiveness of the places of origin and destination. The parameters just quoted are indeed indicative of the process, seeing that all residential changes made by the population must take on certain characteristics of distance travelled, direction and volume of movement. Simultaneously, they may be considered as an impact of migration in the sense that they typify the effects of migration in the intervening space between origin and destination.

The approach that is to be adopted here in the analysis of migration is twofold. An attempt is made firstly to identify and describe migration process and pattern in accordance with information available on recent migration and secondly to define the major factors affecting migration on the basis of testing the Masser-Gould model.

6.1 Patterns of Migration Flows in Time and Space.

a. Time pattern of migration.

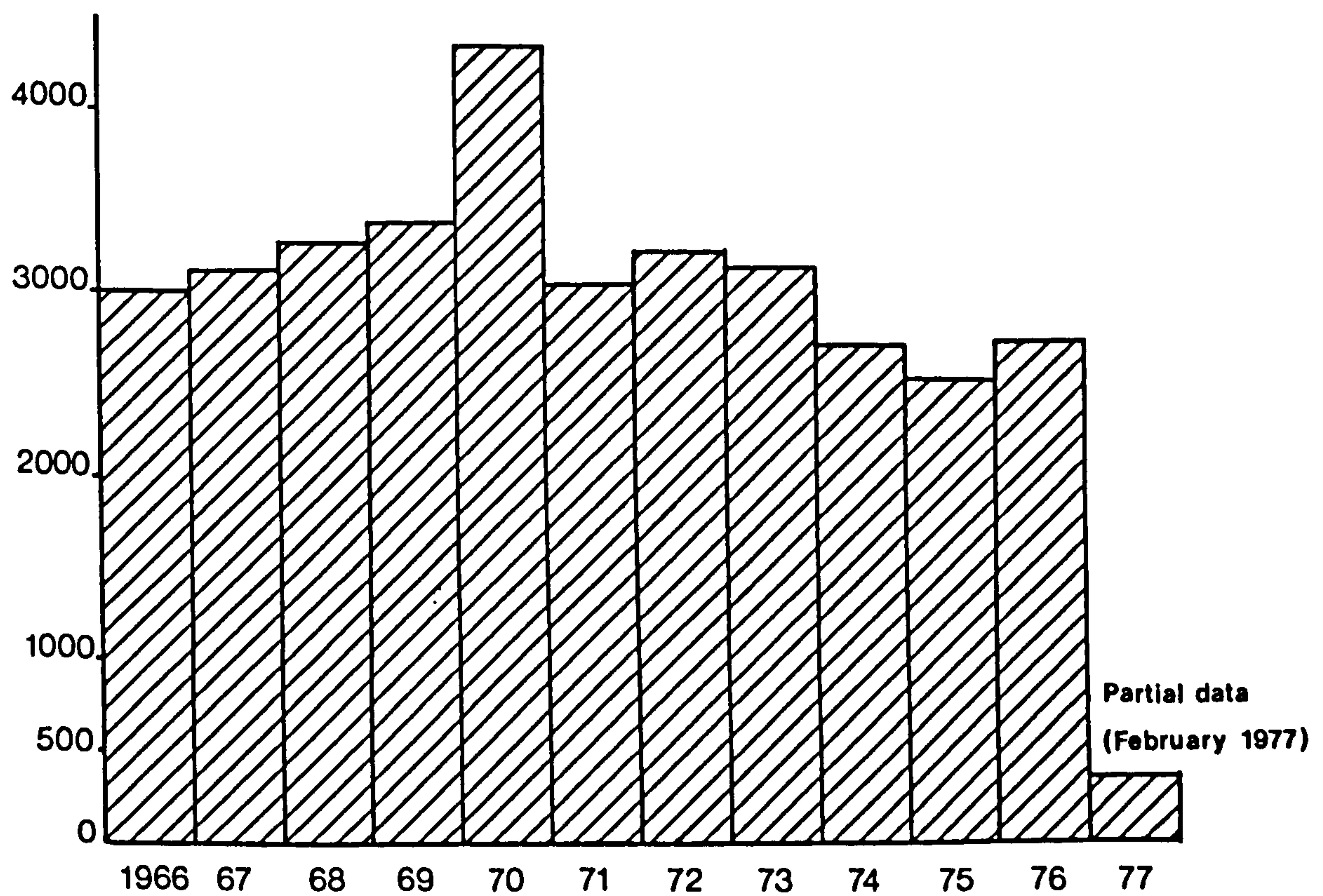
The temporal distribution of lifetime migration to Constantine has already been revealed in the previous chapter. In effect, in Chapter 5, it was noted that almost three-quarters of the overall in-migration occurred by 1966, from which it was to be inferred that migration preceeded the investment effort in the industrial sector. Indeed, up to 1971, the aim of the national economy policy was to stabilise, consolidate and restructure the industrial sector rather than to expand it. Focusing on recent migration (1966-1977), some 35013 migrants have been enumerated in Constantine chef-lieu, which represent only 26.6 per cent of the overall lifetime migration^{*}. Although, as has been stated earlier, general trends in lifetime migration do not seem to reflect economic trends, but on the contrary have evolved in relation to social and demographic forces, when one examines population movement to Constantine over the period 1966-1977, some of the minor fluctuations in migration appear to relate to economic variables. That is to say the fluctuations around the general trend illustrated in Fig.6.1 reflect roughly the efforts made in Algerian regional economic planning during the same period. There is a steady increase in numbers from 1966 to 1969, then a sharp increase in the year 1970 corresponding to the peak in migration distribution followed by two significant stages of decline; from 1970 to 1973 the decrease was of lesser importance than the one occurring after 1973. A larger decrease in migration volume during the latter period must be accounted for by the completion of the large scale projects by 1974-1975 and thus reducing job supply.

Some relationships between fluctuations in migration

* Based on the 35,013 migrant population total in 1977, unadjusted for subsequent mortality or onward migration for which data is unavailable.

Fig.6.1

ANNUAL IN-MIGRATION TO CONSTANTINE
1966-77



Source: data extracted from the fiches ménages (1977 census)

volume and economic development are further depicted when analysing the volume of in-migration by periods related to the national economic plans (TABLE 6.1).

TABLE 6.1 Volume of In-migration to Constantine in
Relation to Development Plans Periods,
1966-1977

Periods	No of Migrants	Percentage
1966	3018	8.6
Pre Plan (1967-69)	9762	27.9
1st Four Year Plan (1970-73)	13761	39.3
2nd Four Year Plan (1974-77)	8472*	24.2
TOTAL	35013	100

*Data not available for all of 1977.

Source: Data extracted from the fiches ménages (1977 census).

From TABLE 6.1, one may see that although the first Algerian plan was implemented in 1967, the highest proportion of migrants arriving between 1966 and 1977 (39.3 per cent) was achieved during the 1970-1973 period, which corresponds to the first four-year plan. This is explained by the fact that job creation was not the main concern of the Pre-plan (1967-1969) but rather to gain control over the economic sector by means of nationalisations. Similarly, in Constantine, few private-owned industries had been nationalised and a state-owned textile complex was set up and put into operation by 1968. On the contrary, the launching of large scale projects, namely a motor and tractor complex as well as another textile

plant during the 1970-1973 period, played an important role in attracting migrants. Turning to the second four-year plan (1974-1977), despite its importance as far as Algeria's development is concerned, it did not generate a great deal of in-movements for Constantine received little investment as compared to surrounding cities such as Annaba, Skikda, Guelma and Sétif. This might have affected migration flows to Constantine in favour of those cities (TABLE 6.2.)

TABLE 6.2 Volume of In-migration to Constantine^{Chef-Lieu} and Skikda by Period of Arrival, (1962-1977).

Period of arrival	CONSTANTINE		SKIKDA	
	N	%	N	%
1962-1966	27199	46.0	8934	41.4
1967-1969	9762	16.5	2737	12.7
1970-1973	13761	23.2	5101	23.6
1974-1977	8472*	14.3	4828*	22.3
TOTAL	59194	100	21600	100

*Data not available for all of 1977

Source: Data extracted from the fiches ménages (1977 census)

b. Migrants origin

Many studies have shown that, in the case of developing countries, there is a strong indication of the increasing degree of urbanisation being brought about by large scale rural-urban migration. Likewise, it was pointed out in previous chapters that one of the most significant features

of population in Algeria is the rapid urban population growth through rural-urban migration. At this stage, it is important to investigate whether the above statement is valid as far as Constantine is concerned.

Information on the magnitude of migration from rural to urban areas is provided by INEAP (1982, p.10) for major Eastern Algerian cities. The INEAP study results based on place of birth of migrants strongly confirm that the mass of in-migrants to Constantine came mostly from rural areas (TABLE 6.3).

TABLE 6.3 Migrants Distribution according to the Type of Settlement of Origin and Present Place of Residence, 1977 (in%).

Type of settlement of origin	Place of residence			
	Constantine	Annaba	Sétif	Batna
Urban Settlement	37.6	30.8	25.2	12.2
Rural 'clustered' Settlement	13.6	29.2	21.0	17.2
Rural 'dispersed' Settlement	48.8	40.0	53.8	70.8
Total urban & Rural	100	100	100	100

Source: INEAP (1982) Etude Migrations : les villes de l'Est, juin 1982, p.10

Indeed, TABLE 6.3 supports the evidence that much of the in-migration has taken place from rural areas. Hence, 62.4 per cent of Constantine's migrants originated from rural places as against 37.6 per cent from urban areas. TABLE 6.3 also indicates that rural population is largely

represented in the stream of other Algerian cities such as Annaba, Sétif and Batna. In all cases, over three-fifths of the in-migrants to the cities have rural characteristics, with a record proportion for Batna which recruits 87.8 per cent of its migrants from rural places. In connection with the rural origin of the migrants, it is worth mentioning that there is a general tendency for cities and towns to recruit their migrants from dispersed as opposed to clustered rural settlements. The distinction between clustered and dispersed settlement is most important since it identifies as a significant problem associated with migrant adjustment to city life. It is argued here that the looser the settlement the greater are differences between rural and urban ways of life; in the mechta or dispersed settlement places, the traditional way of life is stronger since contacts with the outside world are limited. Therefore, from the fact that a large proportion of the migrants originated from dispersed settlement, the question of how much does a rural migrant really have to adjust his personality to become a functioning member of urban society arises. So, with regard to migrants origin, it is clear that a vast part of the migratory movement has consisted of rural exodus.

c. Migration flows in space.

The directional element is an important factor indicating the functional links between origin and destination, a phenomenon which can be seen at a number of scales. For example, at the scale of inter-urban movement, Wolpert (1967) found a prevailing south-westward bias in the movement

between metropolitan areas in the United States. In the case of Constantine, however, at the general level, a diffuse rather than distinct bias in the movement between Constantine, the receiving area, and the sending areas was found. A priori, it appears surprising since the population distribution is largely concentrated in the Tell, north of Constantine. But, given Constantine's central position between the Tell zone and the High Plains, and its role as regional capital, the city of Constantine exerts an important influence over a wide area by recruiting migrants from over 90 communes (1977 census returns). If its influence rapidly decreases west of Sétif in favour of Algiers (IPN, 1970), it remains highly significant from north to south within Eastern Algeria. (TABLE 6.4 and Appendix C).

TABLE 6.4 Recent Migrants Origin by Major Physical Regions, Constantine, 1977.

	Eastern Algeria		Central Algeria		Western Algeria		TOTAL	
	N	%	N	%	N	%	N	%
<u>Tell</u>	14067	89.6	1419	9.1	203	1.3	15689	44.8
High Plains	17649	99.7	-	-	46	0.3	17695	50.5
Saharan Atlas	496	94.3	15	2.8	15	2.8	526	1.5
Sub Total (northern fringe)	32212	95.0	1434	4.2	264	0.8	33910	96.8
Sahara							433	1.3
TOTAL							35013*	98.1*

*Numbers and percentages do not add up because 670 migrants or 1.9% were born outside the country.

Source: Data extracted from the fiches ménages (1977 census)

Indeed, TABLE 6.4 reveals a relatively important population mobility within Eastern Algeria for Constantine attracts almost as many from the Tell as from the High Plains. The slightly lower proportion of migrants who came from the Tell region as compared to the High Plains is probably the result of the major development effort concentrated on the coastal fringe, thus reducing partly the movement toward Constantine. Another way to illustrate Constantine's diffuse influence over a considerable space was an attempt to estimate average road distance travelled and the fall-off of migration with distance (TABLE 6.5).

TABLE 6.5 Distances Travelled by Constantine's Recent Migrants (in km.)

Distances	% Migrants
< 100	51.6
100-200	35.7
200-500	8.5
500-1000	2.1
>1000	0.2
All distances	100

Source: Data extracted from the fiches ménages (1977 census)

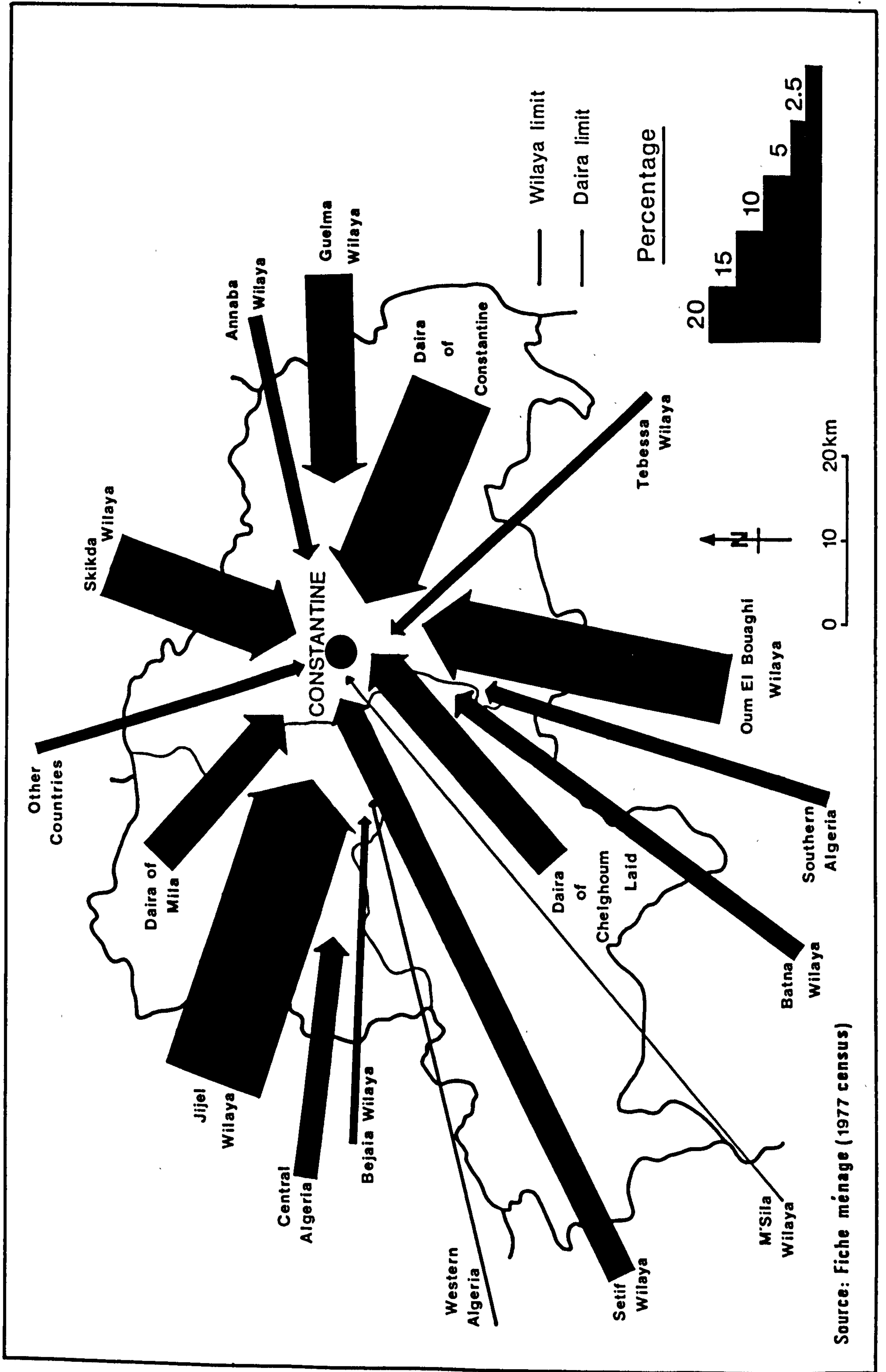
TABLE 6.5 shows that over half of the total migration occurred within a 100 kilometre radius, 35.7 per cent within 100-200 kilometres. However, the proportion of people who have travelled between 200 and 500 kilometres is far from

negligible since it accounts for 8.5 per cent.

Turning to the local level, some special functional links between origin and destination areas become discernible within this diffuse interaction framework. Fig.6.2, representing by straight lines of varying widths the proportion of migrants sent by any given wilaya, throws light on the relationships established between Constantine chef-lieu and other wilayate. According to the findings of the present research, three major sending areas have emerged as having close functional links with Constantine, namely Constantine's immediate surroundings, the Petite Kabylie and the Hautes Plaines Constantinoises. As expected, the bulk of migration to Constantine originated from the different communes of the wilaya of Constantine itself. In effect, out of the 35013 migrants settled in Constantine within the last eleven years, 28.3 per cent were born within Constantine wilaya itself. The migratory flows from those communes to Constantine are somewhat unbalanced; only four communes out of eleven (El Khroub, Ain Abid, Chelghoum Laid and Mila) have developed strong linkages with Constantine. Together, these four communes represent 18.4 per cent of the overall migration.

Similarly, an extensive migration also proceeded from the Tell and the High Plains, respectively situated north and south of Constantine. From the Tell, the Petite Kabylie appears to be the chief sending area. This is not surprising for, as was mentioned in Chapter Four, it consists of an economically poor, mountainous and densely populated area, where the inhabitants practise small scale livestock rearing

Fig.6.2
MIGRATION FLOWS TO CONSTANTINE



on a traditional basis. Within the Petite Kabylie, Jijel wilaya, located north-west of Constantine, emerges as the most important sending area since it accounts for 17.5 per cent of the total migration. However, within this wilaya, three communes (El Milia, Jijel and Ferdjioua) stand out as heavy contributors to Constantine's growth; for out of 6137 born in Jijel wilaya, 90 per cent originated from these three communes, underlying therefore strong linkages between them and Constantine. Also, in the Tell zone, the wilayate of Skikda and Guelma are well represented in the inward migration to Constantine. They respectively contributed 11.4 and 8.1 per cent to the overall in-movement and involved mainly dairate such as Zighout Youcef and Oued Zenati that are located much closer to Constantine than to their respective chef-lieu de wilaya, Skikda and Guelma. Likewise, Constantine is dominated by movements from the High Plains whose semi-arid climatic conditions greatly limit the economic activity. The High Plains zone is par excellence the domain of extensive monoculture of cereal cultivation and semi-nomadic livestock rearing. The wilaya of Oum El Bouaghi, located south-east of Constantine, provides 11.9 per cent of the overall in-migration, of which 68 per cent came from the Oum el Bouaghi and Ain M'lila areas. The Sétif wilaya with its 4.9 per cent underlines a weaker interaction with Constantine, which stems from two major reasons. On the one hand, Sétif is becoming an important industrial centre, and on the other hand Algiers' influence upon the wilaya is relatively important.

Mention also should be made of the relative importance of

people coming from the Algiers region. Despite the long distance separation (about 500 kilometres) the Algiers region contributes 4.1 per cent to the overall migration flow. The explanation for such a high proportion of migrants from the Algiers region is sought in the occupational characteristics of those migrants. On the basis of information extracted from the 1977 census, it was found that out of 63 occupied heads of households from Algiers wilaya, 44.5 per cent held positions that require very high educational levels such as liberal professions, senior managers and middle executives; while those coming from Constantine's immediate surroundings with such positions represented only 17.7 per cent (TABLE 6.6).

TABLE 6.6 Occupational characteristics of the Recent Migrant Heads of Households Born in Algiers and Constantine Wilayate, 1977.

	TOTAL		Algiers <u>Wilaya</u>		Constantine <u>Wilaya</u>	
	N	%	(>400 km)		(40 km)	
			N	%	N	%
Liberal profession	85	1.6	1	1.6	12	0.8
Senior Managers	143	2.6	2	3.2	20	1.4
Middle Executives	143	2.6	7	11.1	25	1.8
Clerks	882	16.3	18	28.6	196	13.7
Skilled workers	1553	28.7	18	28.6	504	35.3
Unskilled professions	2605	48.2	17	26.9	671	47.0
TOTAL	5411	100	63	100	1428	100

Source: Data extracted from the fiches ménages (1977 census)

Such selectivity in occupational status relative to the distance travelled is to a great extent the reflection of Constantine's role and function. Indeed, Constantine, being the service city type par excellence as well as a regional metropolis, acts differently upon nearby and distant migrants. So, the majority of Algiers migrants who travelled long distances came to Constantine to be employed in professional services and government offices and other institutions whereas local migrants tend to take unskilled jobs because they are less qualified. These present findings confirm those earlier set forth by Rose (1958) and Stub (1962) who concluded that people with higher status occupation tended to migrate further distances. TABLE 6.5 also provides confirmation of Ladinsky's findings. Ladinsky (1967a, 1976b), confining his attention to occupational determinants of geographical mobility among professional workers, observed that people employed in salaried professions such as lecturers and engineers are very mobile whilst self-employed such as dentists and lawyers tend to be immobile. The latter group are tied down by heavy capital investment and/or clienteles built up over the years, whereas salaried professionals have no capital outlays and are not closely bound to clienteles.

Special functional links between origin and destination become even more apparent when the proportion of migrants coming from different sources is expressed in terms of out-migration rate (number of migrants per 1000 resident population) rather than in percentage. In effect, when the influence of population size of sending areas is taken into consideration, only four wilayate can be distinguished as

having strong relationships with Constantine. The largest out-migration, occurring within a 40 kilometre radius, was recorded for Constantine's immediate surroundings with a migration rate of 33. Of lower level of out-movement to Constantine but still significant are the wilayate of Jijel, Oum el Bouaghi and Skikda, without-migration rates of respectively 13,11 and 9.

Summing up the analysis of migration streams, three major points can be made. Firstly, within the general diffuse linkages framework, Constantine has developed locally strong relationships between itself and the surrounding wilayate. Secondly, it is noted that Constantine continues to recruit its migrants mostly from the new wilayate (Jijel, Skikda and Oum El Bouaghi) which were part of the former 1966 wilaya of Constantine. Finally, the major sending areas emerged to have in common a high unemployment rate and low degree of urbanisation as TABLE 6.7 indicates. So although each decision to move is the result of some combination of 'push' and 'pull' factors, there is every indication that the 'push' factor has played a major role in stimulating migration, as far as the primary sending areas are concerned.

d. Migration process

After establishing the origin and the major migratory flows, further insights are gained by investigating the migration process.

Ravenstein (1885,1889) and Redford (1926) maintained that

TABLE 6.7 Unemployment Rate and Degree of Urbanisation of the Chief Sending
Wilayate, 1977.

	Total Population (1)	Volume of recent out-migration (2)	Out-migration rate per 1000 resident pop- ulation	Unemployment Rate (1)	Degree of Urbani- sation (1)
Constantine's immediate surroundings	303 122 *	9904	33	29.0 *	24.0 *
Jijel <u>wilaya</u>	475 759	6137	13	27.3	13.1
Oum el Bouaghi <u>wilaya</u>	377 240	4175	11	27.4	32.0
Skikda <u>wilaya</u>	461 191	3982	9	29.6	29.7
Guelma <u>wilaya</u>	520 161	2834	5	29.3	29.6

*Excluding Constantine commune

Source : 1) Secrétariat d'Etat au Plan (1978b) Quelques indicateurs par wilaya, Oct.1978, Alger
2) Data extracted from the 'fiches ménages', 1977 census

migration takes place in steps, that the population living in areas surrounding economically expanding urban centres migrate to those centres and that their place is taken by other migrants from further afield. That is to say the migration system is embraced in a series of moves which may be rural-rural, rural to small town, small town to large city or large city to metropolis, although the end product is the creation of a flow from rural area to metropolis. Many studies, including Brunn and Thomas (1972), have substantiated the "law" that migration occurs in stages. Shaw (1975, p.46) stated that "in a number of studies which examine origin as against destination of migrants, it has become increasingly apparent that in underdeveloped countries and rural-agricultural contexts, significant proportions of in-migrants to large urban centres do not originate directly from rural-agricultural areas. Rather, a process of stage migration is frequently observed in which rural-agricultural migrants first locate in rural non farm areas or small urban areas while occupants of the small urban areas tend to migrate to larger urban areas". Unfortunately, census material at our disposal does not permit an interpretation in this manner. Indeed, the disadvantages of using census data for migration analysis were rightly summed up by Taeuber (1961) who argues: "Many of the questions we may ask about internal migration cannot be answered by analysis of the census data. New types of migration data are needed, based on additional migration questions. Comparisons of current residence with residence at a fixed previous time overlook multiple migrations by individuals. From decennial censuses can be derived estimates only of net migration. Both approaches are thus directly

concerned with population redistribution, and only inferentially with specific moves. Both approaches permit the delineation of some of those persons who have made at least one move, but do not differentiate the migration experiences of the great majority who have the same residence at one, five, ten year intervals". Accordingly, the use of the census data made the establishment of the migration-process pattern difficult, and therefore the series of moves which had taken the migrants from their place of origin to a neighbouring small town and then to the cities of ever-increasing size until finally reaching the metropolis could not have been retraced. The information that could be drawn from the 1977 census is very incomplete in the sense that migration data are available for three points in time, namely place of birth, residence in April 1966 and residence before moving to Constantine. Consequently, at best, the establishment of the pattern, would be limited to state broadly whether migration to Constantine occurred directly or in steps.

By cross-tabulating data on place of birth, place of residence in 1966 and place of residence before moving to Constantine, it was discovered that among the 34343 migrants born within the country, 79 per cent have proceeded to Constantine directly from their place of origin. This implies that only 21 per cent of the migrants were involved in step migration. It is thought a priori that the considerable proportion of children, wives and other members could have disproportionately swollen the figure, in the sense that the latter are little if at all involved in the decision making to migrate and that they are mostly followers. In

effect, this segment of migrant population represents 76.1 per cent. An attempt to refine the result was, consequently, to confine the analysis to the heads of households. In spite of this, the step migration did not seem much more evident since its proportion rose only from 21 to 29 per cent. Thus, in this particular case, there is a strong tendency to direct moves, a conclusion which shows that the Ravenstein-Redford pattern of staged migratory movement is not fully replicated here. The present findings also show that migration is a complex process varying over space and time in its scale, patterns and causes. For example, in Latin American countries, stage migration has been seen as the typical pattern of city-ward migration (HERRICK, 1965; MORSE, 1971). Contrary to Morse and Herrick's findings, Goldstein's (1971) study on Thailand showed no evidence of step migration. According to some authors including Connell et al (1976, p.83), the existence or intensity of step migration is related to both the spatial distribution of towns and the location and changing nature of employment opportunities. This suggests that step migration is likely to predominate where there is a well developed urban-size hierarchy where a hierarchical series of central places organise geographical space and are functionally interrelated by a set of relationships from the farming areas to local supply and service centre and to more specialised industrial and distributive centres (ROBERTS, 1978, p.101). Such an urban distribution is not yet well developed in Algeria, and the existence of only a small number of true functional urban centres in Algeria may well explain the general lack of step migration, as shown in TABLE 1.7. The more so that the

development of primacy has meant that regional urban systems are often weakly developed and direct commercial, social and political relationship have arisen between even remote rural areas and the primate city. As a result, the understanding of both step and direct migration requires a detailed analysis of marketing and institutional organisation of rural areas (JOHNSON, 1970).

Within the Algerian context, the direct move pattern procedure is full of implications, the more so since migration has predominantly taken place from rural areas. Herrick (1965, p.51) rightly noted that "direct moves from the countryside to the city upset existing cultural patterns most. The effects of these cultural differences on the migrant will be less disrupting if he has lived in a series of towns before coming to the capital, thus becoming accustomed to urban living and working conditions".

With regard to step migration, further investigation of this particular aspect on the basis of longitudinal studies that trace all movements of individual migrants is essential to the understanding of migration for the establishment of the migration pattern is an important step in uncovering the socio-economic effects. In this perspective, Taeuber (1961) and Taeuber et al (1968) used a duration-of-residence approach to draw some conclusions about a general feature of residential mobility. Such an approach, however, was recognised as only a preliminary step in the systematic study of migration within the context of the life cycle of the individual and the population redistributions of the nation.

6.2 Causal Factors of Migration.

This section attempts to explore the causes of internal migration. Causal factors of migration may be the subject of either macro or micro analysis. Accordingly, Jones (1981, p.213) argues "within migration theory a significant division exists^{between} on the one hand, the models of explanation derived from social physics which interpret aggregate behaviour as the outcome of impersonal macroscopic laws and, on the other hand, micro-analytic perspectives which examine individual migrant behaviour as the expression of decision-making which need not to be economically or spatially rational". The micro-analytical migration models are based on behaviour of individuals to migrate from one place to another if they have certain demographic and socio-economic characteristics. In such studies, which focus on people rather than places, the objective is to establish the propensity to migrate or alternatively the probability of migration from one region to another according to people's demographic and socio-economic characteristics such as age, sex, level of schooling, levels of skills and range of personal contacts in the destination area (usually through either racial, religious or ethnic affiliations of the individual). Conversely, the macro-analytical approach enables the interpretation of aggregate behaviour. On that subject, Jones (1981, p.214) wrote "a common theme of the macro-analytical migration models is the search for regularities which are capable of mathematical expression. The models generally have an ecological basis in that migration is measured between areas, and explanation

is based on the environmental and community context of migration". Therefore, the macro-analytical migration models are used to estimate the most important determinants of aggregate migration flows between two points, to calculate the relative importance of these determinants as well as predict probable migration flows on the basis of estimated elasticity parameters. Ideally, both approaches should be used since they complement each other and can yield useful insights from a policy point of view. Indeed, on the one hand, the microscopic approach can be used to assess the impact of changes in rural-urban incomes, educational levels and unemployment rates on the propensity that an individual rural resident with certain attributes will migrate to the city. On the other hand, the macro-analytical method permits estimates of elasticities of migration according to changing urban and/or rural incomes, employment rates; and thus can serve as a basis for economy-wide policy formulation. For our purposes, the macroscopic approach is pursued, as the principal data source for this study is the 1977 population census.

Migration is recognised as a major element in rapid changes that have been taken place in rural and urban areas. Nevertheless, the factors impelling migration are both little known and complex in nature. With regard to this, Crowley (1977, p.265) wrote "to explain why people migrate is enormously difficult. The literature on migration is extensive but relatively inconclusive". Similarly, Moody and Puffer (1969, p.192) argue that there seems to be considerable variation in results from studies of the quantitative structure of migration behaviour. Lianos

(1972, p.425) also made a similar point when stating that despite the existing volume of literature, the present state of migration theory has ample room for improvement. This derives partly from the fact that migration models are developed for multiple purposes. A further expression of the unsatisfactory knowledge on migration was found in the study by Morrill (1965). He pointed out that "the established theories are simplifications and identify only the major influences. Many small forces, whose net effect may often be considered random, are also active". He implicitly meant that the causal variables generally selected do not represent an exhaustive list of the explanatory factors of migration.

But, although, knowledge on causes and determinants of migration is not yet as developed as in those of natality and mortality, it is fair to admit the increasing progress in this field.

Systematic studies of population redistribution have provided detailed compilations of movements, elaborate surveys of migrant characteristics and motivations, and of migrant areas of population gain or loss. Numerous studies, including Harris and Todaro (1970), Fields (1975) and Riddell (1969), have also contributed to the construction of migration models where a number of economic, social and demographic variables have been defined to be related to the size of migration. It is maintained that the most influential variables are the income differentials, employment expectation, cost of moving and education. In this view,

Schultz (1971, p.158) commented : "the interregional shifts of population associated with the development process are largely a dynamic adjustment to regional imbalances. A high rate of migration thus reflects substantial interregional inequalities in either the rate of expansion of economic activity or population growth or both. There are, of course, many other factors, including cost of migration and relative educational opportunities, that affect the migration decision". Schultz's statement is founded on the basis that migration is largely the result of purposeful behaviour. In general, people migrate because they have reason to believe that by migrating, they can improve their condition and that of their family.

Responsiveness of migration to some economic, social and demographic developments in the rural and urban sectors of the society may be tackled in different ways. The simplest way is to compute a correlation coefficient relating variation in the migration measure to a further variable. But such an approach would suggest that there is a perfect functional relationship, which could be predictable with certainty. However, when dealing with human nature, a single independent variable cannot produce a completely predictable result, since effects are usually the product of a variety of causes operating in conjunction (JOHNSTON, 1978, p.20). Consequently, this approach should be complemented by a multiple regression analysis which really provides the means to investigate the dependency of measure of migration (or dependent variable) on a set of explanatory variables (or independent variables), as migration deter-

minants can seldom be reduced to a single influence. This latter approach, widely adopted, consists of a sample, n , formed of observations on a measure of migration. In this way, a set of attributes is selected that are believed to be important in explaining migration patterns. In effect, regression analysis has come to be one of the most frequently used techniques in contemporary studies in migration, for it is a tool for examining interactions of a variety of influences as well as a tool to test the predictions of a strictly specified model of migration. However, one must be aware of the danger of making an 'ecological fallacy' when using correlation techniques to study aggregate migration. The major danger is inferring sub-population characteristics from areal characteristics. With regard to this question, Gilbert (1982, p.27) pointed out that "...we must be careful to distinguish between the different manifestations of regional and personal inequality. There is a long-recognised distinction to be upheld between 'place' welfare and 'personal' welfare : the fact that a region or city is rich does not preclude its containing many poor people; many poor agricultural regions have numerous affluent landlords".

Studies using spatial interaction models have been undertaken all over the world and even applied to Third World countries such as Ghana (BEALS ET AL, 1967), Brazil (SAHOTA, 1968), Egypt (GREENWOOD, 1969) and Venezuela (LEVY and WADYCKI, 1972). A wide range of techniques was used in the formulation of spatial interaction models in early research but recent work on migration has been mainly

formulated in terms of the multiple regression model. In this connection, it must be said that to the author's knowledge, the only attempt to test statistically the causal factors governing inter-wilayate migration within the Algerian context was made by Vaidyanatham and Farès (1973). In their study , ten independent variables, including proportion of French to total population in 1954, school enrolment rate and share of the active population in agriculture and industry, were selected and defined as major factors stimulating migration. Apart from this study, no other work on Algerian internal migration was undertaken as to provide enough statistical evidence for migration hypotheses.

With reference to migration to Constantine, causal factors are indirectly explored by testing the Masser-Gould (1975) model. Mention should be made that testing here the Masser-Gould model was not sought to contribute to its improvement but rather to serve as a framework for research in the field.

Using the most reliable source of migration statistics, the census of Population, it is attempted to draw together various possible causal variables that could explain the magnitude of migration to Constantine chef-lieu. To this end, the analysis is based on testing a model developed by the geographers Masser and Gould (1975). This model was the product of their study of inter-regional migration in Uganda, Tropical Africa. The model was founded on three main complementary hypotheses related to spatial interaction of

migration, namely the gravitational hypothesis, the push-pull hypothesis and the costs and returns framework.

Firstly, the gravitational hypothesis postulates that the movement from one region to another is a function of the population of the regions involved and is inversely related to the distance between them. Secondly, the push-pull hypothesis puts forward the argument that migration is a response to the relative attractiveness of the regions involved and there is movement from less favourable regions into more favourable ones. Lastly, the costs and returns framework views migration as a personal investment which is related to the potential productivity of different levels of human resources (SJAASTAD, 1962).

In functional terms, the Masser-Gould model can be expressed as:

$$M_{ij} = f(D_{ij}, P_i, P_j, I_i, I_j, U_i, U_j, E_i, E_j)$$

Where M_{ij} = population born in i and currently resident in j ,

D_{ij} = distance between i and j

P_i and P_j = Population of i and j

I_i and I_j = average income per capita in i and j

U_i and U_j = level of urbanisation in i and j

E_i and E_j = proportion of males in i and j who have received some education.

But as the best statistical fit is obtained by expressing both dependent and independent variables in logarithmic terms, the model adapted to suit the Constantine data set can be specified as a multiple regression model in the form:

$$M_{ij} = \alpha - \beta_1 \log D_{ij} + \beta_2 \log P_i - \beta_3 \log I_i \\ + \beta_4 \log U_i + \beta_5 \log E_i + \epsilon$$

Where α and $\beta(1-5)$ are regression coefficient values and ϵ are random errors.

M_{ij} , D_{ij} , P_i , I_i , U_i and E_i are defined on the previous page. It should be noted that all terms for the destination zone, j , have been excluded, since these all refer to Constantine and are therefore held constant throughout the equation. In this respect, the multiple regression model differs somewhat from that specified by Masser and Gould. M_{ij} , the number of migrants to Constantine from each origin, i , is taken as the dependent variable, with the variance of M_{ij} being explained in terms of the independent variables of distance, population size, economic regional differences, degree of urbanisation and education level. To investigate the relationship between the dependent and independent variables in logarithmic terms is justified on a number of grounds. From a statistical point of view, a logarithmic transformation of both dependent and independent variables helps to reduce the skew in the distribution of values bringing them closer to a normal distribution. In theoretical terms, a number of arguments can be presented to justify the transformation; it is well established that cost structures, information fields and travel times do not relate in a linear fashion to the distance from a point of origin. One would therefore expect the correlation between migration and the independent variables to be best described by curvilinear relationship. Before presenting the findings, it is thought necessary to try and explain the significance of each variable chosen as well as to indicate how each variable is measured.

a - Basic structural correlates of migration
.Distance

The distance variable is specified in terms of road distance between Constantine and the chef-lieux of wilayate of origin. Specification in this way assumes that the regional centres are located near the point of maximum accessibility or population potential of each region, so that the point is a reasonable surrogate for mean physical distance between areas.

Whereas the significance of directional biases has been a recent concern of spatial properties of migration, attempts

to interrelate distance and gravity factors in models of migration have been underway for sometime, commencing with the well known Zipf (1946) $P_1 P_2/D$ hypothesis. That is because the distribution of migration distances is at root spatial. The traditional role of distance in migration phenomena has been regarded as a geographical barrier with the expectation that the probability of a migration between two places diminishes as distance increases. Support for the distance-migration relationship is far ranging. For example, Hägerstrand (1962) found in his survey on Asby, Sweden, that at the beginning of the 1840-1944 period, almost 80 per cent of rural out-migrants stopped within 100 kilometres. Additional support for the negative distance-migration relationship can be found in the studies made by Morrill (1963), Gallaway et al (1967) and Greenwood (1971). Distance is such a well known deterrent to migration that a great number of studies of migration have included distance as one of the explanatory variables. It is conjectured that distance of migration reflects the costs of the migration process, and thus is expressed as an index of transportation costs, earning foregone, non-pecuniary costs of migrating, differentials in psychic income associated with the sending and receiving areas and uncertainty about income prospects due to a lack of information. So, the distance variable is included to take account of both the money and the non-money costs of migration. Distance also takes account of other factors which may vary with distance such as cultural distances and information levels.

.Population Size

Population variable is expressed in terms of total Algerian population resident at the time of the 1977 census at each origin area. It is assumed that the greater population at origin the larger the number who are likely to migrate. It is reasonable to think that the volume of migration between two places is directly related to the product of their populations. Population size may also serve as a measure of information flow and job availability.

.Economic regional differences

Alongside the notion of gravity, it has been tried to incorporate causal economic factors. There is a general agreement on the interpretation of the assumption that people move from regions where wages are low to regions where they are higher. When this is the case, negative signs may be associated with the parameters of the income variable at origin. Income differentials are considered therefore to play a major role in the decision to migrate from one place to another. Sjaastad (1960) clearly demonstrated the relationship of migration and income via the simultaneous interrelation of eight variables.

Data on income per capita were not available and as a result, proportion of the working population employed in the manufacturing industries has been chosen as an alternative indicator of the economic regional differences. This is justified on the grounds that people employed in industry receive higher wages than those employed in agriculture (AARDES, 1979a). So the proportion of people occupied in industries is considered as an indicator of differentials in expansion of manufacturing activities and indicative of differential opportunities due to building and enlargement of the occupational structure.

.Degree of urbanisation.

This is specified in terms of the proportion of population

living in urban areas, as defined in the 1977 census. It is commonly accepted that the pace of urbanisation transition from a largely agricultural society to a largely urban-industrialised economy will be dependent not only upon the pulls associated with the above, but rural-agricultural pushes also, due to mechanisation of agriculture (reducing therefore labour demand) and to increasing rates of rural population growth as general mortality and especially infant mortality decline and fertility rates remain relatively constant, leading to increasing rates of accession to rural-agricultural labour force, increased longevity of labour force participation and decreasing rates of withdrawal from the labour force. However, the urbanisation variable presents problems of interpretation and no consistent pattern in terms of signs associated with it has emerged from studies. The interpretation of the findings is further complicated by multicollinearity between urbanisation and the other variables. As already pointed out by Masser-Gould (1975, p.81), the most widely accepted interpretation of the effects that degrees of urbanisation will have on migration is closely related to the urban dominance in the modern sector of a developing economy. Positive coefficients might therefore be expected for this variable, in that the urban destinations attract migrants, while origins in areas of high urbanisation are associated with high levels of general mobility.

.Education.

The education variable is specified in terms of the proportion of population aged nine years and above who receive some education. Such specification is far from satisfactory but in the absence of better education data, it has been

used despite its drawbacks. The education variable may be treated both as an amenity variable and a motivational influence. Educated people are regarded as more prone to be aware of and to take advantage of differential opportunities between their place of residence and alternative places; and thus, educated individuals are more likely to be mobile. This influence is expected to be positively related to out-migration from the place of origin. But although economic studies have established the significance of education in accounting for differential migration rates between two places, problems of interpretation are similar to those found for the urbanisation variable. Masser and Gould (1975, p.82) argue that the reasons for including education variable in models vary, and several conflicting hypotheses about the effects of education on migration are advanced, none of which are borne out very strongly by the results obtained. They recall that Sjaastad (1962) views education as a personal investment which stimulates migration, both from the origin and to the destination region; while Levy and Wadycki (1972) regard the effects of educational opportunities as an addition to real income and expect the education variable to show similar signs to those obtained for income. On the other hand, other authors remain undecided about the effect of education on migration.

b. Analysis of the simple correlations

Before interpreting the results of the full model, discussion of the simple correlations of each variable with migration and assessment of the correlation matrix for the

explanatory variables were thought necessary for they throw light on the strength of the relationship between variables (TABLE 6.8)

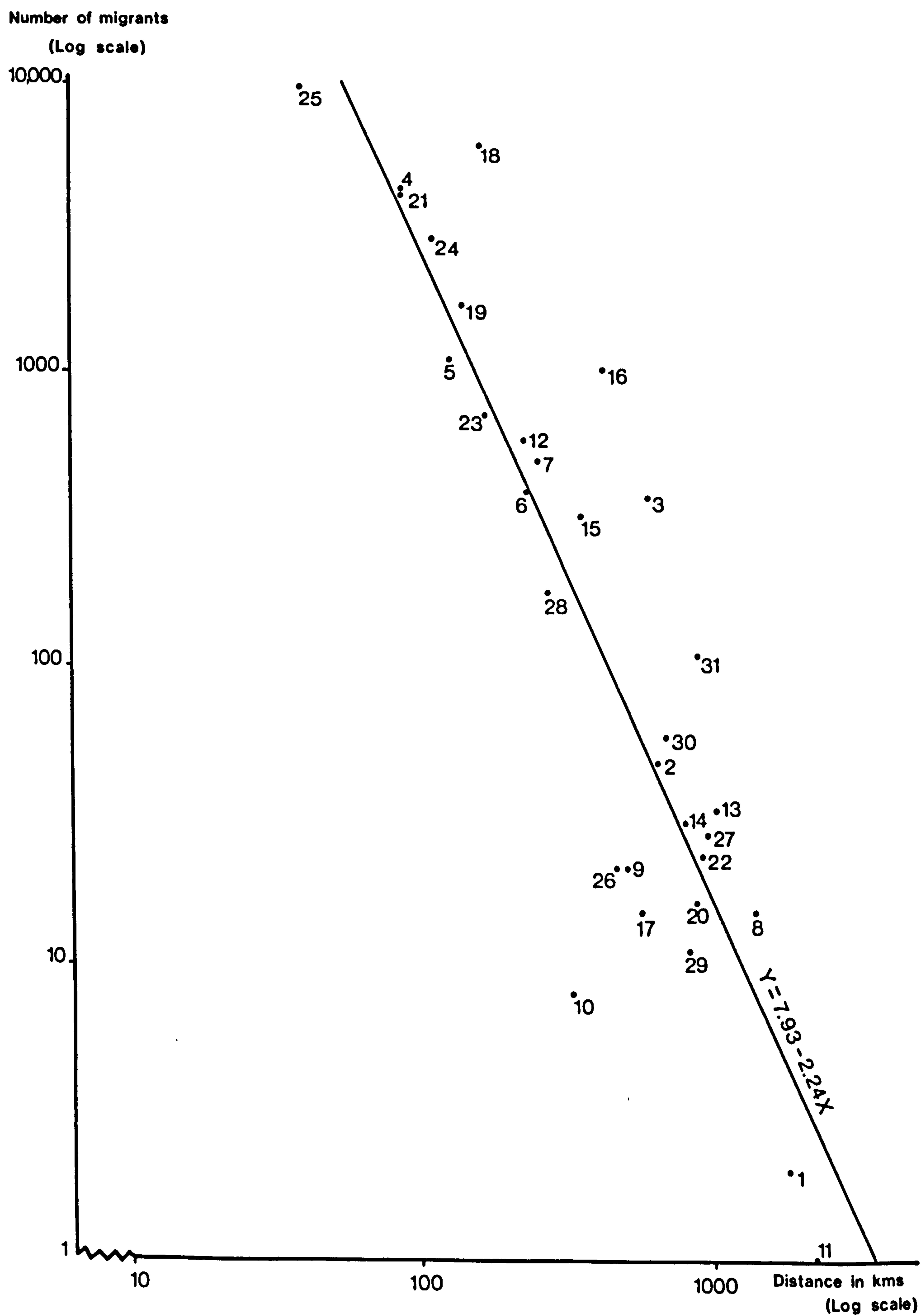
TABLE 6.8 Simple Correlation Coefficients between Each Variable and Migration

	Untransformed	Log transformation
Migration - distance	-0.46	- 0.89
Migration - population	-0.03	0.46
Migration-industrial employment	-0.05	0.11
Migration-urbanisation	-0.23	- 0.03
Migration - literacy	-0.19	0.07

The simple correlation of distance with migration of -0.46 indicates overall that 21.5 per cent of the variation in migration is explained by distance, where distance can be interpreted as a surrogate variable for influences such as travel costs, information, etc... Examination of the relationship indicates that the correlation of the two variables (dependent and independent) is not defined adequately by simple linear regression. Consequently, a number of different curvilinear relationships were examined to find a best fit line. It appeared to have been achieved through the transformation of both dependent and independent variables on a logarithmic scale. The transformed relationship is shown in Fig. 6.3 which indicates an inverse correlation defined by the regression line $Y = 7.93 - 2.24X$. A correlation coefficient of - 0.89 was achieved after log transformation, indicating that 79.3

Fig.6.3

REGRESSION OF MIGRATION TO CONSTANTINE ON DISTANCE



25: See Table 6.9 for wilaya name

TABLE 6.9 List of the Algerian wilayate

01 - Adrar	17 - Djelfa
02 - El Asnam	18 - Jijel
03 - Laghouat	19 - Sétif
04 - Oum el Bouaghi	20 - Saida
05 - Batna	21 - Skikda
06 - Béjaia	22 - Sidi Bel Abbès
07 - Biskra	23 - Annaba
08 - Béchar	24 - Guelma
09 - Blida	25 - Constantine
10 - Bouira	26 - Médéa
11 - Tamanrasset	27 - Mostaganem
12 - Tébessa	28 - M'Sila
13 - Tlemcen	29 - Mascara
14 - Tiaret	30 - Ouargla
15 - Tizi-Ouzou	31 - Oran
16 - Alger	

per cent of the total variation in migration is explained solely on the basis migration - distance relationship. Two main elements of migration to Constantine can be identified from Fig. 6.3. The distribution of log migration values when plotted against the log of distance from migrants origins indicates two distinct regional groupings. There appears to be a cluster of wilayate, most of which send between 10 and 40 migrants and which are located at a considerable distance from Constantine (500-1000 km). These relatively small migration flows consist mainly of semi-skilled, skilled and professional workers, as has been shown in TABLE 6.6. Many of these more highly skilled migrants are employed in government services and administration; and their presence in Constantine reflects the nature of their contract employment, whereby the location of their work is defined more by government ministries than individual preferences. By nature of this fact, these migrants are different in character from these persons moving to Constantine from their own choice. It can be seen from Fig. 6.3 that a second group, almost exclusively from Eastern Algeria, are responsible for much larger migrant flows to Constantine. This distinction is made even more clear when migrant flows are plotted as a histogram in terms of their magnitude (Fig. 6.4). The histogram indicates a bimodal distribution with relatively few wilayate sending 57 to 178 migrants.

Many of the wilayate of Eastern Algeria lie within the sphere of influence of Constantine as Fig 6.3 indicates. They are each responsible for sending several hundred migrants.

Fig. 6.4 Histogram of Migration flows.

Class	Limits	Number of Observations
Log value of of migrants	Unlogged values	
0.000-0.250	0-1	*
0.251-0.750	2-5	*
0.751-1.250	6-17	* * * * *
1.251-1.750	18-56	* * * * * *
1.751-2.250	57-178	* * *
2.251-2.750	179-562	* * * *
2.751-3.250	563-1780	* * * * *
3.251-2.750	1781-5620	* * *
3.751-4.250	5621-17800	* *

By contrast with the longer distance migration flows, these more local population movements are predominantly rural in origin and consist of migrants with much poorer qualifications and skills level (see Appendix D and TABLE 6.6). The generalisations concerning the dichotomized nature of the Constantine migration field indicate the specialised regional nature of migration to Constantine and point to the need for a regional as well as national analysis of possible explanatory variables.

With regard to the population variable, interestingly, the relationship only assumes statistical significance when both variables (dependent and independent variables) are transformed to logarithmic values. The simple correlation of

population with migration of 0.46 was achieved after log transformation. Fig. 6.5 shows the expected positive relationship between the number of migrants and the population size of sending wilayate. This is, of course, not surprising since the greater the population of origin, the greater the number of persons who are likely to migrate from them. Greater causal explanation was achieved when migration was regressed respectively on the urbanisation and educational characteristics of the populations of each wilaya. Without log transformation, the correlation coefficients of - 0.23 and - 0.19 were achieved, indicating a weak inverse relationship with the migration flows being greater from those areas exhibiting lower levels of urbanisation and literacy. Their level of statistical explanation is, however, disappointing compared with the correlation between migration and distance. Attempts to transform the data set concerning urbanisation and education characteristics fail to improve the level of the statistical explanation. The correlation of level of industrial employment in each wilaya proved completely insignificant for both transformed and untransformed data.

The general weak explanatory power of the selected variables with the exception of that of distance derives from the existence of multicollinearity between the variables. Contrary to Masser and Gould (1975) who encountered few problems of multicollinearity among the independent variables, here the interpretation of the performance of the model has been, to a great extent, complicated by severe problems of multicollinearity (TABLE 6.10). TABLE 6.10, panel A which contains the zero-order correlation coefficients for the

Fig.6.5 REGRESSION OF MIGRATION TO CONSTANTINE
RELATIVE TO THE POPULATION SIZE OF SENDING WILAYATE

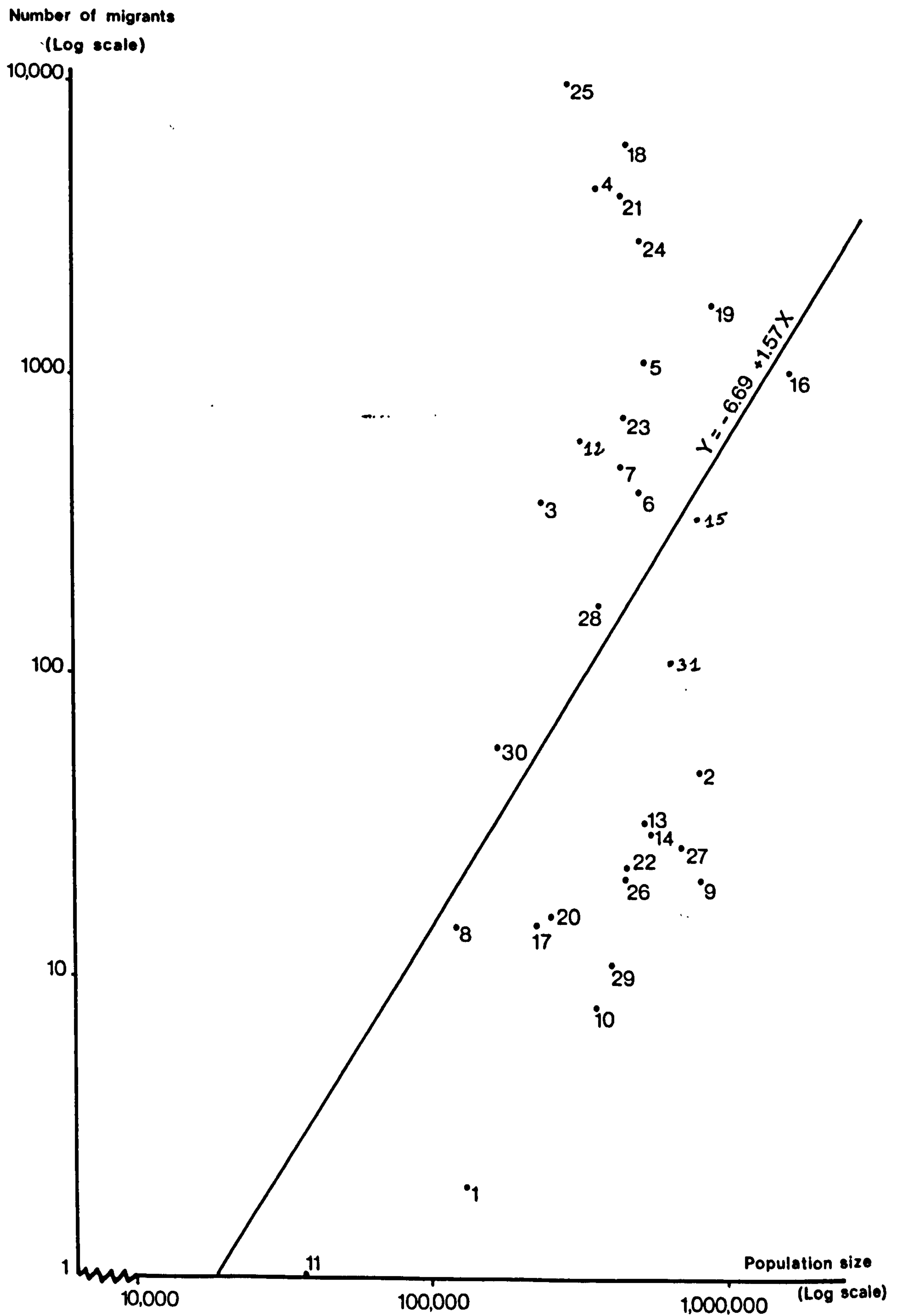


TABLE 6.10 Zero-Order Correlation Matrix for the Independent Variables Specified in the Model.

Panel A : After log transformation.

	Distance	Population	Industrial employment	Urbanisation	Literacy
Distance	1.00				
Population	- 0.37	1.00			
Industrial employment	0.03	0.00	1.00		
Urbanisation	0.23	-0.04	0.51	1.00	
Literacy	0.17	0.19	0.68	0.72	1.00

Panel B : Prior to log transformation

	Distance	Population	Industrial employment	Urbanisation	Literacy
Distance	1.00				
Population	- 0.34	1.00			
Industrial employment	0.07	0.12	1.00		
Urbanisation	0.19	0.21	0.59	1.00	
Literacy	0.09	0.40	0.64	0.83	1.00

independent variables used in the Constantine model after they have been subject to standardisation by log transformation, shows obvious problems of multicollinearity among the independent variables. For example, coefficients of 0.51 and 0.68 were recorded for correlation of the industrial employment variable with urbanisation and education respectively; and a coefficient of 0.72 was obtained for the correlation of the urbanisation variable with education. This level of association between the major explanatory variables is not entirely surprising since they all reflect related dimensions of regional economic development, with modernisation leading to economic and social changes in patterns of employment, skill levels and population distribution. Urban areas, as the major focus for industrial investment and service provision, have become a magnet for in-migration from rural area resulting in urban growth. Consequently, urbanisation, as a variable, can be perceived as a cause and consequence of the migration process. The high correlation between urbanisation and education is even more marked when TABLE 6.10 panel B is examined. This shows that prior to data transformation a correlation coefficient of 0.83 between the two variables exists; indicating the very strong positive association between the level of population literacy and the percentage of population living in urban areas. Both TABLES 6.10A and 6.10B indicate relatively low correlation between the three variables reflecting the different aspects of modernisation and the variables of population and distance. With regard to attempting a multiple correlation of migration on all five independent variables, it can be concluded that the modernisation variables taken as a whole reflect a

relatively independent dimension of the data matrix from the distance and population variables, but because of the high level of multicollinearity between the modernisation variables, only one of the three variables is likely to be selected as being of statistical significance. Interpretation of this variable should reflect the general dimension of economic and social modernity with which TABLE 6.10A and 6.10B indicate ^{+Rem} to be strongly correlated.

Having examined the simple correlations between independent variables and migration and having discussed the problem of multicollinearity, it now becomes possible to examine the results of the full multiple regression model.

c. Interpretation of the model results

The study, by testing Masser-Gould's model, gave both expected and unexpected performances.

On the whole, the results obtained seem encouraging since the complete model (migration regressed on the five independent variables) has a correlation coefficient of 0.924, a coefficient much higher than one achieved by Masser and Gould (1975) and indicating an explanation of 85.3 per cent of the variance. By comparison, Masser-Gould's model achieved only 74 per cent explanation.

With regard to the gravitational hypothesis, the findings of the present study strongly support the assumptions set forth earlier above. The multiple regression indicates, once

again, the very striking dependence of migration on distance. Distance was found to be the most important variable in explaining variation in migration: as expected, the distance elasticity of migration is negative (Fig. 6.3) and highly significant accounting for 79.3 per cent of the total variation. This individual result substantiates the view that either the economic or the non-economic costs of migration for which distance is a proxy, or both are very important deterrents of migration. The very high value can be interpreted as an index of the physical, economic and social diversity between wilayate. Similarly, results obtained for the population variable also support the evidence on the overall pattern of population, but this time to a lesser extent. Thus, the conclusion can be drawn that the effect of distance and wilayate population size on migration flows are, as expected, very strong indeed. The gravity model accounts for 81.3 per cent of the total variation, while in Masser and Gould's (1975, p.84) analysis the gravity model explained only 57 per cent of the variation in migration. Spatial structure emerges as a crucial element. The multiple regression reinforces the view that Constantine stands out as the major regional centre of Eastern Algeria. However, the remaining independent variables, as we shall see, seem to have had little effect on the full model, and interpretation of the results are extremely difficult. While in the Masser-Gould (1975, p.84) model, income, education and urbanisation variables contributed a further 17 per cent to the overall best fit solution, in this present study, the value of R^2 was increased by only 4 per cent when the above variables were taken into consideration (TABLE 6.11).

TABLE 6.11 Results of the Model (in logarithmic terms)

Variables	Gravity model		Full model	
	Regression coefficient	t value	Regression coefficient	t value
Distance	-2.09	- 9.48*	-2.25	-10.20*
Population	0.51	1.71*	0.33	1.07*
Industrial employment			-0.05	- 0.11
Urbanisation			0.29	0.53
Literacy			1.64	1.21
R ²	81.3		85.3	
Degree of freedom	28		25	

*Statistically significant at p=0.05

With regard to economic regional differences, TABLE 6.11 indicates that out-migration is, as postulated earlier, negatively related to the proportion of working population in industry. This confirms the assumptions that migrants move away from low-income wilayate to high income ones. But in terms of its contribution to the full model, the variable improved R² value by only 1.8 per cent. Turning to the urbanisation variable, migration studies concerned with both less-developed and advanced countries have found the degree of urbanisation to be important in explaining the spatial allocation of migration. The urbanisation variable has, as anticipated, a positive sign. Nevertheless, it is somewhat surprising that the variable contributed only 1.4 per cent to explanation of the overall variation in migration.

Such a result does not imply that in Algeria migrants are not going to urban places, but rather that mobility is greater in areas of higher urbanisation and consequently the number of migrants from these areas is also greater. Consequently, different results might be achieved from an examination of migration rates or net-migration or from the specification of urbanisation in a different form. In the Algerian census, urban system ranking has the prime disadvantage of being far from rigorous. The classificatory system was based on the criterion of occupation by economic sector; and yet it took into account potentially semi-urban agglomerations which are likely to have urban characteristics in the near future but do not exhibit a distinctive urban life at the present. Of considerable importance in explaining the difference between the simple correlation between migration and urbanisation, expressed in TABLE 6.8, and the contribution of urbanisation to the results of the multiple regression given in TABLE 6.11, is the existence of strong multi-collinearity. As indicated in TABLE 6.10, there is considerable multi-collinearity between urbanisation and the other independent variables examined in the multiple regression equation, especially in the case of education. This makes interpretation of the regression coefficient rather complex. It appears that economic regional differences and the degree of urbanisation variables have complementary effects on migration. It is particularly true in a country like Algeria where economic development is strongly concentrated in urban places. Finally, it should be noted that persons move to cities for a variety of reasons, among them cultural and social amenities and the desire of migrants to break away from the traditional constraints of inhibiting rural social structures (CALDWELL, 1969).

Turning now to the final independent variable, education, a positive sign was obtained; thus suggesting that the higher the proportion of educated persons in a region, the greater the expected migration from that region. This expectation can be accounted for by the view that more education tends to increase a person's awareness of the social and cultural amenities of alternative locations, hence increasing their propensity to migrate. The view finds little support, however, in the statistical contribution of education to the migration model. It emerges as having hardly any effect on the overall fit since it explains only 0.8 per cent of the total variation. This result may partly stem from the specification of the variable.

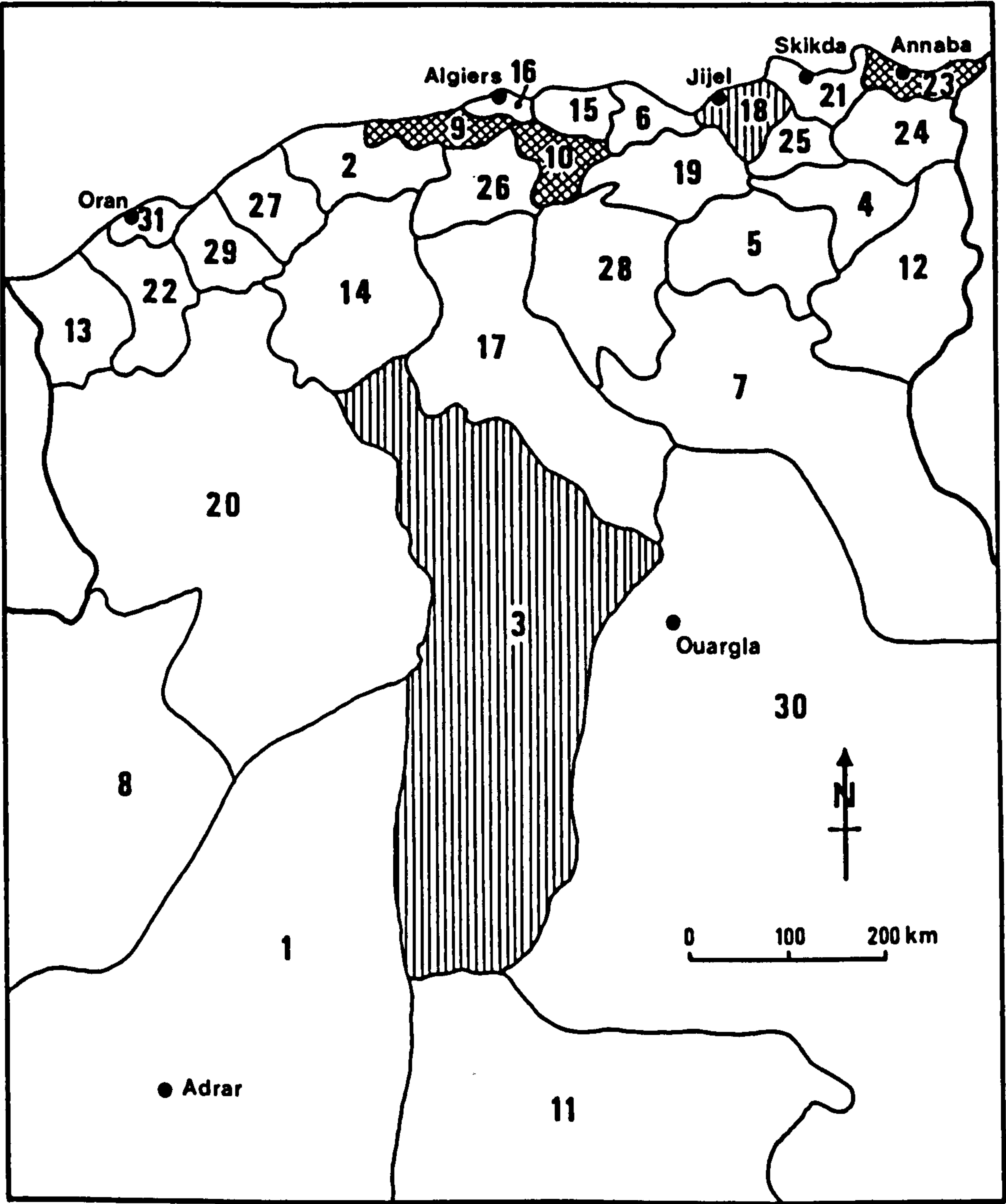
So, by analysing the contribution of each independent variable to the full model, it can be concluded that results are a little disappointing since only limited explanation was achieved beyond the simple gravity model formulation. After dropping out education, urbanisation and industrial employment, R^2 value decreased only by 4 per cent, underlining clearly that the latter variables as specified for all the Algerian wilayate had very little impact on the overall fit. Multiple regression analysis has strongly confirmed, therefore, the gravitational hypothesis, and has reinforced the view that causal rather structural explanation of migration patterns to Constantine can best be attempted at a regional rather than national level. These conclusions in no way reduce the importance which should be attributed to the gravity model whose explanatory power cannot be completely separated from the influence of economic opportunities as an

inducement to population movement. Not only can distance be interpreted in terms of transport costs, information fields and perceptual distance, but it should be remembered that with regard to migration to any single destination (as is the case in this study) distance may coincidentally be associated with large regional economic differentials. Accordingly, Woods's (1982, p.152) comment that one should use the gravity model if one's "purpose is to derive a model which maximises R^2 and hence minimises residual errors" is not entirely justified, although care needs to be taken in overemphasising the explanatory power of the model. Thus, the present results can only be taken as a starting point since they gave only a limited indication of the relationships governing the spatial structure of migration flows to Constantine.

Many attempts were made to improve the model performance by using alternative independent variables such as number of houses provided with gas and electricity, size of the occupied population, unemployment rate and the proportion of highly skilled professions, which individually scored respectively an R^2 of 10.8, 24.5, 15.4 and 6.3 per cent but failed to improve significantly the overall fit. There is no doubt that ^{the} contribution of ^{the} distance variable alone to the overall fit was so high that it cancels the effect of other variables. For instance, when migration is regressed on population, R^2 achieved was equal to 21.3 per cent, but when fitted in with distance parameter, it raised the total degree of explanation by only 2 per cent.

One of the most interesting outcomes of the multiple regression analysis arises from an examination of the patterns of residuals. The residuals may be due principally to the errors in the data, or may represent some unknown variables or variables which are omitted from the analysis. Analysis of residuals therefore helps both to identify the possible sources of data mis-specification in association with the analysis, as well as to understand and explain the complex migration process. Just over 14 per cent of the total variation in migration was not accounted for by the five independent variables specified in the multiple regression model. This residual variance was examined by studying the standardised rather than absolute or relative residuals. This is justified on the ground that standardised residuals have the twofold advantage of being associated with a normative statistical distribution, the normal or GAUSSIAN distribution with known properties. By examining the distribution of standardised residuals in bands parallel to the regression line one does not give undue emphasis to the residuals in Y relative to either large or small values of X (as does analysis of the absolute and relative residuals). Standardised residuals with values greater than 1.0 on either side of the predicted relationship or best fit line are represented in Fig 6.6. Fig. 6.6 reveals that only five wilayate are associated with high deviations from the predicted relationship; of which three wilayate (Blida, Bouira and Annaba) are of high negative residuals and two wilayate (Laghouat and Jijel) have high positive residuals. At this point, attempts are made to explain, on the one hand, the meaning of negative and positive residuals, and on the other

Fig.6.6
STANDARDIZED RESIDUALS OF MIGRATION
ON 5 INDEPENDENT VARIABLES



 Over +1  Between +1 & -1  Under -1

25 See Table 6.9 for wilaya name

hand the major reasons for their spatial distribution.

There are three wilayate (Blida, Bouira and Annaba) associated with negative residuals; that is to say wilayate for which more migrants were predicted than actually observed. In the case of the first two wilayate (Blida and Bouira), geographical location is the determining factor. They are located in central Algeria close to Algiers, and consequently the major outflows from these two wilayate are made in the direction of the national capital, which in turn explains why they send fewer migrants from these areas to Constantine than expected. As far as the wilaya of Annaba is concerned, although it is situated close to Constantine, out-migration intensity from this area is much less than expected. This is explained by the fact that Annaba, like Constantine, is a regional metropolis and also is a pole of Algeria's manufacturing sector with its massive integrated iron and steel complex, which acts as a magnet for its hinterland.

By contrast, two wilayate (Laghouat and Jijel) display positive residuals suggesting that the regression line predicted less migrants than observed. In the case of the wilaya of Laghouat, the number of migrants is artificially swollen in the sense that it is customary for the Mozabite women (originating from the Sahara and especially from the Ghardaia region) living in the city to return to their home village to give birth to their children. While in the case of Jijel wilaya, strong linkages have long been established between Constantine and Jijel which led to the creation of a 'migration region' as defined by Ng (1969,p.140) as "an

areal unit having the maximum mutual interchange of migrants with the minimum inter-regional flow of population". This is encouraged all the more by the presence in Constantine of relatives and friends of similar cultural, social and linguistic background from the Jijel region.

d. Constantine and migration region of Eastern Algeria

It has been shown, in the analysis above that migration to Constantine has a very strong regional identity. It was therefore felt appropriate to attempt to uncover possible explanatory variables at a regional rather than national level. To this end, a multiple regression model of a similar form to the one used at the national level was applied to a data matrix for Eastern Algeria. In order to hold constant variations in population size between wilayate, the migration rate 'migrants numbers/population size x 1000' to Constantine from each wilaya was calculated. The migration rate was then regressed on the same explanatory variables as in the national multiple regression model, but excluding population and introducing the unemployment rate of each wilaya as an additional independent variable. It is worth noting that in this particular case a best fit line was achieved when independent variables alone were expressed in logarithmic terms. The results of the regression are shown in TABLE 6.12 which indicates a superior level of explanation to that achieved at the national level (see TABLE 6.8) for most variables. The greatest level of improvement was achieved by the variables representing percentage of urbanisation and literacy.

TABLE 6.12 Simple Correlation Coefficients between each
Independent Variable and Migration Rate
(prior to and after log transformation).

	Untransformed	Transformed
Migration rate - distance	- 0.69	- 0.84
Migration rate - industrial employment	- 0.03	0.04
Migration rate - urbanisation	- 0.31	- 0.33
Migration rate - literacy	- 0.37	- 0.40
Migration rate - Unemployment	0.39	0.35

This is true for both the transformed and untransformed data set. Since migration rates rather than migration numbers are being explained, it follows that the variables associated with the gravity model are reduced in importance and a higher level of statistical explanation is attributed at the regional level to other variables, and most notably to the level of literacy and unemployment rate (TABLE 6.13).

The relationship between level of industrial employment and migration rate once again proved completely insignificant, for both untransformed and transformed data. But contrary to the results obtained at the national level, urbanisation and literacy variables stand out as having much stronger inverse relationships with migration rate than previously, underlining the fact that higher migration rates are associated with those wilayate with lower degrees of urbanisation and literacy. Similarly there is a significant and positive relationship between the unemployment rate of

TABLE 6.13 Contribution of the Gravity Model Variables and Other Variables Specified in the Model (in % explanation), prior to and after log transformation.

Variables	National level		Regional level	
	Untransformed	Transformed	Untransformed	Transformed
Gravity model*	25.7	81.3	48.9	70.9
Socio-economic	1.6	4.0	26.4	17.0
Overall (R^2)	27.3	85.3	75.3	87.9

* It should be noted that while at the national level both population and distance were taken as independent variables, only distance was considered as an independent variable at the regional level since the dependent variable was expressed in terms of migration rate.

the sending areas and migration rates, a relationship which strengthens the general view that Constantine, by its role as a regional metropolis, has great influence on the economically poor rural areas that it controls (see TABLE 6.3 and 6.7).

In order to determine the order of significance of the independent variables, stepwise multiple regression was applied. This method provides the best possible prediction with the fewest number of independent variables. The first step is to choose the single variable which is the best predictor. The independent variables to be added to the regression equation in successive steps are those that give the best predictions in conjunction with the previous ones.

From the stepwise multiple regression analysis, it emerges that distance and urbanisation variables are the best determinants of the level of migration (TABLE 6.14).

TABLE 6.14 Results of the Stepwise Multiple Regression of Migration Rate on 5 Independent Variables.

Step	1	2
Constant	7533	12428
(Distance) T- Ratio	-4.93	- 5.77
(Urbanisation) T-Ratio		- 2.20
R-Square	70.88	81.09

Deprived areas, where infrastructure and urban service provision are lacking or inadequate and where the absorption capacity of the predominantly rural labour market is too small, send many more migrants than those more urbanised ones. It appears therefore that 'push' factors are particularly significant in explaining the pattern of migration to Constantine from its rural hinterland, while 'pull' factors such as industrial employment are much less important in Constantine. Indeed, there is much evidence to suggest that Constantine as a large urban centre is unable to cope with the level of rural migration, both in terms of urban employment opportunities and the provision of adequate accommodation for the migrants. The remaining independent variables which were hypothesised to be likely determinants of the level of migration were found to have little effect on the regional differences in migration. Either variations in these variables within Eastern Algeria

are too small for their effects on migration to be isolated and measured; or their effects on migration are exerted indirectly and have already been represented by the distance and urbanisation variables.

In accordance with the results obtained, it may be said that Constantine acts as a major regional focus for the least developed areas of Eastern Algeria. It attracts a great number of migrants from areas that are characterised both by low levels of urbanisation and literacy and high unemployment rates. Such migration patterns seem to reflect quite well the existing regional disparities and especially the discrepancy between urban and rural areas. The basic inequalities between the haves of the city and the have nots of the rural areas have led to substantial rural to urban migration. So there is no doubt that attention must be paid to the internal decentralisation of economic development if migration to Constantine and to other large cities is to be reduced to a more manageable scale. To re-orientate the pattern of migration in the future, it is suggested that urban development policy must be supported by judiciously selected complementary policies in the area of rural development. Deprived areas, as defined above, should be given special consideration for the location of industries, the diversification of economic activities, the improvement of amenities and quality of life. A "package" of policies of this type could be an effective vehicle for redesigning urbanisation and restructuring migration flows.

Having analysed the temporal and spatial migratory flows

and defined the major causal factors of migration to Constantine, the thesis, in Part Three focuses on the demographic and socio-economic characteristics of the recent migrant population as well as on spatial aspects of Constantine's demographic growth.

Part Three

PART THREE

Chapter Seven

SELECTIVITY AND DIFFERENTIALS IN MIGRATION

In this chapter, an attempt is made to present analysis of demographic and socio-economic characteristics of the migrant population. As pointed out in Chapter Two, under normal circumstances, migration is a selective process affecting individuals with certain demographic, educational and socio-economic characteristics. Inducements to leave a place of residence, which might be expressed as 'push' and 'pull' factors, do not appear to exert their force equally. Demographers have been particularly concerned with establishing differentials which would apply in all countries. However, apart from age selectivity which demonstrated some consistency in several contexts over a long period of time, little progress has been made toward constructing a general theory of migration selectivity. A great number of studies of the individual characteristics of migrants have been undertaken, but their findings are complex and often contradictory. For instance, the major contrast that was found between Latin American and African migration is that urban-ward migration in the former is predominantly female (HERRICK, 1965) whereas in the latter, it appears to be predominantly male (CALDWELL, 1969). Accordingly, Bogue (1961) strongly asserted that "apart from age selectivity, further differentials do not exist and should not be expected to exist. Various migration differentials emerge to be important and changing in particular places and times". Thus, Bogue suggests that the migration

differentials are, in effect, responses to stimuli that vary from country to country and over time within a given country. The effects of migration depend in part on the nature of the migrant, the people he leaves behind him and the group into which he comes. This selectivity can be defined either in terms of the population groups from which the migrants come or in terms of those they join at destination. In this chapter, the second approach is chosen for most of the data on areas of origin were not available. Broad generalisations about the selectivity of migration are easy to find, depicting migration as highly selective of younger persons who are more flexible to social and economic changes and involving, in general, single, widowed or divorced rather than the married section of the population.

For our purposes, analysis of selectivity in migration may be divided into groups by age and sex, education and occupation characteristics. We will look at the differences between the recent migrants, those with fewer than 11 years of residence in Constantine, and Constantine's total population. The ideal comparison would be to identify clearly characteristics of the migrant and non-migrant populations. We are aware that standardisation is essential if we want to distinguish with clarity differences between migrant and native populations. The more so since migrants represent elements removed from the sending population and added to the receiving one. Therefore, it is of great importance to find what contribution is made by migration as a factor in population redistribution and change in the composition

of population at both places. The migrants, for example, may be older or younger than the resident population, can contain a greater or smaller proportion of males or females and may consist of people with widely differing occupations. Unfortunately, data on recent migration was confined to the chef-lieu de commune, whereas similar information on the total population exists only at the commune level. As a result, establishment of demographic and socio-economic differentials by means of comparing migrant versus total population loses much of its significance since by doing so without standardising, the differences between the two groups become less perceptible. Nevertheless, it is thought a broad comparison would help to depict at least the differential trends. In this way, comparison is only indicative of the general differential trend.

7.1 Age and Sex Selectivity

Numerous studies in Africa and Asia, including Caldwell (1969), Byerlee (1974), Yap (1975) and Connell et al (1976), have provided evidence that the principal demographic characteristics of urban migrants in Third World countries are that they tend mostly to be young single males between the ages of 15 and 30. On the other hand, in Latin America, the growing literature indicates that females apparently are now in the majority of the migration stream (HERRICK, 1965; NELSON, 1974), largely as a result of Latin America's relatively advanced state of urbanisation as compared with other developing countries. According to Herrick (1965, p.73),

female migration to cities in Latin America is encouraged by the multitude of jobs available for domestic and other service activities.

With respect to age, selectivity can be considered a universal law of migration. Research on migration generally confirms that people in their late teens, twenties and early thirties are more migratory than their counterparts. Thomas (1958), Tarver (1963) and Schryock JR (1964) for the United States, Herrick (1965) and Peñia (1977) for Latin America, Beschers (1961) for Indiana and Caldwell (1968) for Africa, supported such findings in their respective studies. Constantine's migration is no exception to the rule.

A fairly clear picture of age and sex differences between total population and migrant population emerges from TABLE 7.1. With regard to Constantine's total population structure, TABLE 7.1 shows that the proportion of population at young ages (0-14) reached a significant 44.4 per cent, and underlines the extreme youthfulness of Constantine's population. Population under 20 years of age accounts for 55.6 per cent, while the elderly (those of 65 years and above) represent only 3.7 per cent. Such an age composition suggests, therefore, strong potential for demographic growth, which is further reflected in the form of the age-sex pyramid (Fig. 7.1). As regards sex distribution, Constantine's population displays a slight excess of females over males, as shown in TABLE 7.1.

As a whole, Constantine's population portrays very similar demographic characteristics to that of the Algerian

TABLE 7.1 Distribution of Constantine's Total Population and Recent Migrant Population
by Sex and Broad Age-group, 1977

Age Groups	TOTAL POPULATION (1)						RECENT MIGRANTS (2)					
	Both Sexes		Males		Females		Both Sexes		Males		Females	
	N	%	N	%	N	%	N	%	N	%	N	%
<15	157944	44.4	80051	22.5	77893	21.9	10225	29.2	5142	14.7	5083	14.5
15-34	114350	32.1	55249	15.5	59101	16.6	16401	46.9	6666	19.1	9735	27.8
35-64	70450	19.8	32616	9.1	37834	10.7	7289	20.8	3519	10.0	3770	10.8
65 & Over	13375	3.7	6360	1.8	7015	1.9	1098	3.1	503	1.4	595	1.7
Total all age groups	356119	100	174276	48.9	181843	51.1	35013	100	15830	45.2	19183	54.8

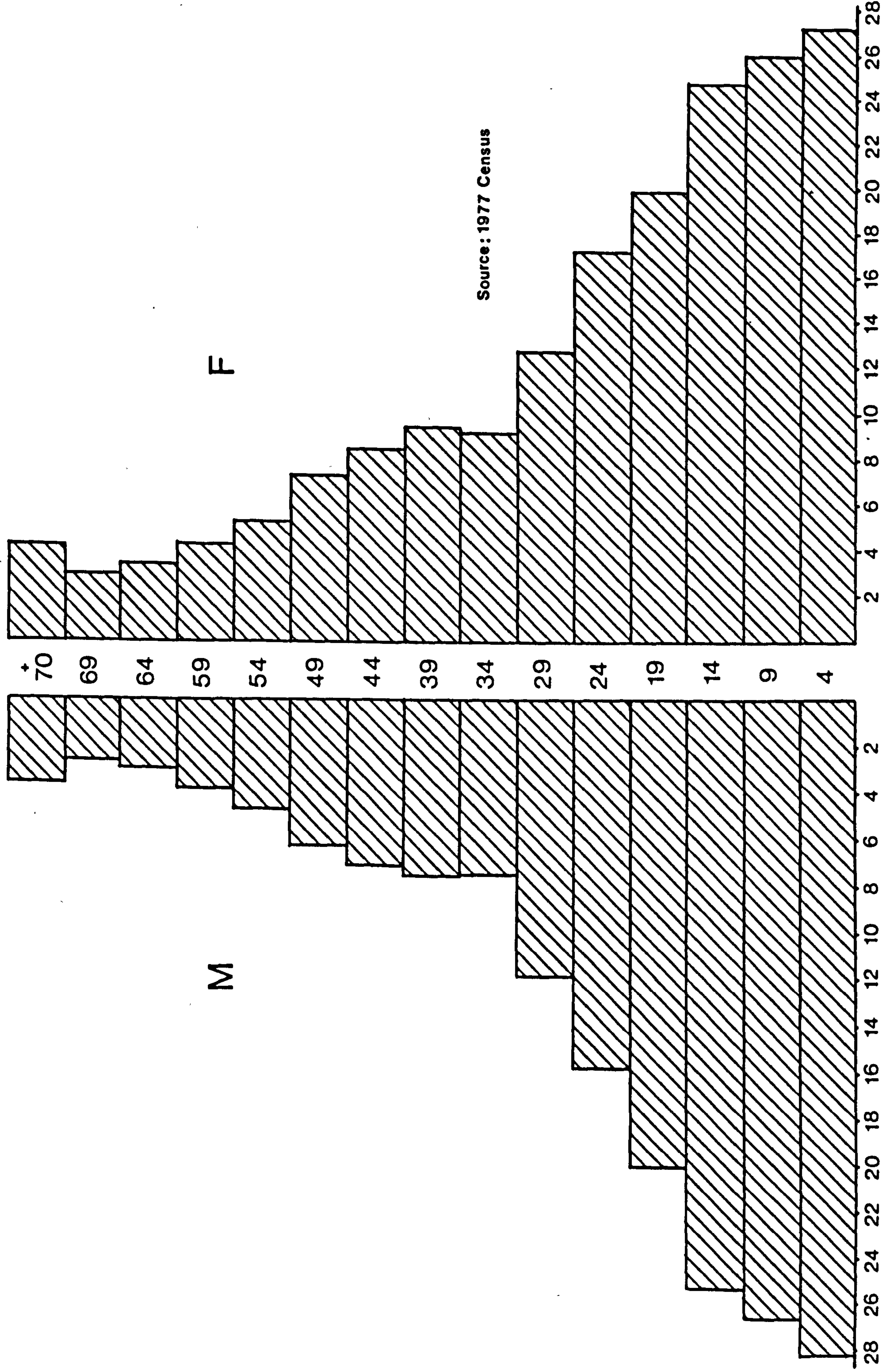
Source: (1) unpublished 1977 census data

(2) data extracted from fiches ménages. (1977 census).

Fig.7.1

POPULATION STRUCTURE BY AGE AND SEX

CONSTANTINE 1977 (in 000's)



population as a whole (TABLE 7.2).

Turning to the migrant section of the population from TABLE 7.1, it emerges that the 0-14 age group is no longer the most important age group. Indeed, among the migrant population, there are disproportionately more 15-34 year olds, which represent 46.9 per cent of the overall migrants. Overconcentration of migrant population in the 15-34 age group implies that massive influx of people between the age 15 and 34 has occurred toward Constantine. Such an age differential in migration is further depicted in Fig.7.2, which displays a distortion of the age-sex pyramid accountable by the fact that migration concentrates extremely heavily on people aged between 15 and 34. Thus, the migrants, as Bogue (1961) and others infer, tend to be young adults. TABLE 7.1 gives relevant statistics in the age - sex distribution. Recent migrants aged 15-34 years made up 46.9 per cent of the overall migrant population, whereas this age group represents only 32.1 per cent of Constantine's total population. Such age structure differences between migrant and total population indicate clearly the extent to which migration is a selective process. Furthermore, among the recent migrants, 54.2 per cent of those over 14 years of age were between 15 and 29 (TABLE 7.3) compared to 49.3 per cent for the same age group of the total population (TABLE 7.4).

With respect to sex, current research asserts that there is no universality, although it has been generally held that males are more migratory than females. Sex is not only of less selectivity than age but also less uniform over time and

TABLE 7.2 Population Distribution of Algeria and Constantine by Age and Sex, 1977 (in %).

1 - Algeria (a)				2 - Constantine Commune (b)		
Age groups	% Distribution of Population.		Total	% distribution of population		
	Males	Females		Males	Females	Total
0 - 4	9.4	8.9	18.3	7.9	7.7	15.6
5 - 9	7.9	7.7	15.6	7.4	7.3	14.7
10-14	6.7	6.4	13.1	7.1	7.0	14.1
15-19	5.4	5.2	10.6	5.6	5.6	11.2
20-24	4.3	4.2	8.5	4.4	4.8	9.2
25-29	3.6	3.5	7.1	3.3	3.6	6.9
30-34	2.1	2.5	4.6	2.1	2.6	4.7
35-39	1.9	2.2	4.1	2.1	2.6	4.7
40-44	1.8	2.1	3.9	2.0	2.4	4.4
45-49	1.6	1.8	3.4	1.8	2.0	3.8
50-54	1.2	1.5	2.7	1.3	1.5	2.8
55-59	1.1	1.1	2.2	1.1	1.2	2.3
60-64	0.9	0.9	1.8	0.8	0.9	1.7
65 & over	1.8	2.3	4.1	1.9	2.0	3.9
Total	49.7	50.3	100	48.8	51.2	100
% under						
20	29.4	28.2	57.6	28.0	27.6	55.6

Source: a - Ministère de la Planification et de l'Aménagement du Territoire
1977 : "L'Algérie en quelques chiffres", Alger

b - Unpublished 1977 census data.

Fig.7.2 AGE AND SEX STRUCTURE OF THE RECENT MIGRANT POPULATION

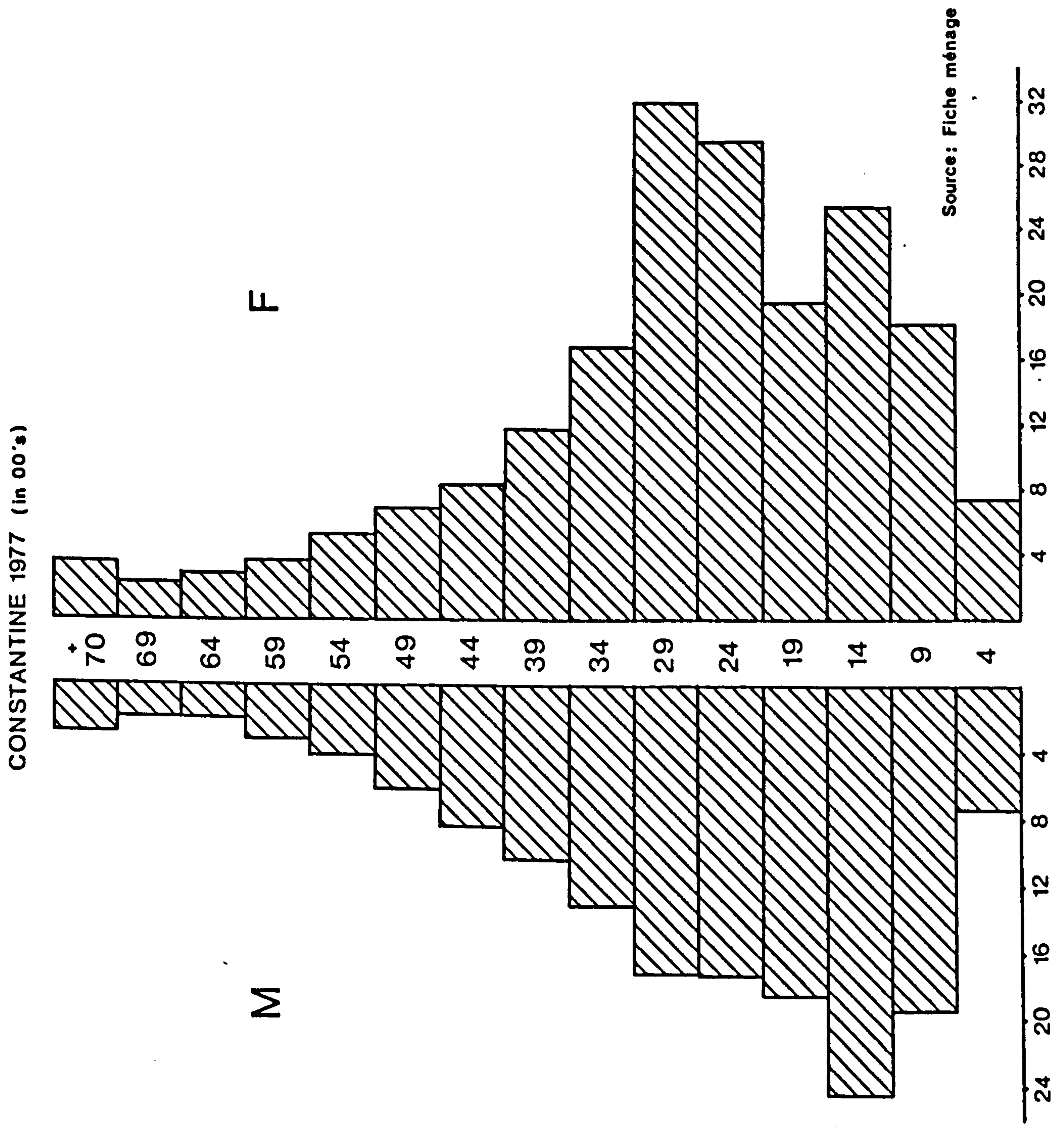


TABLE 7.3. Age and Sex Structure of the Recent Migrant Population ; Constantine 1977

Age groups	Population Numbers			% distribution of those over 14		
	Males	Females	Total	Males	Females	Total
0- 4	749	740	1489	-	-	-
5- 9	1951	1818	3769	-	-	-
10-14	2442	2525	4967	-	-	-
15-19	1861	1946	3807	17.4	13.8	15.4
20-24	1735	2945	4680	16.2	20.9	18.9
25-29	1740	3178	4918	16.3	22.5	19.9
30-34	1330	1666	2996	12.4	11.8	12.1
35-39	1091	1164	2255	10.2	8.3	9.1
40-44	847	810	1657	7.9	5.8	6.7
45-49	627	667	1294	5.9	4.7	5.2
50-54	415	507	922	3.9	3.6	3.7
55-59	329	352	681	3.1	2.5	2.7
60-64	210	270	480	2.0	1.9	1.9
65 & over	503	595	1098	4.70	4.2	4.4
Total	15830	19183	35013	100%	100%	100%
Number over 14	10688	14100	24788			

Source: data extracted from the fiches ménages, 1977 census

TABLE 7.4 Age and sex Distribution of Constantine's Total Population, 1977

Age group	Population Numbers			% Distribution of those over 14		
	Males	Females	Total	Males	Females	Total
0 - 4	28272	27295	55567	-	-	-
5 - 9	26510	25801	52311	-	-	-
10-14	25269	24797	50066	-	-	-
15-19	20035	19934	39969	21.3	19.2	20.2
20-24	15772	17114	32886	16.7	16.5	16.6
25-29	11912	12818	24730	12.6	12.3	12.5
30-34	7530	9235	16765	8.0	8.9	8.5
35-39	7605	9303	16908	8.1	8.9	8.5
40-44	7175	8482	15657	7.6	8.1	7.9
45-49	6285	7239	13524	6.7	7.0	6.8
50-54	4761	5270	10031	5.1	5.1	5.1
55-59	3862	4231	8093	4.1	4.1	4.1
60-64	2928	3309	6237	3.1	3.2	3.1
65 & over	6360	7015	13375	6.7	6.7	6.7
Total	174276	181843	356119	100%	100%	100%
Number over 14	94225	103950	198175			

Source: Unpublished 1977 census data.

place. As mentioned earlier, in African countries males are generally more migratory than females (CALDWELL, 1969) whereas in Latin America and in many Asian countries, the reverse is true (HUTCHINSON, 1963). Clearly, the diverse findings on sex selectivity suggest little support for a broad generalisation as to which sex predominates in migratory flows. Peters (1976) attested that sex may be a basis for selectivity in migration but it does not operate in all cases nor need it operate in the same way. It is widely accepted that sex selectivity patterns vary geographically and according to the nature of migration.

In the present study, it is found, contrary to Caldwell's findings, that women have a higher propensity to migrate than men, as already shown in TABLE 7.1 and further illustrated in TABLE 7.5 by the low sex ratios at migratory ages for recent migrants in comparison with that of total population. Here, sex ratio has been expressed in terms of the number of males for each 100 females (or masculinity ratio). When males and females are equal in numbers, the ratio is 100; a higher ratio signifies more men than women and a ratio of less than 100 means that there is an excess of women over men. Sex ratios at different ages follow a rather typical pattern. Normally, young boys are more numerous than girls because male births are slightly more frequent than female births (BARCLAY, 1963). But males suffer higher death rates with the result that they generally fall short of numbers of females at higher ages. Of course, a different pattern is to be expected if migrants have left or entered the population in recent years. Within the migrant section of the population,

TABLE 7.5 Masculinity Ratios for Constantine's Total Population
and Recent Migrant Population, 1977

Age Group	Total population (1)	Recent Migrant population (2)
0 - 4	103	101
5 - 9	102	107
10 -14	101	96
15 -19	100	95
20 -24	92	59
25 -29	93	54
30 -34	81	80
35 -39	82	93
40 -44	84	104
45 -49	87	94
50 -54	90	82
55 -59	91	93
60 -64	88	78
65 -69	95	94
70 & Over	87	79
All ages	95	82

Source: 1) Unpublished 1977 census data

2) data extracted from fiches ménages (1977 census)

the sex differential is most pronounced in the age group 25-29 where the number of recent male migrants is just over half of female migrants. Another interesting point to make, is that age selectivity is more intensive for females than males as denoted by a higher coefficient of dissimilarity for the former (TABLE 7.6). TABLE 7.6 shows that migrants are positively selected at young adult ages. Age selectivity for women appears to be concentrated in the groups from 20 to 39 years, with those of 25-29 having the highest rates. For males, age selectivity is much less marked since male migrants are positively selected at the ages of 10 to 49, with the highest rate occurring within the 30-34 age group.

A final point to be made regarding the demographic characteristics of the migrant people, is that of the kinship status of migrants. Distribution of migrants by kinship status, which is summed up in TABLE 7.7, suggests that migration follows patterns of family, as heads of households and wives respectively represent 23.7 and 25.3 per cent of the overall migratory movement while children account for a further 45.6 per cent.

TABLE 7.7 Distribution of Recent Migrants by Kinship Status;
Constantine 1977

	N	%
Heads of households	8303	23.7
Wives	8865	25.3
Children	15954	45.6
Fathers and Mothers of heads	970	2.8
Other relatives	754	2.1
others	167	0.5
Total - all migrants.	35013	100

Source: Data extracted from the fiches ménages (1977 census).

TABLE 7.6 Age Distribution of the 1966-77 Migrants and of Total Population, and
Indices of Differentials (in %); Constantine 1977

Age	MALES		FEMALES	
	Migrants (a)	Total Popu- lation (b)	Migrants (a)	Total Popu- lation (b)
		Index (1)		Index (1)
0 - 4	4.7	16.2	3.9	15.0
5 - 9	12.3	15.2	9.5	14.2
10-14	15.4	14.5	13.2	13.6
15-19	11.8	11.5	10.1	11.0
20-24	11.0	9.1	15.3	9.4
25-29	11.0	6.8	16.6	7.1
30-34	8.4	4.3	8.7	5.1
35-39	6.9	4.4	6.1	5.1
40-44	5.3	4.1	4.2	4.7
45-49	4.0	3.6	3.5	4.0
50-54	2.6	2.7	2.6	2.9
55-59	2.1	2.2	1.8	2.3
60-64	1.3	1.7	1.4	1.8
65 & Over	3.2	3.7	3.1	3.8
Total	100%	100%	100%	100%
		15.5 (2)		20 (2)

Source: a- data extracted from fiches ménages (1977 census)

b- Unpublished 1977 census data.

1) Index : Difference between the 2 distributions as per cent of the proportion of population in that age group for the total population.

2) Coefficient of dissimilarity : Sum of the positive differences between the two distributions (migrant and total population).

Thus, contrary to Caldwell (1969) who established that migration is predominantly selective of non-married people in the Ghana case, here we are dealing with a family rather than individuals migration.

7.2 Socio-Economic Differentials.

a. Educational differentials

Considerable number of migration studies, including Barnum and Sabot (1976), support the positive correlation between educational attainment and migration propensity. Such an association between the level of completed education and the propensity to migrate is clearly documented, for example, by Caldwell's (1968, 1969) study of rural-urban migration in Ghana, Herrick's (1965) study on in-migration to Santiago, the capital city of Chile over the period 1950-1960 and Stone's (1969) study on inter-provincial migration in Canada between 1951-1961. They state that the higher an individual's level of education attainment, the more likely he will be aware of differential opportunities and amenities to be had at alternative places of residence. Lipton (1976) suggests that in a range of countries the educated person can expect to increase his earnings by a substantially larger proportion by townward migration than can the uneducated person, possibly because of the urban orientation of most skilled and white collar employment. Accordingly, Sabot (1972) showed that the earning capacity of educated migrants in urban areas of Tanzania was 1.75 times greater than that of uneducated migrants. Similarly, for Ghana, Foster (1965) found an increased tendency for

particular age-groups to migrate if they had primary or secondary school certificates, emphasizing that educational status is used specifically to gain 'better' employment. Such a conception of the utility of schooling and its implications for migration can be reproduced for most countries of the Third World and Algeria is no exception. In effect, the key to occupational success in Algeria is education. The Algerian society is very conscious of educational success and assumes that success should be rewarded. Modernisation, westernisation, the extension of schooling and the growth of towns and cities have all been interrelated. The spread of education in rural areas has certainly speeded up the rate of urbanisation, the more so as most of the superior jobs are largely to be found in towns and cities and are secured by high educational attainments. Thus, educational qualifications are used as a selection device for urban employment and the high level of income that such employment offers relative to rural incomes, which rise slowly or even stagnate.

But although migration has been empirically confirmed to be selective with respect to education, generalisations about the impact of various levels of educational attainment on migration behaviour is another matter. In this respect, there is the common recognition that using measures such as years of school completed cannot take quality of education or differential achievement with the same level into consideration. Furthermore, selecting a scale of measurement by which levels of education can be related to propensity to migrate in a wide variety of contexts represents a real problem;

for, it is likely that within the educational structure in the underdeveloped countries, a small increment in education attainment at a seemingly low level (from late primary to early secondary school) may have a considerable impact on the propensity to migrate whereas in developed countries such increment would likely have a negligible effect. Taking a different perspective on the problem, Connell et al (1976, p.59) argue that "categorising migrants into educated and non-educated groups suggests that migration flows from rural areas comprise two strata which react in different ways to changes in both the rural and urban environments. The question remains as to what is the contribution of education per se to such differing responses; and what, on the other hand, is the consequence of the rural concomitants of education, notably access to employment and income". Despite the drawbacks quoted above, use of levels of educational attainment remains a valuable tool of measuring education differential between migrant and total population.

With regard to education, it was hypothesised in Chapter Two that despite the educational selectivity found in migration, most migrants are illiterate and that nearby communes provide disproportionately large proportions of illiterate, more distant ones involve, in absolute numbers a smaller number of migrants but relatively higher proportions of skilled and professional population. According to information collected on the levels of educational attainment, the first part of the hypothesis is positive. Indeed, the results of the survey support that recent

migrants to Constantine are, generally speaking, less educated than the whole population (TABLE 7.8)

TABLE 7.8 Levels of Educational Attainment of both Recent Migrant and Total Population Aged 6 years and above; Constantine, 1977.

	Migrant Population		Total Population	
	N	%	N	%
No education	15574	48.4	111097	38.3
Primary education	10548	32.7	118870	41.0
Intermediate and technical* education	3536	11.0	41215	14.2
Secondary education	1536	4.8	13342	4.6
University education	998	3.1	5579	1.9
Total all levels of education	32192	100	290103	100

*technical training = any specialized training subsequent to middle schooling or higher education, and thus is included for instance training in nursing or teaching where no secondary or university qualifications were demanded as prerequisites.

Source: (1) Data extraced from the fiches ménages (1977 census).

(2) Unpublished census data.

Almost half of the recent migrants (48.4 per cent) were totally without any formal education whereas a smaller proportion of the total population was similarly handicapped. TABLE 7.8 also shows that recent migrants surpass the overall population in relation to university degrees. Therefore, there is an over-representation of migrants at both ends of the scale, in the categories 'no education' and 'university

education'. With regard to the former category, one rightly would expect more migrants to have no formal education than the total population, schools being more scarce in the place of origin (rural areas). But similarly, it is because the higher educational facilities and opportunities for employment for university trained people are concentrated in the metropolis that many people migrate to Constantine to pursue their education or, if they have completed it, to get a job for which they have the necessary training.

Aiming to attain desired targets of social and economic modernisation, Algeria decided to increase vastly over a small number of years the amount of schooling being offered, but the corollary has inevitably been a very considerable boosting of the population flow into towns, and particularly to university centres. Decomposition of level of education by sex brings out that illiteracy is far more prevalent among migrant females than males. The illiteracy rate among females is almost double that of males (TABLE 7.9).

TABLE 7.9 Levels of Educational Attainment of the Recent Migrant Population Aged 6 years and over, by sex (in %); Constantine, 1977.

	Males	Females	Both Sexes
No education	16.2	32.2	48.4
Primary education	17.1	15.6	32.7
Intermediate and technical education	6.1	4.9	11.0
Secondary education	3.1	1.7	4.8
University education	2.4	0.7	3.1
Total all level of education	44.9	55.1	100

Source: Data extracted from the fiches ménages (1977 census).

Those with at least some secondary education made up 5.5 per cent of males and 2.4 per cent of females. Educational differences by sex are easily explained by the reluctance of parents to send their daughters to school.

We may now turn to the second part of the hypothesis, which proposes that nearby areas send large proportions of illiterates while more distant ones provide relatively greater proportions of better educated. In this particular case, the ratio of population with secondary and university levels per total population aged 17 and over by place of origin will permit the acceptance or rejection of the hypothesis. The lower age limit of 17 is justified on the basis that, given the Algerian educational system, one would begin secondary education at 17; and this under normal circumstances. TABLE 7.10 seems to confirm the general hypothesis: the further the distance travelled, the higher level of education. The sum of evidence suggests two chief points. Firstly, although rural-urban migrants may have a higher average educational level than the village they have left, a much larger proportion of them are illiterate as compared with the city-dwellers as a whole. Secondly, with regard to educated migrants, in general, their propensity to migrate rises with their level of education, not only because of the type of education offered, but also because those with high attainments, are most likely to aspire to jobs that demand such attainments and that are predominantly found in urban areas.

b Economic selectivity.

TABLE 7.10 Percentage of Recent Migrant Population with
Secondary and University education, by Place of Origin;
Constantine 1977

Place of birth	Migrant population with Secondary and University education	Total migrant population over 17 years of age	%
Constantine <u>Wilaya</u>	448	6771	6.6
Adjacent <u>wilayate</u>	1366	13252 [†]	10.3
Remaining Eastern Algeria	433	2094	20.7
Central Algeria	114	552	20.6
Western Algeria	23	104	22.1
Southern Algeria	25	171	14.6
Maghreb	65	233	27.9
Other foreign Countries	60	138	43.5
	2534	23315	10.8

Source : data extracted from the fiches ménages (1977 census)

From the economist's perspective, one would expect that migration would be selective of occupations. Rieger (1972, p.189) points out "many studies purport to show that migration performs a facilitating role, enabling many persons to improve their economic position and even, to achieve a degree of upward mobility unattainable in their original communities". Accordingly, it is argued that whereas the supply and demand for unskilled labour can be met within a local market, the more highly skilled the occupation, the more likely supply and demand for skill will extend from the local, to regional and national levels (RICHMOND, 1969). It is to be inferred that when economies were or are in their early stages of development and industrialisation, migration may have been selective of occupations with a very small degree of specialisation, and then as the economy develops, migration becomes more selective of more specialised occupations. Thus, selectivity of specific occupation may be a function of the supply and demand of these occupations at particular times. As a result, it is very difficult to make any valid generalisations about the economic characteristics of migrants. For many years, the largest percentage of internal migrants were those poor, landless, unskilled individuals whose rural opportunities were for the most part non-existent (TODARO, 1976, p.27-28). Recently, however, rural migrants appear to come from two major economic classes, namely the very poor peasants who are predominantly pushed and the relatively well-off, better educated pulled by attractive opportunities (LIPTON, 1976). Within these two economic groups, the relatively poor rural migrants still predominate in the overall stream in absolute numbers, if only

because the greater proportion of rural inhabitants are relatively poor. This, in turn, leads to the assumptions that a majority of migrants are to be found at the bottom of the stratification system and that migrant-total population differences in socio-economic status are pronounced. Inspection of the available census data for the migrants and the total population will help us to either accept or reject the above depiction.

Census data contribute in two ways to the analysis of manpower. It classifies people according to economic activity, and provides a total population figure against which to measure the size of the economically active portion. Classification of economic activity in census statistics has two stages: first to determine whether a person works or not, and second to show what sort of work (or non-working activity) he does.

As with education, the migrants' rates of participation in the labour force (which is expressed here as percentage of economically active population relative to total population aged 14 and over) might be either higher or lower than the whole commune's rate; higher if the migrants as a whole are somehow more energetic and lower if they are easily discouraged by the complexities of the city life. Taken as an aggregate, the migrants' participation seems to be slightly higher (35.4 per cent) than that of the total population which is 32.9 per cent. However, such a small difference becomes even less significant, considering the age structure discrepancy between migrant and total population, as a result of

age selectivity in migration. Indeed, if the proportion of population over 14 years of age accounts for a considerable 70.8 per cent of the total migrants, it represents only 55.6 per cent of Constantine's overall population. It could be then inferred that the migrant population shares, in real terms, a lower participation rate. The economically active migrant population represents only 13.4 per cent of Constantine's labour force as a whole.

A break down of the economically active population illustrates that the occupied population for the migrants and total population as a whole accounts respectively for 78.9 and 80.6 per cent of the overall economically active portion (TABLE 7.11).

TABLE 7.11 Economic Characteristics of the Recent Migrant and Total Population; Constantine, 1977.

	Migrant Population (1)	Total Population (2)
Occupied labour force	6899	52560
Unemployed labour force	1834	12616
Economically active population	8733	65176
Inactive population	26280	290943
Total	35013	356119

Source: 1) data extracted from the fiches ménages (1977 census).

2) Unpublished 1977 census data.

These data provide substantial evidence that the degree of unemployment is much higher among the migrants than among the total population : an unemployment rate of 21.5 per cent for the migrant population as against 19.4 per cent for the commune as a whole. Such patterns confirm the findings of more recent studies claiming a strong relationship between unemployment and rural-urban migration (ANNABLE, 1972) and thus contradict the traditional economist's perspective which supported the view that people migrate from areas of limited opportunities to places offering a great potential for economic gain (Thomlinson, 1965). In connection with the relationship between unemployment and rural-urban migration, Harris and Todaro (1970) observed that many developing nations witnessed a substantial migration of their rural population into urban areas in spite of rising levels of urban unemployment and underemployment. They postulate that migration proceeds in response to rural-urban differences in expected rather than actual earnings. As a result, the lure of highly paid urban jobs has severe repercussions, in the sense that urban areas are beset by a chronic and serious problem of labour surplus with the consequence that many migrants cannot expect to secure a high paying urban job immediately after arrival, and in turn either become totally unemployed or will seek casual and part-time employment in the urban traditional sector (or informal sector) for at least some time. Moreover, the impact of declining urban employment opportunities on the educational characteristics of the recent migrants was revealed to be quite significant. This phenomenon stems from the fact that limited urban employment opportunities were being 'rationed' by educational levels and

thus only those migrants with some secondary education have more chances of finding a job (EDWARDS and TODARO, 1973). Those with only a primary school education or less found it very difficult to secure regular urban employment. Within the rural-urban migration flow, the use of educational qualifications for job selections means therefore that those with poor education are forced into informal sector and domestic service or join the unemployed section of the work force.

The next step of the analysis on economic selectivity is to try to assert which socio-professional group prevails in the migratory flow to Constantine. Given the inter-linking roles of education, occupation and social status, one expects that migration, in this particular instance, would operate in favour of those of low economic status for a vast majority of the migrants has no formal education.

Before ascertaining which socio-professional group prevails in the migratory flow to Constantine, special mention is required regarding the reliability as well as difficulties associated with the classification of occupations into major socio-professional groups. With respect to the reliability of census data on occupation, it is fair to say they are, perhaps, the least accurate source. As United Nations Bureau of the Census (1973, p.6) noted, the data relating to economic activities obtained in population censuses are subject to important errors and biases due to carelessness and preconceptions on the part of both field-workers and respondents and to ignorance and forgetfulness,

if not unwillingness to give occupation information on the part of the latter. Turning to occupational aggregation into broad socio-professional groups, there were found to be many problems in matching occupational data and in determining precisely what criteria employed by the census when allocating socio-professional classifications, if only because of the enormous variety of occupations found in any country. The chief drawback of the Algerian census classification is that within some of these major groupings, there are ranges of occupational types, skills and income levels. This is particularly true for the grouping entitled 'Personnel Administratif' which comprises secretarial workers, head clerks, primary and middle school teachers, accountants. For our purposes, occupations of migrants are aggregated into 12 major groupings as to match classification used by the census body for publication of occupation data in order to be able to pick up socio-professional differences between migrant and total population. Socio-professional group I comprises proprietors, employers of industrial and commercial activities including the owners of large and small enterprises, the retailer as well as the artisan who own their own shop or workshop and who take on employees. The socio-professional Category II may be defined as the professional and the managerial class while Category III comprises semi-professional workers and middle management. Category IV is represented by white-collar employees. In Category V are found the very small retailers and artisans who hire no employees (self-employed), whereas in Category VI and VII are found respectively non-agricultural skilled and unskilled workers. Workers employed in domestic and personal services are included in Category VIII.

Agricultural labourers are classified in Category IX while the non-salaried workers including apprentices and family aid are identified in Category X. Category XI regroups people in the army. Finally, the last group constitutes the most amorphous grouping since it includes those employed in the so-called informal sector (bootblacks, street hawkers...) as well as those with ill-defined professions and unclassified types of activity.

On the basis of the research findings, recent migrants to Constantine are considerably over-represented among the lower strata (TABLE 7.12).

TABLE 7.12 indicates that a large proportion of the migrant population is made up by manual and service workers. Differences between migrants and total population as a whole in occupational status appear to be significant since the lowest occupational categories (from Category VI to Category XII with the exception of Category XI) include 57.3 per cent of the total occupied migrant population as against a lower proportion of 42.5 per cent for Constantine's total population (1977 census). On the other hand, there is a considerably smaller proportion of migrants in the categories II and III: only 6.8 per cent of the occupied migrant labour force were in professional and highly technical positions while 22 per cent of the commune's occupied population held such positions. It is only in the white-collar employment that both migrants and total population scored the same degree of participation. They both account for 21 per cent of their overall occupied labour force.

TABLE 7.12 Distribution of the Migrant Occupied Labour Force
by Occupational Groupings; Constantine 1977

Occupational Grouping		N	%
Category I	: Employers	15	0.2
Category II	: Professional and managerial class	281	4.0
Category III	: Semi-professional and middle management	195	2.8
Category IV	: White-collar employees	1471	21.3
Category V	: Self-employed	597	8.6
Category VI	: Non-agricultural skilled Workers	1865	27.1
Category VII	: Non-agricultural un-skilled Workers	1516	22.0
Category VIII	: Domestic and personal services	374	5.4
Category IX	: Agricultural labourers	32	0.5
Category X	: Apprentices and family aid	20	0.3
Category XI	: People in the army	397	5.8
Category XII	: Others	136	2.0
Total all occupational groupings		6899	100

Source: data extracted from the fiches ménages (1977 census)

Thus, broadly speaking, although a portion of the migrant occupied labour force has been absorbed by more prestigious activities such as liberal professions and management, substantial numbers sought employment and earnings in less paid activities (low-skill activities in industry construction, domestic services and informal sector activities). From the empirical findings, it becomes clear, that in this particular instance, migration tends to be negatively selective, that is to say from the lower strata. The key factor for understanding the socio-economic position of migrants in the city lies on the one hand in the rate of economic development of places of origin (for economically stagnant localities create conditions for large out-migration so as to relieve pressure) and on the other hand in the types and amounts of occupational opportunities open to migrants as compared to those open to the natives. With regard to the employment opportunities, it has already been pointed out that the rapid demographic growth of Constantine has not been accompanied by an equally rapid industrialisation, the consequence being considerable under- and unemployment. This is particularly true for recent migrants who find it difficult to obtain well paid and stable jobs. Some industrial development has been taken place in Constantine since 1970, but this has not greatly affected the local economy in the sense that it did not contribute to a significant expansion in jobs creation. Similarly, it was found that over three-fifths of the migrants were of rural origin. Furthermore, the higher illiteracy rate among the recent migrants as compared with Constantine's total population has been witnessed. Thus, under the given circumstances, the patterns of differential migration will provide us with the

main key to interpret migrant-total population socio-economic differences. A saturated tertiary sector and few new industrial jobs lead us to expect a maximum differential between migrant and total population groups. The migrant section will not only tend to occupy low occupational positions upon their arrival, concentrating in construction industry, domestic services, petty commerce, they also will find it difficult to move up with time. The more desirable positions in the occupational structure will grow very slowly and will tend to be kept by natives and migrants from urban areas, while rural-origin migrants will remain located at the bottom levels of the system.

Therefore, one may observe that in Constantine's case the socio-economic gap between migrants and total population as a whole is quite large. Confronted with the data, it becomes clear that any attempt to explain the differences had to consider structural, rather than individual, characteristics of both places of origin and destination. This means that a useful analytical framework should be based upon the structural characteristics of the intervening areas. Such a recommended perspective, however, will be possible and fruitful only with further research yielding much more data than are presently at our disposal. This, in turn, depends upon an improvement in the measurement of structural variables.

Chapter Eight

SPATIAL ASPECTS OF CONSTANTINE'S DEMOGRAPHIC GROWTH

The analysis of migration would not be complete without reference to the spatial impacts of demographic growth upon the physical and socio-economic structure of the city. Up to now focus has been put on aggregate growth. Conversely, this chapter is primarily concerned with the spatial growth. The objective is threefold. First, it is attempted to depict the major changes brought by demographic growth (natural increase and migration) upon the internal structure of the city, and thus define the main types of settlement evolved, which in turn serves as background for the analysis of the spatial distribution of the recent migrants. Second, once the morphology of the city is described, attention is shifted to the spatial allocation of migrants within the different subareas of Constantine. Third, with regard to distribution of migrants within Constantine, it is aimed to test whether there exists any spatial concentration of migrants in particular areas according to their place of origin, as has been suggested by Meskaldji (1975). The basic reasons for considering the ecological structure is that by uncovering the differences in quality of Constantine's environment, it would provide a sounder basis for evaluating a number of decisions related to planning and reorganisation of urban areas.

8.1 Ecological Structure of Constantine and its Transformation.

a. Constantine's site.

While Constantine commands a good geographical situation, its site is the major constraint for its development and caused Constantine to grow in particularly difficult conditions. Constantine's site, at the time it originated was regarded as the most convenient to those who were to carry out the town's function. Constantine, originally called Cirta from the Phoenician word meaning city, owes its present name to the Emperor Constantine, who re-built the city after its destruction at the beginning of the fourth century. Constantine has always been a centre of power, for it is difficult to imagine a site better adapted to the needs of defence. Built on a rocky plateau bounded on the north-east, north-west and south-east by deep ravines, the city is on a site that serves as a natural bastion. Constantine's site is twofold (see Plate 8.1). On the one hand, the original settlement or Medina and the main modern city are perched on a lozenge of limestone rock of which three sides are sheer and have deep stream-beds at their foot and the fourth is joined to land outside on the south-west by a narrow isthmus of rock also precipitous on both sides (FURLONGE, 1966, p.92). That is to say that this section of the city is isolated on three sides by deep gorges. The presence of these most impressive features (the gorges or canñon) together with the perched site make Constantine a picturesque city, but at the same time poses severe accessibility problems. On the other hand, the city expansion has resulted in a break-up of the present site onto three plateaux, namely the Plateau du Mansourah to the east, the Plateau d'Ain el Bey to the south and the Plateau de Bellevue to the south west, all separated from one another by the Oued Rhumel and Oued Bou Merzoug. To allow for

Medina

El Kantara

Coudiat

Bardo

Mansourah

SMK
Superieur

Cité
Abbas

SMK
Inferieur

Cité
Daksl

Cité des
Muriers

Bellevue

Cilloc

4eme KM

Unlverslty

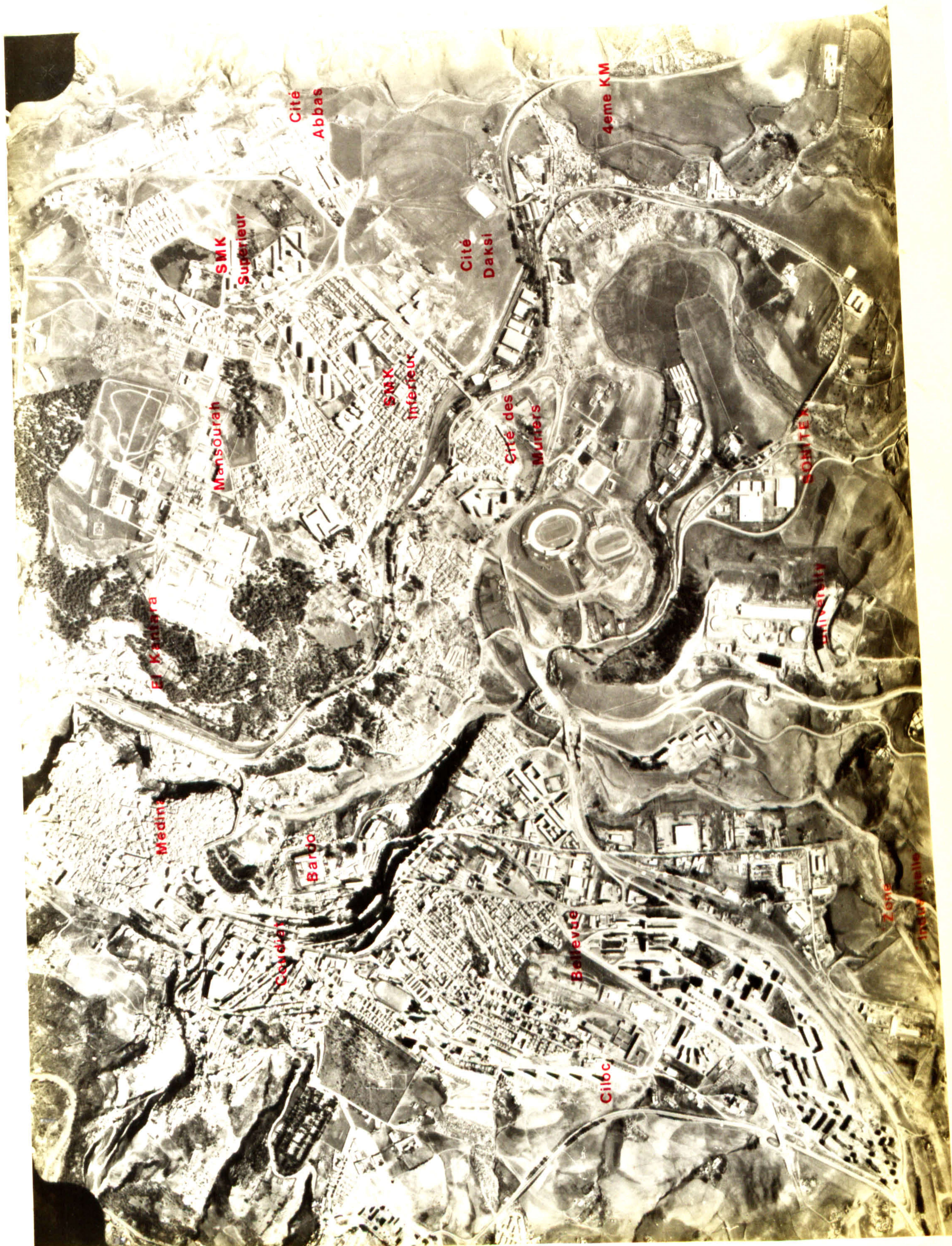
SONITEX

Zone

Industrielle



General view of Constantine's nucleus, 1973



General view of Constantine's nucleus, 1973

the expansion of the city, hills have been levelled and small valleys filled in. This break-up of the site has, therefore, resulted in a discontinuous built-up area with all the problems that it implies. In effect, because the city was originally isolated on three sides, entrance to the city has been made possible thanks to the construction of a large number of bridges during the colonial period. The very first bridge to be built was the El Kantara iron bridge dating back from 1863. It spans the Oued Rhumel in the north-eastern part of the town and gives access to the railway station. Then, in 1912, two other very bold examples of engineering skill were thrown across the Oued Rhumel : the suspension bridge of Sidi M'Cid (175 metres long and 203 metres above the Oued Rhumel) links the Medina with the road to the Fort de Sidi M'Cid (Plate 8.2); while the long curved viaduct of Sidi Rached at the south-eastern side of the town offers direct connection between the Coudiat Aty area and the railway station (Plate 8.3). Lastly, a foot-bridge, the Passerelle Perregaux, was built near the Medina to link up the centre of the town with the station.

The fragmented character of the site has made Constantine a divided city into subquarters, which in turn has created substantial difficulties with reference to urban development in terms of city expansion, access, communication and linkage between the heart of the city and the more recent quarters. In this connection, Loew (1979) noted that Constantine's site once regarded as the perfect site has become today tyrannical. So much so that Constantine is a town planners' nightmare and the Master Plan, launched in 1973 and many times revised has.

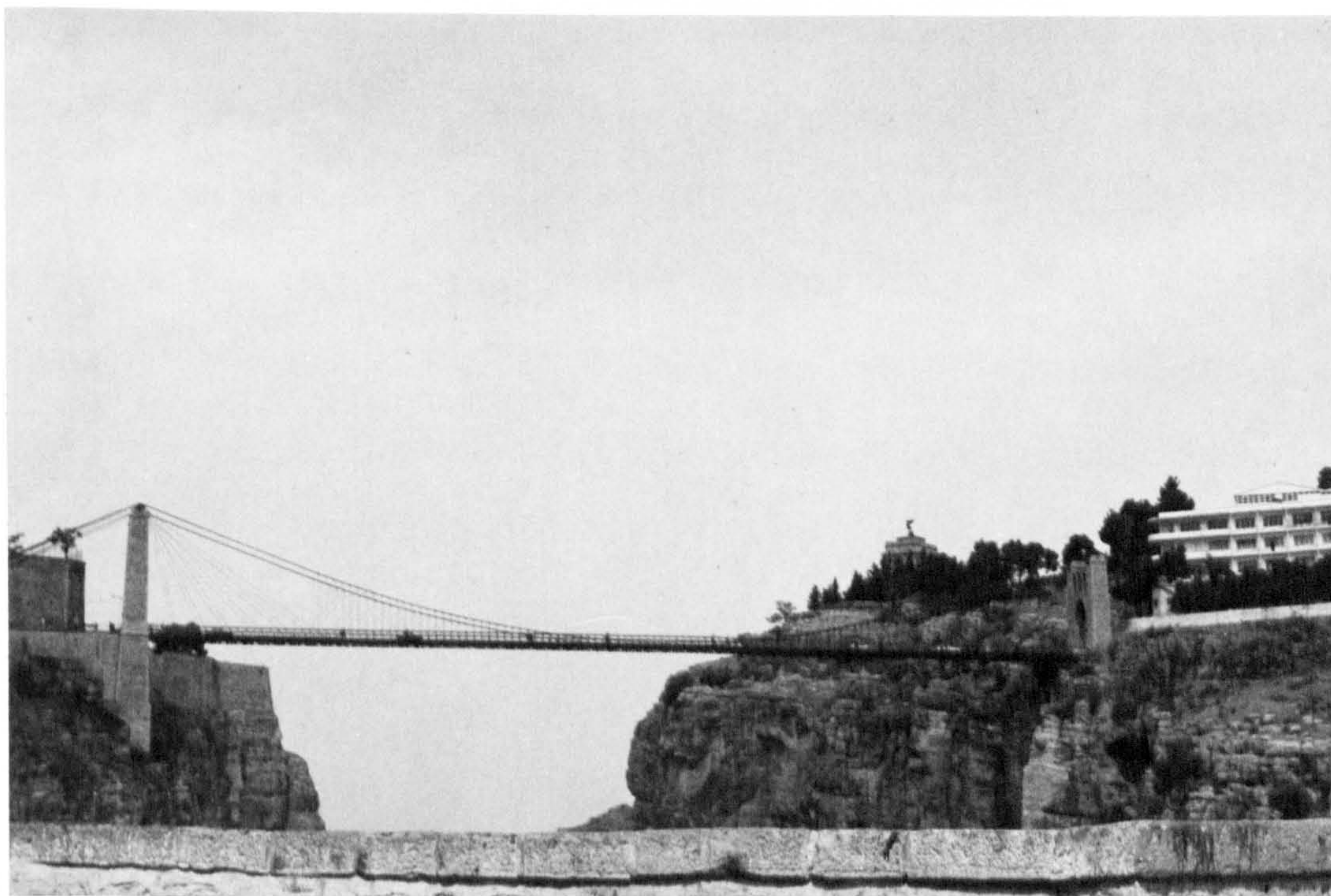


Plate 8.2

The suspension bridge Sidi M'Cid



Plate 8.3

The viaduct of Sidi Rached

still not been officially approved. The site may have retained its advantages if it was chosen at the outset with the intention of expansive development, which was not the case for Constantine. Indeed, Constantine which was originally designed for approximately 50 000 inhabitants, reached almost 400 000 in 1977. Consequently, Constantine's site no longer fulfils the conditions it originally offered.

b. Constantine's morphology.

The formation of urban spatial structure is a historical and dynamic process. The structure of Constantine has changed markedly through the years; and its present form and structure is the result of numerous economic, social and cultural factors operating through this last century. Similarly, Nelson (1971, p.75) argued that "the forces contributing to the contemporary urban structure are many, some are obvious and strong, others are more subtle, but all add an important dynamic quality to urban development". Some of the most significant of these factors include colonial penetration and rapid and massive growth stemming not only from high natural increase rates but also from disproportionate in-migration. Within the scope of this section, the aim is not to attempt a detailed ecological description but rather to suggest some general principles of ecological organisation. Traditionally, most Arab cities are acknowledged to be divided into four parts: the historic pre-colonial core or the Medina, the modern colonial appendage, the unregulated indigineous settlement usually on the outskirts known as bidonvilles or gourbivilles according to the nature of construction

materials used, and the villa suburbs (MICAUD, 1976). But in the case of Constantine only the first three are represented (Plates 8.4 and 8.5).

The Medina, the old traditional form of city building is a relatively small nucleus in extent situated in the northern part of the actual city and dated from Roman times. It has been occupied in turn by Byzantines, Berbers, Arabs and Turks and contains numerous remains of Roman buildings. It was, at the height of its medieval importance, a compactly but rationally organised unit which contained the entire population. The urban community was designed for foot and pack-animal traffic, given its irregular street pattern, narrow streets and houses nearly meeting ahead. The Medina is lively for it is an area of high residential density but also a centre for traditional commercial, industrial and craft activities. Within the Medina, each trade has a special location; and so there are entire streets of tanners, saddlers, shoe-makers, jewellers, woollen goods...etc. While the physical structure of this community still persists, the social organisation has altered drastically. With this in mind, Micaud (1976, p.145) wrote "much has gone wrong with the Medina since the European colonisation. It is the 20th century that has made incoherent this once perfect urban organism. The refinements of a very calculated and controlled lifestyle have given way to all the components of slum living conditions", that is to say sewage problems, disposal collection and population pressure (1600 inhabitants per square kilometre have been recorded). Within the Medina, strong pressure for space and privacy has led to the haphazard construction in the



Plate 8.4

The Medina, viewed from the south



Plate 8.5a



Plate 8.5b

Juxtaposition of the modern appendage (in the background)
and the spontaneous settlement (in the foreground).

patio of more rooms, which cut off light and air from the only available source. Another major problem facing the Medina is that buildings are deteriorating quickly, water seeping into the earthen or poorly laid stone walls. Consequently the Medina poses the most pressing urban planning problems as seepage and lack of funds for restoration are the twin enemies of the built-up area of the Medina. Despite the Medina still remaining very much alive and forming a distinctive part of the urban landscape, it has become a less and less wealthy, self-respecting and well urban organised community (MICAUD, 1976, p.145; BENNOUNE, 1980, p.51). This impoverishment of the Medina derives from the out-movement of the richer elements of the population to the European quarters, which in turn alter to a certain extent the Medina's role and function (TABLE 8.1).

TABLE 8.1 Percentage of the Medina's Population of the Total Population of the Commune (1954-1977).

	Constantine	Medina	%
1948	114 338	44 391	38.8
1954	143 334	44 562	32.0
1960	199 326	47 389	24.0
1966	245 621	44 378	19.0
1977	349 629	46 577	13.3

Source: Census returns.

With colonisation, a modern appendage was created alongside the Medina. However, it is of interest to note that the relationship between the Medina and the modern 'western style'

appendage differs from one country to another. As Abu-Lughod (1976, p.205) pointed out, in Moroccan cities full castlelike segregation was encouraged and indeed enforced. Not only were the walls surrounding the city of Salé and Rabat left intact, but indeed they were repaired and strengthened by the French, once the newly imposed protectorate was established in 1912. The policy adopted by the Resident General Lyautey, to 'avoid the unhealthy mixture of the races', which he had criticised in Tunisia and Algeria, was to separate as fully as possible the life of the colonial from that of the Moroccans. To this end, Cordons Sanitaires or 'green belts' were created wherever possible, and new cities for French occupancy were built often at a substantial distance from existing Medina (Marrakesh and Fez). On the other hand, in Tunisia and Algeria, the line between the Medina and the 'modern' city is quite blurred and was never demarcated by a physical wall. Nevertheless, in the case of Tunis, the presence of a large proportion of foreigners helped to sustain a relatively self-contained modern quarter without soliciting assistance from the Tunisian elite. Conversely, in Constantine where the foreign population was small, even at the height of the colonial power, spatial mixture of Europeans and Algerians occurred. But, of course, it would be wrong to imply that full social assimilation was achieved. Thus, the modern appendage is very closely linked spatially to the Medina and yet it is a world apart in its life style.

The European settlement which emerged alongside the Medina became and still remains the chief focus of all modern sector (administrative, financial and service functions) and

therefore only commercial and religious functions associated with the Medina continue to give the old town an important role within the city centre. The 'modern' city has been grafted onto the older traditional form of city-building; better adapted to a contemporary life that is a legacy left by the departed colonial power. Since the French occupation, new quarters have been built beyond the limits of the town mainly to the south-west on the plateau of Coudiat (Coudiat, Saint Jean, Bellevue) and on the opposite bank of the Oued Rhumel near the railway, El Kantara, Mansourah and Sidi Mabrouk. Bellevue was par excellence the residential area for Europeans, for almost three-quarters of its population was made up of Europeans (TABLE 8.2).

TABLE 8.2 Percentage of European Population in Selected Areas of Constantine.

	1948	1954	1960
Bellevue	73.9	n.a.	64.5
Saint Jean	60.8	31.7	41.6
El Kantara	58.8	34.7	40.8
Sidi Mabrouk	41.7	44.3	13.0

Source : Census returns.

This appendage was either designed by Europeans or built on the European style, often by Europeans for their own use since their settlement in Constantine. These settlements, mostly villas (Plate 8.6) and high rise buildings (Plates 8.7 and 8.8) were considerably less dense, laid out with straight and wide streets to accommodate wheeled vehicles.



Plate 8.6a



Plate 8.6b

Example of villas in the Bellevue district

Two types of multi - storey European building



Plate 8.7

Multi - storey residential and commercial building in the Central
Business District



Plate 8.8

High rise apartments in the Bellevue district (late 1950s)

These settlements also coincide with the areas that have received the most obvious attempts at a planned urban development.

To these two types of settlement was added another one : the bidonville or gourbiville according to the construction materials used. This third type of settlement - the uncontrolled settlement - consists chiefly of self-constructed buildings, primarily on the periphery (Plate 8.9) but in some cases reaching deep into the heart of the modern quarters (Plate 8.10) and is one feature born in the incessant influx of the rural population. Given, on the one hand, the great difficulties for spatial extension due to the site and the demographic explosion, and on the other hand the limited housing provision through formal and planned channels, expansion and creation of uncontrolled settlements are inevitable; the more so that all that is needed to build such shelters are a tin roof and a few planks. In the majority of cases, such settlements are established illegally on communal and domanial lands and steep slopes and insalubrious terrains are almost a prerequisite. In Constantine, many areas have been formed in this way where the majority of their population live in a deplorable state of hygiene (Fig. 8.1). The first apparent changes in Constantine's morphology through accretion of bidonvilles dated from 1948; and by 1954, the bidonvilles, 4^e km, Bardo and Arcades Romaines were already part of the city landscape. However, it is worth mentioning that one can distinguish three types of uncontrolled settlements on the basis of the physical state and construction materials of the dwelling and on the level

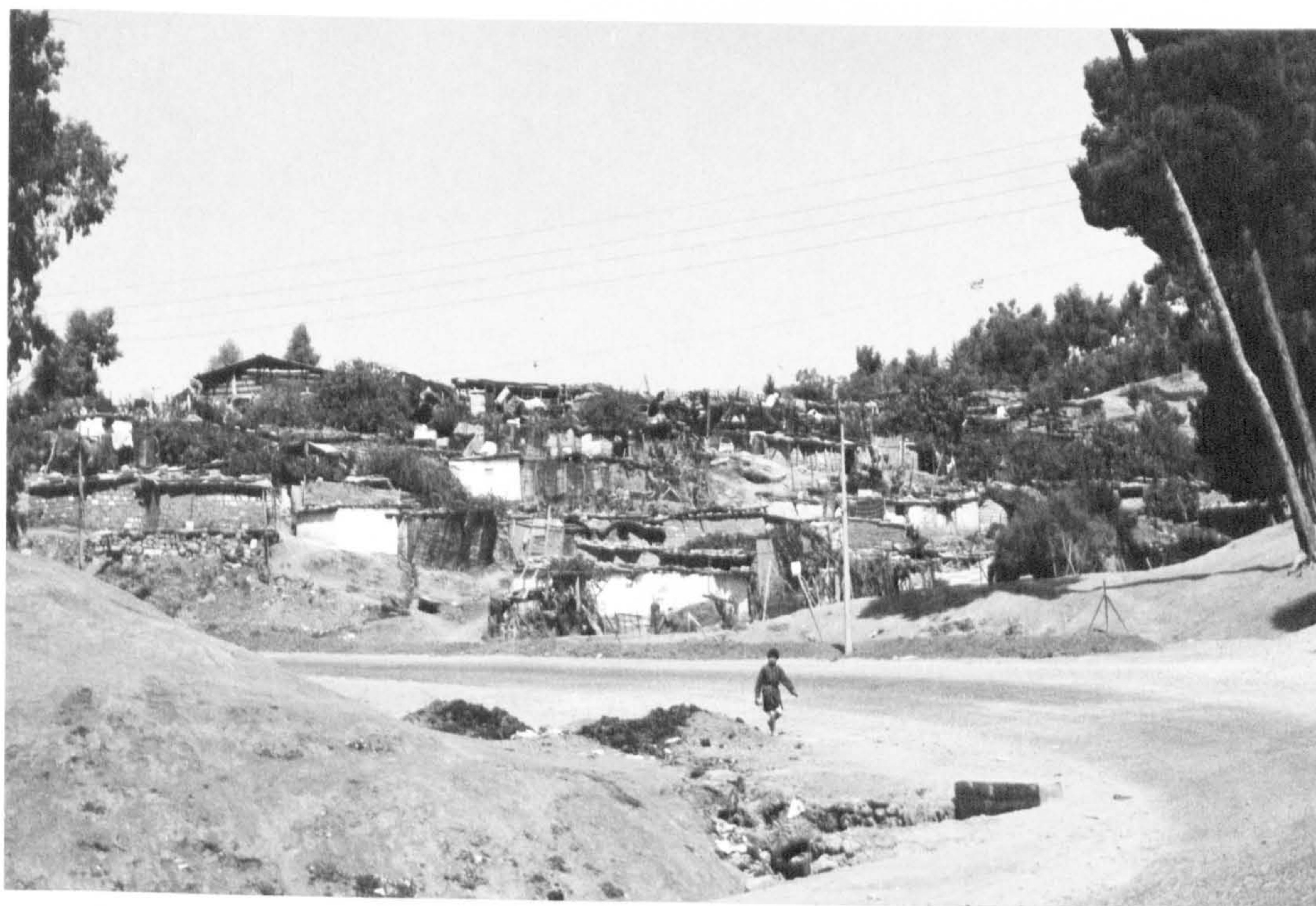


Plate 8.9

Example of a peripheral gourbiville

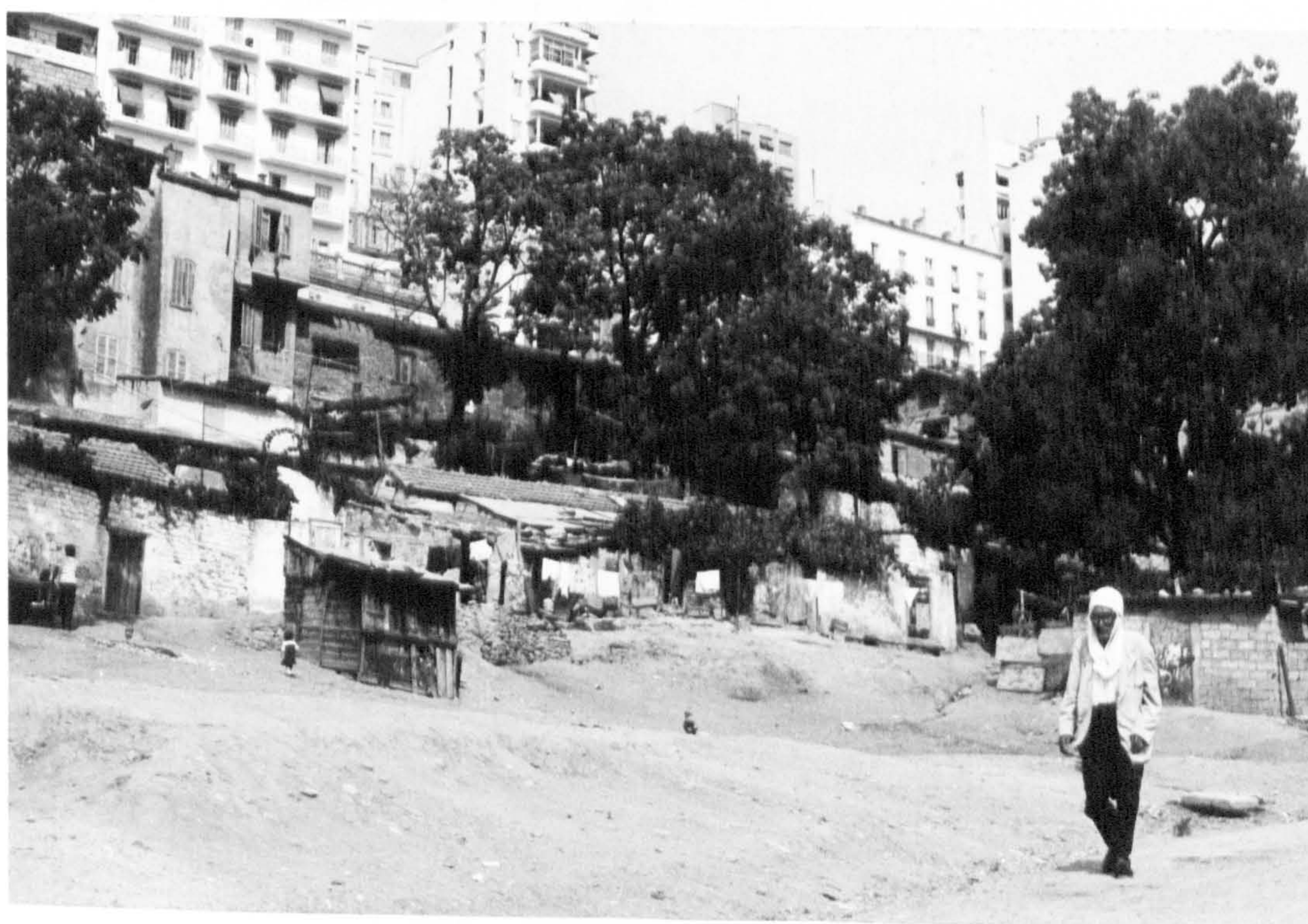
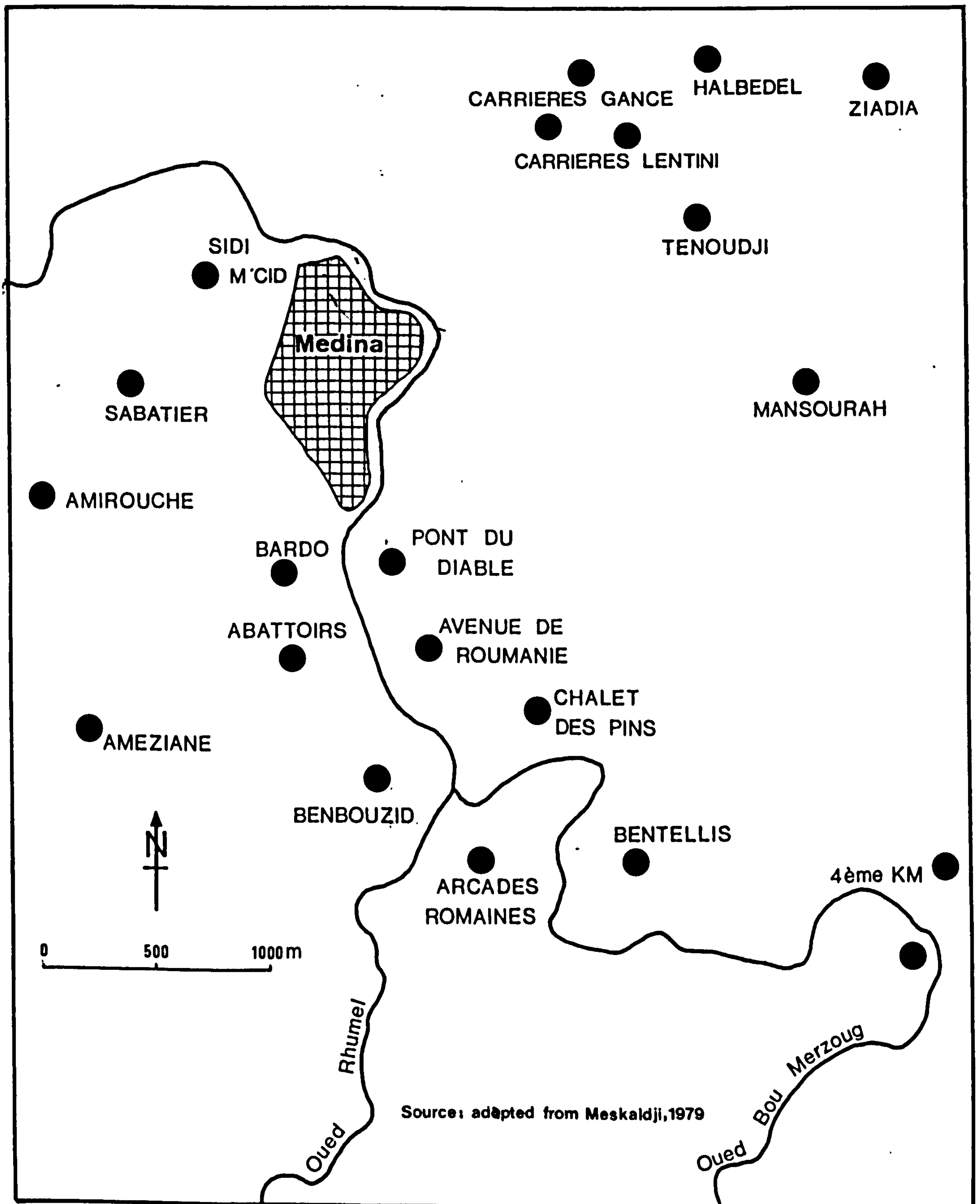


Plate 8.10

Gourbiville located within the city centre

Fig.8.1

LOCATION OF SPONTANEOUS SETTLEMENT IN CONSTANTINE

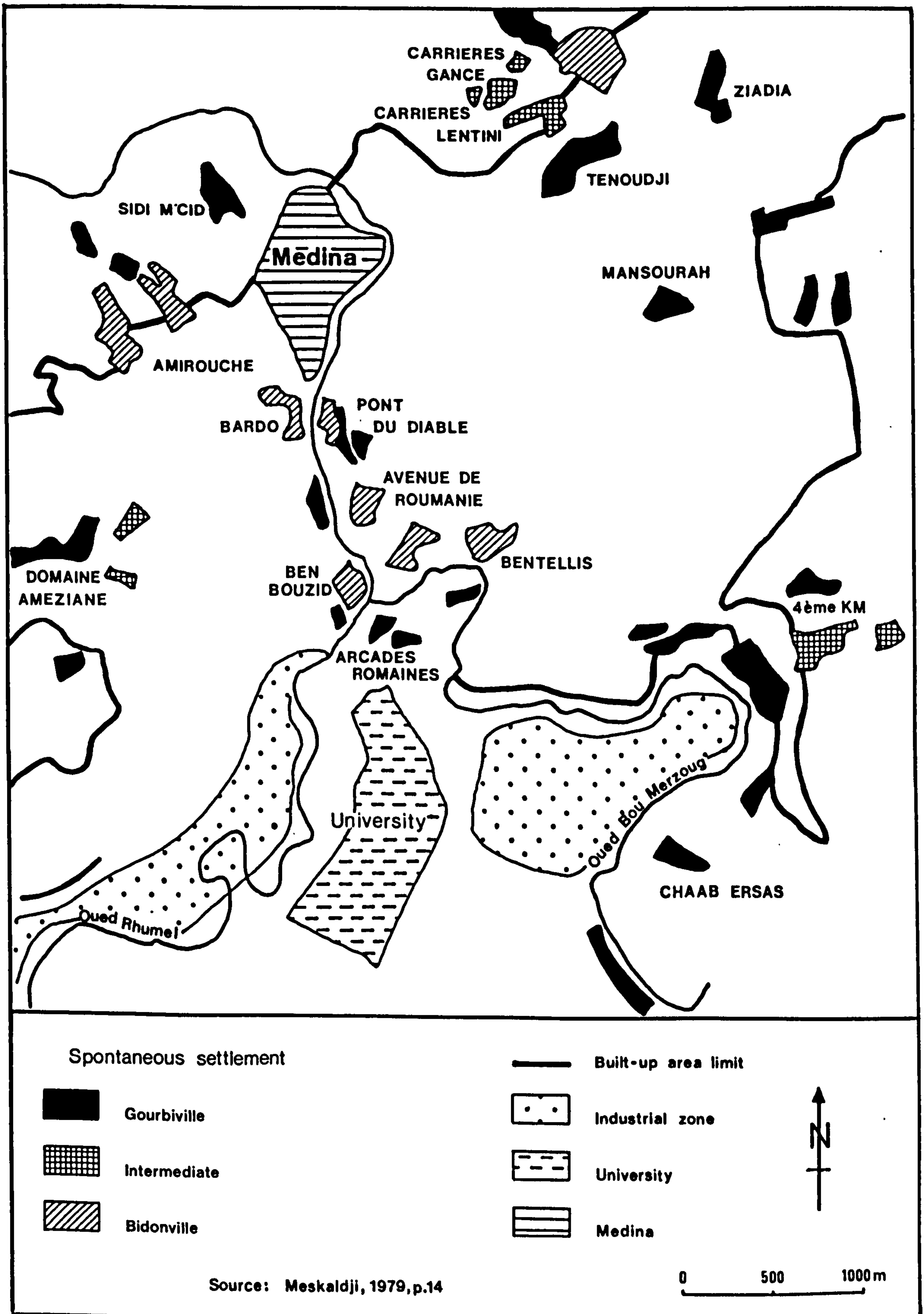


of services provision (Fig. 8.2). On that subject, a valuable work was produced by Meskaldji (1975,1979) establishing a typology of the spontaneous settlements based upon criteria such as nature of construction materials, geographical location, level of services provision and nature of economic activities. Consequently, only a brief description of each type is pursued here.

The poorest of them all, found mostly on the periphery of the city (Sidi M'Cid, Domaine Améziane) are constructed with a mixture of clay and chopped straw and are totally deprived of basic facilities. In addition, typical rural activities such as livestock rearing and gardening on a micro-scale are practised. These settlements are commonly called gourbivilles. Despite the lack of services, the second type is slightly better intergrated into the city. The houses are of better quality for breeze block is used for construction and the activities are almost exclusively urban. It is the case of Carrières Lentini, Carrières Gances and 4^e km. The final type consists of bidonvilles (Plate 8.11) fully integrated within the urban fabric (Cité Amirouche, Avenue de Roumanie, Cité Bentellis). Here it can be perceived that an attempt to standardise the buildings was pursued. A minimum of infrastructure and services, such as regular water supply and a few retail shops, are provided.

So, by its morphology, Constantine is an example of the dual city, which is the end-product of both native and foreign traditions whereby not one city but two have evolved side

Fig.8.2 TYPES OF SPONTANEOUS SETTLEMENT
IN CONSTANTINE



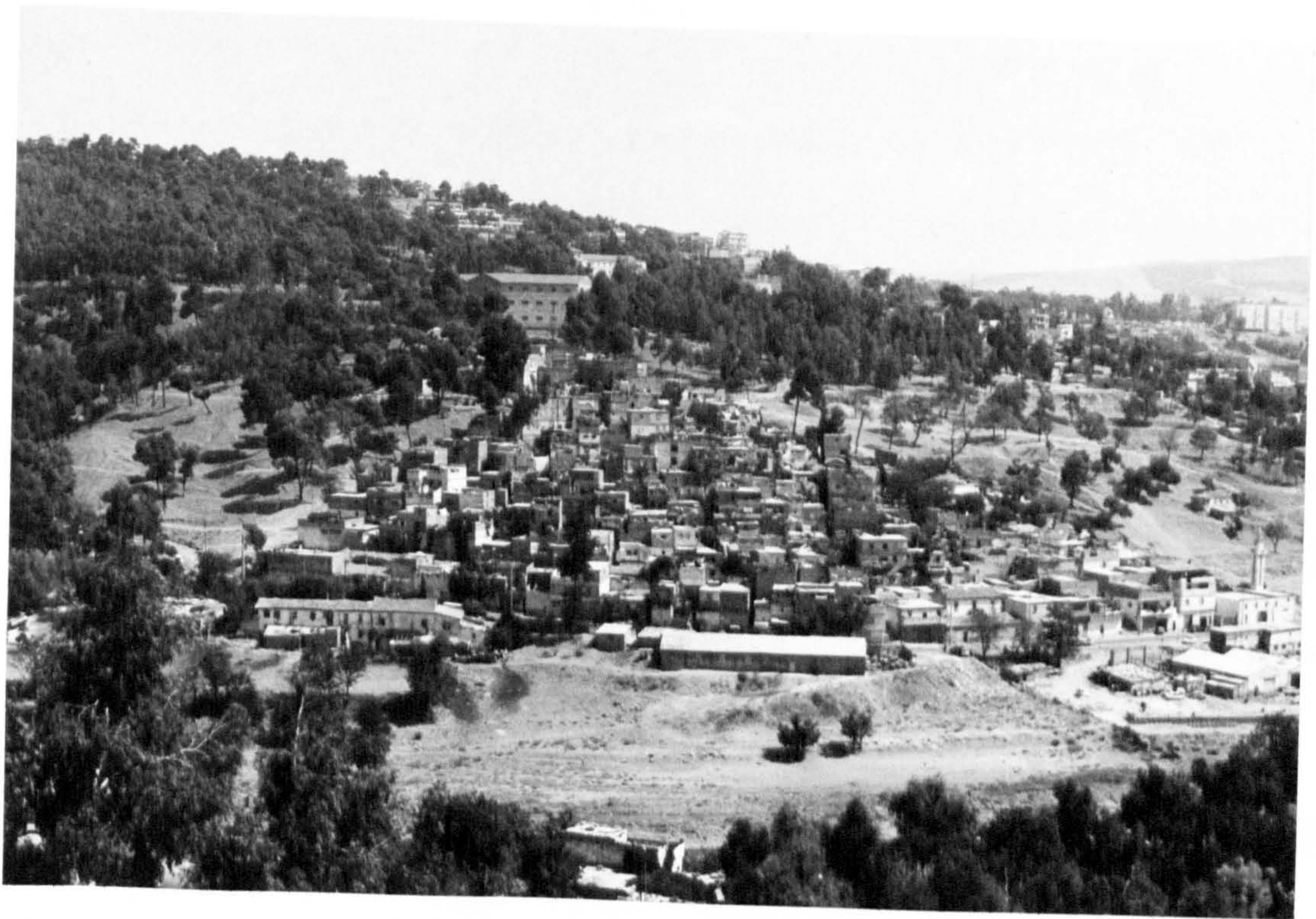


Plate 8.11

Example of a bidonville with limited services

(Avenue de Roumanie)

by side, each with its own morphological and functional patterns, poorly interrelated. In the 'modern' city (formerly the European district) are concentrated infrastructure services, community facilities and environmental quality; while the 'non-western' city comprising the Medina and the bidonville areas, which have to be differentiated from each other from the point of view of morphology and function, are nonetheless both typified by lower accessibility, poorer living environments and lack of public utilities. According to the 1977 census, the Medina and the bidonvilles housed respectively 13.3 and 24 per cent of Constantine's total population, that is to say that the proportion of people living in poor conditions approaches 40 per cent. Having said that, it would be, nevertheless foolhardy to imply that the people living in the 'non-western' areas contain only the lowest socio-economic groups. In effect, many families living in the Medina and bidonvilles have television sets and cars, which are regarded in the Algerian context as a luxury. Therefore, in Algeria as a whole and in Constantine in particular, the physical aspect of the residential areas does not fully relate to the socio-economic status of their inhabitants, for the individuals choice of residence is severely restricted by institutional constraints. In effect, since independence, land ownership is nationalised, that is to say that land cannot be bought or sold and solving the housing problem is a function of state planning and administration. With reference to Constantine, the facts gathered show clearly the government's incapacity to cope with housing problems, translated into the total disparity between needs and responses. There has been a tendency in the past for

supplying inadequate housing; and the massive and rapid transfer of population from the countryside to Constantine since 1954 greatly intensified the existing housing problems. Housing shortage which already arose in the 1950s has become increasingly severe. Between 1938 and 1958 only a small number of houses were built. By 1958, according to the 'Plan de Constantine' some 3500 housing units would have to be built each year to satisfy the demand; but in fact only 6000 were constructed within the 1959 and 1962 period mostly in the Bellevue area. Since independence and up to 1967 housing construction stopped as priority was given to investment in industrialisation; and despite the excessive growth of towns and cities. Little investment was devoted to housing because Algerian planners believed that urban infrastructure inherited from the colonial period would support at least the early stages of industrialisation; assumptions which have proved false. Consequently, it was not until the housing crisis became too apparent that the Algerian government initiated a programme of public housing. During the Pre-Plan (1967-1969) some 750 prefabricated units were built at Bellevue, while in the course of the first four-year plan (1970-1973) 600 units were constructed at Sidi Mabrouk and Bellevue (Plate 8.12). By 1972, Constantine had 41000 housing units while needing 70000 (LOEW, 1979, p.73). The greatest effort in expanding housing provision was made during the second four-year plan (1974-1977). Approximately 6400 new units were provided at Sidi Mabrouk and Cité Emir Abdekader. Unfortunately, priority process in allocating these houses did not benefit the people whose needs were the most pressing. First and foremost, priority was given to teaching staff and



Plate 8.12

Example of recent new housing (Bellevue Ouest)

particularly to those attached to the University, then administrators and senior staff employed in state companies, while individual cases are for the most part overlooked. Accordingly, the problem of accommodation is solved 100 per cent for the University lecturers, 90 per cent for primary and secondary school teachers, 40 per cent for the administrators and national companies' staff and only 2 to 3 per cent in the case of individual applicants. With regard to rehousing those living in bidonvilles, little has been done so far. A bidonville clearance scheme was formulated in 1975; but by 1978 only two Cités de relogement were in the process of being completed, consisting of small prefabricated cottages (Plate 8.13). Approximately 2000 cottages were built but the objective of bidonville clearance is far from fulfilled for on the basis of the 1977 census information there are at least 5834 deteriorated housing units that need demolition and rebuilding.

Given the severe physical constraints, migrants and particularly more recent migrants do not have much choice as to where they wish to live, and the more so since the housing crisis is acute and that limited housing units available are offered exclusively to certain population categories, namely those with high educational and occupational levels. Within the recent migrant population to Constantine only one third of the occupied persons meet the established criteria and thus are likely to be provided with public housing. The remaining occupied population together with their families have to fill in the empty space unsuited to standardised construction. So under the existing circumstances, the housing allocational

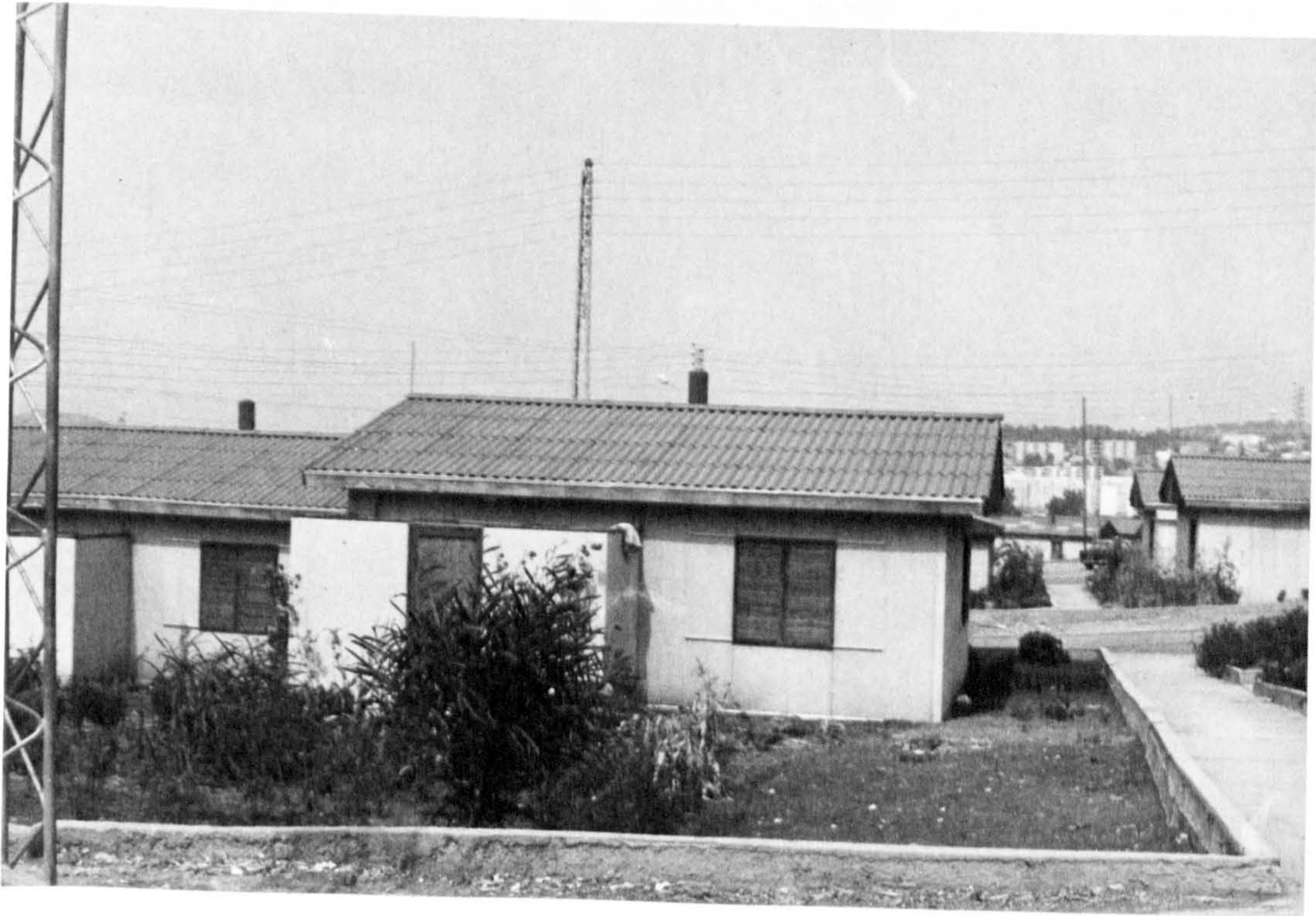


Plate 8.13

Example of new housing units after clearance of bidonvilles

(4^e km)

procedures by controlling the houses of higher social status play a major role in the social patterning of the urban community, namely residential segregation.

8.2 Spatial Distribution of Recent Migrants within Constantine city.

This sub-section aims at uncovering the residential location of the recent migrant population within Constantine and to see whether migrants are uniformly distributed or clustered in particular parts of the city.

Analysis of the distribution of migrants within the city was made possible since information was recorded for the 24 major subareas of the city (Fig. 8.3). TABLE 8.3 and Fig. 8.4 show that the Bellevue area holds the larger number of migrants, namely 5382 or 15.4 per cent of the overall migrant population settled in Constantine between 1966 and 1977. This is not surprising since it is among the few areas of the city offering suitable terrain for expansion. Indeed, since the 1960s, most efforts in housing provision were concentrated in this southern part of the city. Concentration of migrants, but to a lesser extent, also occurs in the Medina and Cité Abdelkader areas which received almost 9 per cent each of the overall flow. This low figure may be explained by the fact that these two areas received the bulk of their migrant population before 1966. Overall the above three areas group a third of the total migrant population. Much lower concentrations of migrants, but still significant, occur in five other parts of the city, namely Sidi Mabrouk inférieur (7.4 per cent), Quartier Amirouche (6.4 per cent), Domaine Améziane (6.3 per cent),

Fig.8.3 LOCATION OF THE MAJOR URBAN DISTRICTS OF CONSTANTINE

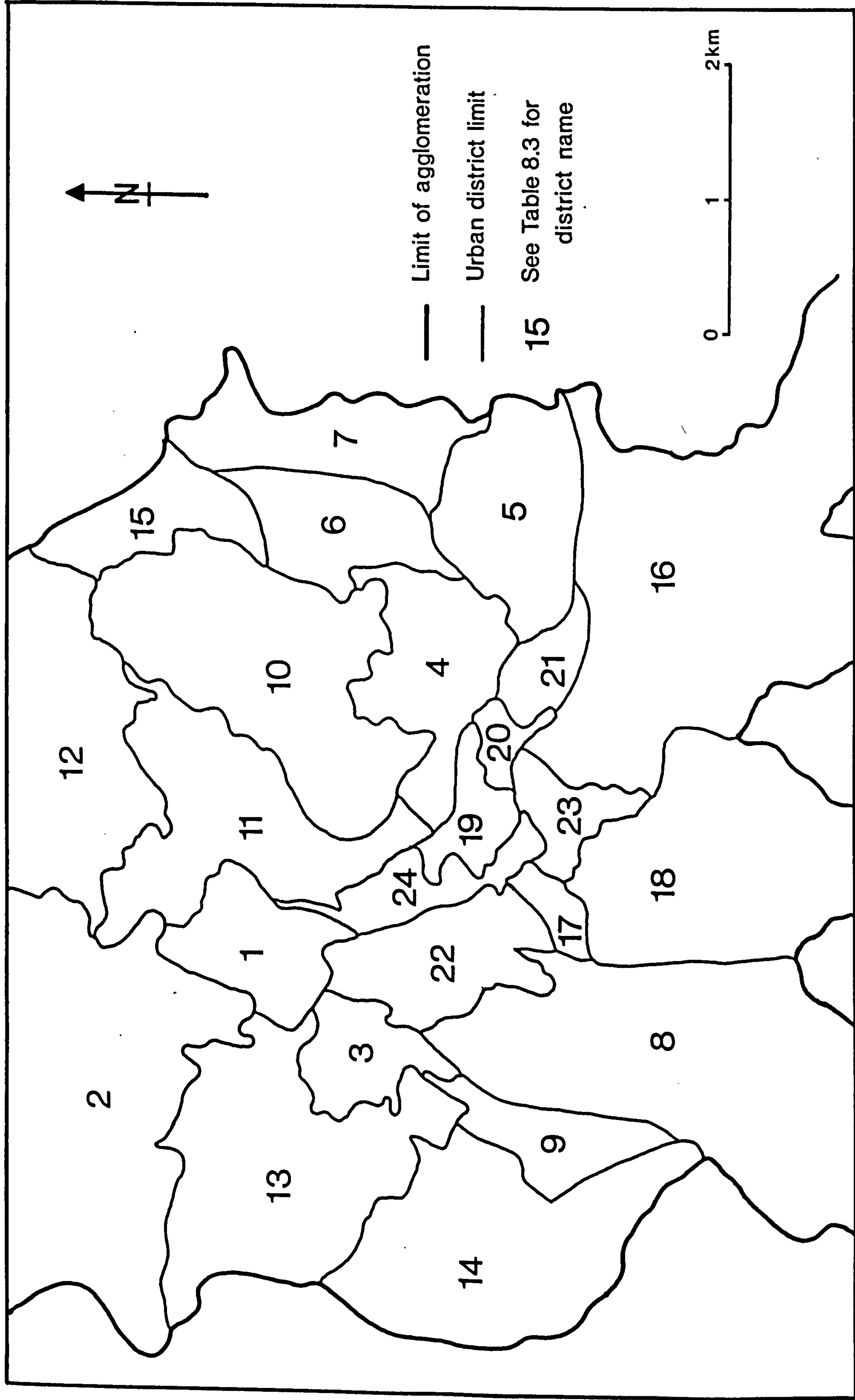
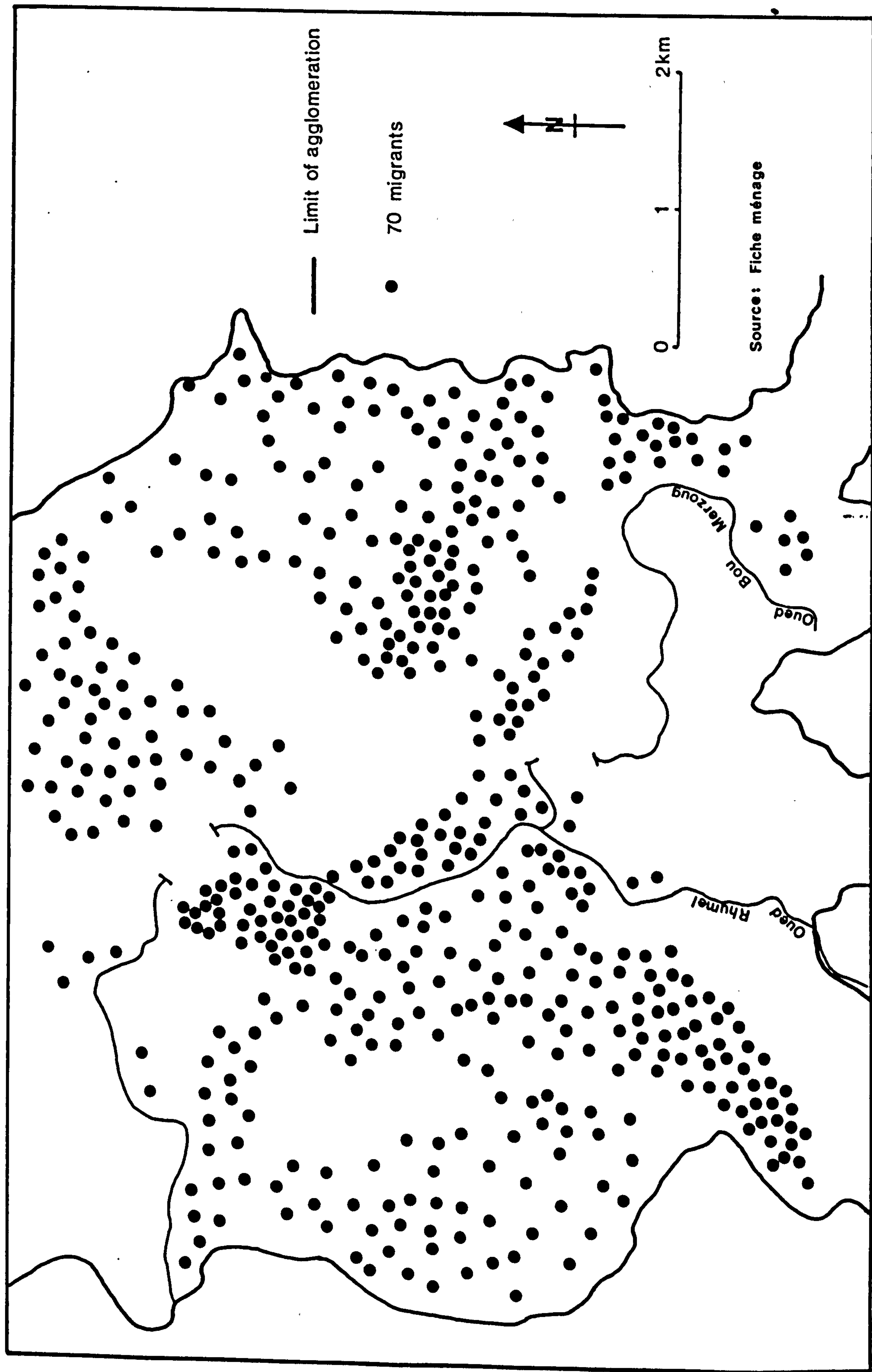


TABLE 8.3 Distribution of Recent (1966-1977) Migrants by
Area of Residence; Constantine 1977

	Migrant Population	Percentage
1. Medina	3067	8.8
2. Sidi M'cid	434	1.2
3. Centre ville	972	2.8
4. SMK inférieur	2580	7.4
5. Daksi	1891	5.4
6. SMK supérieur	904	2.6
7. Cité Abbas	1396	4.0
8. Bellevue	5382	15.4
9. Ciloc	854	2.4
10. Mansourah	1073	3.0
11. El-Kantara	836	2.4
12. Emir Abdel Kader	3074	8.8
13. Quartier Amirouche	2194	6.3
14. Domaine Améziane	2247	6.4
15. Bidonville Sarkina	449	1.3
16. 4 ^e km	1798	5.1
17. Cité des Chasseurs	634	1.8
18. Cité des Fonctionnaires	160	0.4
19. Châlet des Pins	615	1.8
20. Cité Bentellis	525	1.5
21. Cité des Muriers	768	2.2
22. Bardo	1590	4.5
23. Arcades Romaines	143	0.4
24. Avenue de Roumanie	1427	4.1
TOTAL	35013	100.0

Source: Data extracted from the fiches ménages (1977 census).

Fig.8.4 DISTRIBUTION OF MIGRANT POPULATION, 1977



Cité Daksi (5.4 per cent) and 4^e km (5.1 per cent). On the whole, over three-fifths of the recent migrants are found in these eight areas of Constantine. The remaining 36.5 per cent are scattered all over the city.

A better insight in the analysis and of more significance is achieved by examining the percentage of migrants in the total population of each area. Considering the 1966-1977 period, it is noted that over a half of the areas have over 10 per cent of their population made up of migrants (TABLE 8.4 and Fig. 8.5). It is worth mentioning that in bidonvilles such as Avenue de Roumanie (21.7 per cent), Plateau du Mansourah (19.2 per cent) and 4^e km (18.2 per cent), the proportion of migrants relative to their total population is high but not as high as one would have expected; this is mainly due to the fact that our study considers the very recent migration flows. Similarly, the new high rise areas such as Cité des Fonctionnaires (23.8 per cent) and Cité Daksi (21.6 per cent) have recorded high percentages of migrants in their overall population. Among the areas with the lowest proportions are the Medina (6.6 per cent), El Kantara (5.7 per cent) and the Centre ville (4.8 per cent). The latter areas have reached saturation stage and therefore can no longer spatially expand or absorb newly arriving population. Nevertheless, when looking into migration flows from 1962 to 1977 (TABLE 8.5), one notices that while the migrants settled in Constantine between 1962 and 1965 are found relatively spread over the city, those who arrived later tend to concentrate themselves in particular areas of the city. Such a trend towards clustering during the latter period (1966-1977) reflects on the one hand physical

TABLE 8.4 Distribution of Recent Migrant and Total Population
by Area of Residence; Constantine 1977.

	Total (1) Population	Migrant (2) Population	Percentage
1. Medina	46577	3067	6.6
2. Sidi M'cid	5931	434	7.3
3. Centre ville	20443	972	4.7
4. SMK inférieur	25935	2580	9.9
5. Daksi	8736	1891	21.6
6. SMK Supérieur	8775	904	10.3
7. Cité Abbas	17242	1396	8.1
8. Bellevue	42193	5382	12.8
9. Ciloc	10808	854	7.9
10. Mansourah	5592	1073	19.2
11. El-Kantara	14717	836	5.7
12. Emir Abdel Kader	31218	3074	9.8
13. Quartier Amirouche	24931	2194	8.8
14. Domaine Améziane	22602	2247	9.9
15. Bidonville Sarkina	2993	449	15.0
16. 4 ^e km	9882	1798	18.2
17. Cité des Chasseurs	8362	634	7.6
18. Cité des Fonctionn- aires	672	160	23.8
19. Chalet des Pins	6117	615	10.1
20. Cité Bentellis	6054	525	8.7
21. Cité des Muriers	9464	768	8.1
22. Bardo	12452	1590	12.8
23. Arcades Romaines	1352	143	10.6
24. Avenue de Roumanie	6581	1427	21.7
TOTAL	349629	35013	10.0

Source: 1) 1977 census (TRC)

2) Data extracted from the fiches ménages (1977 census)

Fig.8.5 PERCENTAGE OF MIGRANTS IN THE TOTAL POPULATION
OF CONSTANTINE BY DISTRICT

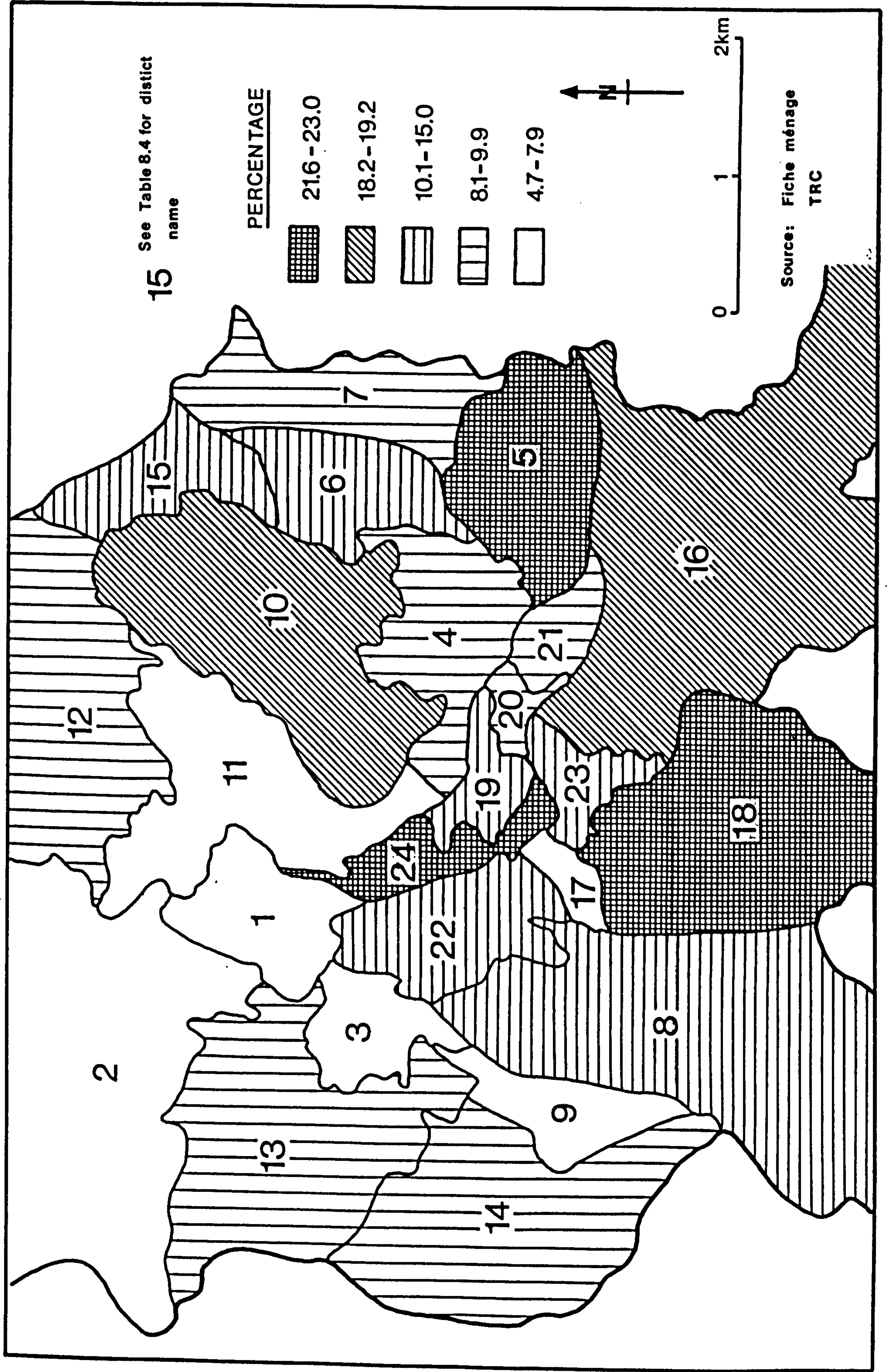


TABLE 8.5 Percentage of the 1962-1965 and 1966-1977 Migrants in
the Total Population of Constantine by Area of
Residence, 1977.

	TOTAL POPULATION (1)	MIGRANT POPULATION ⁽²⁾					
		1962-77		1962-65		1966-77	
		Total	%	Total	%	Total	%
1. Medina	46577	6210	13.3	3143	6.7	3067	6.6
2. Sidi M'cid	5931	674	11.4	240	4.1	434	7.3
3. Centre ville	20443	2344	11.5	1372	6.7	972	4.8
4. SMK inférieur	25935	4172	16.1	1592	6.1	2580	10.0
5. Daksi	8736	2482	28.4	591	6.8	1891	21.6
6. SMK supérieur	8775	1642	18.7	738	8.4	904	10.3
7. Cité Abbas	17242	2958	17.2	1562	9.1	1396	8.1
8. Bellevue	42193	9031	21.4	3649	8.6	5382	12.8
9. Ciloc	10808	1436	13.3	582	5.4	854	7.9
10. Mansourah	5592	1402	25.1	329	5.9	1073	19.2
11. El-Kantara	14717	1854	12.6	1018	6.9	836	5.7
12. Emir Abdel Kader	31218	4922	15.8	1848	5.9	3074	9.9
13. Quartier Amir- ouche	24931	3707	14.9	1513	6.1	2194	8.8
14. Domaine Améziane	22602	3500	15.5	1253	5.5	2247	10.0
15. Bidonville Sarkina	2993	667	22.3	218	7.3	449	15.0
16. 4 ^e km	9882	2434	24.6	636	6.4	1798	18.2
17. Cité des Chasseurs	8362	1382	16.5	748	8.9	634	7.6
18. Cité des Fonctionnaires	672	229	34.1	69	10.3	160	23.8
19. Chalet des Pins	6117	949	15.5	334	5.5	615	10.0
20. Cité Bentellis	6054	1007	16.6	482	7.9	525	8.7
21. Cité des Muriers	9464	1547	16.3	779	8.2	768	8.1
22. Bardo	12452	2579	20.7	989	7.9	1590	12.8
23. Arcades Romaines	1352	188	13.9	45	3.3	143	10.6
24. Avenue de Roumanie	6581	1878	28.5	451	6.8	1427	21.7
TOTAL	349629	59194	100.0	24181	100.0	35013	100.0

Source: 1) 1977 census (TRC)

2) Data extracted from the fiches ménages (1977 census)

constraints for expansion facing the city and on the other hand the general situation in housing provision and allocation. For those migrants who do not meet the established criteria on which accommodation is provided by local authorities, there is a general movement towards bidonvilles areas.

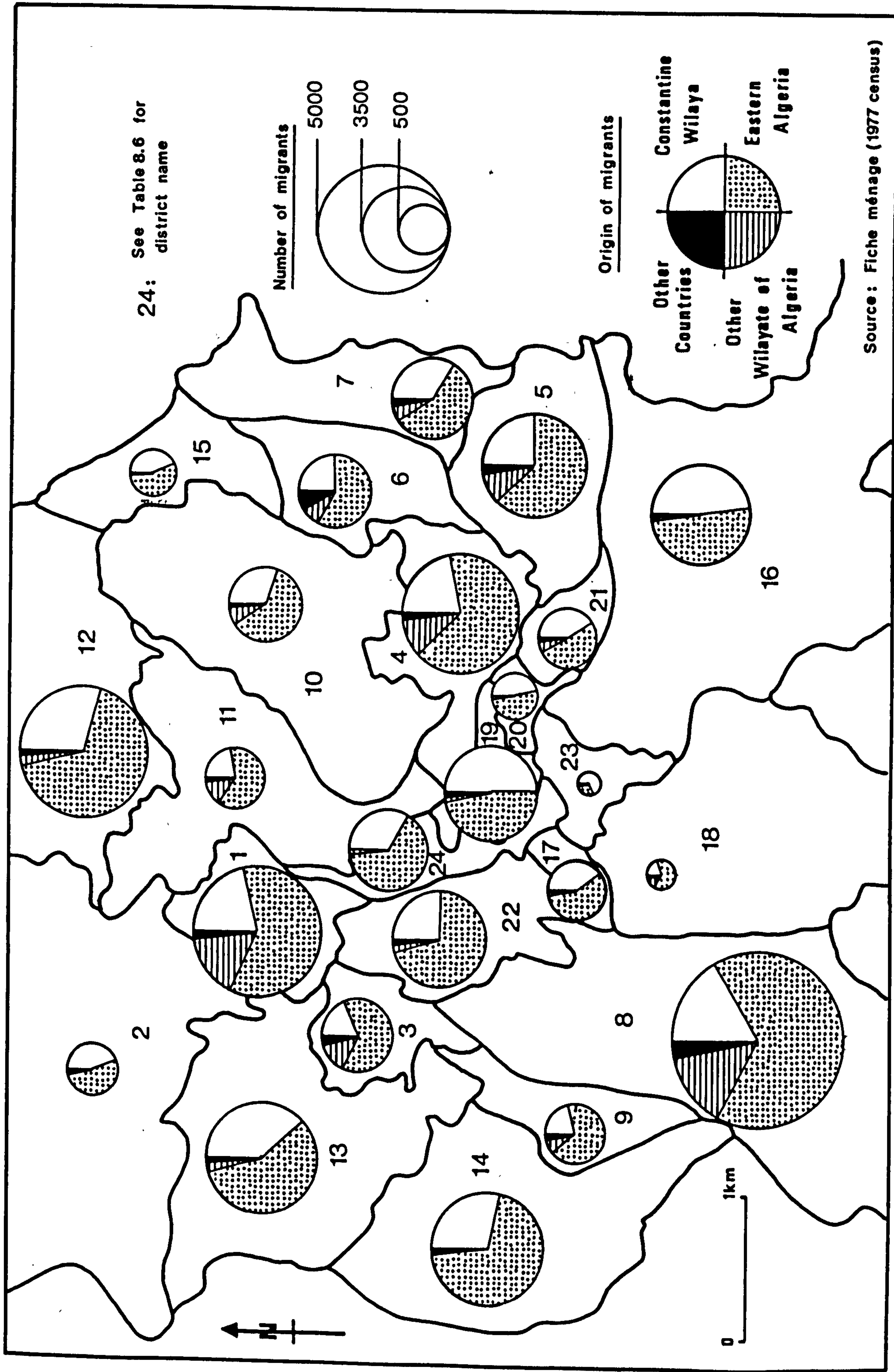
Having described in general terms the spatial distribution of migrants together with their percentage in the total population of the areas of which they are part, it is equally useful to indicate the contribution of each origin to the total volume of migrants within each area of the city. The summarisation of detailed results in TABLE 8.6 and Fig. 8.6 shows that migrants from the Constantine wilaya predominate in all cases with the exception of four, namely the Medina, the Domaine Améziane, the Centre ville and Cité Emir Abdel Kader. In effect, in the case of the Medina, the Domaine Améziane and the Centre ville, migrants from the Petite Kabylie (Jijel and Béjaia wilayate) respectively represent 41, 25 and 19 per cent of their overall migrants; whereas in the case of the Cité Emir Abdel Kader, migrants from Skikda constitute 30 per cent. The proportion of migrants from Constantine wilaya varies from 16.6 per cent in the case of the Bellevue area to 67.8 per cent in the case of the Arcades Romaines. The share of migration from the Petite Kabylie and Oum el Bouaghi wilaya is, in most cases, substantial. The contribution of the surrounding wilayate (Skikda, Guelma, Sétif) is noticeable but to a lesser extent. As far as the remaining sending areas share is concerned, only Algiers and Batna regions seem to have some impact.

TABLE 8.6 Distribution of the Recent (1966-77) Migrant Population by Origin and by Area of Residence in Constantine¹
(in %), 1977.

Area of residence	Constantine															Southern Algeria	Abroad	Total
	Origin (place of birth) (Jijel + Béjaia)																	
		Petite Kabylie (Jijel + Béjaia)	Oum el Bouaghi	Skikda	Quelma	Sétif	Tébessa	Batna	Algérois	Oranais	Arraba		M'Sila					
1-	Medina	21.3	25.1	10.2	8.5	6.0	5.7	2.1	3.0	4.0	0.5	11.6	2.0	100				
2-	Sidi M'Cid	44.0	25.6	1.1	21.0	3.2	0.2	2.1	-	0.5	0.2	-	2.1	100				
3-	Centre ville	18.4	19.0	10.4	7.5	10.0	8.1	4.5	4.7	8.5	1.4	3.8	3.7	100				
4-	SM inférieur	22.0	13.5	9.7	4.9	12.1	7.7	9.7	8.3	6.2	1.2	3.1	1.6	100				
5-	Daksi	24.9	12.8	9.7	7.8	15.6	4.8	6.0	6.3	5.9	1.5	2.1	2.6	100				
6-	SM supérieur	24.2	13.9	15.8	7.2	8.3	3.0	8.0	2.5	3.3	0.8	4.3	8.7	100				
7-	Cité Abbas	33.7	12.8	22.5	8.9	6.1	2.6	1.4	3.1	2.9	0.5	3.1	2.4	100				
8-	Bellevue	16.6	15.8	11.2	9.3	8.0	7.5	8.2	6.4	9.2	1.4	3.2	3.2	100				
9-	Cilloc	21.4	19.5	11.7	11.6	8.3	8.8	2.6	4.8	3.7	1.6	3.9	2.1	100				
10-	Plateau du Mansourah	30.1	12.3	16.2	10.2	11.2	4.1	3.4	3.1	5.7	2.2	0.6	0.9	100				
11-	El Kantara	22.1	17.1	11.4	14.7	4.4	6.0	5.6	3.0	9.5	1.7	2.6	1.9	100				
12-	Emir Abdel Kader	29.5	19.1	7.6	30.2	4.5	2.9	1.1	1.5	1.5	0.2	0.8	1.1	100				
13-	Quartier Amirouche	38.1	27.5	5.6	11.8	5.0	6.2	1.0	0.8	1.9	0.1	1.1	0.9	100				
14-	Domaine Améziane	28.6	41.0	6.3	10.4	4.6	3.7	0.6	3.1	0.6	0.1	0.6	0.4	100				
15-	Bidonville Sarkina	43.7	9.3	14.5	24.7	4.4	0.4	1.4	1.4	0.2	-	-	-	100				
16-	4 ^e km	48.1	10.8	15.1	9.9	10.5	1.1	1.1	1.5	0.3	0.1	1.0	0.5	100				
17-	Cité des Orsaeurs	39.9	16.4	18.3	8.2	8.5	3.0	0.9	2.4	1.6	-	0.6	0.2	100				
18-	Cité des Fortionnaires	20.0	15.7	20.0	6.2	6.2	1.9	7.5	6.2	10.0	0.6	3.8	1.9	100				
19-	Orâlet des Pins	49.6	20.8	11.5	5.8	5.1	2.1	0.7	1.6	0.5	0.2	0.3	1.8	100				
20-	Cité Bentellis	46.9	16.0	13.0	11.6	7.6	1.9	0.4	0.9	1.3	-	0.2	0.2	100				
21-	Cité des Muriers	40.8	12.5	12.4	7.1	9.4	4.5	2.6	2.3	3.1	0.8	1.7	2.8	100				
22-	Barbo	25.4	16.5	22.2	9.1	11.9	5.8	2.0	3.1	1.1	0.1	1.2	1.6	100				
23-	Arcades Romaines	67.8	4.2	15.4	4.2	0.7	-	-	6.3	1.4	-	-	-	100				
24-	Avenue de Roumanie	33.0	16.2	21.3	12.9	11.1	1.5	0.8	1.3	0.7	0.1	0.3	0.8	100				
	TOTAL	28.3	18.7	11.9	11.4	8.1	4.9	3.7	3.7	4.0	0.7	2.7	1.9	100				

Source: Data extracted from the fiches sériées (1977 census).

Fig.8.6 DISTRIBUTION OF MIGRANT POPULATION BY ORIGIN



Further insights on the spatial distribution of migrants may be gained by examining the residential location of the recent migrants according to their place of origin. Such analysis indicates that migrants from the Constantine and Oum el Bouaghi wilayate tend to be represented evenly in all areas of the city (TABLE 8.7). On the contrary, migrants from other regions seem to be predominant in one area rather than another. For example, those migrants coming from Annaba, Batna, and central and western Algeria are mostly found in two particular areas of the city, namely Bellevue and Sidi Mabrouk inférieur, whereas those from the Petite Kabylie are well represented in the Medina and Domaine Améziane. Similarly, the migrants originating from the Skikda wilaya tend to settle, in the great majority of cases at the Cité Emir Abdel Kader. Accordingly, there is every evidence that the residential location of migrants took place, to a great extent, in accordance to the place of origin, supporting the view that migrants arrive to be received by kinsman and friends who steer them through the hazards of their new life and also that they retain close ties with their community of origin (LLOYD, 1979, p.133). Meskaldji's (1975,1979) studies on uncontrolled settlements of Constantine revealed such association when looking at the migrant population origin without testing it however. So, it seems of interest to throw more light on such a process. Useful indication of the existence of such segregation is given by the Index of Dissimilarity (ID), which was initially employed by Duncan and Duncan (1955a) in their study of residential segregation in Chicago. By using this index, it was possible to quantitatively describe any patterns of residential segregation that may

exist in Constantine. Before presenting the results, a few comments may be made on the measurement, usefulness and limitations of this index. "The index indicates the percentage of one population that would have to redistribute itself in order to have the same per cent distribution by spatial units as another population" (LIEBERSON, 1963,p.19). The index ranges from 0 to 100. Complete similarity or absolutely no segregation between two groups would yield the minimum index value of 0; while complete dissimilarity that is complete segregation would yield the maximum index value of 100. These extremes did not occur for the population group under investigation. However, the importance of the index of dissimilarity is that it enables one to measure the extent to which the groups tend towards one of these two extremes. It should be noted that a value of 50 does not indicate a random pattern, the significance of all ID values between 0 and 100 being dependent on the size of the population being analysed. Determining to what extent two population groups are similarly distributed among specified subareas of a city is achieved by summing the differences between the two percentage distributions in each area. The ID is one half of the sum of these differences, as the ID formula below indicates:

$$ID = 1/2 \sum_{i=1}^k |X_i - Y_i|,$$

where X_i represents the percentage of the 'X' population in the i th areal sub-unit, Y_i the percentage of 'Y' population in the i th areal sub-unit, and the summation being over all the K sub-units making up the given universe of territory

such as in this case, the Constantine chef-lieu. Consequently, the index of dissimilarity compares the conformity of two population distributions among a set of areas. Greater details on the calculation of the index of dissimilarity may be found in the works by Duncan and Duncan (1955b), Taeuber and Taeuber (1965) and Lieberman (1963, 1981).

With regard to the index of dissimilarity, one should bear in mind a number of limitations which exist in its application. The index is an average measure representing the situation for an entire city, and thus intentionally does not give any indication of the full complexity and detail of a residential pattern. Similarly, Duncan and Duncan (1955b, p.217) pointed out that "it may be that no single index will be sufficient, because of the complexity of the notion of segregation, involving as it does consideration of spatial pattern, unevenness of distribution, relative size of the segregated group, and homogeneity of subareas, among others". On the subject of difficulties associated with the use of the index of dissimilarity, Lieberman (1963, p.33-36) and Woods (1976) emphasise the profound effects of spatial units and group size on indices of dissimilarity. Lieberman (1963, p.36) wrote "the relationship between the segregation index and the size of the group under study creates two major types of problems. First, there is a purely methodological matter involved in the effect of group size on the sensitivity of the index of segregation. The second difficulty is both methodological and substantive in nature and is of the fact that the index is based on a comparison of per cent distribution and does not take into account the absolute numbers of the groups involved". Woods

(1980, p.181) further noted the need "to know whether segregation, in the spatial sense, has been produced and maintained by discriminatory practises or whether it is merely geographical clustering", because, " spatial separation does not necessarily mean social isolation, nor does spatial mixing imply social integration". Nevertheless, given these limitations, the index is of value in attempting to achieve objective comparison of the levels of segregation of different population groups living within the same spatial context.

For our purposes, the indices of dissimilarity were computed between migrants from different origins for the 24 major areas of Constantine city (see Appendix E). By applying the above formula, it was possible to examine the degree of unevenness in the areal distribution of migrants in accordance to their place of birth and therefore to indicate the extent to which different migrant groups are localised in particular areas of Constantine. The results, summarised in TABLE 8.8, show that the values of indices of dissimilarity, in this case, range from 15.3 to 45.1. The lowest index values were recorded for migrants originated from the Petite Kabylie (15.3) and from the Constantine wilaya (20.1). Such low scores suggest that there exists an overall similarity in the level of dispersion of migrants from these two origins; and thus these two migrant groups are distributed throughout the city in much the same manner as the total population of which they are a part, with only minor and relatively insignificant migrant clusters being found in a few areas.

TABLE 8.8 Size of Migrant Groups and Indices of
Residential Segregation.

Migrant Groups	Size of migrant groups	Index of dissimilarity
Constantine <u>wilaya</u>	9904	20.1
<u>Petite Kabylie</u>	6535	15.3
Oum el Bouaghi <u>wilaya</u>	4175	26.4
Skikda <u>wilaya</u>	3982	24.6
Guelma <u>wilaya</u>	2834	28.5
Sétif <u>wilaya</u>	1703	23.7
Annaba-Tébessa <u>wilayate</u>	1302	45.1
Batna-M'Sila <u>wilayate</u>	1281	33.4
Central Algeria	1419	37.4
Western Algeria	249	43.9
Southern Algeria	959	34.6
Abroad	670	32.0

The value obtained for the Petite Kabylie migrant group is, however, somewhat surprising in the sense that it recorded a lower figure than the larger migrant group, that is migrants from the Constantine wilaya. Indeed, although the migrants from Constantine's surroundings represent the largest group, it ranks as second least concentrated group. The reason why the Petite Kabylie group displays a tendency for even distribution throughout the city may be sought in their economic activities. Out of a total of 489 migrant heads of household involved in commercial activities, 35 per cent originated from the Petite Kabylie. By practising commercial activities, and especially retailing of goods and services, the Petite Kabylie migrants have to be located as near as possible to the customers they serve, and consequently are found in the 'CBD' area as well as in residential areas; which leads to a tendency towards dispersion. Conversely, it is apparent that the degree of spatial concentration is greatest for those migrants coming from Annaba-Tebessa (45.1), Western (43.9) and Central Algeria (37.4) regions. Such values suggest that respectively 45.1, 43.9 and 37.4 per cent of the migrant groups from these three origins would have to be reallocated among tracts in order to achieve an identical distribution. This appreciable degree of concentration in particular areas for these migrants generally reflects the association that exists between long distance migrants together with their higher educational and occupational levels and their chances of being allocated accommodation reserved exclusively for these particular population groups. It follows that segregation does

occur here as a by-product of the housing selection and allocation procedures for employees in the government sector. As TABLE 8.8 shows the segregation indices for other migrant groups lie between the levels of high concentration as exemplified by the migrants from Annaba-Tébessa and the relatively dispersed pattern of settlement of those from the Petite Kabylie. On account of the size of the migrant groups from the Southern Algeria and from abroad it is hard to ascertain the significance of the values of ID for these groups. It is however interesting to note that although cultural reasons existed which might have led one to expect that these two groups would have been strongly segregated, neither of them exhibit very high levels of isolation as measured by the index of dissimilarity.

8.3 Some Implications of Constantine's Excessive Growth.

As a result of interaction between severe physical constraints and the utter divorce between demand and supply of infrastructure for a fast expanding urban population, most of the sub-areas are now seriously overcrowded. According to the 1977 census results, the average rate of occupancy was estimated as 7.1 per housing unit. Overcrowding is even more pronounced when one looks at the number of rooms that form the unit. Indeed 61 per cent of the total housing units have fewer than three rooms (TABLE 8.9).

With respect to infrastructure deficiencies, one must

also mention the serious problems of water supply and traffic congestion that Constantine faces. In the 'modern' part of the city where water systems have been installed, water is supplied, on average for 5 to 6 hours a day. But people, living on the third floor and above,

TABLE 8.9 Size of the housing units for Constantine

Commune and chef-lieu, 1977

Number of Rooms	Commune		'Chef-lieu'	
	N	%	N	%
1	16738	33.2	16286	33.2
2	14289	28.3	13705	27.9
3	11017	21.9	10868	22.1
4	5715	11.4	5615	11.4
5	1661	3.3	1648	3.4
6 & over	994	1.9	974	2.0
TOTAL	50414	100	49096	100

Source: Unpublished 1977 census data.

hardly benefit from the supply because of the inefficiency of the water system. In the 'non-western' areas, the great majority of the population has to rely on public fountains and tanks. The existence or non-existence of water systems in different parts of Constantine stems from colonisation. Wherever Europeans have settled they have installed water systems that serve the European houses and

either terminate at the boundary of the Algerian quarter or end up therein as public fountains. Consequently, it is believed that insufficiency of domestic water supplies derives more from the lack of adequate work and equipment than to scarcity of water resources.

Urban planners encountered such great problems in formulating appropriate development plan for Constantine that the city is still subject to the 1973 master plan version produced by the CADAT. The major criticism to be made is that this agency approaches the city as a separate entity and therefore detaches it from its hinterland. As a result, this approach ignores the existence of interaction within and between regions. This, in turn, adds to the already serious problems that Constantine faces, namely the betterment of the environment and indeed the provision and maintenance of services and amenities. For instance, concentrating investment in urban areas and neglecting rural development increases urban-rural disparities and stimulates further cityward migration for which the cities are unable to cope. Creation and expansion of bidonvilles are the clear evidence of the cities incapacity in providing adequate housing for a fast growing population. Thus, any attempts to better the environment would place insuperable strains on the financial resources of the cities. Demolition of bidonvilles and rehousing of the displaced people are projects that cost vast sums of money but bring no corresponding profits. And examples may be multiplied. Similarly, the acute problems such as housing crisis, water shortage, urban renewal that

Constantine encounters are problems that are insoluble under the existing organisation of municipal government, without financial aid from the national or regional governments, stressing that regional government as well as state assistance are urgently needed in all the urbanised areas. It is equally believed that even the most carefully constructed urban plans and the most ambitious urban development programmes would not, alone, solve Constantine's problems. Indeed, under the present circumstances of increasing urbanisation, there is a pressing need for urban development policy to be supported by judiciously selected complementary policies in the area of rural development. Such a comprehensive development policy approach is seen as essential since the main sources of migrating population are problem areas from a development point of view, and thus it emerges that the issue is directing development to these areas suffering from under-development.

CONCLUSION

This thesis has examined urbanisation in a framework that relates it to population growth, socio-economic development and rural-urban migration. In a historical perspective, Algeria's urbanisation can be considered as being very rapid. Overall urban population expanded explosively and particularly so since the War of Independence that broke out in 1954. Inordinate urban growth and accelerating urbanisation, which is the cumulative of historical, economic and demographic trends, have posed serious socio-economic problems. Interactions between economic and internal migration and especially rural to urban, suggested by many authors, are obviously clear for a number of reasons. As Gilbert (1982, p.27) points out "economic development tends to favour certain geographic areas. Certain regions and cities attract economic activity and population more than others. There is a clear tendency for industry, commerce and other economic sectors to concentrate in particular areas". As a result, certain areas are dynamic whilst the economies of others are growing slowly or even declining. Associated with this tendency is a marked trend for the population to become more spatially concentrated. In the Algerian context, the process of spatial concentration and the shift from rural to urban areas have been further encouraged by the very development strategy adopted. The Algerian development strategy based on industrial growth poles has led, contrary to its objective, to an over-concentration of industrial development in major cities, which in turn has widened the existing regional disparities, since the spatial aspect of development

was ignored. Indeed, national planning has been more concerned with allocation to various sectors than with the location of projects and their impacts on regional and national development. Thus, the development strategy was short-sighted as there was a lack of research to anticipate the intended and unintended effects on spatial mobility of the different development programmes and projects. As a consequence of these differences in level of development between urban and rural areas, substantial urbanward migration was stimulated, and this despite the urban centres being unable to cope with excessive demographic growth because they were ill-equipped. Consequently, rural-urban migration which is the predominant factor within Algerian internal migration, may be regarded as a negative aspect of the development process. This is particularly true of Constantine city which by virtue of its perched site and its function as an administrative centre has little possibility for either spatial or economic base expansion. Yet its growth since the 1950s has been significant. Constantine's geographical location and role as a regional metropolis, however, played essential parts in shaping the migration flows. Between 1954 and 1966, Constantine's disproportionate growth was largely the result of massive migration from rural areas originated from the hardships of the war of Independence with all social disorganisation that accompanied it. Conversely, since 1966, there has been a noticeable slow-down in migration to Constantine and the natural increase has become the biggest component of urban growth. This change in the nature of Constantine's growth during the later period reflects the development policy adopted by the Algerian government.

Algerian policy-makers have indirectly reshaped the migration flows by means of establishing industrial growth poles mainly on the coastal cities. It follows that migration flows to Constantine have been affected in favour of those poles which offer greater employment opportunities than Constantine, for example in Eastern Algeria, Annaba and Skikda.

When focusing more particularly on recent migration (1966-1977) to Constantine, the study findings are essentially in accord with the initial hypotheses. With respect to migrants characteristics, the present study corroborates the findings of other studies. Migration to Constantine has most strongly favoured young adults (with a slight excess of females over males) of predominantly rural origin. Also there is evidence that the great majority of migrants has no formal education and consequently is mainly represented in the lower occupational categories. It was equally clear from the study that the uneducated migrants originated from nearby areas while the better educated travelled longer distances.

As far as the major determinants of rural-urban migration to Constantine are concerned, an attempt to explain migration by the multiplicity of forces present in the movement was made, using the Masser-Gould model. The most prominent findings regarding the general determinants of migration relates to the effect of the location and political status of Constantine on the structure of migration. The present study serves, however, as only a framework for research in this field for it is considered that much more can be learnt by further disaggregating the variables used in the study.

By trying to identify the causal factors of migration, it became evident that there is an enormous gap between the need for the data on migration and the actual supply of such data. The foremost problem was the lack of comparable regional wage data by which to measure, however roughly, the income alternatives facing potential migrants. This gap should be filled by further research in this area. Another weakness of the study was the lack of a questionnaire with which we could have a full understanding of social phenomena depending on various types of enquiry. Rural-urban migration streams could have been better understood if many detailed questions could have been asked of migrants and non-migrants in origin and destination areas. The contribution of a detailed questionnaire in uncovering factors that affect the choice of destination would be invaluable. Even more pertinently, analysis of migration has yet to deal with shifts in the spread, intensity and nature of employment opportunities between towns and villages, and between regions, and to assess the impact of such shifts on the pattern and nature of migration. Consequently, it is hoped that migration analysis, with reference to Constantine, presented here, will serve as a base for continuing exploration of internal migration in the Algerian context, as many aspects of migration that were not looked at deserve particular attention. Much more knowledge on migration is essential for an adequate understanding of the forces which determine the direction and rate of migration and would be very useful in devising effective national and regional policies to reduce regional discrepancies. Accordingly, the conclusions of this study are too tentative to serve as input to policy-makers. The chief objectives of this study have

been to contribute to the understanding of the process of migration from rural to urban areas by indicating facts and establishing relationships. However, some suggestions for policy do emerge.

The problems cited in the thesis call for many different forms of planning, whether social, economic or physical. One approach to the problem of urban centres inadequacies in infrastructure and service provision would be the enlargement of such urban facilities. Such a policy is costly, and as many authors have argued forcefully more urban facilities will mean more migrants. Thus, such an urban policy, by itself, would contribute to further local congestion rather than improve the quality of the urban environment. This substantiates the general view that the policy of redistribution of population flows rests on the assumptions the problems associated with urbanisation are not just urban problems and their solution is not just a matter of urban planning. It is also a matter of national and regional planning, in which social policies should be joined with economic and physical policies in a geographical strategy of development. It follows that urban development policy must be supported by judiciously selected complementary policies in the area of rural development, for the main sources of out-migration coincide with problem areas from a development point of view. Such measures, if adequately implemented, would have the double advantage of scaling down the growth rate of existing large urban centres where the present rate is judged undesirable and decentralising urban development through the establishment of a network of viable

growth away from the main cities. Thus, to reduce rural-urban distortions, a policy for reversing urban and industrial concentration must be pursued by means of co-ordinated economic, social and physical programmes. Such re-orientation is not only consistent with national development goals but also essential. To be successful such a policy must be comprehensive, ordering simultaneously the location of industrial, educational, housing and other programmes and projects (U.N., 1968, p.5). Indeed, for such a policy to have any effect, it is not only needed to increase the share of total resources in rural areas but also to have these resources carefully chosen, allocated and distributed, because for example more rural education of the type available in urban areas unaccompanied by expansion at the same speed of attractive employment opportunities relative to the urban situation would speed cityward migration. Simultaneously, to be effective these comprehensive development programmes must also be accompanied by a population policy. Excessive demographic growth is a major handicap in achieving economic and social development to which the country aspires. While it is true that for the immediate and intermediate period, the population size and distribution has been fixed by past levels of birth and death rates so that population policy will have a limited immediate impact; a successful programme of family planning can make a significant contribution over the long run to the achievement of the major social and economic objectives of development plans. Hence, it is very clear that the solution to the various problems associated with urbanisation is not a simple policy but a package of policies including those whose effects are more immediate as well as

those whose impacts will be felt in the longer run.

Appendix

Appendix A

Rank size of chef-lieux categorised as urban in 1977

	1966 Population	1977 Population
Algiers	884 200	1 473 835
Oran	321 046	490 788
Constantine	245 621	334 656
Annaba	152 423	222 607
Sidi Bel Abbès	88 514	112 994
Sétif	88 212	129 044
Blida	85 823	136 033
Tlemcen	71 872	88 505
Mostaganem	63 744	85 059
Skikda	59 605	91 935
Batna	55 571	102 756
Biskra	53 154	76 988
Béjaia	50 467	73 960
El Asnam	49 776	75 864
Béchar	45 535	56 563
Tebessa	41 094	61 073
Relizane	39 399	55 450
Tiaret	37 990	53 277
Médéa	37 848	57 828
Mascara	36 803	49 370
Guelma	36 308	56 106
Souk Ahras	34 922	52 144
Saida	33 593	55 855
Bordj Bou Arreridj	33 505	54 505
Ain Temouchent	30 683	29 844
Ain Beida	29 719	42 578
Ghardaia	29 533	57 153
Khenchela	28 606	44 223
Tizi-Ouzou	26 643	38 979
Laghouat	26 565	40 156
Sig	26 289	30 104
Jijel	25 737	35 065

El Eulma	25 667	42 756
Djelfa	25 628	47 435
Bou Saada	24 322	46 849
Touggourt	24 298	42 467
Maghnia	24 271	35 053
Boufarik	24 242	33 561
Khemis Miliana	23 903	37 252
Mohammadia	23 321	30 119
Ain Taya	22 212	6 040
Bordj El Kiffan	19 719	46 590
M'Sila	19 657	29 512
Ouargla	19 511	42 098
Douera	19 386	7 283
Beni Saf	18 547	23 764
Ain Benian	16 954	28 572
Miliana	16 975	22 528
Ksar el Boukhari	16 216	25 412
Birkhadem	16 535	17 034
Kolea	16 145	23 838
Bouira	16 119	22 412
El Bayadh	15 308	28 176
Chelghoum Laid	15 111	21 376
Bordj Menaiel	14 530	20 562
Sedrata	14 144	22 732
Hadjout	13 635	18 582
Sougueur	12 848	23 285
Ain M'Lila	13 956	19 452
Mila	12 484	17 267
Frenda	12 478	18 044
Bou Ismail	12 370	24 770
Nedroma	12 155	13 489
Cherchell	11 943	14 685
Ténès	11 929	13 852
Mecheria	11 781	21 295
Arzew	11 700	18 357
Ghazaouet	11 644	10 117
Tissemit	11 359	17 207

Collo	10 828	12 408
El Affroun	10 655	15 462
Lakhdaria	10 347	18 066
Dellys	10 180	12 085
Oued Zenati	9 791	12 565
El Khroub	9 561	14 962
Oued Rhiau	9 494	15 471
Ain Bessem	9 126	13 022
Sour El Ghozlane	9 101	13 767
Azzaba	9 034	12 063
Boudouaou	8 743	15 527
Aflou	8 585	16 320
Es Senia	8 484	14 347
Ain Sefra	8 426	14 786
Cheraga	8 395	13 729
Draria	8 321	1 499
Staoueli	8 291	14 462
Thenia	8 241	10 386
Dar El Beida	6 866	8 778
Berrouaghia	6 585	11 511
Saoula	6 374	2 806
Rouiba	5 699	13 239
Mers el Kebir	5 626	7 455
Zeralda	5 364	8 569
Sidi Aich	5 001	5 930
El Oued	(11 576)	47 173
Ouenza	(18 061)	30 281
A.S. Boukhalfa *	(?)	29 180
A.S. Sidi Salem *	(?)	26 746
Barika	(19 376)	26 315
L'Arba	(14 704)	24 568
El Golea	(13 351)	22 394
Messaad	(18 368)	19 885
Hamma Bouziane	(12 380)	19 252
'Ouled Djellal	(13 875)	19 192
Guerrara	(12 854)	18 026
A.S. Blida*	(?)	17 739

Ain Oussera	(6 907)	17 173
Sidi Aissa	(9 247)	16 898
Tighinef	(11 851)	16 406
Ain Delfa	(9 566)	15 288
El Meghaier	(11 293)	15 285
Ksar Chellala	(9 275)	15 152
Oum-el-Bouaghi	(9 282)	15 123
Régaia	(1 741)	14 959
Sfisef	(11 362)	14 922
Akbou	(10 052)	14 903
Ras el Oued	(9 616)	14 834
Bougara	(13 382)	14 833
Ain Touta	(6 133)	14 693
Hammam Bouhadjar	(11 307)	14 084
Meftah	(7 045)	13 753
El Milia	(7 642)	13 392
Remchi	(9 325)	13 153
El Arrouch	(9 532)	12 920
Tolga	(8 405)	12 607
Mahdia	(7 761)	12 588
Hassi Behbeh	(5 665)	12 322
Draa Ben Khedda	(4 869)	12 310
Dréan	(8 530)	12 170
A.S.Beni Isguen*	(?)	11 328
Metlili	(9 889)	10 880
Ouled Mimoum	(7 472)	10 766
Mouzaia	(6 903)	10 627
Oued Fodda	(7 084)	10 487
Chéria	(5 844)	10 434
El Kseur	(7 423)	10 411
Téniet el Had	(7 532)	10 385
El Kala	(8 357)	10 179
Telagh	(6 885)	9 794
Sebdou	(6 268)	9 740
Khemis el Khechna	(6 991)	9 713
Sidi Okba	(7 480)	9 632
Abadla	(4 666)	9 633
Bougaa	(6 379)	9 564

N'Gaous	(6 443)	9 284
Ain Oulmène	(5 496)	9 077
Gydel	(4 927)	9 073
In Salah	(6 319)	8 806
Telerghma	(5 120)	8 684
Zighout Youcef	(6 999)	8 612
El Amria	(7 069)	8 382
Kais	(5 329)	8 328
Taher	(1 944)	8 311
Lambèse	(5 654)	8 210
Azazga	(5 855)	8 116
Hennaya	(6 618)	7 913
Arris	(5 283)	7 790
Isser	(5 517)	7 710
Timimoum	(4 859)	7 588
Mazouna	(6 039)	7 324
Ben Badis	(5 418)	7 323
Adrar	(4 462)	7 057
El Abiod Sidi Cheikh	(4 118)	6 998
Boghni	(4 715)	6 751
Ain Tédèles	(5 224)	6 606
Sidi Ali	(4 641)	6 518
El Attaf	(4 214)	6 346
Tamanrasset	(2 087)	6 242
Draa el Mizan	(4 571)	6 210
Ferdjioua	(3 840)	6 168
Ain el Melah	(1 225)	6 093
El Hadjar	(6 074)	6 074
Tindouf	(3 323)	6 044
Mérouana	(4 212)	5 895
Chaabet el Leham	(4 594)	5 809
Dahmouni	(3 540)	5 443
Boukadir	(2 895)	5 065
A.S.Cité Messaad*	(?)	5 029
Bir el Ater	(2 006)	4 916
Zahana	(3 318)	4 885
Oued Tlelat	(3 395)	4 868
Bethioua	(3 135)	4 867

Larbaa N.I.	(2 709)	4 826
Douaouda	(2 022)	4 662
Tablat	(3 047)	4 429
Bou Hanifia	(2 899)	4 390
El Karimia	(2 643)	4 387
Amizour	(3 180)	4 192
Bouhadjar	(1 646)	3 989
Ghriss	(2 912)	3 986
Beni Abbès	(2 339)	3 874
El Aouinet	(2 329)	3 655
Ain Boucif	(2 336)	3 589
Ain Kébira	(2 009)	3 369
Boucheougouf	(1 646)	3 206
Stora	(614)	1 845
Birtouta	(1 073)	1 693
Tigzirt	(1 206)	1 585
Beni Slimane	(431)	1 431
Cherchar	(812)	1 364
El Hassasna	(—)	1 162
Réggane	(706)	1 142
Fouka	(9 724)	1 091
Bir el Djir	(513)	806
Djebel Onk	(3 184)	211
In Aménas	(548)	202

(-) Non urban in 1966

* : Secondary agglomerations

SOURCE: 1966 and 1977 census returns

APPENDIX B

Constantine: Number of Births and Deaths, and Natural Increase
(1958-1981)

Year	Births	Deaths	Natural increase
1958	7904	4636	3268
1959	8593	4505	4088
1960	9207	4665	4542
1961	9501	4281	5220
1962	10360	4545	5815
1963	12651	4360	8291
1964	12951	4108	8843
1965	12584	4171	8413
1966	12702	4243	8459
1967	12821	4008	8813
1968	12947	4192	8755
1969	13075	4003	9072
1970	13140	4061	9124
1971	13940	4679	9261
1972	14028	4543	9485
1973	14450	4691	9759
1974	14879	4219	10660
1975	15582	4427	11155
1976	14853	4959	9894
1977	16386	4705	11120
1979	17485	4603	12882
1980	16807	4778	12029
1981	17400	5014	12386

Source: Etat Civil, Constantine.

APPENDIX C

Distribution of the recent Migrants Population by Origin and Period
of Arrival, Constantine 1977

Wilaya	1966-1969	1970-1973	1974-1977	Total 1966-1977
Adrar	-	-	2	2
El Asnam	4	24	19	47
Laghouat	108	148	117	373
Oum el Bouaghi	1709	1548	918	4175
Batna	339	453	316	1108
Béjaia	149	131	118	398
Biskra	189	186	121	496
Béchar	-	8	7	15
Blida	3	7	11	21
Bouira	7	-	1	8
Tamanrasset	-	-	-	-
Tébessa	210	251	125	586
Tlemcen	6	18	9	33
Tiaret	6	10	14	30
Tizi-Ouzou	103	131	83	317
Alger	230	439	336	1005
Djelfa	9	4	2	15
Jijel	2456	2327	1354	6137
Sétif	588	720	395	1703
Saida	3	10	3	16
Skikda	1317	1679	986	3982
Sidi Bel Abbès	6	12	5	23
Annaba	207	305	204	716
Guelma	1046	1062	726	2834
Constantine	3716	3892	2296	9904
Médéa	-	14	7	21
Mostaganem	4	8	15	27
M'Sila	55	73	45	173
Mascara	3	3	5	11
Ouargla	17	21	20	58
Oran	20	50	39	109
Abroad	270	227	173	670
TOTAL	12780	13761	8472	35013

Source: Data extracted from the fiches-ménages (1977 census).

APPENDIX D

Independent Variables Used in the Constantine Model

	Nb. of Migrants	Distance	Total Population	% employed in industry	% Urban	degree of literacy	Unemployment rate
001. Adrar	2	1800	132 522	5.9	10.8	26.7	14.2
002. El Aouana	47	657	833 374	7.2	21.9	29.0	19.0
003. Laghouat	373	610	243 251	15.3	65.5	48.7	12.3
004. Oum el Bouaghi	4175	90	377 240	6.1	32.0	36.2	27.4
005. Batna	1108	130	549 614	9.5	31.4	34.3	24.5
006. Béjaïa	398	242	522 473	16.3	21.5	37.1	18.7
007. Biskra	496	260	456 854	12.8	32.4	36.3	28.4
008. Bêchar	15	1420	123 453	11.0	60.2	51.1	10.8
009. Blida	21	507	828 845	19.9	38.8	49.6	10.4
010. Bouïra	8	330	361 349	12.7	18.3	34.8	17.0
011. Tamaniasset	0	2200	37 147	26.7	42.0	37.9	17.1
012. Tébessa	586	230	327 896	13.8	33.4	28.4	30.5
013. Tlemcen	33	1050	541 557	16.8	39.8	40.5	13.0
014. Tيارت	30	820	568 157	7.7	27.1	27.3	32.1
015. Tizi Ouzou	317	360	823 297	17.1	15.0	40.4	21.0
016. Alger	1005	435	1680 567	28.4	87.2	66.6	7.9
017. Djelfa	15	580	226 865	7.0	42.5	24.5	28.4
018. Jijel	6137	165	457 759	14.3	13.1	31.3	27.3
019. Sétif	1703	140	933 384	11.7	27.9	34.5	24.0
020. Saïda	16	895	256 386	12.5	48.8	38.1	13.0
021. Skikda	3982	90	461 191	18.2	29.7	37.7	29.6
022. Sidi Bel Abbès	23	930	465 669	10.8	42.3	46.4	15.1
023. Annaba	716	170	468 316	32.4	55.7	53.6	10.6
024. Quelma	2834	112	520 161	13.6	29.6	37.4	29.3
025. Constantine*	9904	40	303 122	14.6	24.0	27.6	29.0
026. Médéa	21	470	452 618	11.1	22.5	26.7	21.5
027. Mostaganem	27	780	715 461	9.0	25.0	32.4	24.0
028. M'Sila	173	280	377 962	5.3	24.5	30.0	20.5
029. Mascara	11	830	405 816	12.0	33.8	35.4	13.7
030. Ouargla	58	710	171 281	43.3	55.8	43.1	15.1
031. Oran	109	910	653 664	30.7	85.9	63.9	9.9

*Excluding Constantine Commune

Source: 1977 Census

APPENDIX E

Distribution of the Recent Migrant Population by Area and Origin, Constantine 1977

Origin Area	Constantine	Petite Kabylie	Oum el Bouaghi	Skikda	Quelma	Setif	Annaba & Tebessa	Batna & M'Silla	Algerois	Oranle	Southern Algeria	Abroad	Total Migrants
1. Medina	663	771	313	262	183	175	62	91	123	16	355	63	3067
2. Sidi M'Cid	191	111	5	91	14	1	9	-	2	1	-	9	434
3. Centre ville	179	185	101	73	97	79	44	46	82	13	37	36	972
4. Sidi Mabrouk inf.	569	347	249	126	313	198	251	214	161	31	81	40	2580
5. Cité Deksi	472	243	183	147	296	91	113	119	111	28	39	49	1891
6. Sidi Mabrouk Sup.	219	126	143	65	75	27	72	23	30	7	39	78	904
7. Cite Abbès	471	178	314	124	84	36	19	44	41	7	44	34	1396
8. Bellevue	892	851	604	502	429	402	442	346	498	74	172	170	5382
9. Cilloc	183	166	100	99	71	75	22	41	32	44	33	18	854
10. Plateau Mansourah	323	132	174	109	120	44	37	11	61	24	6	10	1073
11. El Kantara	185	143	95	123	37	50	47	25	79	14	22	16	836
12. Cité Emir Abdel Kader	908	585	234	929	139	89	35	45	46	5	24	35	3074
13. Quartier Amirouché	834	603	122	260	109	137	22	17	43	2	25	20	2194
14. Domaine Améziane	643	920	142	234	102	83	14	70	14	2	13	10	2247
15. Bidonville Sarkina	196	42	65	111	20	2	6	6	1	-	-	-	449
16. 4 ^e km	855	195	271	179	189	20	19	27	6	1	18	8	1798
17. Cité des Chasseurs	253	104	116	52	54	19	6	15	10	-	4	1	634
18. Cité des Fonctionnaires	32	25	32	10	10	3	12	10	16	1	6	3	160
19. Chalet des Pins	305	128	71	36	31	13	4	10	3	1	2	11	615
20. Cité bentellis	246	84	68	61	40	10	2	5	7	-	1	1	525
21. Cité des Muriers	313	96	95	54	72	35	20	18	24	6	13	22	768
22. Bardo	404	253	354	144	189	92	32	49	17	1	20	25	1590
23. Arcades Romaines	97	6	22	6	1	-	-	9	2	-	-	-	143
24. Avenue de Roumanie	471	231	302	185	159	22	12	18	10	1	5	11	1427
Total Areas	9904	6535	4175	3982	2834	1703	1302	2181	1419	249	959	670	35013

Source: Data extracted from the fiches ménages (1977 census)

GLOSSARY

Arrondissement	:	Administrative subdivision of a department
Arch	:	Property that may be inherited but cannot be alienated. Tribal land and a form of property based on labour invested in the land.
Bidonville	:	Shanty town
Bled	:	Back-country, outback
Cadi	:	Judge who interprets and administers the religious law of Islam
Casbah	:	Citadel stronghold
Chott	:	Marsh, swampy area
Colon	:	European settler
Daira (pl.dairate) or arrondissement	:	A sub-division of a wilaya (department)
Dinar	:	Algerian unit of currency
Fellah	:	Peasant, small farmer
Gourbi	:	Type of dwelling made, either of stone with roof of branches or of toub, a mixture of clay and chopped straw.
Kabyles	:	Inhabitants of the Kabylie region
Mechta	:	Village, area
Medina	:	Old quarter of many Arab cities

Oued : Wadi, river or dry-river bed

Sahel : Coast, shore

Wilaya (pl. wilayate) or department : the largest
administrative sub-division.

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