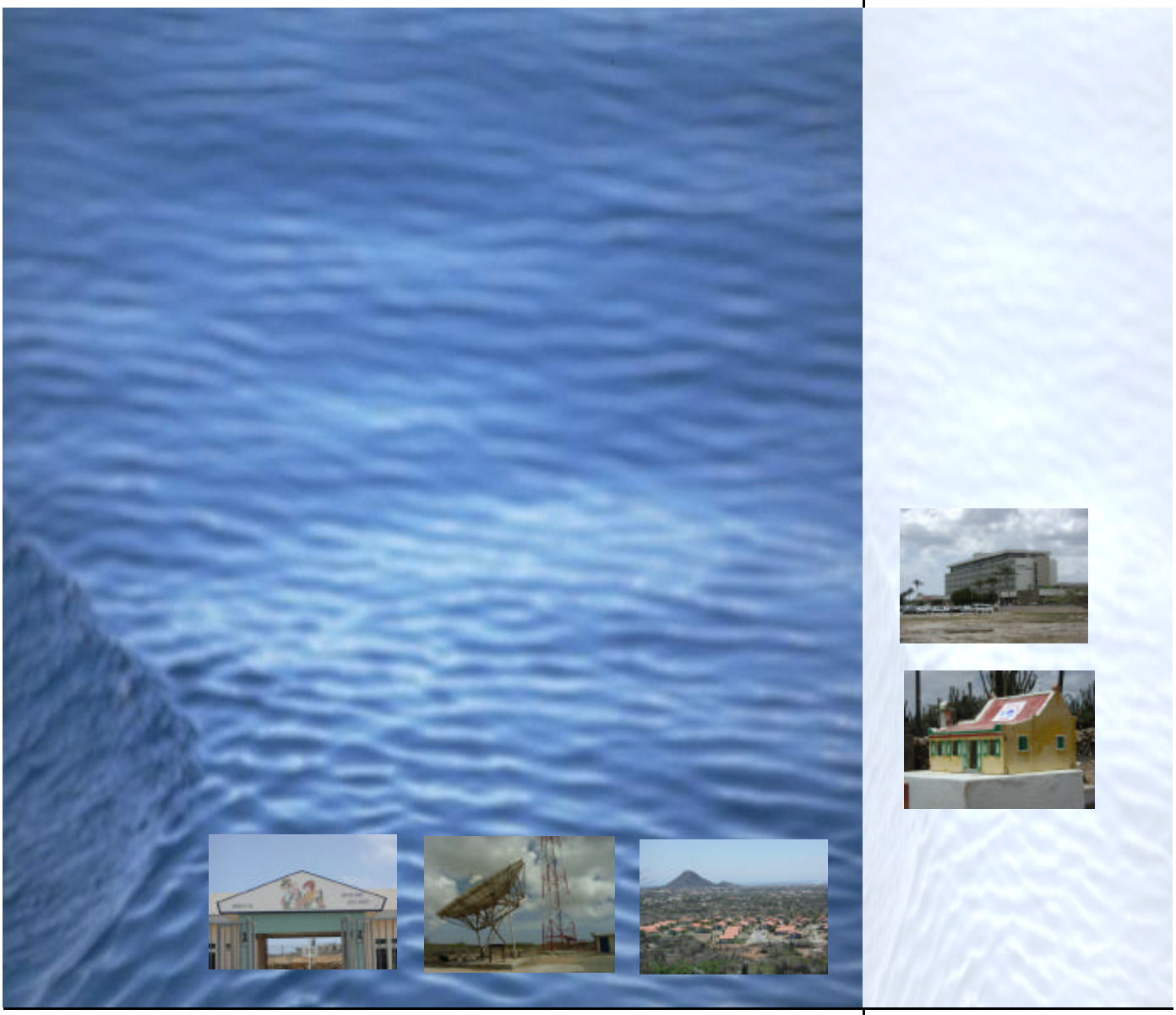
FOURTH POPULATION AND HOUSING CENSUS, ARUBA

The People of Aruba, Continuity and Change

Census 2000 Special Reports

February 2002



CENTRAL BUREAU OF STATISTICS - ARUBA

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FOURTH POPULATION AND HOUSING CENSUS
ARUBA
OCTOBER 14, 2000

The People of Aruba
Continuity and Change

CENTRAL BUREAU OF STATISTICS
Oranjestad, February 2002

Where to order

Central Bureau of Statistics
L.G. Smith Boulevard 160,
Oranjestad,
Aruba,
Dutch Caribbean
Phone: (297) 5837433
Fax: (297) 5838057

Preface

From 14 October till 22 October 2000 the Fourth Population and Housing Census was conducted on Aruba. After a week of intensive work in which a group of 1256 enumerators visited all households on the island, the census team started with the data-processing, editing and tabulation of the census results. To speed up this process the Central Bureau of Statistics made use of some innovative techniques such as imaging and computer aided coding. Already in June 2001 the CBS was able to finish a CD-ROM with Selected Tables. Up to now results from the population census have been used by a large group of organizations from within and outside the public sector.

A population census is an ideal opportunity to draw a picture of the social and demographic characteristics of a population. In this publication the CBS highlights some interesting changes that have taken place on Aruba during the last ten years. The rapid economic developments during the last decade of the previous century have triggered an enormous growth of the population. In less than ten years time the population increased from 66,687 in 1991 to 90,506 in 2000. During this time Aruba was one of the fastest growing countries on earth. The growth of the population has had a profound effect on the composition and characteristics of the population of Aruba. In this publication dr. F.C.H. Eelens describes these demographic and social changes. Dr. F.C.H. Eelens is a senior researcher from the Netherlands Interdisciplinary Demographic Institute (NIDI), who provided technical assistance for the 2000 and 1991 Population and Housing Censuses. The technical assistance of NIDI was financed by development aid from the Dutch government.

Drs. Rendolf A. Lee
Director Central Bureau of Statistics
Oranjestad, February 2002.

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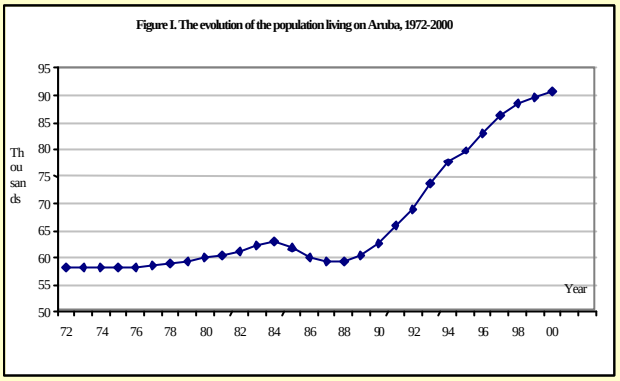
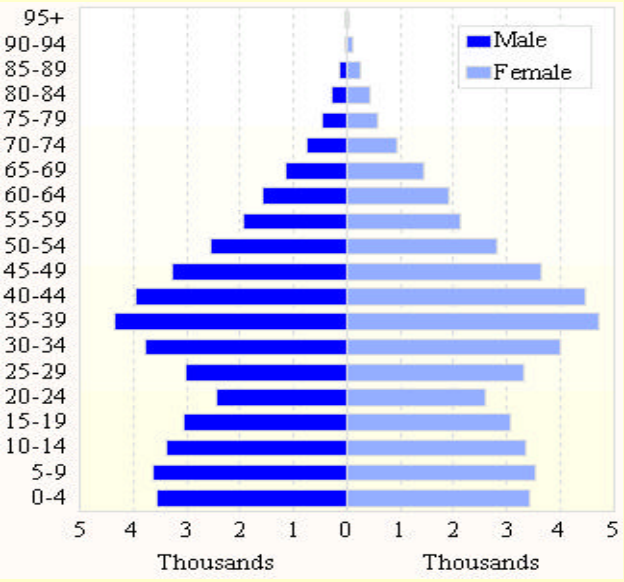


Impressive growth

Migration trends in the last thirty years clearly reflect the economic, political and social events that have taken place in this period. Figure I. depicts the change in the population size in the period 1972-2000, which was mainly the result of changes in migration. The nineteen-seventies and early eighties were a period of relative demographic stability, with low growth rates. From 1979 to 1985, emigration became less pronounced, resulting in moderate growth rates. From 1989 until 1993, Aruba witnessed very high growth rates and indeed was one of the fastest growing countries in the world. In this period, the average growth rate was well above five percent annually. Growth rates have fallen since then: between 1994 and 1997 they were on average still above three percent, but they have come down by about one percent annually since then.

Figure II. Population pyramid Aruba 2000



The ' big generation'

Aruba experienced a very rapid decrease in human fertility. Because of this decline the population pyramid became quite irregular. Another important aspect contributing to the irregular age structure were the high levels of immigration concentrated in the age groups of high economic activity. Figure II. depicts the population pyramid from the 2000 population census. In addition, in Table 1 some indices are presented that describe the population age structure. In many western countries the generation born after World War II and before the onset of the fertility decline (1945-1960), was referred to as the 'baby boomers'. The use of this term in Aruba would be misleading, thus after some deliberation it was decided to call these cohorts the 'big generation'. 'Big' refers to the size of the families they come from, not to any physical characteristic. The movement of the 'big generation' through successive age groups has been a major feature of the population structure since the sixties. The combination of recent immigration with the aging of the 'big generation' has made the age group 35-39 the largest. The large number of people under the age of 15 is caused by the fact that at a certain point in time women from the 'big generation' moved into their reproductive years. However, there is a good chance that the increase of young people will be only temporary. In a few years time, the smaller cohorts of people who are now between 15 and 30 will form the majority of persons in their reproductive years. As individual levels of fertility are not expected to change drastically in the near future, the number of births per year will come down again.

Table I: Percentage growth of population by sex and age group, native and foreign born, 1991-2000

	Native born			*Foreign born*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*
0-14	20.0	25.4	22.6	51.5	65.6	58.3
15-29	-7.4	-0.3	-4.0	94.7	94.3	94.4
30-39	-9.5	-7.8	-8.7	160.9	132.3	144.6
40-54	40.0	40.2	40.1	129.9	129.1	129.5
55-64	53.0	53.5	53.3	16.2	34.4	26.1
65+	56.8	55.3	55.9	12.2	24.8	19.2
Total	15.8	20.4	18.0	88.4	90.9	89.8

Source: Populati on and Housing Census 1991 and 2000

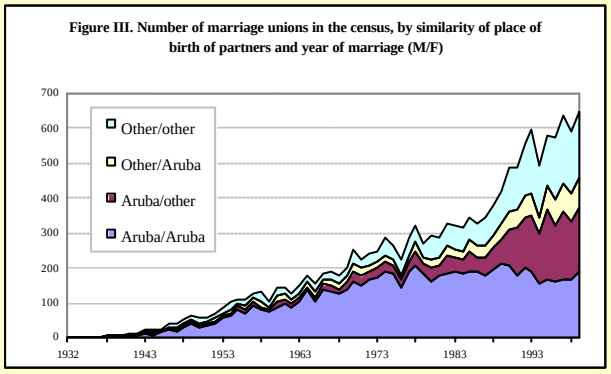
should be reason for concern.

Aruba is growing older

Aging is the inevitable consequence of fertility decline, and accelerates once replacement or sub-replacement fertility is reached. In the earlier stages of the aging process, fertility-induced aging can be observed at the bottom of the age pyramid. At the top of the same pyramid the signs of aging caused by falling mortality based on increasing life expectancy can be seen.
Table 3 presents the percentage growth of the population between 1991 and 2000 for native and foreign-born persons. It shows some characteristics of the Aruban population that

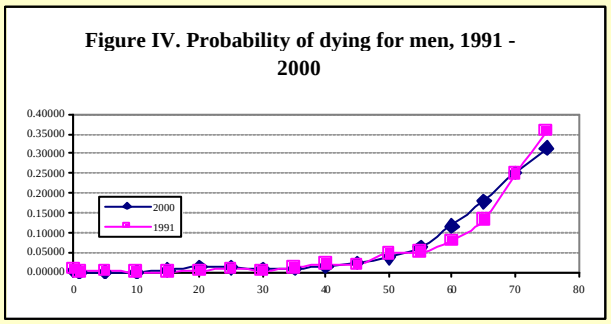
Table II: Relative population by abridged age groups 1960-2001 (percentage)

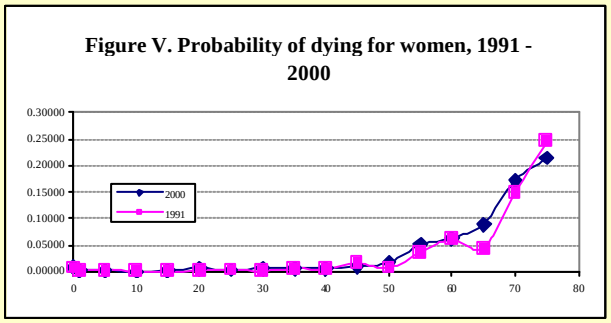
	Census 1960			*Census 1972*			*Census 1981*			*Census 1991*			*Census 2000*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
0-14	20.8	20.5	41.3	18.5	17.8	36.3	13.2	12.6	25.8	12.6	11.8	24.4	11.7	11.4	23.2
15-64	27.0	28.6	55.6	28.6	30.7	59.3	32.6	34.9	67.5	33.3	34.9	68.2	33.2	36.3	69.5
65+	1.3	1.8	3.1	1.9	2.5	4.4	2.8	3.9	6.7	3.0	4.0	7.0	3.1	4.2	7.3
Total	49.1	50.9	100.0	49.0	51.0	100.0	48.6	51.4	100.0	48.9	50.7	99.6	48.0	52.0	100.0
Sex ratios															
0-14			101.5			103.9			104.8			106.8			102.4
15-64			94.4			93.2			93.4			95.4			91.3
65+			72.2			76.0			71.8			75.0			73.0
Total			96.5			96.1			94.6			96.4			92.2
Dependancy ratio	81.9	78.3	79.9	71.5	66.0	68.6	49.5	47.0	48.1	47.1	45.1	46.0	44.7	43.2	43.9
Young persons per 100 older persons	1652.9	1119.2	1332.3	956.5	714.9	825.0	460.9	337.6	385.1	415.7	290.8	348.6	378.2	269.5	315.3
Persons 65+ per 100 pesons 15-64	4.7	6.4	5.6	6.8	8.1	7.4	8.8	10.7	9.9	9.1	11.5	10.3	9.4	11.7	10.6
Mean age	23.3	24.8	23.9	25.4	26.7	26.1	28.9	30.7	29.9	31.5	33.6	32.6	33.0	34.7	33.9



An international marriage market

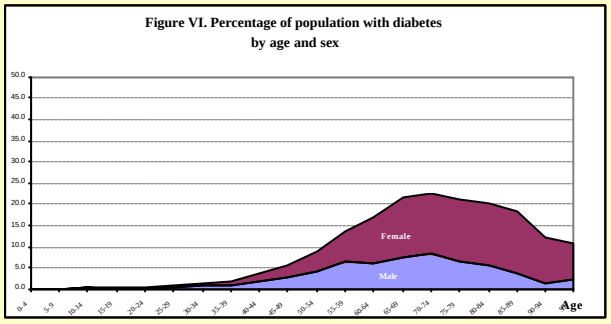
Figure III. shows the number of marriage unions by similarity of place of birth of the partners and year of marriage. Data were taken from the Population and Housing Census 2000 for unions in which both partners were still living together. The number of unions where at least one of the partners is foreign born is substantial and has increased since the beginning of the nineties. Figure III. also shows that many more native men marry foreign-born women than the other way around. This is consistent with the findings of the 1991 census. Since 1991 the number of native-born men and women marrying a foreign-born person is much higher than the number of persons in marriages where both partners are native born.





A year less to live

Figures IV. and 18b V. the age-specific probabilities of dying for men and women for 1991 and 2000. Both graphs clearly show that probabilities of dying in age group 55-70 for men and 60-70 for women are considerably higher in 2000 than in 1991. For men the probability of dying between age 60 and 65 was 8.07 percent in 1991, and rose to 11.8 percent in 2000. Between ages 65 and 70 these probabilities were respectively 13.2 and 18.07. The life expectancy of a man aged 60 was 17.4 in 1991 and 16.3 percent in 2000. This indicates that the loss in life expectancy for men is clearly caused by higher mortality at more advanced ages. For women this pattern is less clear, but we still see an increased risk of dying in 2000 than in 1991 for ages 65 and 75.



The Aruban community and diabetes

Graph VI. shows that a large group within the Aruban community is affected by diabetes. In answer to the question, 4,107 people indicated that they had diabetes, 1,643 men and 2,464 women. It can be expected that a large number of persons have the disease but as yet undiagnosed. The census counted four and a half percent of the total population as having diabetes. The prevalence of diabetes in Aruba increases after age 55. In the age groups 60 to 90 the percentage of people with the disease is well above twenty.

Fertility

Table III. Fertility schedules 1991 - 2000

Censo 91			
Fertility table	Marital fertility	Illegitimate fertility	Total fertility
14	0.0000	0.0101	0.0101
15-19	0.5143	0.0420	0.0571
20-24	0.2816	0.0832	0.1375
25-29	0.1967	0.0672	0.1308
30-34	0.1038	0.0628	0.0858
35-39	0.0457	0.0244	0.0370
40-44	0.0059	0.0064	0.0061
45-49	0.0000	0.0000	0.0000
Total			
	TMFR	ITFR	TFR
	5.74	1.44	2.28
Mean age	22.72	26.77	26.64
Censo 2000			
Fertility table	Marital fertility	Illegitimate fertility	Total fertility
14	0.0000	0.0006	0.0030
15-19	0.4197	0.0433	0.0508
20-24	0.1888	0.0744	0.0994
25-29	0.1491	0.0785	0.1062
30-34	0.0924	0.0549	0.0688
35-39	0.0458	0.0354	0.0363
40-44	0.0085	0.0117	0.0078
45-49	0.0000	0.0000	0.0000
Total			
	TMFR	ITFR	TFR
	4.52	1.49	1.85
Mean age	22.97	27.49	26.99

Source: Population and Housing Census 1991 and 2000, Population registry.

Table IV. Percentage of women 15-19 years with and without child(ren), age and school going status

	Without a child		With one or more child(ren)	
	In school	Not in school	In school	Not in school
15	95.8	4.1	25.0	75.0
16	93.3	6.6	72.7	27.3
17	88.8	10.8	47.4	52.6
18	76.7	23.1	41.8	58.2
19	67.3	32.4	24.2	75.8
	86.3	13.7	36.0	64.0

Source: Population and Housing Census 2000

Figure VII. Age pyramids for native born and foreign-born population, 2000

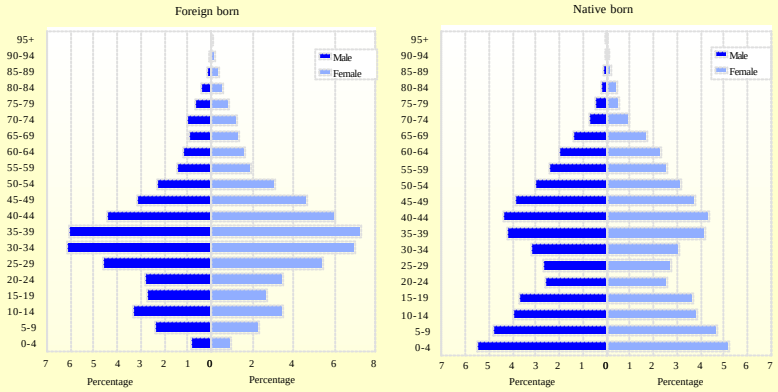


Figure VII. presents the population pyramids for the native born and foreign-born. The relatively large number of children among the native born population clearly stands out. The reason for this is not that fertility in this group has suddenly shot up; it is compensated by the limited number of children among the foreign-born population. The explanation for this is that the Aruba-born children of many foreign-born women are classified as native born. Most of the migrants who have come to Aruba in the last ten years are in the age groups between 25 and 40.

Language

Table V. presents the absolute and relative number of persons by the language they predominantly speak at home with other members of the household, according to information from the last three censuses

Table V. Languages people speak at home on Aruba (1981-2000)

	1981		1991		2000	
	No.	% tot.pop.	No.	% tot.pop.	No.	% tot.pop.
Papiamento	48335	80.1	51061	76.6	59984	70.0
English	6393	10.6	5954	8.9	7001	8.2
Dutch	3013	5.0	3626	5.4	5289	6.2
Spanish	1891	3.1	4946	7.4	11368	13.3
Portuguese	245	0.4	185	0.3	225	0.3
Other	435	0.7	914	1.4	1781	2.1
Total		100.0		100.0		100.0

Population and Housing Census 2000

School enrollment

Table VI. presents the number of students according to the level of education they are in. Interestingly there are many more girls than boys at ISCED level categories 3 and higher.

Table VI. School-attending population by ISCED level category of program, age, and sex

ISCED level of program	Males		Females		Total	
	Absolute	Percentage	Absolute	Percentage	Absolute	Percentage
ISCED level category 0	2,536	21.8	2,370	20.2	4,906	21.0
ISCED level category 1	4,780	41.0	4,701	40.1	9,347	40.0
ISCED level category 2	3,047	26.2	2,976	25.4	6,023	25.8
ISCED level category 3	484	4.2	761	6.5	1,245	5.3
ISCED level category 5	616	5.3	680	5.8	1,297	5.5
ISCED level category 6	71	0.6	250	2.1	321	1.4
ISCED level category 7	9	0.1	25	0.2	35	0.1
ISCED level category 9	108	0.9	105	0.9	213	0.9
Total school-attending population	11,652		11,735		23,387	

Source: Population and Housing Census 2000

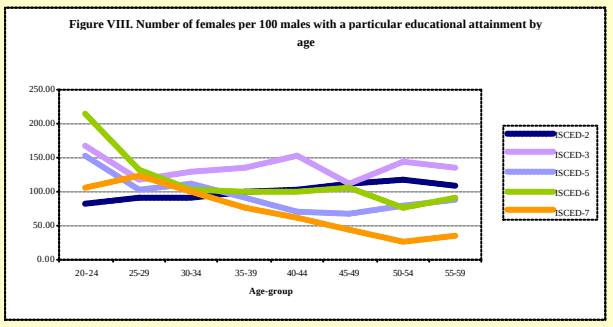


Table VII. Participation of women in the labor force by ISCO-category, 1991 - 2000

	1991			2000		
	Male	Female	Sex ratio	Male	Female	Sex ratio
Armed forces	124	0	0.0	134	0	0.0
Legislators, senior officials, and managers	1637	674	41.2	2413	1349	55.9
Professionals	847	480	56.7	1441	1105	76.7
Technicians and associate professionals	1557	1171	75.2	2539	2106	83.0
Clerks	2066	3812	184.5	2361	5335	225.9
Service workers and shop and market sales workers	2385	3013	116.6	3571	4575	128.1
Skilled agricultural and fishery workers	229	17	7.4	292	32	10.8
Craft and related trades workers	3803	187	4.9	4807	319	6.6
Plant and machines operators and assemblers	1487	40	2.7	1976	125	6.3
Elementary occupations	2388	2943	123.2	3260	4729	145.1
Total	16723	12337	73.8	22794	19675	86.3

Source: Populatio censuses 1991 and 2000. Only employed persons are included from whom job information was available.

Position of women

In figure VIII. each of the lines indicates the number of women for every 100 men by age with a given level of education. There are more women than men with a university education up to age group 30-34, after that the proportion of women declines rapidly. After age 45 fewer than 50 women have a university degree per 100 men. For higher non-university education (ISCED level 6) too, the number of women at younger age groups is much higher than for men.

Table VII. presents the number of males and females at each ISCO-level for 1991 and 2000, together with the sex ratio. The table clearly shows that the position of women on the higher side of the labor market has improved considerably in the intervening nine years. In 1991, only 41.2 women per 100 men were present at the senior managerial level. By 2000, the sex ratio at this level had increased to 55.2. But although serious progress has been made, there are still some two male senior managers for every female manager. The increase in the sex ratios for elementary occupations and sales and service workers on the other hand, is more a consequence of sex-specific migration than of changes in the work status of local women.

Population projections

Table VIII. Evolution of Aruban population according to three scenarios

	2006			2011			2016		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Low	41,822	46,298	88,120	42,500	47,175	89,675	42,984	47,846	90,830
Medium	44,394	48,751	93,145	45,337	49,889	95,226	46,020	50,756	96,776
High	45,352	49,379	94,731	46,337	50,573	96,910	47,029	51,466	98,496

Table 49 shows the sizes of the projected populations according to three scenarios. In the 'low' scenario, it is assumed that the emigration will increase while immigration decreases. In the 'medium' we assume that the level and age pattern of migration will not change in the period 2001-2006. This means we use the net migration schedule observed at the time of the census, for the period 2001-2006. The 'high' scenario looks at Aruba's economy from a brighter perspective. In this scenario we assume that the current economic slowdown will be very temporary. Thus more immigrants will come to Aruba, while there is no reason for people to emigrate.

Figure IX. Absolute number and percentage of persons 60+ years

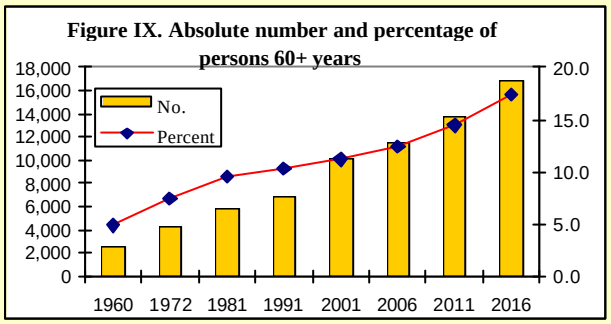
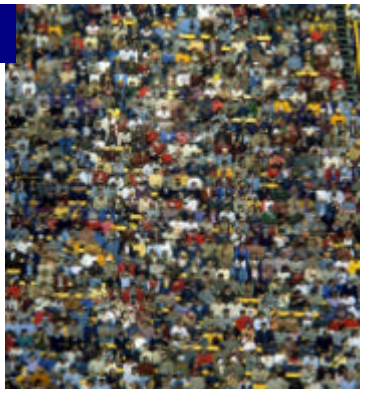


Figure IX. comprises four population pyramids to illustrate the aging of Aruba's population. We have selected the pyramids from the medium scenario. Pyramids from the other two scenarios are slightly different, but present a similar picture. Figure IX. clearly shows how the 'big generation' will progress through the age categories. By the year 2016, the 'big generation' will be approaching retirement. In that year the age group containing the most people will be 50-54 years. The median age (the age at which half the population is older and half younger) is projected to rise from 34.3 in 2000 to around 39 in 2016.

1. The people of Aruba



Unity in diversity

Aruba is a small country. According to the census, 90,506 people[1] were living on the island on census night, 14 October 2000, 43,434 boys and men and 47,072 girls and women. Although the island thus accounts for only about 1.5 per 10,000 of the world population, despite its small size Aruba has a highly diverse population with distinct characteristics. Although more and more foreigners have come to Aruba, the core of its people still consists of the mixed descendants of the 19th century population of indigenous Indians and European settlers. Various migration waves in the past have molded the ethnic and cultural diversity of the island.

Out of the total population, 59,886 people (66.1 percent) were born on Aruba, while the remaining 30,104 (33.9 percent) were foreign-born (for 517 persons, country of birth was unknown). Most migrants originate from surrounding Latin American and Caribbean countries and from the Netherlands. At the moment, residents of Aruba represent 79 different nationalities and have no fewer than 124 different countries of birth. People from countries all over the globe have come to live on Aruba: in recent years large groups of migrants from as far afield as India, China and the Philippines have migrated to the island. And although one would not perhaps expect people from Africa to live on an island in the Caribbean, in fact, people born in seventeen different African countries currently reside on Aruba: Guinea, Liberia, Kenya, Mali, Morocco, Nigeria, Seychelles, South Africa, Zimbabwe, Zambia, United Republic of Tanzania, Egypt, Tunisia, Algeria, Gambia, Ghana and Congo. It has been a major accomplishment of Aruban society that people from so many cultural and ethnic backgrounds have been able to live together in harmony.

Impressive growth

Migration trends in the last thirty years clearly reflect the economic, political and social events that have taken place in this period. Figure 1 depicts the change in the population size in the period 1972-2000 [2].

Figures 2 and 3 show that in the period 1972-2000 the natural growth rate[3] was fairly constant. The demographic changes that took place were mainly the result of changes in migration. The nineteen-seventies and early eighties were a period of relative demographic stability, with low growth rates. In the seventies, the natural growth rate was somewhere between 10 and 15 per thousand. Somewhat higher emigration than immigration rates resulted in overall growth rates of less than 5 per thousand. From 1979 to 1985, emigration became less pronounced, resulting in moderate growth rates of 10 to 18 per thousand. When the local tourist industry started to prosper, there was more work for Arubans in their own country, and less needed to go abroad.

---

[1] The population census in Aruba was a 'de jure' enumeration. Only persons having their usual residence in Aruba were counted. 'Persons with usual residence in Aruba' were defined as: persons who, at the time of the census, had been living on Aruba for one year or longer and persons who, at the time of the census, had been living on Aruba for less than one year, but who had the intention to remain on the island for one year or more. This definition was also used in the censuses of 1981 and 1991.

[2] Appendix 1 presents the table on which Graphs 1, 2 and 3 were based. We used stock data from the last four censuses, together with flow data from the Population Register.

[3] The natural growth rate is the difference between the crude birth rate (number of births in a particular year/total population) and the crude death rate (number of deaths in a particular year/total population).

Figure 1. The evolution of the population living on Aruba, 1972-2000

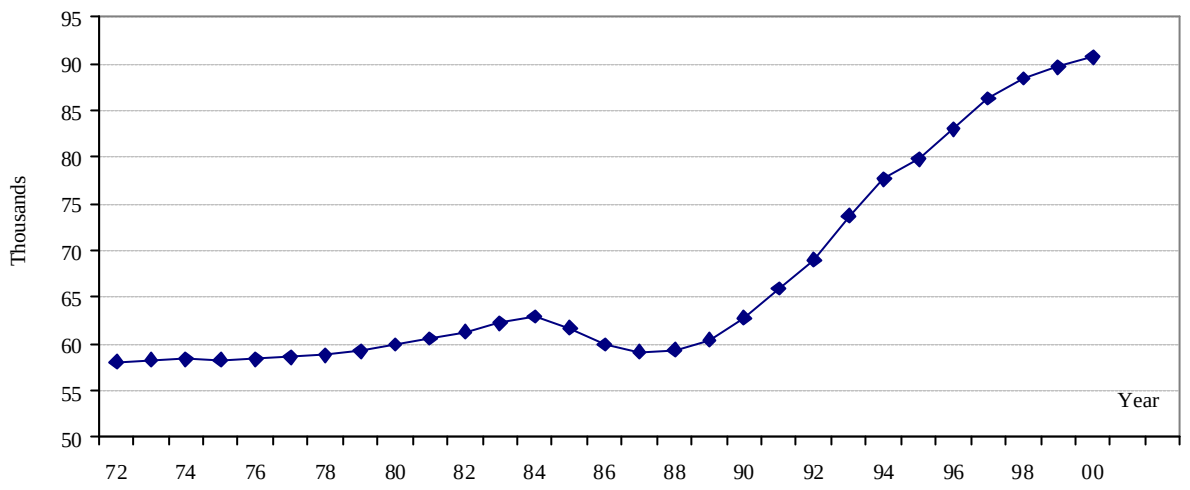


Figure 2. Growth rate and natural growth rate Aruba , 1972-2000

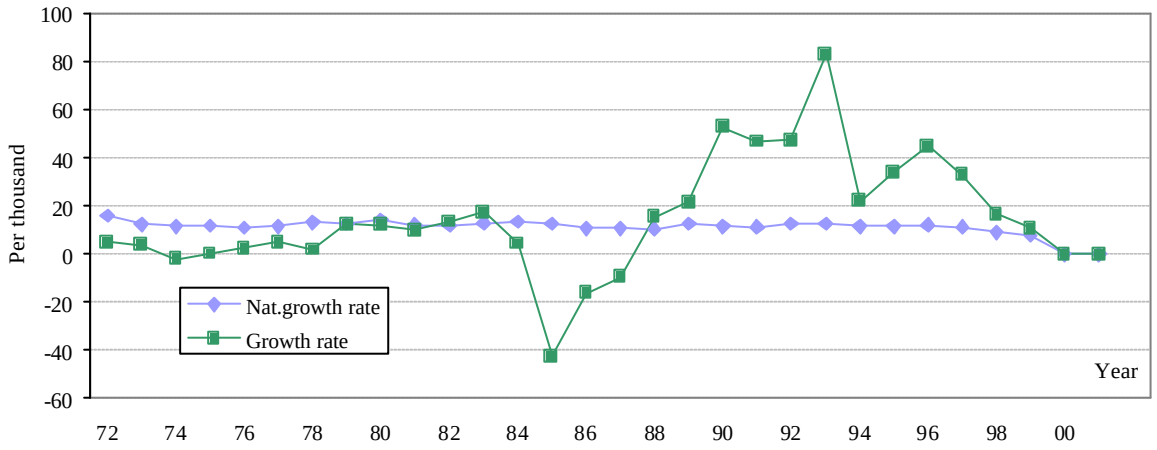
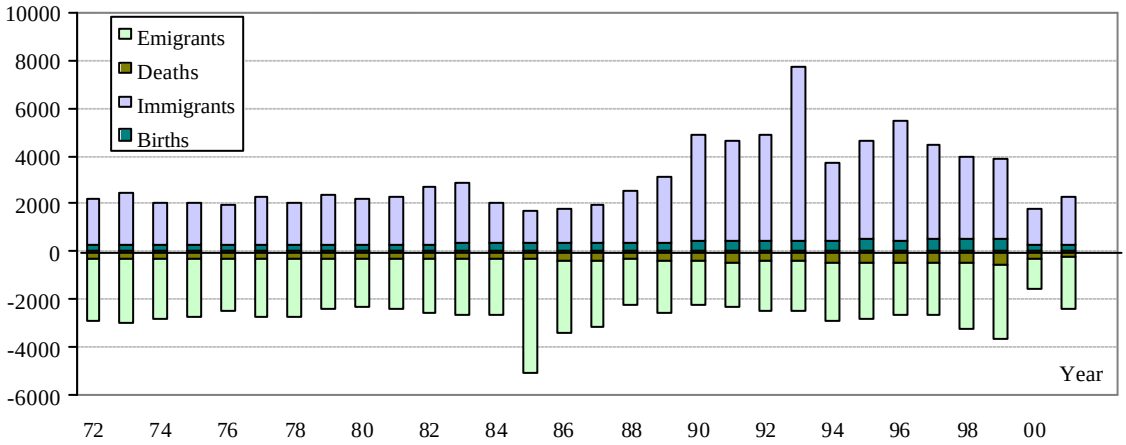


Figure 3. Births, deaths, immigrants and emigrants in Aruba , 1972-2000



The year 1985 was a dramatic one in Aruba's history. In March of that year, the LAGO oil refinery stopped all its operations on Aruba. LAGO had been the main pillar of Aruba's economy since 1927. When it was closed down, unemployment soared from about 5 percent to a staggering 27 percent, with 1,300 LAGO employees losing their jobs overnight. In a matter of months 6,000 to 8,000 more employees were made redundant. In that same year, Aruba underwent an important transition from being a part of the Netherlands Antilles to a country with a 'Status Aparte' within the Kingdom of the Netherlands. The closure of the LAGO refinery triggered an important exodus as many Arubans decided to try their luck overseas and migrated to the Netherlands. In 1985, more than five percent of the population left the country and although emigration rates were less prominent in 1986 and 1987, Aruba still experienced a negative population growth. Of the 62,901 persons residing on Aruba in 1984, 59,929 were left by 1987.

Following the dramatic events of 1985, the government decided to develop Aruba's potentials as an exotic tourist destination more fully. In 1985, Aruba had 2,040 hotel rooms. Through a massive construction campaign, backed by government guarantees and favorable fiscal conditions, the number of hotel rooms increased drastically. At the end of 1990, Aruba had a total of 4,500 rooms and in 1995 no fewer than 6,500. The number of tourists surpassed the half million mark for the first time in 1991, and by 2000, 721,224 stay-over tourists spent a total of 5,247,824 nights on the island. In the period 1985-2000 the number of cruise ship tourists increased almost sevenfold from 72,000[4] to 490,148. The government also found a firm to operate the abandoned oil refinery. In April 1990, Coastal Oil Cooperation started its operation on Aruba. In 2000 the oil refinery was taken over by El Paso.

Although international migration has always been a part of Aruba's demographic entity, much of the change in the size and composition of the population has taken place during the last ten years. The fast growing economy not only solved most of the unemployment problems on the island, but also triggered a large demand for all types of labor. By 1990, the growth in the construction and the hotel and tourism sector led to serious shortages on the labor market, thus creating an overheated economy. For instance, due to the shortages in the construction sector, wages soared. From 1988 to 1990, wages in this sector increased by 47.0 percent, from Afl. 1,655 to Afl. 2,434 [5]. This had the effect of attracting large groups of foreign laborers to Aruba. In 1990 and 1991, the Population Registry recorded 4,436 and 4,229 immigrants respectively. Because the influx of foreign workers was so large, the public administration was unable to handle all the migration formalities. In 1993, the administration made up its backlog and 7,279 new residents were registered, many of whom had arrived in previous years.

From 1989 until 1993, Aruba witnessed very high growth rates and indeed was one of the fastest growing countries in the world. In this period, the average growth rate was well above five percent annually. Growth rates have fallen since then: between 1994 and 1997 they were on average still above three percent, but they have come down by about one percent annually since then.

Throughout Aruba's economic history, migration has acted as a demographic regulator. In times of economic growth foreign laborers came to the island, while in times of economic depression, people left to try their luck overseas [6]. However, the recent flow of so many foreign workers to Aruba is unprecedented in the island's history. The large influx of foreign workers created some serious infrastructure problems on the island. In the early nineties, the shortage of housing facilities created an overheated housing market, and utility companies - such as water, electricity and telecommunications- have found it hard to keep up with the sharp increase in demand caused by rapid population and economic growth. It is a major accomplishment of the water and electricity

[4] Edo Haan, p.83.
[5] Aruba Investment Bank, Aruba Economic Memorandum, 1991.
[6] An historic overview of the link between migration patterns and economic development is provided in F.Eelens (1993).

companies that they were able to cope successfully with this rapid growth in demand. Other services such as the Telephone Company and the Post Office were not able to deal with this unusual situation. Consequently, the general public has noted a serious drop in the quality of their services.

More women than men

On October 14th, 2000, 3,638 more women than men were living on Aruba (43,434 men against 47,072 women), giving a sex ratio of 92.2 [7]. Table 1 shows that the number of women on the island has been significantly higher than the number of men since 1960. However, as more foreign women than men have migrated to Aruba in recent years, the discrepancy between the number of males and females has further increased.

The sex ratio decreases with age. Below the age of 15 there are actually more boys than girls. At these younger ages, there are 102.4 boys per 100 girls. Above the age of 65 there are only 73 men on Aruba per 100 women. As we shall see later on, mortality rates above age 65 are higher for men than for women.

Age-specific sex ratios on Aruba have been disturbed by the immigration of foreign workers. An overview of the sex ratios per broad age category in 1991 and 2000 for foreign and native-born persons is presented in figures 4 and 5. Appendix 3a-b and 4 give more information on this topic. A comparison between figures 4 and 5 shows how the age structure and the sex ratios have been affected by immigration. In 2000, the number of foreign-born persons in the age category 30-39 was almost the same as the number of native born.

Compared with 1991, the sex ratios among native people have come down, i.e. the number of men and women are almost the same. We can still see somewhat more boys than girls (103.9 boys per 100 girls) in the youngest broad age category. From age 0 to 55, there are 101.2 native men for every 100 native women. Among the foreign-born population under the age of 55 there are only 83.3 men per 100 women. Chapter 2 will show what effect this uneven sex distribution has on the marriage market. At older ages, the number of women, both native and foreign born is significantly higher than the number of men.

Unevenly distributed population

With a population of 90,506 and a total area of 180 km^2, Aruba has a population density of 502.8 persons per square kilometer, making it the second most densely populated country in the Caribbean. In mid-1998 Barbados had a population density of 624. The Caribbean region as a whole had a population density of 159 persons per square kilometer. On a global scale Aruba is one of the twenty most densely populated countries. The absolute champion is Macao, where in 1998 no fewer than 25,501 persons were heaped together per square kilometer. For purposes of comparison, at the time the Netherlands had a density of 462 per km^2.

[7] The sex ratio is the number of males divided by the number of females times 100. A sex ratio smaller than 100 indicates that more women than men are present.

Table 1: Relative population by abridged age groups 1960-2001 (percentage)

	Census 1960			*Census 1972*			*Census 1981*			*Census 1991*			*Census 2000*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
0-14	20.8	20.5	41.3	18.5	17.8	36.3	13.2	12.6	25.8	12.6	11.8	24.4	11.7	11.4	23.2
15-64	27.0	28.6	55.6	28.6	30.7	59.3	32.6	34.9	67.5	33.3	34.9	68.2	33.2	36.3	69.5
65+	1.3	1.8	3.1	1.9	2.5	4.4	2.8	3.9	6.7	3.0	4.0	7.0	3.1	4.2	7.3
Total	49.1	50.9	100.0	49.0	51.0	100.0	48.6	51.4	100.0	48.9	50.7	99.6	48.0	52.0	100.0
Sex ratios															
0-14			101.5			103.9			104.8			106.8			102.4
15-64			94.4			93.2			93.4			95.4			91.3
65+			72.2			76.0			71.8			75.0			73.0
Total			96.5			96.1			94.6			96.4			92.2
Dependancy ratio	81.9	78.3	79.9	71.5	66.0	68.6	49.5	47.0	48.1	47.1	45.1	46.0	44.7	43.2	43.9
Young persons per 100 older persons	1652.9	1119.2	1332.3	956.5	714.9	825.0	460.9	337.6	385.1	415.7	290.8	348.6	378.2	269.5	315.3
Persons 65+ per 100 pesons 15-64	4.7	6.4	5.6	6.8	8.1	7.4	8.8	10.7	9.9	9.1	11.5	10.3	9.4	11.7	10.6
Mean age	23.3	24.8	23.9	25.4	26.7	26.1	28.9	30.7	29.9	31.5	33.6	32.6	33.0	34.7	33.9

Figure 4. Population age distribution, 1991

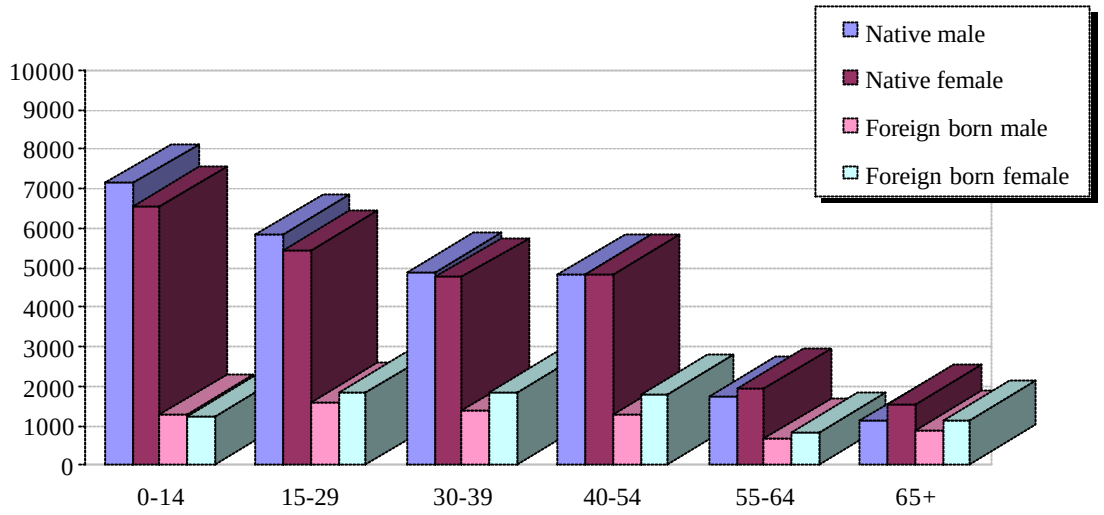
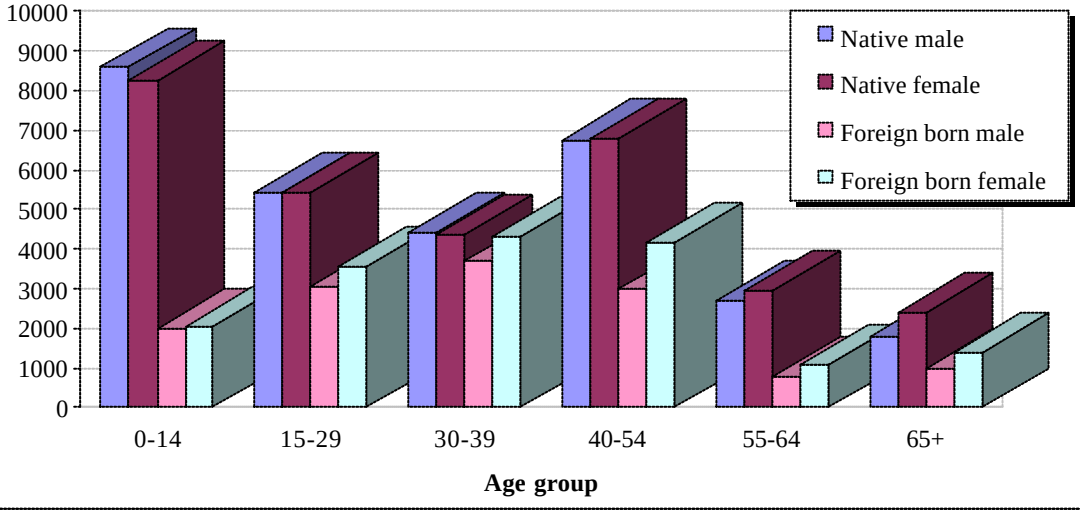


Figure 5. Population age distribution, 2000



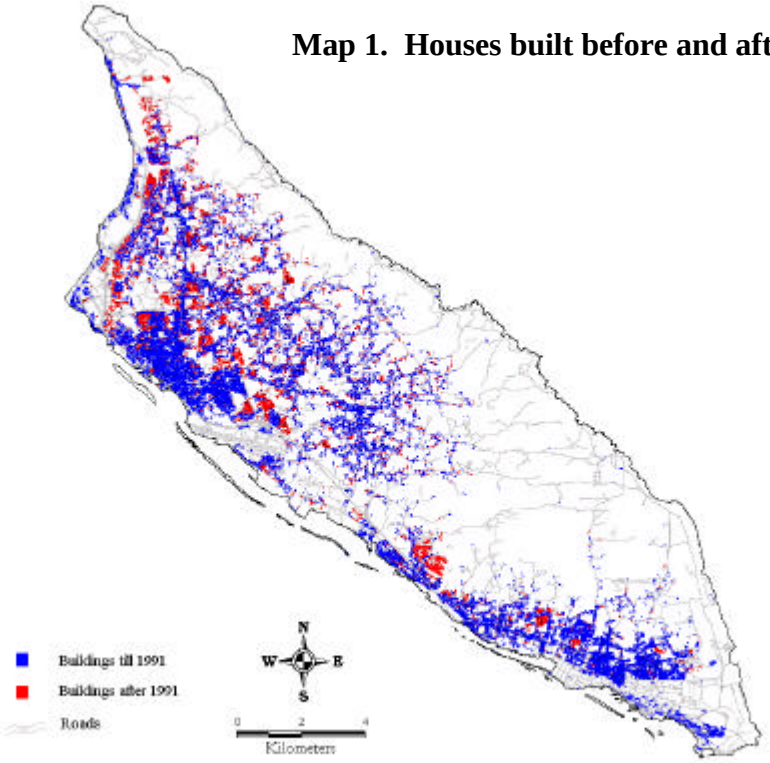
Because of its rapid growth, Aruba has quickly become more densely populated. In 1991, the population density was about 150 persons per square kilometer less than it is now (respectively 354.7 and 502.8 persons per km^2) [8]. Although it is very densely populated, large portions of the island remain uninhabited. Map 1 shows where houses are situated on Aruba and where practically no buildings have been constructed. Each blue or red dot on the map shows the actual position of a house[9]. Blue dots represent houses built before 1991. The red dots show the houses that have been

[8] Social Atlas of Aruba, 1991, p.13

[9] Maps are constructed using the Geographical Information System (GIS) of the Central Bureau of Statistics. During the period July-October 1999, CBS staff did a first round of fieldwork for the GIS. The information gathered in the field was linked to digital maps from 1991, obtained from the Department of Land Surveying and Land Registration (DLV) and to aerial photographs taken in 1998. Additional information on new housing schemes and roads was provided by the Department of Public Works. Based on the digital maps and the information gathered in the field, a Geographical Information System (GIS) was created. CBS will continue to update this GIS for use as an analytical and cartographic tool.

built since then. Throughout the nineties, tourism was the main engine of Aruba's economic development. As most hotels are situated along the beaches to the North West of Oranjestad, it should come as no surprise that much of the housing development took place on that side of the island. Many new houses were constructed around Oranjestad and in the region of Noord. Only few new housing schemes were developed in and around San Nicolas.

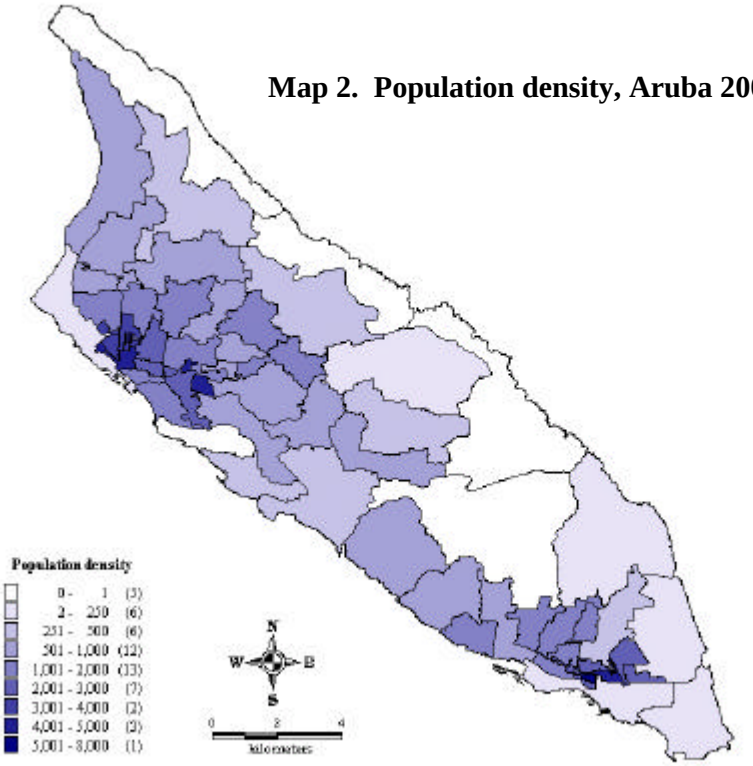
Map 1. Houses built before and after 1991



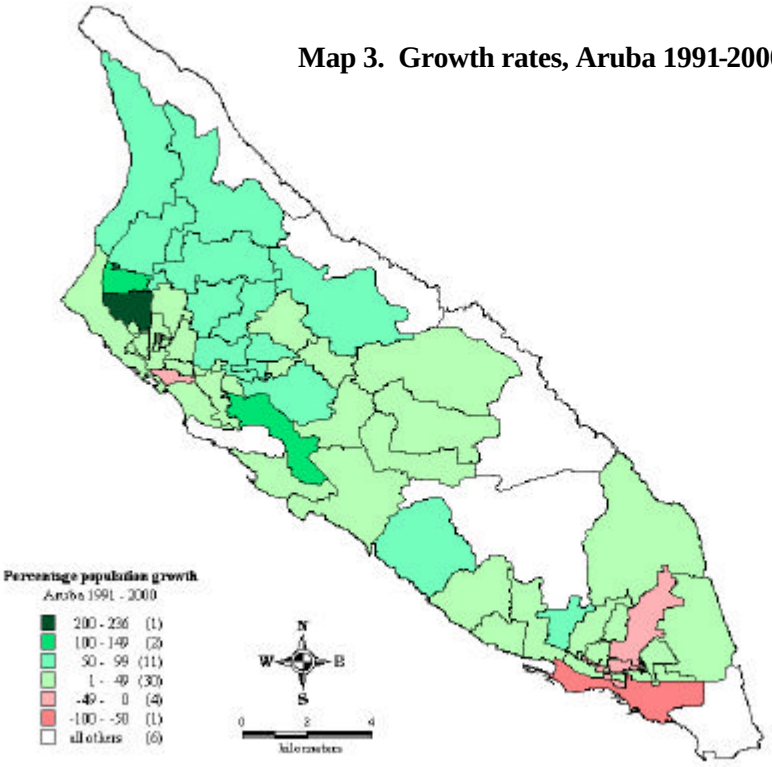
Map 2 shows the population density per GAC-zone[10]. The most densely populated part of Aruba is the Village in San Nicolas: in 2000, 7,785 persons per square kilometer lived here. As expected the town centers of Oranjestad and San Nicolas are densely populated. The most densely populated areas are Madiki Rancho (3,883 persons per square kilometer), Socotoro (4,036), Tarabana (4,820) and Essoville (4,166). The creation of the National Park Arikok has preserved a significant portion of the island in its natural state.

[10] For the analysis of the census data, the census team used the Geographical Address Classification Aruba (GAC). The GAC has a hierarchical structure and consists of three levels: region, zone, and street/barrio. The GAC divides Aruba into 8 regions, and each region into zones and, finally, into streets/barrios. A one-digit code is given to each region; a two-digit code is assigned to the zones, and a five-digit number to the streets/barrios. A full explanation of the GAC system is given in the CBS publication 'GAC-01. Geografische Adressen-Classificatie Aruba' (CBS, Oranjestad, December 1997). Appendix 6 presents two maps of Aruba depicting the subdivisions into regions and zones. The GAC system is an indispensable tool for the data classification and analysis of the 2000 Census. The GAC has been set up in such a way that it is valuable for a wide range of applications. Those interested in applying the GAC in their own field of work can contact the Central Bureau of Statistics for further information.

Map 2. Population density, Aruba 2000



Map 3. Growth rates, Aruba 1991-2000



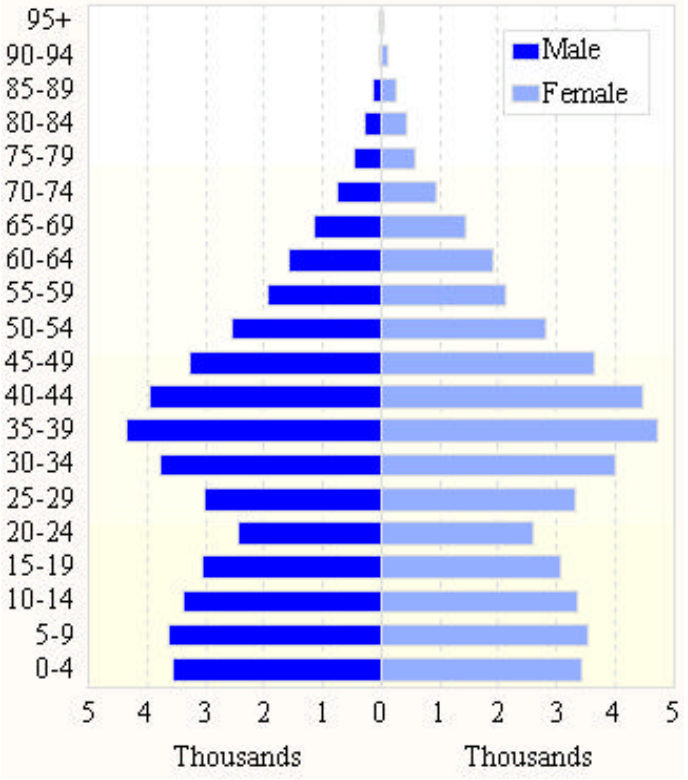
For the last ten years, the epicenter of economic development on Aruba has been concentrated around the hotel area and Oranjestad. Many new housing schemes have been developed in the region of Noord and the areas around Oranjestad. Madiki grew by 254 percent in nine years, experiencing the highest growth on Aruba. Two other zones that grew very rapidly were Pos Abao/Cunucu Abao (122 percent) and Sabana Blanco/Mahuma (140 percent). No fewer than 11 GAC zones grew by between 50 and 100 percent; nine of which were situated in Noord or around Oranjestad. The two other high growth zones are Brazil and Pos Chiquito.

Five zones saw their population decrease in the period 1991-2000. Four of these are situated in San Nicolas: Standard Ville (-7.5 percent), Pastoor Hendrikstraat (-2.4 percent), Van de Veen Zeppenfeldstraat (-16.2 percent), and San Nicolas South other (-63.0 percent). In Oranjestad, the zone 'Nassaustraat' lost 18.7 percent of its population.

The ' big generation'

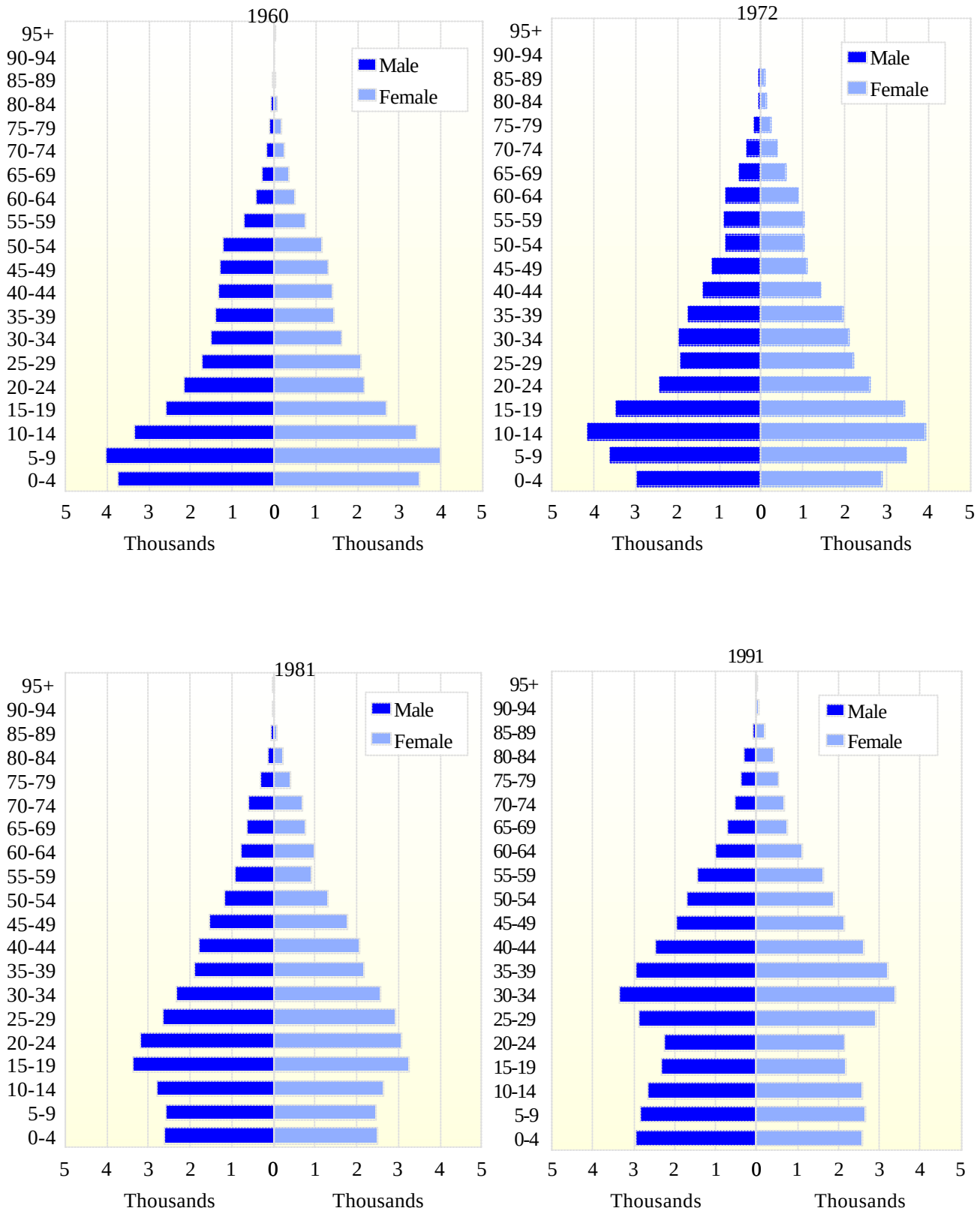
Aruba experienced a very rapid decrease in human fertility from 1958 to 1967. In this period the Total Fertility Rate[11] (TFR) more than halved, from a level of 5.26 births per women to 2.58. Because of this decline the population pyramid became quite irregular. Another important aspect contributing to the irregular age structure were the high levels of immigration concentrated in the age groups of high economic activity. Figures 6 and 7 depict the population pyramids from the subsequent population censuses. In addition, in Table 1 (see p.5) we have brought together some indices that describe the population age structure.

Figure 6. Population pyramid Aruba 2000



[11] The Total Fertility Rate (TFR) is the average number of children that would be born per woman if all women lived to the end of their childbearing years and had children

Figure 7. Population pyramids Aruba 1960-1991



Following World War II many western countries experienced increased levels of fertility. The generation born in the period 1945-1960 in these countries is often referred to as the 'baby boomers'. Aruba never really experienced a baby boom after World War II. In fact, from the 1930's until the late fifties, fertility remained constantly high. As the use of the term 'baby boomers' for the generation born after World War II and before the onset of the fertility decline would be misleading, after some deliberation we decided to call these cohorts the 'big generation'. 'Big' refers to the size of the families they come from, not to any physical characteristic. The movement of the 'big generation' through successive age groups has been a major feature of the population structure since the sixties.

Although in 1960 children under the age of 15 dominated the population pyramid, the effects of receding fertility are already there to be seen: more children in the age group 5-9 than in the group 0-4. Since 1960, the proportion of children in the population has diminished steadily. In 1960, no less than 41.3 percent of the population were younger than 15. By 1991, this percentage had dropped to 24.4. Between 1991 and 2001 only a small further decrease to 23.2 percent was noted. Table 2 shows that regions in the world with high levels of fertility still have large portions of their population at younger ages. Compared with many countries in the region, Aruba experienced its fertility transition fairly early. Most countries in Central and South America and the Caribbean have much younger populations than Aruba. In the Caribbean only Cuba, Barbados and Martinique have similar proportions of population under age 15.

Table 2: Percentage of population under 15, 1998. International comparison.	**Percentage**
Africa	43
Asia	31
Eastern Europe	19
Northern Europe	19
Southern Europe	16
Western Europe	17
Caribbean	30
Central America	36
South America	31
Northern America	22
Oceania	26

The movement of the 'big generation' through the population pyramid has been disturbed by the influx of large groups of migrants that arrived on Aruba since the late eighties. These migrants are mainly in age categories 25 to 45. The combination of recent immigration with the aging of the 'big generation' has made the age group 35-39 the largest. By comparison, there are far fewer persons between ages 15 and 30. Interestingly, the absolute number of persons under 15 is significantly higher than the group between 15 and 30. The large number of people under the age of 15 is caused by the fact that at a certain point in time women from the 'big generation' moved into their reproductive years. Even with constant fertility this resulted in much larger number of births.

In recent years, this large group of children has created some serious problems for educational planning. Currently there is a shortage of classrooms, while the government has been building extra classrooms in various schools for some time now. The 2000 pyramid clearly shows that in a few years time, a large group of pupils will enter secondary education. It is important for education planners and policy-makers to anticipate this increase in students. However, there is a good chance that the increase of young people will be only temporary. In a few years time, the smaller cohorts of

people who are now between 15 and 30 will form the majority of persons in their reproductive years. As individual levels of fertility are not expected to change drastically in the near future, the number of births per year will come down again. There is reason to believe that this trend has already started. In the period 1998-2000, a total of 3,834 children were born on Aruba, compared with 4,328 in the period 1995-1997.

Aruba is growing older

Population aging has become a main concern throughout the developed world. Aging is the inevitable consequence of fertility decline, and accelerates once replacement or sub-replacement fertility is reached. In the earlier stages of the aging process, fertility-induced aging can be observed at the bottom of the age pyramid. At the top of the same pyramid the signs of aging caused by falling mortality based on increasing life expectancy can be seen[12].

The percentage of persons 65 years and older in the Aruban population has not increased drastically since 1991: from 7.0 percent to 7.3 percent. To a layman this may suggest that aging is not a primary concern for Aruban society. A more detailed analysis, however, shows that Aruba will soon be confronted by a severe aging of its population.

The mean age of the population has increased from 32.6 to 33.9 years since 1991 (see Table 1)[13]. It is interesting to note that in 1960 the mean age was only 23.9 years. Much of the aging of the Aruban population is masked by the arrival of large groups of foreign workers that came to Aruba in the past ten years. To understand the aging process, it is necessary to disentangle the aging of native and foreign-born persons. At this moment it is not clear whether the majority of foreigners who have come to Aruba in recent years will stay indefinitely or return to their country of origin. Although many may intend to stay on the island, it is questionable whether they will do so if for instance the economy were to take a plunge. In Curaçao, for example, emigration prompted by the current economic crisis has had a direct effect on the aging of the population. People in the active age groups are more likely to migrate overseas. In the last ten years the mean age of the population of Curaçao has increased by no less than 3.4 years, from 31.7 to 35.1 years[14].

Table 3 presents the percentage growth of the population between 1991 and 2000 for native and foreign-born persons. It shows some characteristics of the Aruban population that should be reason for concern. Since 1991, the number of native persons of 65 and older has increased by 55.9 percent. The increase in the numbers of native men and women in this age-category is almost equal. The growth rate for older foreign-born persons has been much smaller (19.2 percent). The growth of age categories 55-64 and 40-54 among native-born persons has also been impressive, 53.3 and 40.1 respectively. The retirement of the 'big generation', which will happen between five and fifteen

[12] Höhn, p.29.

[13] The evaluation of the census quality showed a slight undercount in the census. Mostly based on the comparisons with the different secondary sources, increment factors were estimated to compensate for the under enumeration of living quarters as well as persons. An estimated increment of 5 percent has been incorporated in the figures of all census tables, irrespective of the type of enumeration unit. The census data user should be aware, however, of the drawback of the use of an increment factor for the presentation of the tables. As it happens, applying an increment factor leads to rounded figures in the tables. As a result, in some cases the detailed items in the tables do not add to the totals. However, to prevent inconsistencies among the totals in the different tables, the decision was made not to correct these apparent miscomputations.

[14] CBS-Curaçao (2001), p.3.

Table 3: Percentage growth of population by sex and age group, native and foreign born, 1991-2000

	Native born			*Foreign born*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*
0-14	20.0	25.4	22.6	51.5	65.6	58.3
15-29	-7.4	-0.3	-4.0	94.7	94.3	94.4
30-39	-9.5	-7.8	-8.7	160.9	132.3	144.6
40-54	40.0	40.2	40.1	129.9	129.1	129.5
55-64	53.0	53.5	53.3	16.2	34.4	26.1
65+	56.8	55.3	55.9	12.2	24.8	19.2
Total	15.8	20.4	18.0	88.4	90.9	89.8

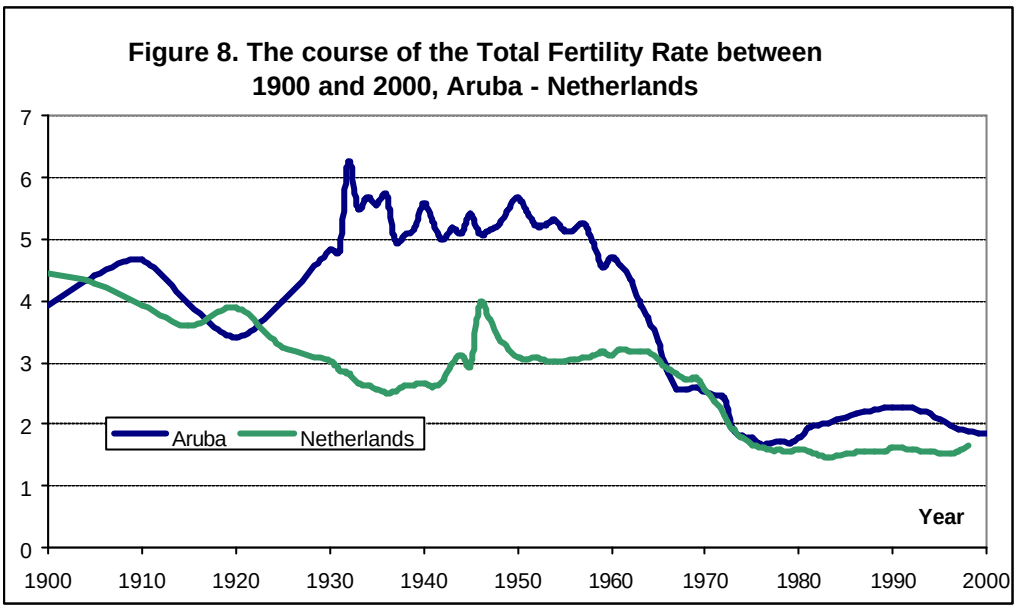
Source: Population and Housing Census 1991 and 2000

years from now, is going to trigger a very rapid aging process among the native population. The aging of the Aruban population will progress more rapidly than for instance in the Netherlands, where aging is considered one of the major social and economic problems of the future. The reason for this is that the fertility transition has been much more rapid in Aruba than in the Netherlands. Figure 8 shows the total fertility rates for the Netherlands and Aruba since 1900[15]. The population in the Netherlands Antilles is also aging rapidly. There the process is aggravated by the large-scale emigration of young people to the Netherlands. Currently, out of a total population of 136,000, 21,600 people in Curaçao are older than 60 (15.9 percent).

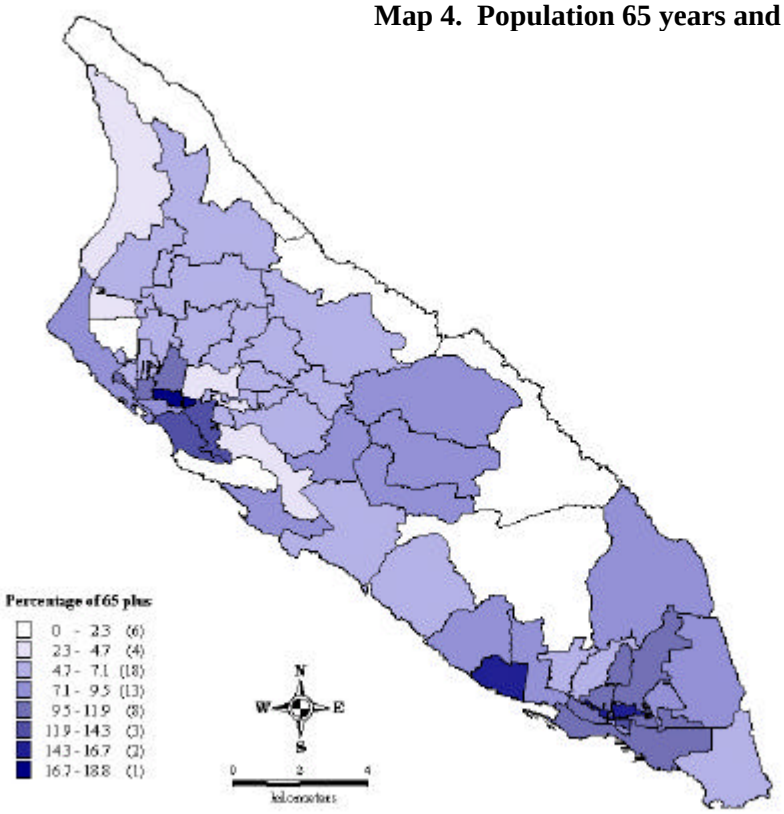
The group of foreign-born people between ages 15 and 40 on Aruba has more than doubled in the last ten years, while the number of native people in the same age group has decreased. This means that, if we were to disregard the foreign-born population for a moment, an ever-bigger group of senior citizens would have to be supported by a decreasing group of people in their active years. This observation stresses the importance of the full integration of foreign workers into the social system. In the coming years it will be necessary to make foreign workers contribute to the social security system, in order to safeguard the current system against the threats of aging. In-depth research into the social and economic consequences of aging on the Aruban society is highly necessary. On the basis of this research, steps can then be taken to ensure the viability of the social security system.

At the time of the census, 6,616 persons aged over 65 were living on Aruba, compared with 4,720 in 1991. Among these people 2,411 were born outside Aruba. It is clear that the number of beds in geriatric homes has not grown at the same rate: in 1990, there were 236 beds in geriatric homes; by 2000 this number had grown to only 256 [16]. Table 4 shows some important indicators for the position of the young and old on Aruba. The dependency ratio[17] fell slightly during the period 1991-2000, from 46.1 in 1991 to 44.0 in 2000. However, if we look at the native-born population we can see that it increased sharply, from 47.9 to 54.1 in the same period. The numbers of both older and younger persons have increased in the last ten years. The dependency ratio among the foreign-born population has decreased from 40.5 to 27.3.

[15] Figures for Aruba until 1980 can be found in Van Leusden (1985), p.28. Figures after 1981 were calculated on the basis of the subsequent censuses. Data for the Netherlands were downloaded from the website of Statistics Netherlands.
[16] Aruba Statistical Yearbook 1995; 2000.
[17] The dependency ratio is a demographic measure of the ratio between the old (65 years of age and older) and the young (14 years of age and younger) divided by the potential labor force (i.e. the population between 15 and 65). This measure gives a rough indication of the number of persons who have to be supported per person in the active age groups.



Map 4. Population 65 years and older, Aruba



In 1960, 13.3 youngsters were present for every person older than 65. Since 1960 this proportion has come down steadily and today 3.4 young people are present for every elderly person. The aging of the native population is further illustrated by the proportion of persons aged 65 and older compared with the group aged 15-64 years. The proportion of persons 65+ over persons 15-64 in foreign-born persons decreased from 17.9 to 10.2, while the ratio among Aruban-born persons increased from 7.9 to 10.8 between 1991 and 2000.

Map 4 shows the regional distribution of senior citizens on Aruba. High concentrations can be found in the urban centers of Oranjestad and San Nicolas. Zones with new housing development such as Noord and Pos Chiquito have attracted many young families and consequently have much lower levels of older people. Sividivi has the highest concentration of people above age 65: as many as 18.8 percent of its population. High proportions of older people can also be found in De Bruynewijk (15.2 percent), Pastoor Hendrikstraat (15.6 percent), Village (12.4 percent), Dakota (13.1 percent) and Klip/Mon Plaisir (12.9 percent). In 1991, Madiki Kavel had the lowest proportion of people above 65 (0.7 percent)[18]. In the past ten years Madiki Kavel grew slightly older, but still has the lowest share of older people (2.1 percent).

Table 4: Relative population by abridged age groups 1991-2001 (percentage), native and foreign born

	Native born			*Foreign born*			*Native and foreign born*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
Dependency ratio									
1991	47.8	47.9	47.9	44.3	37.5	40.5	47.1	45.1	46.1
2000	53.7	54.5	54.1	28.4	26.4	27.3	44.8	43.2	44.0
Young persons per 100 older persons									
1991	625.2	422.7	508.4	147.1	109.4	126.0	415.7	290.8	344.6
2000	478.5	341.2	399.7	198.7	145.1	167.3	378.2	268.9	315.0
Persons 65+ per 100 pesons 15-64									
1991	6.6	9.2	7.9	17.9	17.9	17.9	9.1	11.5	10.4
2000	9.3	12.3	10.8	9.5	10.8	10.2	9.4	11.7	10.6

Source: Population and Housing Census 1991 and 2000

[18] Social Atlas of Aruba; p. 21. A large number of maps will be published in a forthcoming social atlas.

2. Marriage and the family

Nuptiality

Table 5 presents the percentage of the population by marital status according to the last four population censuses. The distribution depends to some extent on the age-structure of the population. It should come as no surprise that the percentage of never-married persons in 1972 was much higher than it is now. In 1972, a larger proportion of the population was too young to marry: 41.3 percent of the population was younger than 15 years, compared with 23.2 percent in 2000.

In each of the censuses, the number of widows is considerably higher than the number of widowers. As we shall see later, this clearly reflects the lower life expectancy for men than for women. The fact that 3.5 percent of the population is widowed against 2.5 in 1972 is another indication of the aging of the population. There are more native-born never-married men than women in the age group 15-34 years: 5,350 men against 5,083 women. This gives a sex ratio of 95.0 for never-married persons between 15 and 35. In 1991, this sex ratio was only 84.0. Obviously, this unbalanced situation has some effect on marriage on the island.

The proportion of divorcees in the population has grown steadily over the last four decades. Currently, 6.7 percent of the population is divorced. The number having gone through a divorce is in fact higher, but obscured because many people remarry. The relative number of persons who live in the divorced state has more than quadrupled in the last thirty years. Interestingly, a larger percentage of women than men are divorced, suggesting that it is more difficult for women to remarry than for men. Or perhaps, that the willingness to remarry is much smaller. The number of persons who are legally separated [19] remains very small and is about the same for men and women.

Table 5. Percentage of Population by marital status at the time of the census in 1972, 1981, 1991 and 2000

Marital Status	1972			1981			1991			2000		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Never-married	31.9	32.1	64.0	28.6	28.6	57.2	26.7	25.7	52.4	25.4	26.7	52.1
Married	15.9	16.0	31.9	17.9	18.2	36.1	19.1	18.6	37.7	18.9	18.3	37.2
Divorced	0.6	1.0	1.6	1.4	1.9	3.3	2.3	3.3	5.6	2.6	4.1	6.7
Widowed	0.6	1.9	2.5	0.7	1.7	3.4	0.8	2.9	3.7	0.7	2.8	3.5
Leg.separted	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	0.3	0.3	0.6	0.3	0.3	0.6

Source: Population and Housing Censuses 1972, 1981, 1991 and 2000

[19] According to the Civic Code (art 154, par.1), married persons are obliged to live together. If, for some reason the couple is not able to live together, they can apply to a court of law for either a formal divorce, or a legal separation. When legally separated, the spouses are exempted from their obligation to live together. However, the legal bond between the spouses remains unaltered.

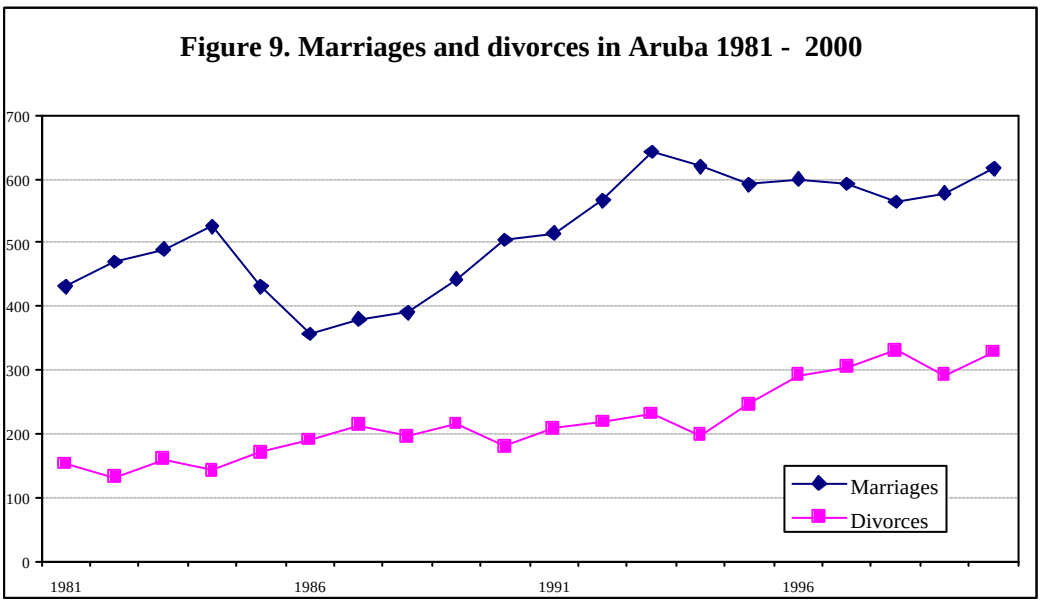
In 2000, 616 marriages took place and 329 marriages were annulled. Table 6 shows the number of marriages and divorces, and the number of divorces per 100 marriages from 1981 to 2000. Readers should be careful not to interpret the latter as the proportion of marriages ending in divorce. In a given year the number of divorces does not refer to the marriages conducted during that year, but to marriages conducted in previous years. Figure 9 gives a more visual presentation of the same data.

Table 6. Marriages and divorces Aruba 1981 - 1999

Year	Marriages	Divorces	Divorces per 100 Marriages
1981	432	153	35.4
1982	470	132	28.1
1983	490	160	32.7
1984	526	142	27.0
1985	431	171	39.7
1986	357	191	53.5
1987	380	214	56.3
1988	390	196	50.3
1989	443	216	48.8
1990	504	180	35.7
1991	515	209	40.6
1992	566	219	38.7
1993	643	231	35.9
1994	620	198	31.9
1995	591	246	41.6
1996	600	292	48.7
1997	592	305	51.5
1998	564	331	58.7
1999	578	292	50.5
2000	616	329	53.4

Source: C.B.S. and Registry Office

Figure 9. Marriages and divorces in Aruba 1981 - 2000



In the last twenty years the number of marriages has increased. The number of marriages in a year is determined by the number of persons of marriageable age in the country, the age at which people decide to marry and the proportion of each birth cohort that stays out of wedlock. Equally, the number of divorces in a year is determined by the number of marriages in earlier years, by the duration of marriage before ending in a divorce and the proportion of each marriage cohort ending in divorce. Given the limited data, it is impossible to disentangle marriage and divorce into their contributing factors. In the section on marriage dissolution we shall elaborate on the timing and intensity of divorce on Aruba.

The number of marriages grew steadily in the early eighties, from 432 in 1981 to 526 in 1984. There was a dip during the national crisis of 1985, and in 1986 the number dropped to 357. From 1989 to 1993 the number of marriages increased steadily, and since then it has remained fairly constant, hovering around 600 a year.

Aruba pops the question … a little late

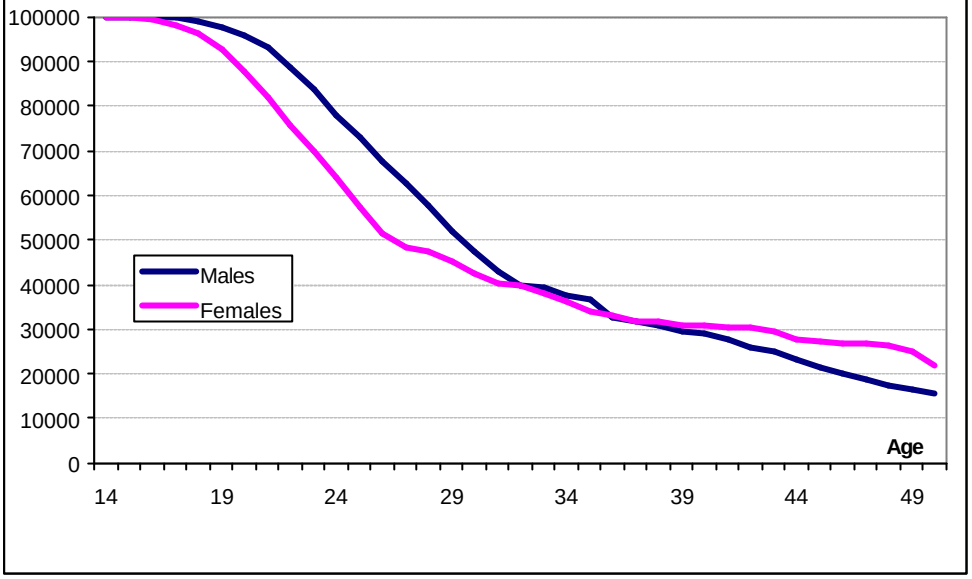
Timing and intensity of first marriage is normally measured using a first marriage table. The first marriage table gives the first marriage experience of a fictitious cohort in the 'pure state', i.e. when intervening factors, such as migration and mortality are controlled for. In 1991, we were able to construct such a table for men and women. Unfortunately, with the current automated system used by the Population Registry it is no longer possible to discern between first, second and third marriages, and we were only able to use data provided in the population census. To do so we made use of a method suggested by W. Mertens (1965), an approximate, but nevertheless highly useful technique for estimating first marriage rates. First marriage rates are expressed by the simple equation:

$$n_{x+0.5} = (p_x - p_{x+1}) / p_x$$

Where n_x is the probability of first marriage and p_x is the proportion of single people in the population between age x and x + 1, computed from a single census. Because of the small size of the Aruban population, values of n were smoothed using running averages. On the basis of age-specific nuptiality rates, the proportion of persons never married in a fictitious cohort of 10,000 persons was calculated. These nuptiality tables are included in appendix 7.

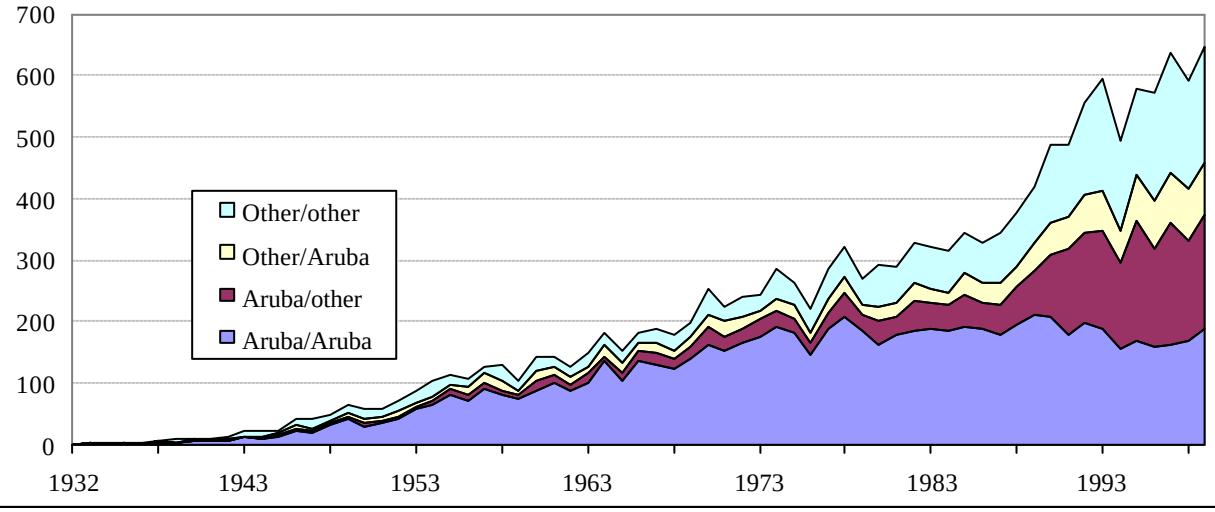
The nuptiality table shows two things: 1) marriage is relatively late and 2) far from universal. The difference between age at first marriage for men and women is 2.8 years. The mean age at first marriage is 29.4 for men and 26.6 for women. Between 1972 and 1991 the age at first marriage increased significantly. In 1972 and 1981, the mean ages at marriage were respectively 24.3 and 25.5 years for women and 27.1 and 27.4 for men. The increase in the age at first marriage was earlier and more pronounced for women than for men. Age at first marriage has not changed significantly since 1991. At that time men married on average at age 29.8 and women at age 26.2. Differences between the two periods can easily be attributed to small number variability due to the small size of the population.

Figure 10. Number of never-married persons in the nuptiality table, Aruba 2000



According to the nuptiality table, about 15.4 percent of men and 22.0 percent of women are still never-married at age 50. A number of these actually live together in a consensual union with a partner. Among men between age 40 and 50, 28.1 percent of those who have never married are currently living together with a partner. Among women of the same age this percentage is somewhat lower: 20.1 percent. The different first marriage patterns for men and women are quite interesting (figure 10). More women than men get married at younger ages. Around age 32, men catch up with women. Around that age about the same numbers of men and women are married. In their late thirties, more men than women are married. As there were 25,858 women and 23,856 men aged 15 to 50 on Aruba at the time of the census, it should come as no surprise that more women than men remain unmarried.

Figure 11. Number of marriage unions in the census, by similarity of place of birth of partners and year of marriage (M/F)



An international marriage market

The influx of thousands of migrant workers from all over the world has changed the population living on Aruba. Many migrants have brought along their spouses and children, and by marrying Arubans many have been completely integrated in local society. Figure 11 shows the number of marriage unions by similarity of place of birth of the partners and year of marriage[20]. Data were taken from the Population and Housing Census 2000 for unions in which both partners were still living together. The number of unions where at least one of the partners is foreign born is substantial and has increased since the beginning of the nineties. For instance, the most recent population census counted 646 couples who married in 1999 and who were still living together on the island in October 2000. Among these couples only 189, or 29.2 percent, were unions where both partners were Aruban born. Almost an equal number 188 (29.1 percent) were marriages where both partners were born outside Aruba, and 184 (28.5 percent) were marriages where the husband was Aruban and the wife foreign-born. The percentage of marriages of two native partners is higher if we go further back in time. In 1992, 35.8 percent of all marriages (where partners were still together in the 2000 census) were between native partners. Figure 11 also shows that many more native men marry foreign-born women than the other way around. This is consistent with the findings of the 1991 census. Since 1991 the number of native-born men and women marrying a foreign-born person is much higher than the number of persons in marriages where both partners are native born.

Table 7. Age difference between marriage partners by similarity in place of birth (Male/Female)

Years difference	Aruba/Aruba Percent.	Aruba/Other Percent.	Other/Aruba Percent.	Other/Other Percent.	Total Percent.
Percentage -5 y. through 5 y.	74.4	56.1	63.5	66.4	68.3
Percentage Women + 5y older than husband	4.1	7.9	11.7	5.1	5.8
Percentage Women + 15y older than husband	0.1	0.7	1.7	0.2	0.4
Percentage Men +5y older than wife	21.5	36.0	24.7	28.4	26.0
Percentage Men +15y older than wife	1.1	8.0	2.9	3.7	3.1
Mean Age difference	2.5	4.0	1.7	3.3	2.9
	Aruba/Aruba Years	Aruba/Other Years	Other/Aruba Years	Other/Other Years	Total Years
Percentile 05	-5	-7	-11	-6	-6
Percentile 25	0	-1	-2	0	0
Percentile 75	5	8	5	6	6
Percentile 95	10	18	13	14	13

Source: Fourth Population and Housing Census 2000

Table 7 shows that the age-difference between spouses is largest for native men marrying foreign-born women: the men are on average four years older. If both partners are born on Aruba the age difference is 2.5 years. Twenty-five percent of local men who marry foreign-born women are at least eight years older than their bride. Five percent are more than 18 years older. These figures are significantly higher than among the other categories. According to the figures of the 2000 census, 812 native men who married foreign-born women are more than 10 years older than their spouse, against 498 native men who married native women. Out of the total of these 812 young foreign wives, 236 come from Colombia, 204 from the Dominican Republic and 89 from Venezuela.

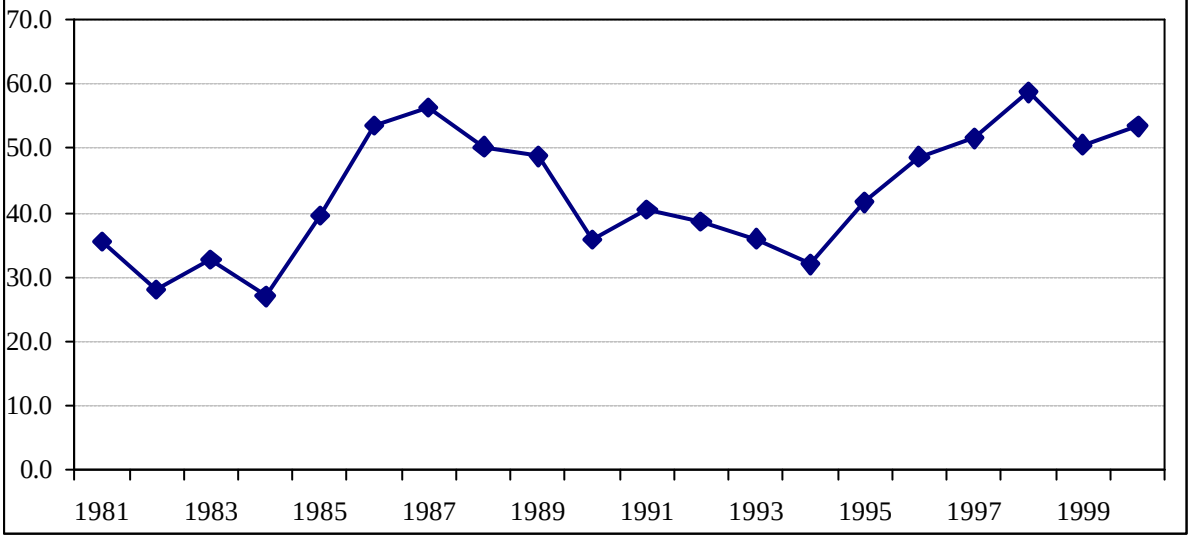
Native-born women who choose foreign partners choose much younger ones than native women who marry partners born on Aruba. The mean age difference is smallest between both partners in this category. 11.7 percent of native women are more than 5 years older than their foreign husband; only 4.1 percent of those married to an Aruban are more than 5 years older. The number of local women who marry a foreign-born man who is more than 5 years older is relatively small (346). Most of their spouses come from Colombia (68), Venezuela (67) and the Dominican Republic (47).

[20] Figures on which this graph is based are presented in Appendix 8.

Divorce

Figure 9 shows the number of divorces in the period 1981-2000. The absolute number of divorces on Aruba increased from a level of about 150 a year in the early eighties to over 300 in recent years. Figure 12 shows the number of divorces in a given year as a percentage of the number of marriages conducted in that year. Obviously, this is not a very sophisticated way to look at the intensity of divorce. Nevertheless, the figure shows that divorce rates in Aruba are very high. Since 1995, the number of divorces in a year has never been lower than 40 percent of the number of marriages in the same year. In 1998, the number of divorces was 58.7 percent of the number of marriages.

Figure 12. Divorces per 100 marriages in Aruba 1981 - 2000



Source: Population Register.

A more sophisticated way to look at the disruption of marriage is by constructing a divorce table, similar to the nuptiality table. For each age group the probability for a married person to experience a divorce is calculated. The table describes the divorce experience of a fictitious marriage cohort of 10,000 men and women married at age 20, if no intervening factors such as mortality and migration take place [21]. The divorce table is presented in table 8a. Table 8b shows the divorce table for 1991. To allow an easy interpretation of the process of divorce we have presented the divorces in tables 8a and 8b in the form of two graphs. The bars in figures 13a and 13b should be interpreted as follows: If 10,000 men/women had married at exact age 20 and no one were to die or migrate, how many would experience a divorce between ages x and x + 5.

[21] No divorce rates were calculated for the age group 15-20 because too few persons were married in this group. Moreover, only one or two divorces in this age group would completely distort the outcome of the divorce table. It is possible that a small bias is introduced in the divorce table because we were not able to restrict the analysis to first marriages and divorces to these marriages. Implicitly, we are assuming in this table that the pattern of dissolution of marriage through divorce is identical for first and later marriages.

Figure 13a. Age-specific divorces in the divorce table, males 1991-2001

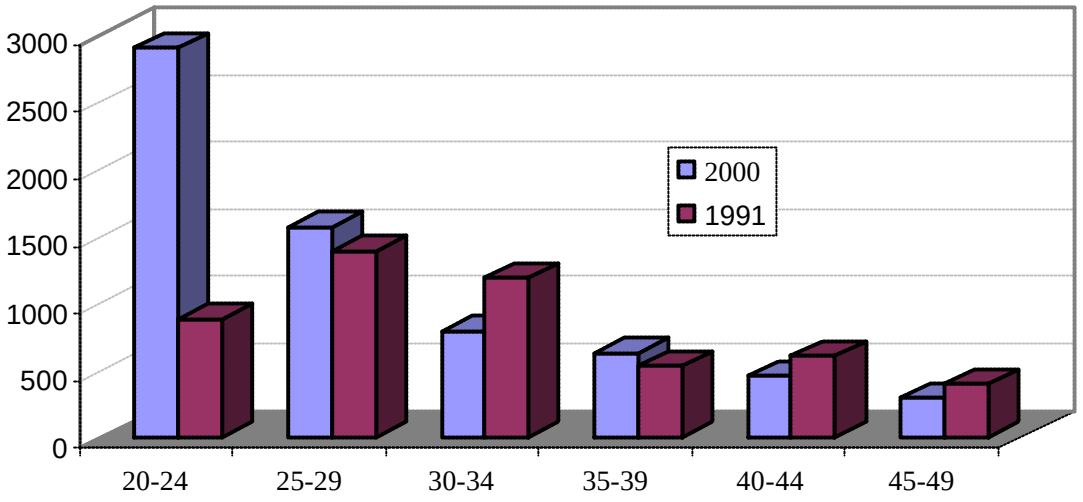
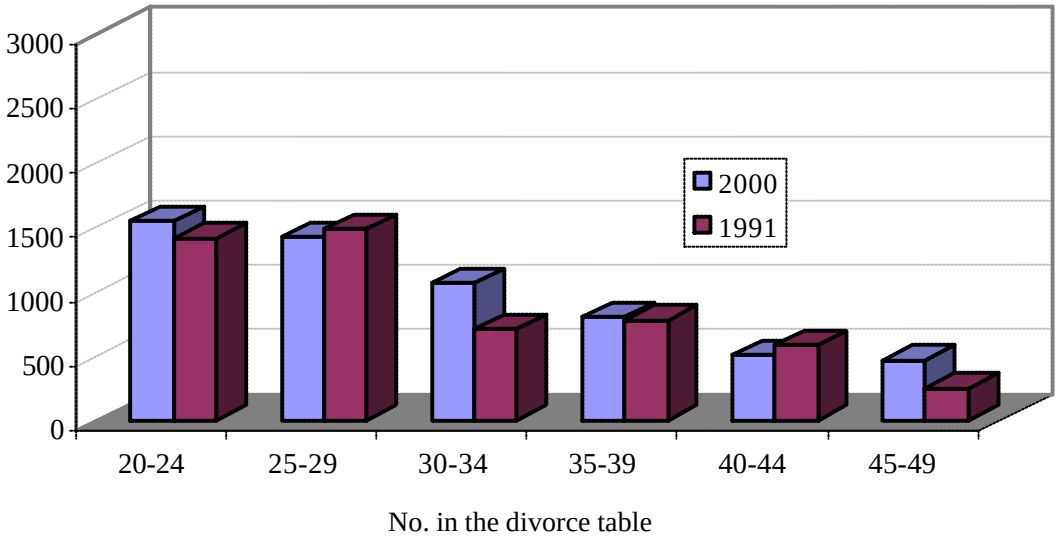


Figure 13b. Age-specific divorces in the divorce table, females 1991-2001



Divorce is very common in Aruba. If a cohort of 10,000 men were to be subjected to the same intensity and timing of divorce as occurred in Aruba in 2000, only 3,380 would still be married when they reach age 50. Because of differences in timing of marriage and divorce, this figure is somewhat higher among women; 4,220 women would still be married at age 50. Divorce rates are very high before age 30. It is clear that people on Aruba who marry very young, run a high risk of experiencing early divorce, if they were subjected to the same age-specific probabilities as in 2000 on Aruba. Out of a group of 10,000 no fewer than 4,220 men would be divorced by the time they reach 30. It is a pity that no data are available from the Population Registry about the number of divorces by duration of marriage, making it impossible to construct a marriage-duration-specific divorce table.

For men in particular, the total number of persons who experience a divorce is a bit distorted by the high number of divorces in the age group 20-24. In fact at age 20 only few men and women are married in Aruba. However, probabilities of experiencing a divorce between ages x and x + 5 ($d_{x, x+5}$) appear to be very high at younger ages.

Table 8a. Divorce table for males and females, Aruba 2000

	Males						Females					
	Divorces	Married persons	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)	Divorces	Married pers	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)
15-19	1	18	0.0556	0.243902		10000	2	62	0.0323	0.149254		10000
20-24	18	266	0.0677	0.289389	2894	10000	20	599	0.0334	0.154083	1541	10000
25-29	53	1072	0.0494	0.220008	1563	7106	56	1529	0.0366	0.167765	1419	8459
30-34	62	2028	0.0306	0.142006	787	5543	68	2089	0.0326	0.150509	1060	7040
35-39	74	2624	0.0282	0.131719	626	4756	75	2622	0.0286	0.133476	798	5980
40-44	58	2481	0.0234	0.110434	456	4129	48	2365	0.0203	0.096579	500	5182
45-49	37	2227	0.0166	0.079759	293	3673	41	1977	0.0207	0.098581	462	4682
50-54	21	1753	0.0120	0.058156		3380	14	1569	0.0089	0.043641		4220
	324	12469					324	12812				

Table 8b. Divorce table for males and females, Aruba 1991

	Males						Females					
	Divorces	Married persons	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)	Divorces	Married pers	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)
15-19			0.0000	0.0000		10000			0.0000	0.0000		10000
20-24			0.0180	0.0880	877	10000			0.0300	0.1410	1411	10000
25-29			0.0330	0.1520	1388	9123			0.0380	0.1720	1478	8789
30-34			0.0330	0.1530	1187	7734			0.0210	0.1000	709	7111
35-39			0.0170	0.0810	533	6547			0.0260	0.1210	775	6403
40-44			0.0210	0.1000	600	6014			0.0220	0.1030	578	5628
45-49			0.0150	0.0740	399	5414			0.0100	0.0490	245	5050
50-54			0.0120	0.0590		5015			0.0080	0.0390		4805

Source: Population and Housing Census 1991 and 2000.

Figure 14a. Age-specific probabilities of experiencing divorce, by origin of partners, males

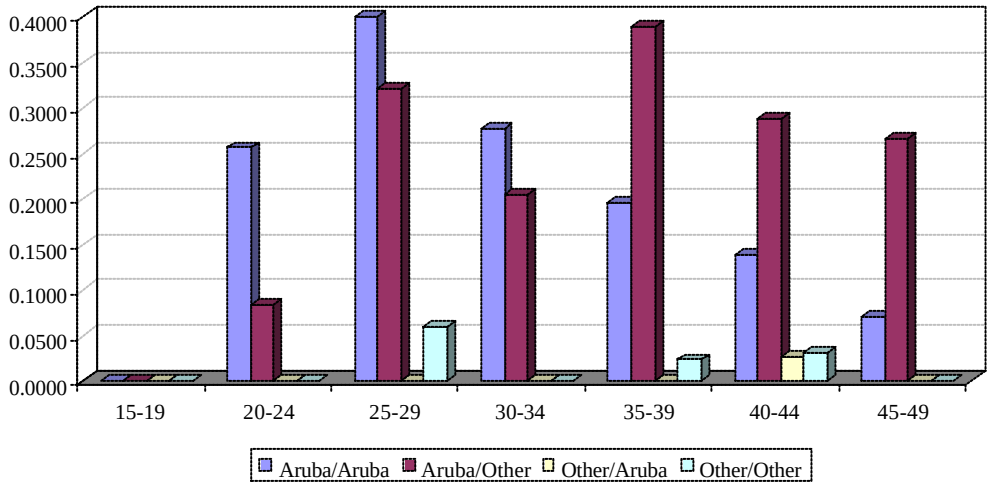
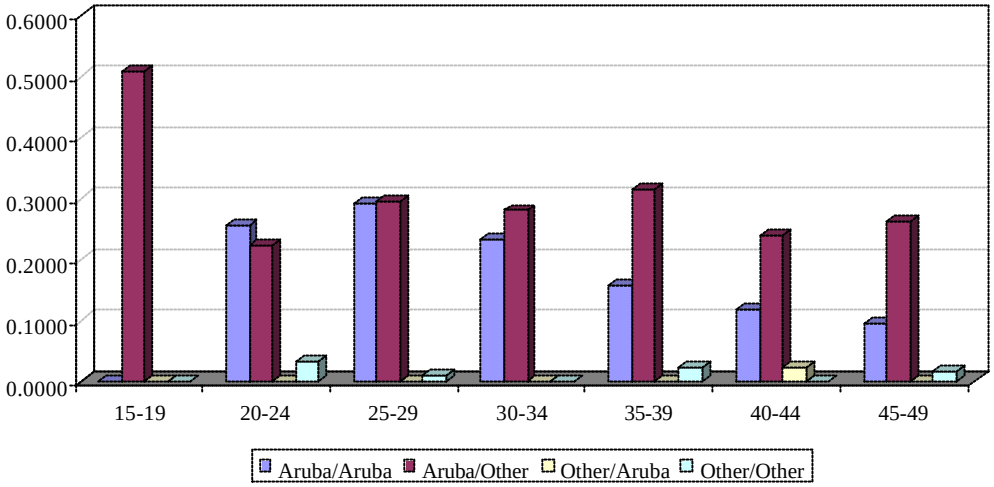


Figure 14b.Age-specific probabilities of experiencing divorce, by origin of partners, females



As many marriages take place between native and foreign-born persons, it is interesting to see whether the country of birth of the partners has an influence on marriage stability. Again we divided the number of persons married and the number of divorces into four separate categories: both partners born on Aruba, the husband born on Aruba and the wife born abroad, the husband born abroad and the wife born on Aruba and finally, both partners born overseas. To compare the timing and intensity of divorce between the various groups, we present the age-specific probabilities of divorce for all four categories, separately for men and women (Figures 14a-b)[22]. Divorce tables for each of these four groups are presented in appendix 9a-d.

Some intriguing patterns emerge from figures 14a and 14b. First, divorce rates for native men married to native women are higher than for native men married to women born abroad in the age groups 20 to 35. After age 35 this pattern is reversed. The probability of divorce is highest for native men married to native women in the age group 25-29. Native men married to foreign-born women have the highest probability in the age group 35-39. It is not clear what exactly causes this difference. The divorce rates in the other two groups (foreign man/native woman and foreign born men and women) are remarkably low. One reason for this might be that couples in which both partners were born outside Aruba file for a divorce in their own country. Alternatively, marriage problems may also be a reason for a foreign couple to leave Aruba.

For women, the probabilities of divorce in age groups 20 to 30 are similar for native and foreign women who married a native-born man. Probabilities for foreign women married to an Aruban man are very high in the age group 15-19, although this result should be interpreted with caution as it is based on just a few cases. After age 30, the risk of divorce becomes much greater for foreign women married to Aruban born men than for native women married to Aruban men. Also for women, divorce rates are very low for native women married to a foreign born men and for foreign-born women married to foreign-born men.

[22] The figures should be interpreted as follows. A value of .26 for age group 35-39 for men, for instance, indicates that a man who is still married at age 35 has a probability of 26 percent that his marriage will end in a divorce before he reached age 40, given that he and his wife will survive up to that age and will stay on Aruba.

Till death do us part

In 2000, 488 people died on Aruba, 257 men and 231 women; 216 of these people were married at the time of death. As in many parts of the world, women on Aruba are more likely to experience widowhood in their life than men: 145 of the 216 married people who died were men.

The age at which people lose their partner is higher for men than for women. Among those who indicated in the census that they were widowed, the average age at widowhood was 54 years for women and 60 years for men. This clearly reflects the different pattern of mortality between men and women.

Living together

Since 1981, population censuses on Aruba include questions to determine the number of persons living together in a consensual union[23]. Table 9 shows the number of persons by marital status and sex who are living together in a permanent relationship without being married to each other. It shows that the number of persons living in a consensual union has almost quadrupled during the last twenty years. Currently, 6,506 men and women are living together without being married, compared with 30,175 married people living together. This means that 17.7 percent of all people living together are not married to each other. This is a much larger proportion than in 1991, when 12.9 percent of people older than 15 were cohabiting without being married.

About two thirds of all men and women who live together in a consensual union have never been married. The second largest group consists of divorcees. Figure 15 shows that for almost all age groups, and for both sexes, the proportion of persons living together in a consensual union was higher in 2000 than in 1991. The proportions are largest in the younger age groups. In the Netherlands many young people live together with a partner. Most of these couples see their consensual union as a temporary arrangement, a step on the road to marriage to their current partner[24]. Unfortunately, for Aruba no data are available on the motivation and rationale for living in a consensual union. Further research on this topic is needed. In Aruba, many never-married women who live together in a permanent relationship have children. Among the 4,342 never-married women only 27.2 percent are childless; 29.5 percent have one child and 24.4 percent have two children. This is an indication that on Aruba having children is certainly not a reason for getting married.

[23] Two questions were asked to see if a person was living in a consensual union. 1) 'Are you currently living with your spouse or with a life partner?' If the answer to this question was 'yes' a second question was asked. 2) ' Are you married to this person?' In 1972, no question was asked about consensual unions. In 1960, a question was asked but only to those who were never married.

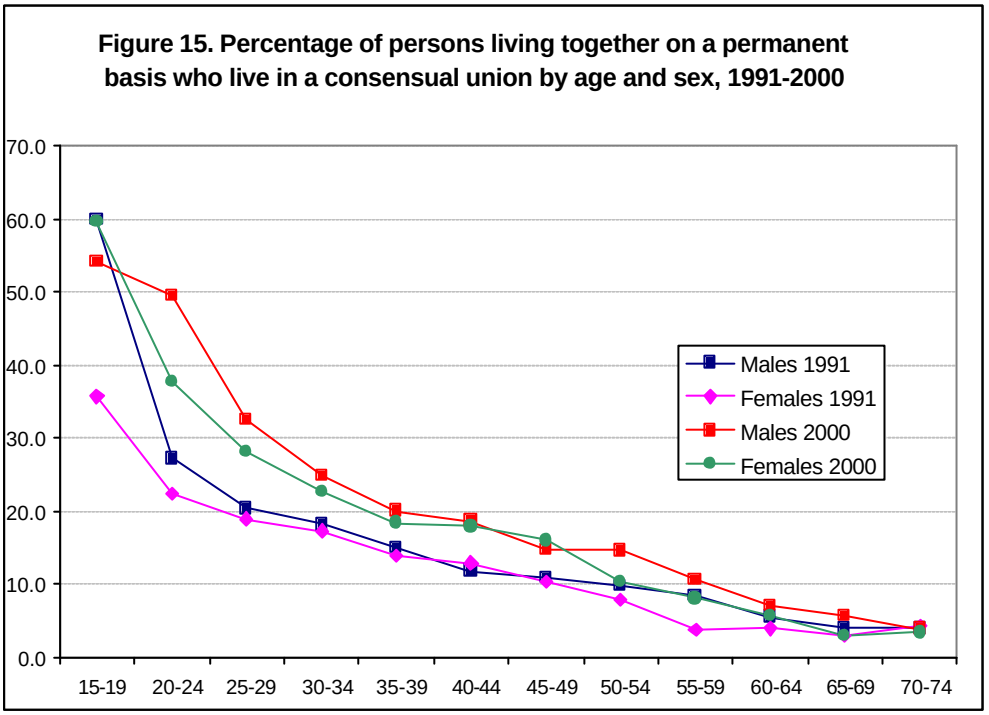
[24] CBS-Nederland. Levensloop en gezin, p. 14.

Table 9. Persons living together on a permanent basis by marital status and sex

Marital status	1981		1991		2000	
	Male	Female	Male	Female	Male	Female
Never married	533	563	1,049	1,100	2,093	2,249
Married	77	34	74	34	204	96
Widowed	22	43	32	59	71	97
Divorced	200	192	511	513	795	760
Legally separated	n.a.	n.a.	55	17	83	41
No reported	-	-	3	1	7	11
Total	832	832	1,724	1,724	3,253	3,253

Source: Population and Housing Census 1981, 1991, 2000.

Source: Population and Housing Censuses 1991, 2000



The status of people who cohabit without being married has apparently changed somewhat in the last ten years. Table 10 presents the number (absolute and relative) of persons living in a consensual union, under and above the age of 40, by marital status and sex, for 1991 and 2000. For both younger and older persons there is an increase in the number of never-married persons living together. In 1991, the percentages were 75.2 and 39.4 percent for persons below and above age 40 respectively. In 2000, these percentages were 81.1 and 45.9 respectively. At the same time, the percentage of divorced persons living together fell from 20.2 (< 40 years) and 46.5 (> 40 years) to 13.7 and 39.2. The fact that more widowed women than men are living together is more a consequence of the fact that many more women than men are widowed and not a sex-specific behavioral pattern.

Table 10. Number of persons living in consensual unions, under and above 40 years of age, by marital status and sex, 1991 - 2000

	Never-married			Married			Divorced			Legally Separated			Widowed			Not reported			Total		
	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total
Absolute numbers																					
1991																					
< 40	801	860	1661	32	23	55	181	266	447	18	11	29	2	14	16	1	1	2	1035	1175	2210
> 40	246	239	486	42	11	53	329	244	573	37	5	43	30	46	76	2	0	2	686	546	1232
2000																					
< 40	1478	1661	3140	81	49	130	229	300	529	19	21	40	6	25	32	1	2	3	1814	2059	3873
> 40	614	588	1202	123	46	169	566	460	1026	64	20	84	65	71	137	2	0	2	1434	1185	2620
Percentage of persons in specific marital status by sex and age																					
1991																					
< 40	77.4	73.2	75.2	3.1	1.9	2.5	17.5	22.7	20.2	1.7	1.0	1.3	0.2	1.2	0.7	0.1	0.1	0.1	100.0	100.0	100.0
> 40	35.9	43.8	39.4	6.1	2.1	4.3	47.9	44.8	46.5	5.5	1.0	3.5	4.4	8.4	6.2	0.3	0.0	0.2	100.0	100.0	100.0
2000																					
< 40	81.5	80.7	81.1	4.5	2.4	3.4	12.6	14.6	13.7	1.0	1.0	1.0	0.3	1.2	0.8	0.1	0.1	0.1	100.0	100.0	100.0
> 40	42.8	49.6	45.9	8.6	3.9	6.5	39.5	38.8	39.2	4.5	1.7	3.2	4.5	6.0	5.2	0.1	0.0	0.1	100.0	100.0	100.0

Table 11. Local and foreign persons in consensual union by marital status and sex.

	Never married		Married		Divorced		Legally separated		Widowed		Not reported		Total	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
Persons in consensual union														
Native	1,132	1,135	64	18	510	471	40	9	44	50	1		1,791	1,684
Foreign born	961	1,114	140	78	285	289	43	32	27	46	6	11	1,462	1,569
All persons														
Native	8,434	8,782	10,888	9,498	1,629	2,480	131	116	432	1,524	16	13	21,529	22,412
Foreign born	4,584	5,530	6,111	6,908	712	1,178	100	169	231	954	13	17	11,751	14,757
Percentage in consensual union														
Native	13.4	12.9	0.6	0.2	31.3	19.0	30.5	7.8	10.2	3.3	6.3	0.0	8.3	7.5
Foreign born	21.0	20.1	2.3	1.1	40.0	24.5	43.1	18.9	11.7	4.8	47.6	65.5	12.4	10.6

Soure: Population and Housing Census 2000

Table 11 shows that, irrespective of marital status, the percentage of persons living together in a consensual union is higher among those born outside Aruba than among native people. Among native men 14 years of age and older, 8.3 percent are living together in a consensual union; compared with 12.4 percent of foreign-born men. The trend is similar for women (7.5 against 10.6 percent).

Figure 16. Percentage of native and foreign born persons who live together on a permanent basis, whether married or not, by age and sex

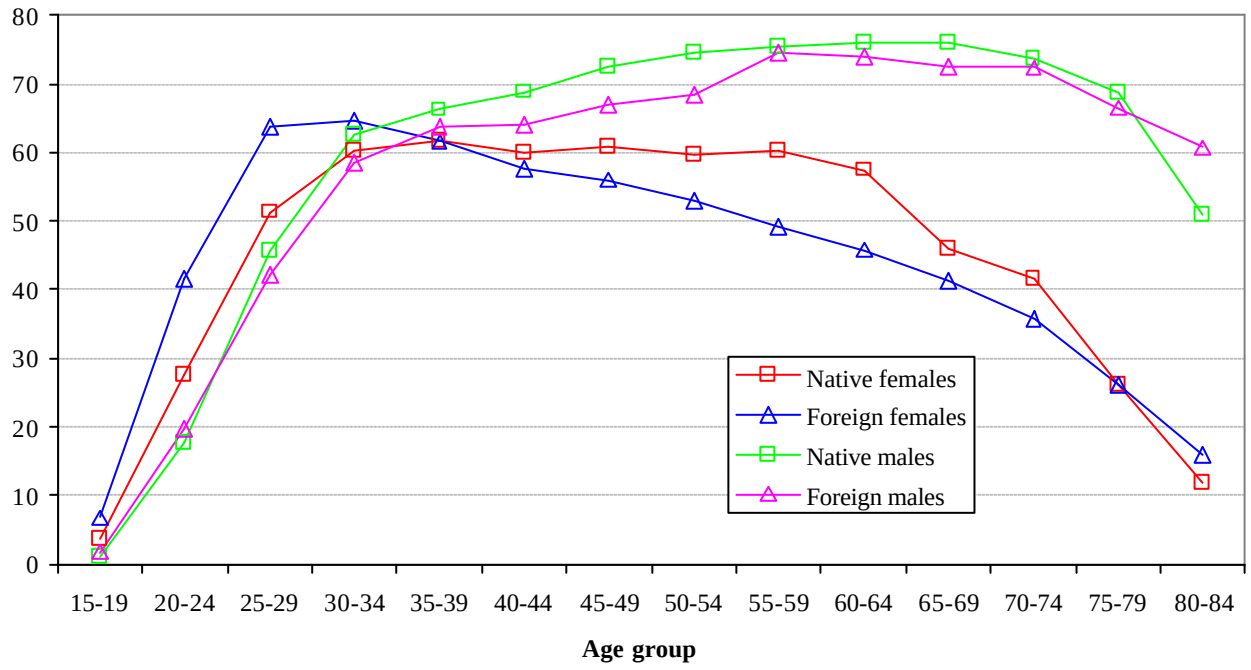


Figure 16 shows the percentage of native and foreign-born persons who are cohabiting on a permanent basis, whether married to their partner or not. The figure depicts some interesting characteristics of the way people live together on Aruba. First, a large proportion of women above 35 do not live in a union. For native women between 30 and 60 years of age the percentage living with a partner hovers around 60 percent. This percentage is much lower than for native men. After age 60 the percentage for women gradually decreases as a consequence of the higher mortality among men than among women in these age groups. Before age 35 foreign born women have lower levels of celibacy than native women. However, for foreign women over 35 the levels are significantly higher than among native women. Many of these women have a family abroad, and often they came to Aruba to support their family overseas.

After age 35 the percentage of men (both native and foreign born) who live together on a permanent basis is much higher than among women in the same age groups. There may be several reasons for this. First, as we saw before, men have the tendency to marry younger women. The lower percentage of women living together after 35 years of age is compensated by the higher percentages who live together at younger ages. Second, men seem to have better chances of finding a new partner after a divorce. Third, at older age groups men are more likely to die than women. Therefore, the chance of a woman surviving her partner is higher than that of a man.

Smaller households

At the time of the census, 29,264 households were counted. With a population of 90,506 persons on the island, this gives an average household size of 3.09 persons. The average household size has continued its decrease since 1991. At that time, the average household consisted of 3.46 persons, down from 4.04 in 1981, which in turn was already substantially smaller than the 4.89 persons per household unit in 1960. The reduction in household size comes as no surprise. In the sixties and seventies many large families still existed on the island. Gradually, the children in these families left home, and with the fall in fertility in the sixties, large families are now almost completely a thing of the past.

Figure 17. Percentage of persons in non-collective households by size

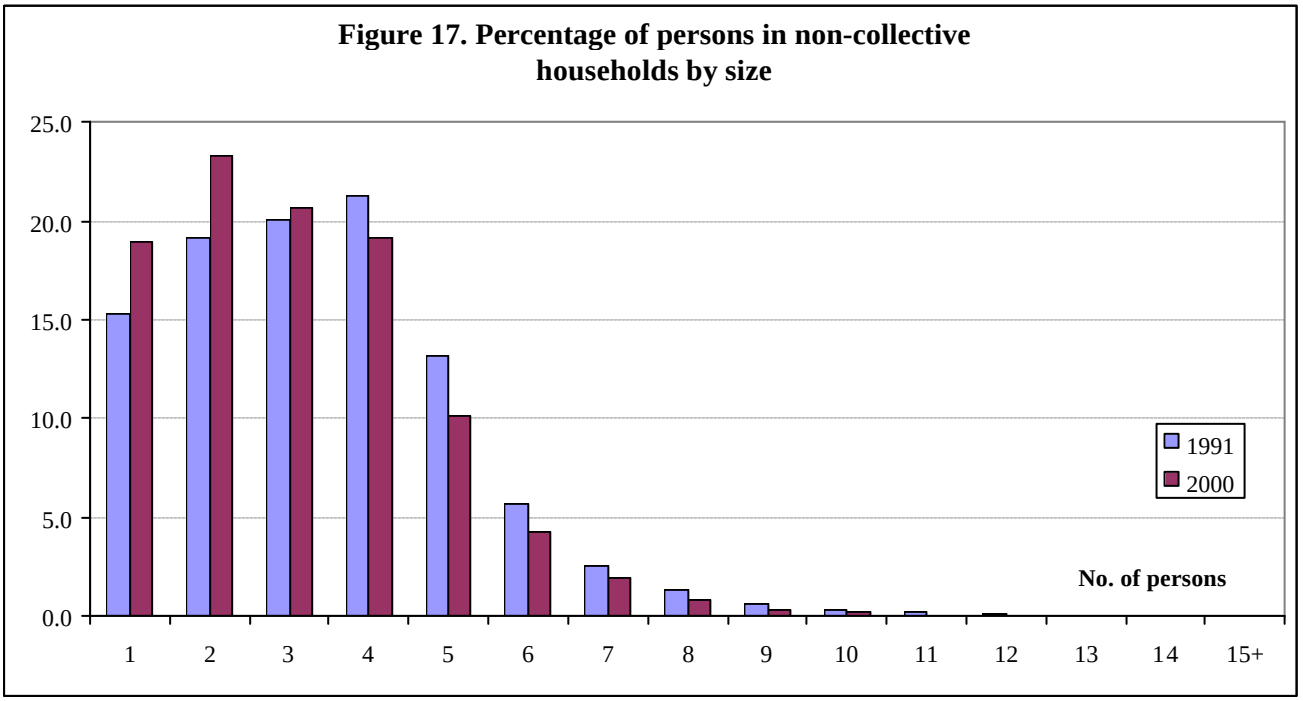


Figure 17 shows the percentage of persons living in non-collective households by household size in 1991 and 2000[25]. The graph clearly shows that the relative number of people living in a small household (1-3 persons) has increased since 1991. The number of households with only one or two persons in particular has gone up significantly. The relative number of people living in households with more than three persons has decreased in the last ten years. Remarkably, although Curaçao has experienced a completely different economic and social development in this period, it saw similar changes in terms of household size. The average household size in Curaçao is 3.0 persons per household, and the number of one-person households is also very similar to the number in Aruba. Currently, 18.3 percent of all households in Curaçao consist of one person, against 19.0 percent in Aruba[26].

The census of Aruba distinguished the following household types:

1. Collective household
2. Non collective household
    - One person household
    - Nuclear household
        - Married couple, no children
        - Married couple with children
        - Mother with children
        - Father with children
    - Extended household (all members related)
        - One family nucleus and other persons
        - Two or more family nuclei and other persons
        - Two or more family nuclei without other persons
        - Two or more persons not belonging to any nucleus
    - Composite household (not all members related)
        - One family nucleus and other persons
        - Two or more family nuclei and other persons
        - Two or more family nuclei without other persons
        - Persons not belonging to any family nuclei

These household types closely follow the types proposed by the UN in its 'Principles and Recommendations for Population Censuses'. As soon as an enumerator contacted a new household he/she had to note all relationships within the household, i.e. see which nuclei existed within the household and who belonged to each of these nuclei. Each person belonging to the household received a nucleus number (1 digit) and a person number (3 digits). The reference person[27] always received family number 1 and person number 001. On the basis of these numbers and the relationship to the reference person, we were able to give a much more detailed description of the household types than most other countries.

[25] A household can be defined as one or more persons who live together and who have made common arrangements for living (food, other necessities). A household can be 1) a one-person household, i.e. one person who lives independently or 2) a household with two or more persons. These persons may be related to each other or not. In the census a collective household was defined as a household of more than ten persons without any family relationship to each other. Often these households were institutions such as homes for the elderly, orphanages, prisons, etc..

[26] CBS-Nederlandse Antillen (2001), p11.

[27] Many countries use the concept of head of household. In a modern society like Aruba's, this concept is a bit out of place. Therefore, we used 'Reference person'.

Table 12 gives a detailed description of the occurrence of the various household types on Aruba, according to the 1991 and 2000 population censuses. Population growth combined with the decrease in the average size of the household pushed up the number of households from 19,277 to 29,264, an increase of no less than 51.9 percent. The number of one-person households has increased from 2,950 to 5,552, a growth of 88.2 percent. Currently, 19 percent of all non-collective households consist of only one-person.

Table 12: Type of households in Aruba, 1991 -2000.

	1991		2000	
All collective households	20		15	
All non-collective households	19,257		29,249	
One-person household	2,950	15.3	5,552	19.0
Nuclear household				
Married couple, no children	1,731	9.0	3,058	10.4
Married couple with children	6,289	32.6	7,638	26.1
Mother with children	1,582	8.2	2,664	9.1
Father with children	199	1.0	305	1.0
Nuclear household not elsewhere classified			29	0.1
Total nuclear households	9,800	50.8	13,693	46.8
Extended household (all members related)				
One family nucleus and other persons	1,540	8.0	2,175	7.4
Two or more family nuclei and other persons	347	1.8	327	1.1
Two or more family nuclei without other persons	1,093	5.7	1,244	4.3
Persons not belonging to any family nuclei	512	2.7	863	2.9
Total extended households	3,492	18.1	4,608	15.7
Composite household (not all members related)				
One family nucleus and other persons	1,806	9.4	2,914	10.0
Two or more family nuclei and other persons	234	1.2	365	1.2
Two or more family nuclei without other persons	110	0.6	165	0.6
Persons not belonging to any family nuclei	863	4.5	1,923	6.6
Total composite households	3,014	15.6	5,367	18.3
Unclear whether composite or extended			27	0.1

Source: Poulation and Housing Censuses, 1991 and 2000

The number of nuclear households increased by about 40 percent between 1991 and 2000, from 9,800 to 13,693. However, the percentage of this type of household among all households has decreased from 50.8 to 46.8. The relative number of extended households also fell, from 18.1 to 15.7 percent. Both decreases may be partially caused by the fact that currently more and more well to do families have a live-in maid, the presence of such an unrelated person makes the household ‘composite’. According to the census count, 898 domestic servants lived in with a family.

The number of collective households decreased from 20 in 1991 to 15 in 2000. Most of these collective households are in fact institutions such as homes for the elderly, youths or the handicapped.

3. Mortality and health

For many years, Aruba has been blessed with favorable health conditions. Many tropical diseases, endemic to its neighboring countries have never been endemic on the island and high levels of schooling, together with a high priority for health issues by policy makers, have contributed to low levels of mortality and morbidity. The influx of overseas workers since the late nineteen-eighties has drastically changed Aruban society. Many of these people come from countries with different mortality and morbidity backgrounds. In this chapter we probe deeper into current developments in the field of mortality and health on Aruba. A population census is not the ideal basis for a detailed account of the health situation in a country. The Department of Public Health has recently conducted a Health Survey whose results will shed more light on the interaction between social and economic characteristics and the health status of the Aruban population.

A year less to live

Appendix 1 presents the crude death rates for Aruba since 1972. Over the years the crude death rates for Aruba hover around a level of 6 per thousand. In recent years the aging population has pushed the rate up slightly. As there are more people in older age groups, the relative number of deaths in the population increases and the death rate rises. To gain an insight into the timing and intensity of mortality, demographers rely on the calculation of life tables.

Tables 13a and 13b present life tables for men and women on Aruba. To avoid small number variability, the number of deaths was taken for a period of two years. These data were taken from the Population Registry and were linked to the data from the census. Today, life expectancy is 70 years for men and 76 for women. Many countries around the world have seen an increase in life expectancy in recent years. In Western Europe, for instance, it rose from 76 years in 1990 to 78 years in 1998; and in Latin America people could expect to live three years longer based on the same period, to 69 instead of 66.[28] So it was a bit disappointing to note that life expectancy in Aruba fell by just over a year for men and women since the last census. In 1991 we calculated a life expectancy of 71.1 for men and 77.1 for women. Current levels of life expectancy are slightly lower than the levels observed in 1981[29].

[28] Data were obtained from the United Nations World Population Charts 1990 and 1998. The columns in the life table are the following: The life table functions given in Tables 9 through 11 are the following:

- M(x,n) the age-specific mortality rate defined as the number of deaths in age group x to x+n, divided by the mid-year population in age group x to x+n.
- Q(x,n) the age-specific probability of dying between ages x and x+n.
- l(x) the function of survival, being the number of survivors in the life table at exact age x, out of an initial population of 100000 at age 0.
- D(x,n) the function of death, being the number of deaths in the life table between ages x and x+n.
- L(x,n) the total number of person years lived by the total population between ages x and x+n in the life table
- S(x,n) the survival rate S(x,n) is the probability of surviving between two groups of completed years. This survival rate is necessary for the construction of demographic projection models.
- T(x) the 'total after lifetime' T(x) is the total number of person-years lived by the cohort after exact age x.
- e(x) the expectation of life, or life expectancy represent the average after lifetime at exact age x.

[29] Life tables for 1972, 1981 and 1991 can be found in Eelens (1993), p.34-36.

Table 13a. Life table Aruba, males 1999 - 2000

Age	Deaths	Pop. 1/1/2000	M(x,n)	q(x,n)	l(x)	D(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	8	717	0.00558	0.00555	100000	555	99584	0.99339	7000693	70.01
1	1	2758	0.00018	0.00072	99445	72	397636	0.99894	6901109	69.40
5	1	3650	0.00014	0.00068	99373	68	496694	0.99893	6503473	65.45
10	2	3409	0.00029	0.00147	99305	146	496160	0.99602	6006779	60.49
15	8	3070	0.00130	0.00649	99159	644	494187	0.98926	5510619	55.57
20	15	2480	0.00302	0.01501	98515	1478	488881	0.98567	5016432	50.92
25	17	3092	0.00275	0.01365	97037	1325	481874	0.98799	4527551	46.66
30	16	3845	0.00208	0.01035	95713	990	476087	0.98995	4045677	42.27
35	17	4334	0.00196	0.00976	94722	924	471300	0.98688	3569590	37.68
40	26	3904	0.00333	0.01651	93798	1549	465117	0.97946	3098290	33.03
45	32	3207	0.00499	0.02464	92249	2273	455563	0.96882	2633172	28.54
50	39	2525	0.00772	0.03789	89976	3409	441357	0.94935	2177610	24.20
55	51	1931	0.01321	0.06392	86567	5533	419001	0.90970	1736253	20.06
60	78	1548	0.02519	0.11849	81034	9601	381165	0.85238	1317252	16.26
65	89	1120	0.03972	0.18067	71432	12905	324898	0.78743	936087	13.10
70	85	739	0.05754	0.25151	58527	14720	255834	0.72181	611189	10.44
75	70	470	0.07445	0.31382	43807	13748	184665	0.61004	355355	8.11
80	77	288	0.13366	0.50091	30059	15057	112653	0.40270	170690	5.68
85	64	122	0.26139	0.79043	15002	11858	45365	0.21951	58037	3.87
90	20	43	0.23144	0.73306	3144	2305	9958	0.27249	12672	4.03
95	7	11	0.30929	….	839	839	2714		2714	3.23
	723									

Source: Population and Housing Census 2000, Population Registry

Table 13b. Life table Aruba, females 1999 - 2000

Age	Deaths	Pop. 1/1/2000	M(x,n)	q(x,n)	l(x)	D(x,n)	L(x,n)	S(x,n)	T(x)	e(x)
0	12	654	0.00917	0.00909	100000	909	99318	0.98772	7601524	76.02
1	3	2778	0.00054	0.00216	99091	214	395935	0.99719	7502206	75.71
5	3	3539	0.00042	0.00212	98877	209	493861	0.99894	7106272	71.87
10	0	3389	0.00000	0.00000	98667	0	493337	0.99878	6612411	67.02
15	3	3068	0.00049	0.00244	98667	241	492735	0.99547	6119074	62.02
20	7	2629	0.00133	0.00663	98427	653	490500	0.99484	5626339	57.16
25	5	3390	0.00074	0.00368	97774	360	487969	0.99448	5135838	52.53
30	12	4055	0.00148	0.00737	97414	718	485274	0.99314	4647870	47.71
35	12	4709	0.00127	0.00635	96696	614	481944	0.99342	4162596	43.05
40	12	4389	0.00137	0.00681	96082	655	478772	0.99141	3680652	38.31
45	15	3592	0.00209	0.01038	95427	991	474658	0.98603	3201880	33.55
50	20	2816	0.00355	0.01760	94436	1662	468025	0.96589	2727222	28.88
55	45	2153	0.01045	0.05092	92774	4724	452060	0.94308	2259197	24.35
60	49	1875	0.01306	0.06325	88050	5569	426327	0.92397	1807137	20.52
65	53	1411	0.01878	0.08967	82481	7396	393913	0.87055	1380811	16.74
70	72	950	0.03791	0.17315	75085	13001	342921	0.80806	986897	13.14
75	57	593	0.04810	0.21467	62084	13327	277099	0.71652	643976	10.37
80	84	461	0.09113	0.37110	48756	18094	198546	0.54574	366877	7.52
85	84	253	0.16596	0.58647	30663	17983	108356	0.39996	168331	5.49
90	40	108	0.18515	0.63284	12680	8024	43338	0.38388	59975	4.73
95	19	34	0.27983	….	4656	4656	16637		16637	3.57
	607									

Source: Population and Housing Census 2000, Population Registry

Figure 18a. Probability of dying for men, 1991 - 2000

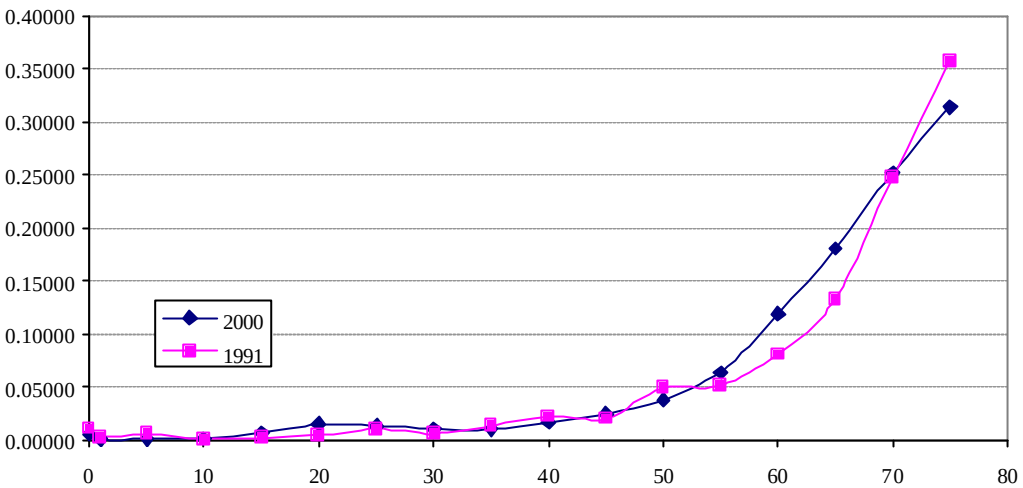
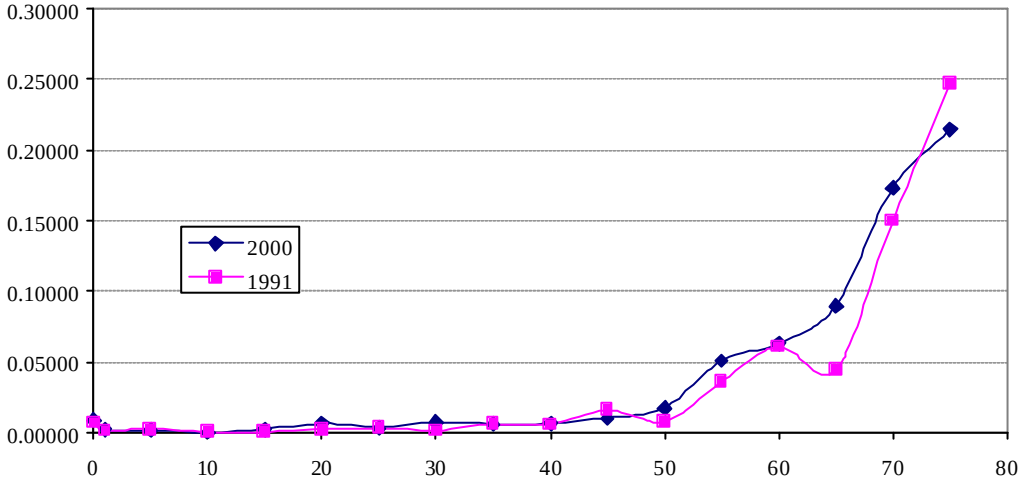


Figure 18b. Probability of dying for women, 1991 - 2000



Figures 18a and 18b show the age-specific probabilities of dying for men and women for 1991 and 2000. Both graphs clearly show that probabilities of dying in age group 55-70 for men and 60-70 for women are considerably higher in 2000 than in 1991. For men the probability of dying between age 60 and 65 was 8.07 percent in 1991, and rose to 11.8 percent in 2000. Between ages 65 and 70 these probabilities were respectively 13.2 and 18.07. The life expectancy of a man aged 60 was 17.4 in 1991 and 16.3 percent in 2000. This indicates that the loss in life expectancy for men is clearly caused by higher mortality at more advanced ages. For women this pattern is less clear, but we still see an increased risk of dying in 2000 than in 1991 for ages 65 and 75. Between ages 65 and 70 the probability of dying is twice as high in 2000 as in 1991, 9.0 percent in 2000 against 4.5 in 1991.

Possible reasons for lower life expectancy

It is hard to pinpoint exactly what caused the drop in life expectancy. More epidemiological research on this topic is needed. The first idea we had was that perhaps immigrants bring in the risk of dying from their own (developing) country, thus decreasing the overall life expectancy. However, this is certainly not the case: we calculated the life expectancy for the population born on Aruba and it was practically the same as for the population as a whole.

One possible explanation, in our opinion, may be the diet of the population and the overweight of people on Aruba. According to a study conducted by the Department of Public Health in 1991, protein and fat intake increased significantly between 1957 and 1991[30]. The World Health Organization recommends that the relative contribution of fats and protein in a person's daily diet should be respectively 15-30 percent and 10-15 percent. In 1957, the average consumption of fats and proteins on Aruba were 24 percent and 12 percent. In 1991, they had increased to 39 and 16 percent. The consumption of carbohydrates dropped from 64 percent to 45 percent, compared with a WHO recommended carbohydrate intake of 55-70 percent of the daily diet. These figures indicate the imbalance in the Aruban diet. Between 1957 and 1991, the average weight of an Aruban man aged 35 or older increased by about 15 kg. Women were on average 10 kg heavier, while the height sexes remained about the same for both sexes.

The Quetelet-index (QI) is used internationally to measure (over)weight. The index is calculated by dividing a person's weight (in kilograms) by the square of his/her height (in meters). A QI value between 20 and 25 is considered normal. People scoring higher than 27 are overweight and have increased health risks, and people with a QI higher than 30 are obese. The mean QI value for the Aruban population aged over 35 in 1991 was 27.8. No less than 54.9 percent of men over 35 years of age were overweight with health risks or were obese. Among women this percentage was 50.7. Although these figures relate to the situation in 1991, there is little indication that the proportions of overweight people in the Aruban population have changed significantly. A comparison with results from a WHO study (1989) to monitor cardiovascular diseases in 26 countries showed that Aruba had the highest QI[31]. The study by Kappel and Kock further found that Arubans with a QI of higher than 27 had a three times higher risk of high blood pressure and a four times higher chance of being diabetic. A comparison between age-standardized death rates for nine major causes of death between Aruba and the Netherlands showed that men in Aruba died more frequently from endocrine and nutritional diseases (including cerebrovascular disease) and diseases of the circulatory system (including hearth disease) than in the Netherlands.[32]

Many overweight people on Aruba are now entering age groups where they run a higher risk of certain fatal diseases. This may indeed be the reason for the higher death rates in the age groups at more advanced ages. However, this is only a simple hypothesis, and is not based on solid epidemiological research. Further research in this area is highly recommended.

Very low infant mortality

Levels of infant mortality remain very low on Aruba: 5.6 per thousand for boys and 9.1 for girls (7.4 for both sexes). In most populations in the world, mortality in the first year of life among baby boys is higher than among baby girls. In 1999 and 2000 only twenty babies died on Aruba, eight boys and twelve girls. As the numbers are so small, small number variability may easily influence the figures. The rates are quite satisfactory and only just higher than the level for the Netherlands (5.6 per thousand in 1996). The low levels of infant mortality are the result of a healthy climate, a high level

[30] Department of Public Health (1993), p. 118.
[31] Figures provided in Kappel and Kock, p. 54.
[32] Van Ginneken, p.6.

of literacy in the population, an almost complete vaccination program, and high standard gynecological and prenatal/perinatal care, all factors which are known to be linked to low levels of infant mortality.

To calculate the infant mortality rate we used the number of deaths from the Population Registry, together with data from the census. The Population Registry does not follow the international recommendations on the registration of neonatal deaths completely. On Aruba babies who die shortly after birth are neither registered as births nor deaths. Administratively they are considered as stillbirths. Obviously, as many infant deaths occur shortly after birth, this would lead to an underestimation of infant mortality. This underreporting of infant deaths may be the reason why after 1985 infant mortality dropped very suspiciously. Corrections were made by hand. As so few infants die, it was quite easy to trace the true nature of the death of each child.

Diabetes, high blood pressure, joint ailments

For the first time in a population census on Aruba, in the 2000 census contained a direct question on specific ailments a person suffered from. Information was gathered about the prevalence of three conditions: high blood pressure, diabetes and joint ailments. Obviously, the data on these diseases are based on self-reported status. No medical examination was part of the investigation. This means that a) a person has to be aware that he/she has a certain ailment, and b) they have to be willing to share that information with the enumerator. As such, it can be expected that the information provided is a minimum estimate of the true levels of these diseases in the population. Another problem is that definitions remain rather vague for the respondent. For instance, high blood pressure may mean different things to different people, depending on how they view their own health. On the other hand, all recent data on the occurrence of these ailments were lacking. Despite the shortcomings of this type of information in a population census, it was decided to include these questions in the questionnaire.

Figures 19a-c display the incidence of high blood pressure, diabetes and joint ailments by age and sex. The data on which these figures are based are given in Appendix 10. Figure 19a suggests that high blood pressure is more prevalent among women than among men. It is unclear whether women do indeed have higher levels of blood pressure, or whether they report more accurately because they are more concerned and aware of their health status. Among the whole population on Aruba, 8.4 percent indicate that they suffer from high blood pressure, with relatively most sufferers among people aged 55 years and older. Between ages 65 and 80 year, nearly one in every three people suffers from hypertension. Interestingly, at very old ages relatively fewer people report high blood pressure. This may be caused by is a selection procedure where people with high blood pressure have a higher probability of dying.

Diabetes mellitus is a group of diseases characterized by high levels of blood glucose resulting from defects in insulin secretion, insulin action, or both. Two major types of diabetes exist.[33] Type 1 diabetes was previously called insulin-dependent diabetes mellitus (IDDM) or juvenile-onset diabetes. Type 1 diabetes may account for 5 to 10 percent of all diagnosed cases of diabetes. Type 2 diabetes, previously called non-insulin-dependent diabetes mellitus (NIDDM) or adult-onset diabetes, may account for about 90 to 95 percent of all diagnosed cases of diabetes. Risk factors for type 2 diabetes include old age, obesity, family history of diabetes, prior history of gestational diabetes, impaired glucose tolerance, physical inactivity, and race/ethnicity. Complications of diabetes include heart disease, stroke, high blood pressure, blindness, kidney disease, nervous system disease, and amputation.

[33] Besides these two types 'gestational diabetes' and 'other types' are discerned. These types account for less than 2 percent of diabetes.

Diabetes is on the increase throughout the developed and the developing world. It has been predicted that the number of diabetic patients will double over the next 15 years.

Figure 19a. Percentage of population with high blood pressure by age and sex

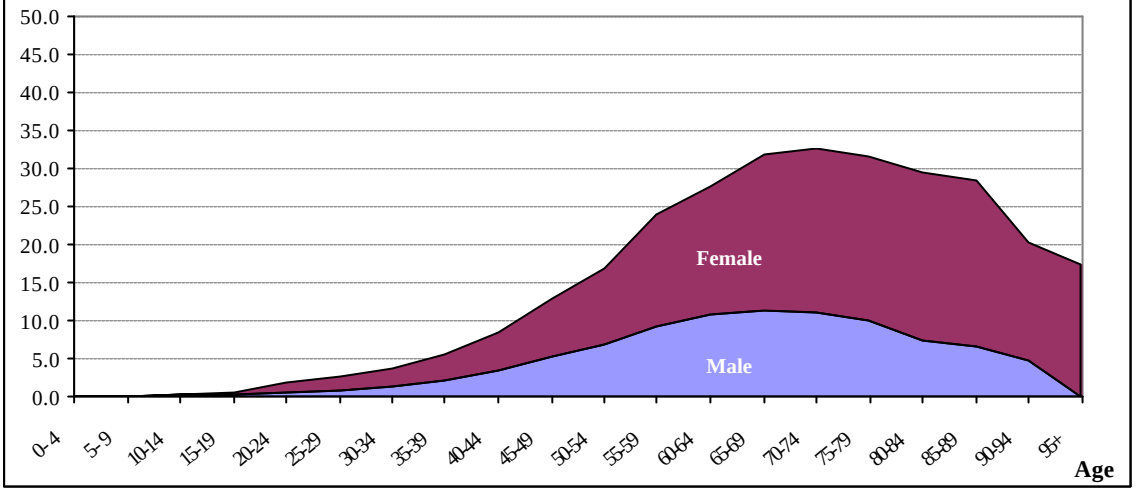


Figure 19b. Percentage of population with diabetes by age and sex

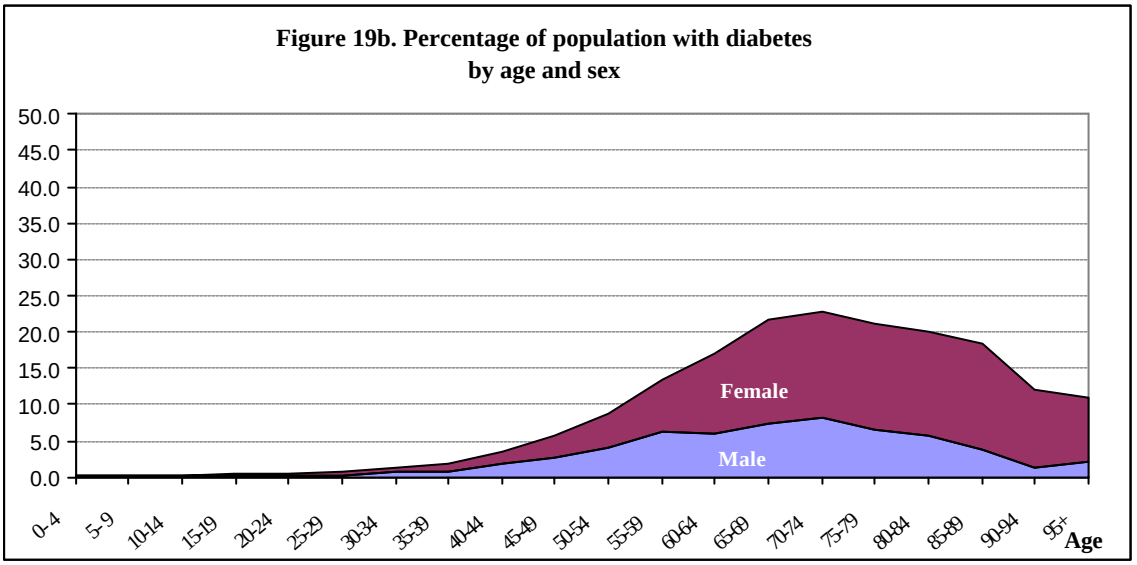
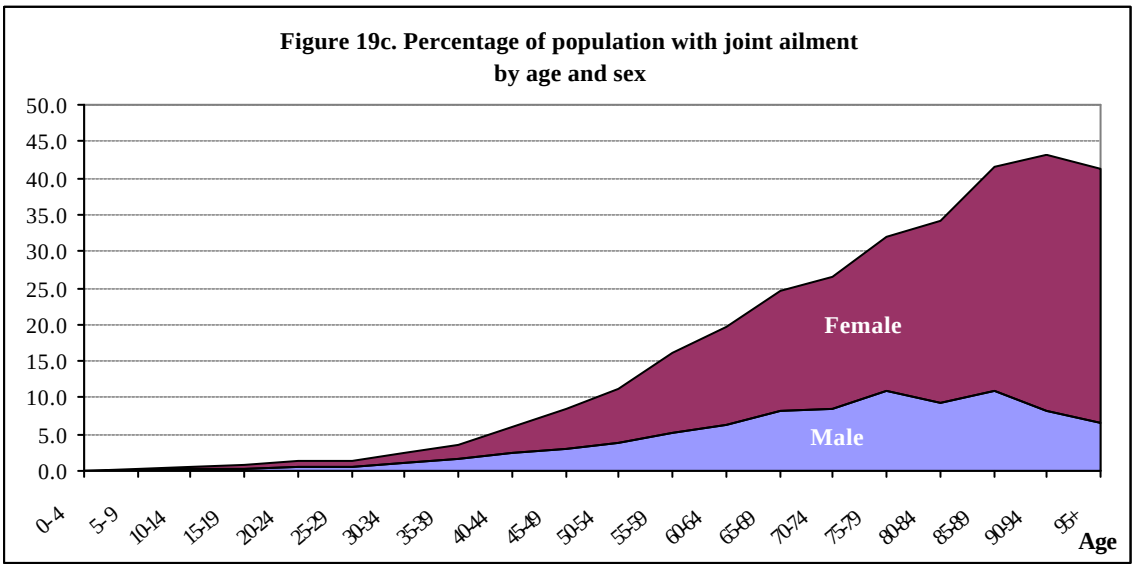
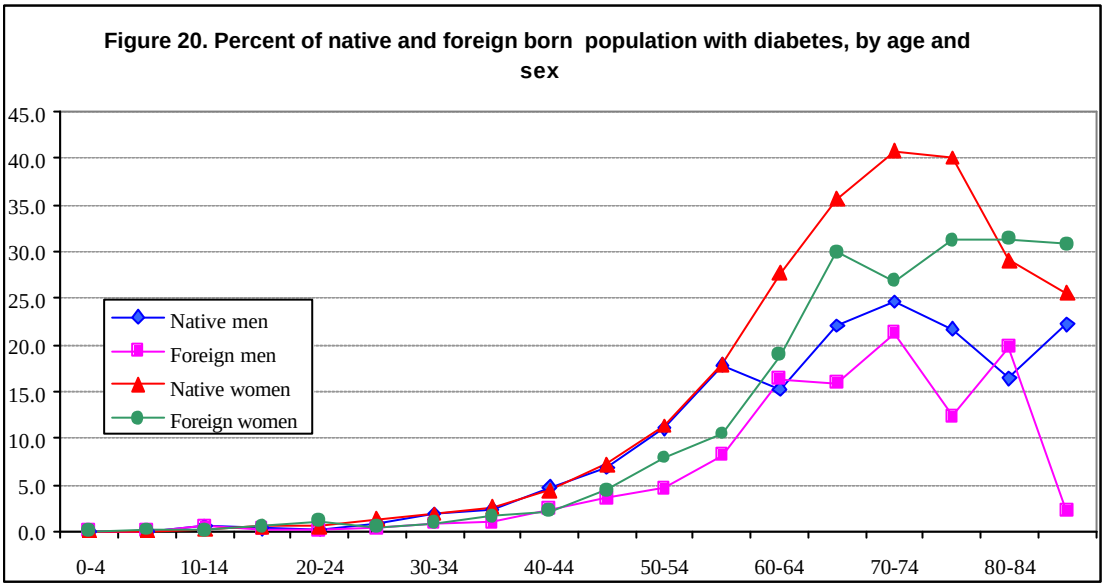


Figure 19c. Percentage of population with joint ailment by age and sex



In the region of the Americas, there were an estimated 28 million cases in 1994, including 15 million in the United States and Canada, and 13 million in Latin America and the Caribbean. By the year 2010, cases in Latin America and the Caribbean are expected to rise to 20 million or more due to aging populations, social changes and associated risk factors[34]. In 2000, it was estimated that 34.2 thousand people suffered from type1 and 1,482.4 thousand persons from type 2 diabetes in the Caribbean.

Graph 19b shows that a large group within the Aruban community is affected by diabetes. The question in the census did not distinguish between type 1 and type 2 diabetes. In answer to the question, 4,107 people indicated that they had diabetes, 1,643 men and 2,464 women. It can be expected that a large number of persons have the disease but as yet undiagnosed. For instance, in the US, the National Institute of Health under the U.S. Department of Health and Human Services estimates the total number of diabetics to be 15.7 million among whom 10.3 million diagnosed and 5.4 million undiagnosed cases[35].



The census thus counted four and a half percent of the total population as having diabetes. According to the study by de Veer and Kock (1990), the prevalence of diabetes was four percent. As the population has grown older, our results point in the same direction as de Veer and Kock. The prevalence of diabetes in Aruba increases after age 55. In the age groups 60 to 90 the percentage of people with the disease is well above twenty. Many questions remain on the impact of diabetes on mortality and morbidity, and on society. For instance, how does diabetes interact with obesity, high blood pressure and other health conditions as a cause of mortality? What are the consequences of high levels of diabetes on the health care system? What are the general costs of diabetes as a disease?

[34] Information was gathered from the Pan American Health Organization (PAHO) through their website. The Caribbean includes the Bahamas, Barbados, Cuba, Dominican Republic, Guadeloupe, Haiti, Jamaica, Martinique, Netherlands Antilles, Puerto Rico, Trinidad and Tobago. Other countries did not have information available.

[35] Data obtained from the official website from The National Diabetes Information Clearinghouse (NDIC) which is a service of the National Institute of Diabetes and Digestive and Kidney Diseases (NIDDK). NIDDK is part of the National Institutes of Health under the U.S. Department of Health and Human Services. Established in 1978, the clearinghouse provides information about diabetes to people with diabetes and their families, health care professionals, and the public.

In chapter 1 we discussed the rapid aging of the population of Aruba. One consequence of aging is that the absolute number of persons with diabetes (and high blood pressure) will increase rapidly in the next ten to fifteen years, putting an extra burden on the logistics and financial means of the public health system. More demographic, epidemiological and economic research in this field is necessary. Figure 20 shows that diabetes is much more a problem among the native population than among those born overseas. Especially at younger ages, more native men and women have the disease than foreign-born persons. At older ages, the percentage of people with the disease increases for both groups, although native men and women still have significantly higher levels than their foreign-born peers.

As joint ailments are quite common on the island, there were several requests to include a question on these diseases in the 2000 population census. Joint ailments include a large group of diseases among which rheumatism, arthritis and arthrosis. Although these diseases are rarely life threatening, they can seriously interfere with a person's quality of life. Again, the number of women indicating that they suffer from joint ailments was considerably higher than the number of men. The percentage of persons who suffer from these ailments increases gradually from age 25 up to the end of life. At the later stages in life more than 40 percent of people suffer from joint ailments. In the case of high blood pressure and diabetes we saw that in the very last age groups the percentages of people suffering from the diseases went down again. In the case of joint ailments this is not the case. This may be due to the fact that both high blood pressure and diabetes are connected with diseases that can be fatal. At the older ages a selection may then have taken place where those who suffer chronically from these diseases may have died. As joint ailments do not have fatal consequences, no such selection takes place.

Causes of death

Death is a random event. Being in the wrong place at the wrong time definitely has an influence on our chance of dying. This not only has to do with accidents, but also with things like catching a disease from water, air or from another human being. In a small place such as Aruba this often leads to random variations in the number of persons who die from a certain disease or an external cause. One way to overcome these problems is to group causes of death into broad categories. Table 14a and 14b present seven broad groups of causes of death in Aruba for the period 1992-1999. Table 14a presents the relative distribution of these causes by sex, for two periods: 1992-1995 and 1996-1999. As the data for 1993 seem to be quite erratic, with many undefined causes of death, we have not included them in the totals. A graphical representation of this information (now per single year) is given in figure 20a. Table 14b presents the cause-specific crude death rates per year for the period 1992-1999. One problem in the analysis of causes of death is the category 'Symptoms, signs and ill-defined conditions'. According to a recommendation by the World Health Organization, the proportion of ill-defined causes should not exceed five percent. For the period 1992-2000 the percentage of ill-defined causes is well above this minimum level.

The major causes of death are essentially the same throughout the industrialized world: cardiovascular diseases and cancer take the lead, while infectious diseases rank consistently at the bottom of the list. Aruba is no exception: 34.7 percent of people who died between 1996 and 1999 were victims of heart attacks, strokes or other diseases of the circulatory system. There is evidence that death rates from these diseases have remained fairly constant over the last ten years, hovering around 20 per ten thousand. Earlier on we indicated that more and more people, with increased health risks because of overweight, are now entering age groups where they are at higher risk. The fact that mortality rates from cardiovascular diseases have not gone up does not mean that these diseases do not have an effect on the reduction in life expectancy of the population. People may well

be suffering from these diseases at younger ages. As we indicated before, more research is needed in this field.

The second most important cause of death is neoplasms (tumors). Although there is a little variation in the figures, there is some indication that there has been a slight increase in the occurrence of cancer in the last ten years. Table 14a clearly shows that the large difference in life expectancy between men and women is caused by external causes of death (such as accidents). Among women the proportion who die from an external causes and poisoning is small (2.8 and 4.6 percent respectively for the period 1992-1995 and 1996-1999). A comparison of graphs 21a and 21b shows that in the same periods men are much more at risk of dying from an accident than women (see category 6). External factors account for 12.8 and 12.1 percent of all male deaths in the periods 1992-1995 and 1996-1999. Because of the large sex difference in mortality from this cause, the relative mortality for all other causes (except 'other diseases') is higher for women than for men.

Death rates from infectious diseases (category 2) remain low on Aruba. This is a clear indication that immunization of children is almost complete and that the health system works well.

Table 14 a. Relative causes of death by sex, 1992-1999

RELATIVE CAUSES OF DEATH	1992 - 1995				1996 - 1999			
	Male	Female	Unspec.	Total	Male	Female	Unspec.	Total
1 Symptons, signs and ill-defined conditions	7.5	10.6	0.0	12.8	5.8	6.4	6.1	8.0
2 Communicable diseases	4.7	6.9	0.0	5.4	8.1	9.1	8.6	7.4
3 Neoplasms	17.8	20.6	0.0	17.2	18.8	20.7	19.6	18.1
4 Diseases of circulatory system	37.1	40.8	16.7	37.6	34.6	36.4	35.4	34.7
5 Certain conditions originating in perinatal period	1.6	1.4	16.7	1.5	1.1	1.2	1.2	1.3
6 External causes of injury and poisoning	12.8	2.8	33.3	8.3	12.1	4.6	8.9	12.3
7 All other diseases	18.6	16.8	33.3	17.2	19.6	21.6	20.5	18.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Table 14 b. Cause specific death rates 1992-1999 (per 10,000)

	Cause specific Death Rates (per 10000)							
	1992	1993	1994	1995	1996	1997	1998	1999
1 Symptons, signs and ill-defined conditions	4.5	14.0	6.3	4.1	2.4	4.1	2.9	4.5
2 Communicable diseases	2.8	2.4	2.8	3.9	3.0	6.0	5.7	4.9
3 Neoplasms	8.1	6.4	10.4	13.2	11.1	9.8	12.4	11.7
4 Diseases of circulatory system	20.7	18.7	20.7	23.8	20.2	19.2	19.2	22.6
5 Certain conditions originating in perinatal period	0.1	0.8	1.4	1.0	0.7	0.6	0.7	0.7
6 External causes of injury and poisoning	4.1	4.1	3.5	6.8	4.5	5.4	5.4	5.0
7 All other diseases	9.4	8.1	9.3	11.5	14.0	11.8	9.8	11.6
Total	49.7	54.6	54.5	64.3	55.9	57.0	56.2	61.0
Total pop.	69005	73685	77595	79804	83021	86300	88451	89658

Source: Department of Public Health

Figure 21a. Relative causes of death for men, 1992-1999

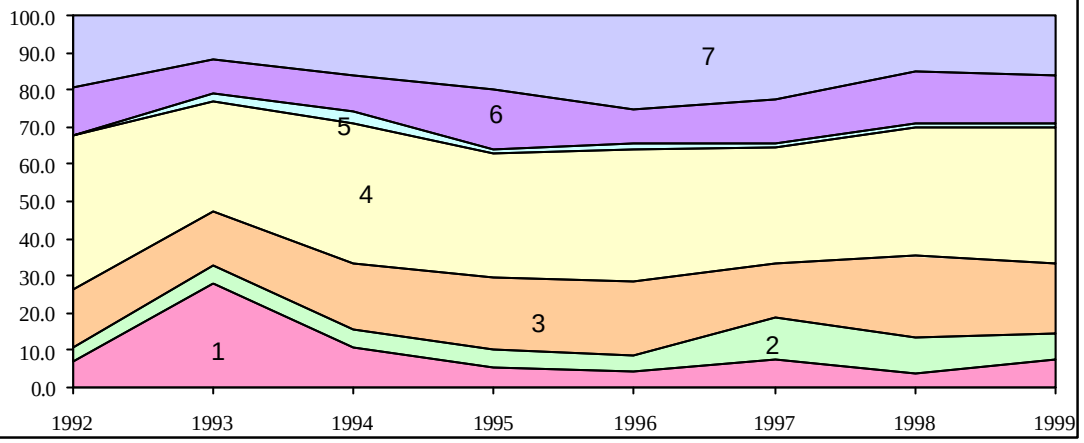
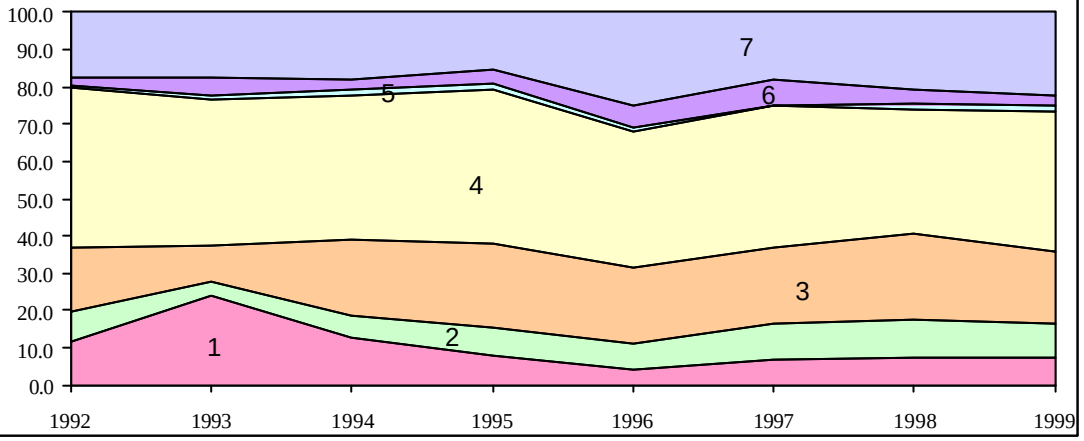


Figure 21b. Relative causes of death for women, 1992-1999



Note: numbers refer to the categories in Tables 14a -b.

Handicapped persons on Aruba

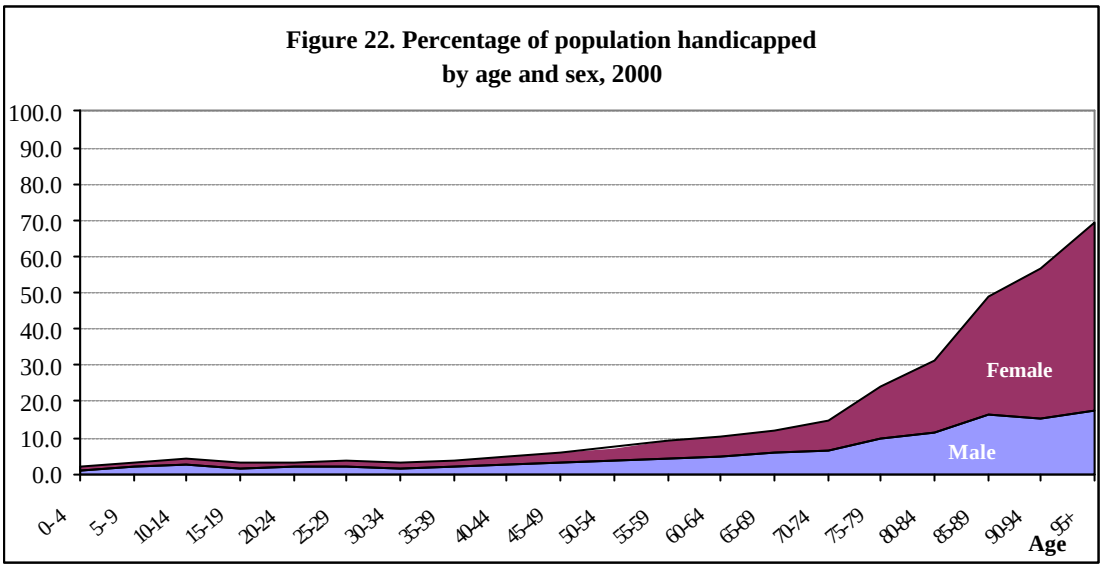
Someone who is handicapped has a physical or a mental disability, which prevents him or her living a totally normal life. Whether someone views his/her own physical or mental condition as handicapped or not is very subjective. Two people with an identical physical malfunction may view the limitations of their personal abilities completely differently. The population census included a direct question on whether the respondent considered himself/herself to be handicapped. The same question was asked in the 1991 census. In addition to this direct question, four extra questions were asked on long-term (six months or more) limitations experienced by the respondent as a result of a physical or mental condition. Information was gathered about the following limitations:

- Difficulty with learning, remembering or concentrating,
- Difficulty with dressing, bathing or getting around inside the home,
- Difficulty with going out, for instance, to shop or visit the doctor,
- Difficulty with working (where relevant).

The questions on difficulty with going outside and working were restricted to persons aged 14 years and older. These questions are identical to those in the 2000 US Census.

Asked directly whether they were handicapped, 5.6 percent of respondents answered affirmatively: 5.8 percent of men and 5.4 percent of women. This comes very close to the figures from the 1991 census, when 5.5 percent of the population indicated they were handicapped. Age is the main factor affecting the likelihood of disability. Figure 22 very clearly shows a steady increase in the relative number of handicapped by age[36]. As we saw before, aging is one of the major societal problems in Aruba. As the group of elderly will grow quickly in the future, both in absolute and relative terms, the number of handicapped persons will also increase rapidly, bringing with it serious logistic and financial consequences for Aruba's health system.

Figure 22. Percentage of population handicapped by age and sex, 2000

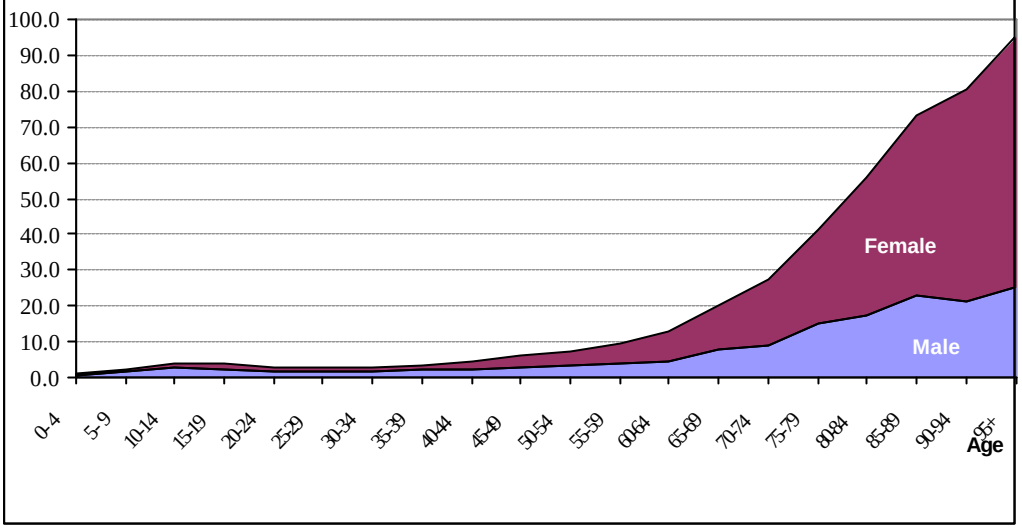


According to the US Bureau of the Census, one-fifth of all Americans have some form of disability and one in ten are severely disabled[37]. In reply to the questions on limitations, 6.3 percent of the population on Aruba indicated that they had one or more limitations. Again we see the same age pattern, i.e. the number of limitations increases rapidly with age (see figure 23)[38].

Although older people often acknowledge that they need help to perform certain activities, they do not consider themselves to be handicapped. This causes a discrepancy between persons with a limitation and those with a handicap. Compared with the US, the number of people with a limitation is quite low in Aruba. This may be the result of a national culture characteristic: people may not easily admit, either to themselves or to others, that they need assistance with some things. For planning purposes it is important to know that, because of the aging of the population, the number of persons who will need assistance will increase significantly in the –not too distant- future.

[36] The data on which figure 22 is based are presented in appendix 11. For the sake of comparison data on the number of handicapped persons were included in this table for the 1991 Population and Housing Census.
[37] Census Brief, December 1997.
[38] Data for graph 23 can be found in appendix 12; the absolute numbers are presented in the selected tables (Table P.E.6).

Figure 23. Percentage of population with a limitation by age and sex



The total number of handicapped persons is almost the same for men and women. The percentage of women with limitations (7.0 percent) is somewhat higher than the percentage for men (5.5 percent), mainly because more women than men are in the older age groups. Typically, at younger ages the number of handicapped is higher among men than among women. At older ages this pattern is reversed (see appendix 14). The number of handicapped women above 75 is 501, against 280 for men. Again, this should come as no surprise as many more women than men survive to these old ages.

It is a well-known fact that baby boys are more likely to have a handicap than baby girls. Males are more vulnerable to X-chromosome linked recessive genetic diseases. In a male fetus, the testes secrete testosterone and other hormones, which control the development of the male reproductive organs. It appears that male hormones also influence the development of other parts of the body, including the lungs, brain and immune system. The effects of testosterone may contribute to sex differences in health and mortality at young ages related to respiratory diseases, accidents and infectious diseases[39]. At younger ages males are also more prone to disablement because they more often manifest risk-taking behavior and consequently have higher rates of accidents.

Motor handicaps most common

The question on type of handicap in the 2000 census differed from the one in the previous census. In 1991, respondents could indicate only one type of handicap, although there was a category 'multiple handicaps' for people with more than one handicap. As this proved unsatisfactory, it was decided that in 2000 respondents could give more than one answer to the question on type of handicap. This means that 1991 and 2000 results should be compared with caution, the more as the 2000 census distinguishes between 'number of handicapped persons' and 'number of handicaps'. The number of handicapped persons is obviously smaller than the number of handicaps, as one person may have more than one handicap.

Figures 24a-b show the relative distribution of types of handicap for men and women by age. Handicaps related to movement are most common for both men and women: 733 and 793

[39] Waldron (1998), p.66.

respectively indicate that they have a motor handicap. At younger ages, men have a higher frequency of mental handicaps than women. Interestingly to see fewer than one thousand people indicated that they had an organ disorder. As the census tells us that about four percent of the population has diabetes, this means that the vast majority of these patients did not indicate that they were handicapped; in other words they did not experience any limitations in their personal abilities caused by their illness. The proportion of organ disorders is higher at the younger ages, which is contradictory to expectations. Both visual and auditory handicaps increase with age. A total of 1,038 persons indicated they have a visual handicap and 677 reported hearing problems.

Figure 24a. Percentage of type of handicap by age, males

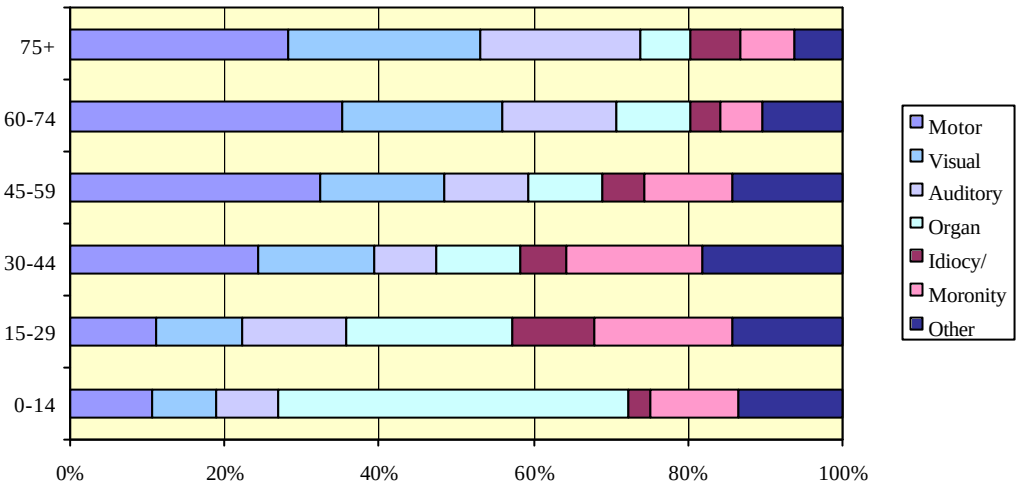
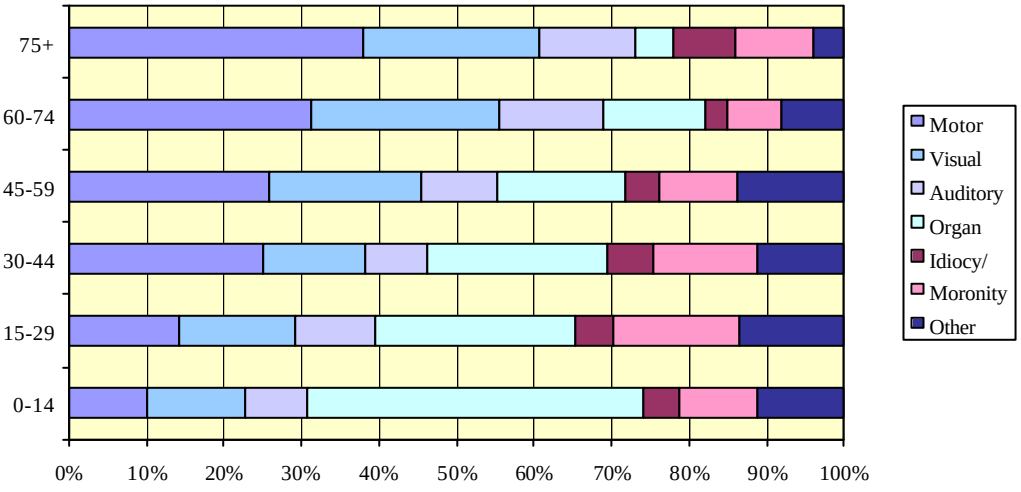


Figure 24b. Percentage of type of handicap by age, females



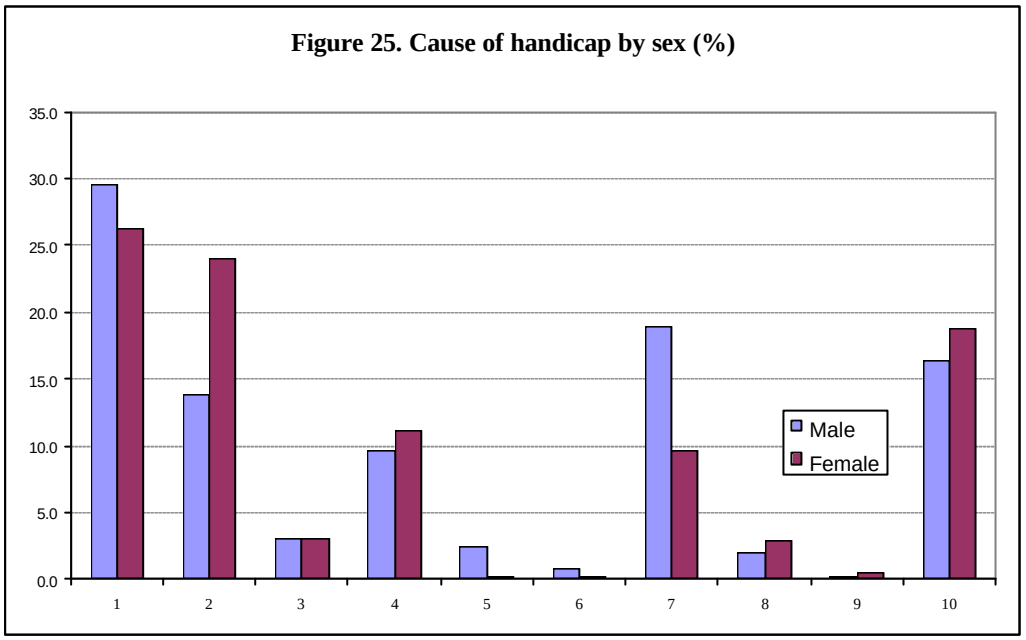
Cause of handicap: birth, age and behavior

People who answered the handicap question affirmatively were further asked what caused the disability. Figure 25 shows the percentages of causes of disability for men and women. The following categories were discerned: 1) congenital defect, hereditary illness, 2) geriatric illness, 3) infection, 4) other disease, 5) health-damaging habits (e.g. smoking, drugs), 6) poisoning, 7)

accident, 8) emotional stress, 9) unhealthy nutrition, 10) other reason. The numbers in the graph correspond to these causes.[40]

Congenital anomalies cause most handicaps: 867 men (29.3 percent) and 778 women (26.3 percent) indicate that their handicap was caused by a birth defect. As many more women than men survive to the oldest age groups, it comes as no surprise that the percentage of handicaps caused by geriatric diseases is much higher for women than for men. Accidents not only result in much higher mortality for men, they also leave more men handicapped, 552, compared with 285 women. About ten percent of men and women indicated they are handicapped because of a disease.

Figure 25. Cause of handicap by sex (%)



Good health, bad health

An interesting way to look at the health condition of a population is the 'health expectancy' approach, using life table techniques developed by Sullivan. These techniques can be used to determine how many years a person can expect to live in a healthy or, for instance, a handicapped state, given a certain level of life expectancy. For Curaçao, Van Ginneken, Van Leusden and Van de Hel calculated how many years a person could expect to live in good health and in bad health[41].

The Aruba census 2000 included a question on perceived health, phrased as follows: "How is your health in general?", with possible answers: 1) perfect, 2) good, 3) moderate, 4) sometimes good, sometimes bad and 5) bad. Several studies have found that the answers 'moderate', 'sometimes good and sometimes bad' and 'bad' give a good indication for the number of people not in good health. Van Ginneken et al. (1991) showed that the use of these three categories agrees reasonably well with the percentages of persons not in good health determined by a series of questions on short-term and long- term disability.

Table 15 shows the absolute and relative numbers of men and women according to their own perceived health status: 11.6 percent of the total population indicate that their health is less than

[40] Absolute numbers and percentages for these causes are given in appendix 13.
[41] K. van Ginneken, H.M. van Leusden and M. van de Hel, 1992. For an estimate of health expectancy for the Netherlands see also Van Ginneken et al. (1991).

good. Figure 26 shows the percentages of males and females in less good health by age. In 1992 in Curaçao, 13.9 percent of persons perceived their health condition as less than good. The figures for Aruba show that a higher percentage of women think their health is not so good: 13.6 percent for women against 9.6 percent for men. This is consistent with other countries. Van Ginneken et al. (1994) indicate that percentages of poorer health are nearly always higher for women than for men and increase steadily age up to 40. After the age of 40, the proportion of people in poorer health increases at a much faster pace.

Figure 26. Percentage in poorer health, by age and sex

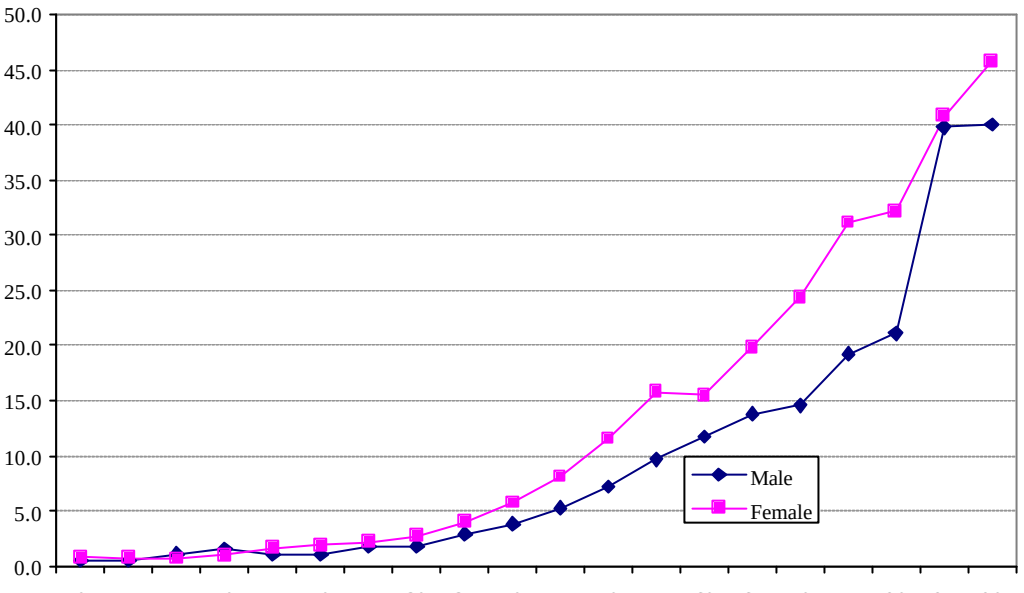


Table 15. Absolute and relative number of persons by health condition and sex.

	Male		Female		Total	
	No.	Percentage	No.	Percentage	No.	Percentage
Perfect health	14,528	33.4	13,776	29.3	28,304	31.3
Good health	24,269	55.9	26,388	56.1	50,656	56.0
Moderate health	2,345	5.4	3,301	7.0	5,646	6.2
Sometimes good, sometimes bad	1,422	3.3	2,576	5.5	3,997	4.4
Bad	382	0.9	534	1.1	917	1.0
Not reported	489	1.1	497	1.1	986	1.1
Total	43,434		47,072		90,506	

Source: Population and Housing Census 2000

According to their self-perceived state of health, at birth a baby boy can look forward to an average of 66.2 years in good health and 3.8 years in poorer health. Women live on average six years longer than men: they will live 2.6 years of these six years in good health and 3.4 in poorer health. In table16 we provide the age-specific life expectancies for men and women in good and poor health. Unsurprisingly, at higher ages the number of years in poorer health, as a proportion of total age-specific life expectancy, becomes substantial. At these ages the difference between men and women also becomes considerable. For instance, at age 55 men may expect to live for an average 20.1 years more, while women still have 24.4 years to go. Expectancies in poor health for men and women are

then respectively 2.9 and 5.6 years. In other words, at age 55 men can expect to spend 14.4 percent of their remaining lifespan in poorer health, while for women this percentage is 22.9 percent.

Table 16. Life expectancy in good and less than good health by age and sex

	Males			Females		
Age	*e(x)*	*e(x) Good health*	*e(x) Poor health*	*e(x)*	*e(x) Good health*	*e(x) Poor health*
0	70.0	66.2	3.8	76.0	68.9	7.1
1	69.4	65.6	3.8	75.7	68.5	7.2
5	65.4	61.7	3.8	71.9	64.7	7.2
10	60.5	56.7	3.7	67.0	59.9	7.1
15	55.6	51.9	3.7	62.0	54.9	7.1
20	50.9	47.3	3.6	57.2	50.1	7.0
25	46.7	43.0	3.6	52.5	45.6	7.0
30	42.3	38.7	3.6	47.7	40.8	6.9
35	37.7	34.1	3.6	43.0	36.2	6.8
40	33.0	29.6	3.4	38.3	31.7	6.6
45	28.5	25.2	3.3	33.6	27.1	6.4
50	24.2	21.1	3.1	28.9	22.8	6.1
55	20.1	17.2	2.9	24.4	18.8	5.6
60	16.3	13.7	2.6	20.5	15.4	5.1
65	13.1	10.8	2.3	16.7	12.1	4.6
70	10.4	8.4	2.0	13.1	9.1	4.0
75	8.1	6.2	1.9	10.4	6.8	3.5
80	5.7	4.1	1.5	7.5	4.8	2.7
85	3.9	2.4	1.5	5.5	3.2	2.3
90	4.0	2.6	1.4	4.7	2.7	2.0
95	3.2	2.7	0.5	3.6	2.3	1.3

Source: Population and Housing Census 2000.

Men: shorter life, longer in marriage

The same life table techniques used to calculate the 'health expectancy' can be applied to several other age-specific conditions. It is interesting to see how long a person can expect to remain in each of the marital states: never married, married, divorced, legally separated and widowed[42].

The table in appendix 15 summarizes the results of this analysis. Only age-specific life expectancies in a particular state are presented. Results are presented graphically in figures 27a and 27b, separately for males and females. There are a number of differences between men and women. First, although men marry on average at a somewhat older age than women, during their lifespan women spend more time in the never married state than men (35.6 against 32.8 years). This sounds contradictory, but as more women than men remain unmarried throughout their life, their overall life expectancy in the never married status becomes much higher. Second, although men live six years shorter than women, on average they remain married for 5.6 years longer than women. This is partly because when a couple divorces, the woman is less likely than her ex-husband to remarry. At birth a boy can expect to spend 3.9 years of his life as a divorcee. The average woman will spend 5.7 years in the divorced state. Third, because men die at an earlier age, women spend more time widowed.

[42] We did the life table analysis for legal marital status. In principle it would be possible to do the same type of analysis for consensual union, i.e. to see if a couple was living together or not, or the number of years a persons lives with his parents, with or without children etc.. These types of analysis fell a bit outside the scope of the present study.

Women are widowed for an average of 9.01 years of their life, men for an average 2.8 years. The difference between these two figures is about the same as the difference between life expectancy for men and women.

Figure 27a. Age specific expectancy in specific marital status, males, 2000

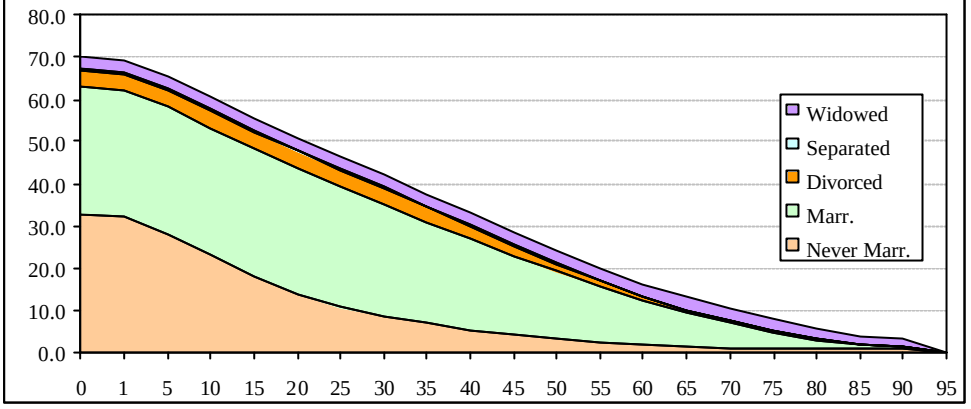
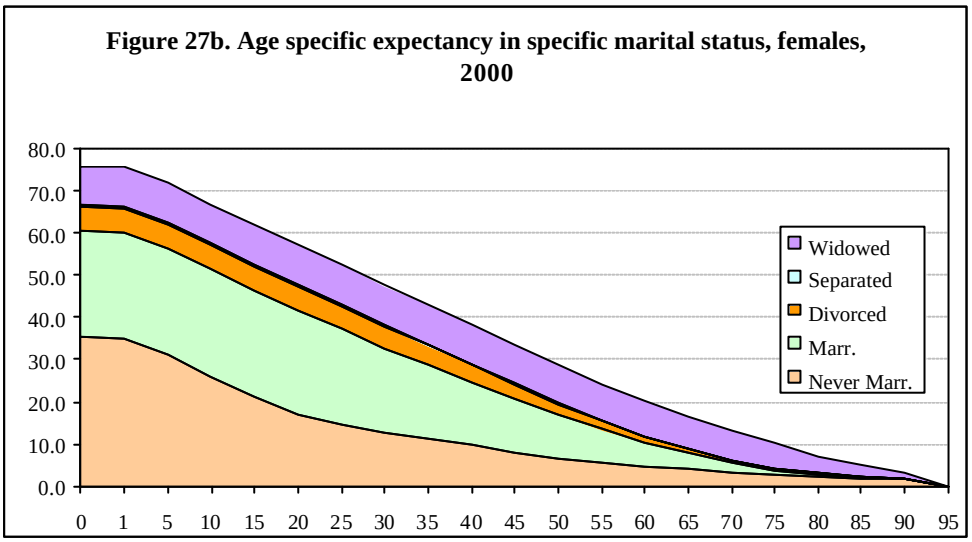


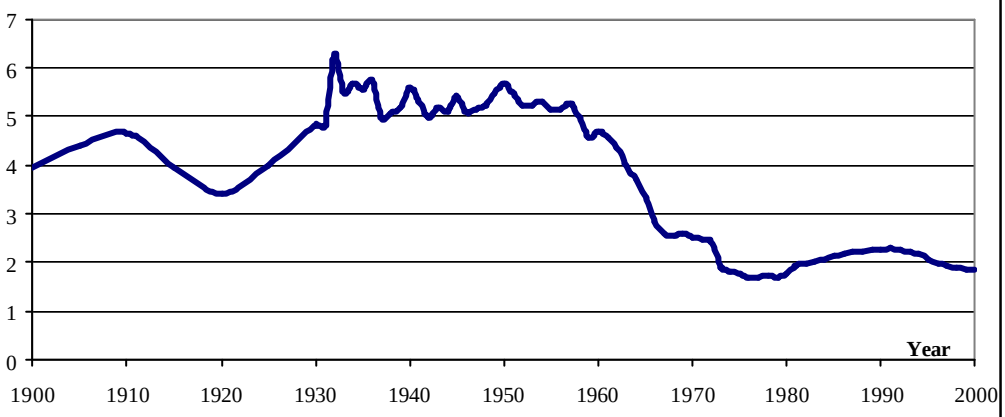
Figure 27b. Age specific expectancy in specific marital status, females, 2000



4. Fertility

The changes that have taken place in levels of fertility have had a profound influence on the current age structure of the population and are an important contributing factor to the aging process. Since the early 1970's, fertility in Aruba has hovered around replacement level, i.e. the level at which a mother has one daughter who survives up to the age when she herself starts having children. In their description of the historical levels and trends of fertility on Aruba, Van Leusden and Moors (1985) go deeper into the causes of the steep fertility decline that took place in Aruba between the late 1950's and the early 1970's. Eelens (1993) has further elaborated on these historical trends in fertility. The rapid decrease in fertility was the result of an economic modernization process which included: a rapid increase in the participation of women in the labor process, the necessity for higher education of new entrants in the labor force, and the change of cost-benefit ratios for having additional children. This process accelerated during the 1960's, prompting couples to limit their offspring. This chapter concentrates on more recent trends in fertility.

Figure 28. The course of the Total Fertility Rate between 1900 and 2000, Aruba



Back below replacement

Table 17 presents the basic data underlying the calculations of the fertility schedule. These data come from the population census and are combined with data from the Population Registry. The number of births refers to the period April 2000 – March 2001, putting the population stock data of the census at the middle of the time interval, thus removing any bias in the fertility schedule.

In the period April 2000 – March 2001, 1,252 children were born on Aruba. With a population of 90,506 this implies a crude birth rate of 13.8 per thousand. In 1991, the crude birth rate was 18.5 per thousand. Although widely used, the crude birth rate is a poor measure of the level of fertility in temporal or spatial comparisons. It does not eliminate the impact of differential population structures and remains influenced for quite a number of years by irregularities in fertility behavior experienced by former cohorts in their reproductive ages.

Table 17. Number of women and children

	All women	Married women	Never-married women	Legitimate births	Illegitimate births	Total births	% Illegitimate
14	668	1	3,371	0	2	2	100.0
15-19	3,071	62	3,000	26	130	156	83.3
20-24	2,597	599	1,948	113	145	258	56.2
25-29	3,333	1,529	1,604	228	126	354	35.6
30-34	3,997	2,090	1,494	193	82	275	29.8
35-39	4,733	2,622	1,468	120	52	172	30.2
40-44	4,468	2,365	1,286	20	15	35	42.9
45-49	3,659	1,977	928	0	0	0	-
Total	25,858	11,243	15,099	700	552	1,252	44.1

Crude birth rate:

Total population	No.births	**CBR**	**GFR**
90506	1252	13.8	48.4

Instead of dividing the number of births by the total population, the ratio of the number of births to the population of women in reproductive age categories is already an improvement. This ratio is called the General Fertility Rate (GFR). Currently, the GFR stands at 48.4 births per thousand.

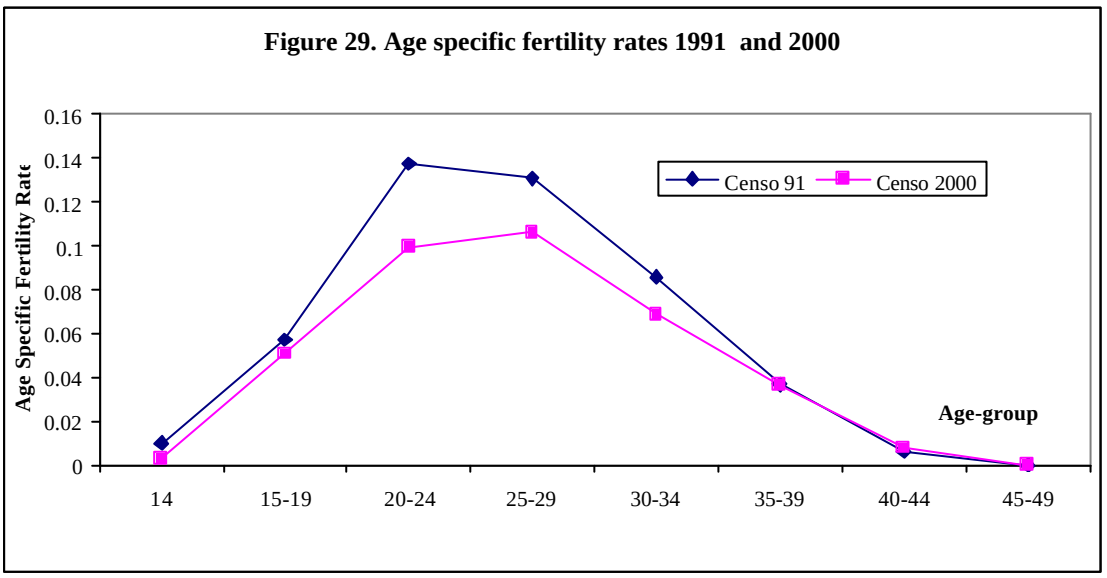


Table 18. Fertility schedules 1991 - 2000.

Censo 91			
Fertility table	Marital fertility	Illegitimate fertility	Total fertility
14	0.0000	0.0101	0.0101
15-19	0.5143	0.0420	0.0571
20-24	0.2816	0.0832	0.1375
25-29	0.1967	0.0672	0.1308
30-34	0.1038	0.0628	0.0858
35-39	0.0457	0.0244	0.0370
40-44	0.0059	0.0064	0.0061
45-49	0.0000	0.0000	0.0000
Total			
	TMFR	ITFR	TFR
	5.74	1.44	2.28
Mean age	22.72	26.77	26.64

Censo 2000			
Fertility table	Marital fertility	Illegitimate fertility	Total fertility
14	0.0000	0.0006	0.0030
15-19	0.4197	0.0433	0.0508
20-24	0.1888	0.0744	0.0994
25-29	0.1491	0.0785	0.1062
30-34	0.0924	0.0549	0.0688
35-39	0.0458	0.0354	0.0363
40-44	0.0085	0.0117	0.0078
45-49	0.0000	0.0000	0.0000
Total			
	TMFR	ITFR	TFR
	4.52	1.49	1.85
Mean age	22.97	27.49	26.99

Source: Population and Housing Census 1991 and 2000, Population registry.

Based on table 17 a set of age-specific fertility schedules were calculated for legitimate, illegitimate and all births. For the sake of comparison we have included the fertility schedule for 1991 as well (see table 18). Figure 29 shows that the age-specific fertility rates[43] for 2000 are lower than the values for 1991. The relative decrease is highest in age group 20-24. Young women in their early twenties now have an almost 40 percent lower chance of bearing a child than nine years ago. In age groups 25-29 and 30-34 the decline in fertility is also significant. These age-specific reductions have resulted in a drop in the total fertility rate[44] from 2.28 in 1991 to 1.85 in 2000. The mean age at

[43] Age-specific fertility rates are computed by dividing the number of births to women in a particular age group by the number of women in that age group. The marital age-specific fertility rate is calculated by dividing the number of children born to married women in a particular age group, by the number of married women in that age group. The illegitimate age-specific rates are calculated in a similar way.

[44] The Total Fertility Rate (TFR) gives the average number of children that would be born per woman if all women lived to the end of their childbearing years and bore children according to the given set of age-specific fertility rates. The measure is sometimes referred to as total fertility. The Total Marital Fertility Rate and the Total Illegitimate Fertility Rate indicate the same as the TFR, but are restricted to the women in the indicated marital status. The Total Fertility Rate is calculated as five times the sum of the age-specific fertility rates. The factor five has to be applied as the age specific fertility rate is a age standardized measure and refers to single year age groups.

which women have their children has increased slightly since 1991: from 26.6 to 27 years. This shows that in Aruba women tend to have their children at a somewhat older age.

To measure the *'replacement'* of mothers by their daughters, the Gross Reproduction Rate (GRR) is used. The GRR for Aruba currently stands at .894. This rate can be further refined by taking mortality into account: not all girls survive to an age where they have children. This results in the Net Reproduction Rate (NRR)[45]. The NRR for women living on Aruba is .873. The fertility of Aruban women is currently below replacement level; in other words the next generation of potential mothers will be smaller than the current one. (Obviously, migration is not taken into account in these calculations.) Fertility of Aruban women was below replacement for a good part of the 1970's. It subsequently rose to a level slightly above replacement in the 1980's and early 1990's: in 1991, the NRR was 1.08. Since the mid-1990's, however, the level of fertility has dropped again to the current below replacement level.

Human fertility varies considerably between countries across the world. Today, the country with the highest Total Fertility Rate is Niger, where women have on average 7.5 children, and a number of countries are in the race for the lowest fertility. Italy or Spain, both with a TFR of 1.2, probably started the new millennium with the lowest fertility on record. The Netherlands has a level of 1.6 children per woman. While many countries in the developed world are confronted with below replacement fertility, most countries in our region still have fertility levels that are well above replacement (e.g. Colombia 3.0; Jamaica 2.8; Venezuela 3.5). Preliminary results from the 2001 census in the Netherlands Antilles show that the TFR in Curaçao is now 2.15 children per woman.

More baby boys

Because relatively few children are born, small number variability may distort data on sex ratios at birth. The sex ratio at birth indicates the number of male live births per 100 female live births. In 1991, the sex ratio at birth was 107.4. To calculate the current sex ratio at birth we took the number of births for 2000 and 2001 together to decrease small number variability. At the moment the sex ratio at birth is 106.9. This comes close to the 1991 figure. Around the world, sex ratios at birth vary between about 103 and 107. With a value of 106.9 the sex ratio in Aruba is high. It has been observed that countries with better health and lower fertility tend to have higher sex ratios of live births. Another cause of variation between countries may be ethnic characteristics. Improved maternal health may be associated with lower late fetal mortality, particularly for male babies, and may thus lead to higher sex ratios at birth. Lower fertility means fewer higher order births and more lower order births. Low order births have higher sex ratios. Therefore, both better health care and lower fertility lead to higher sex ratios at birth (Waldron, p. 53).

Adolescent fertility: a problem?

Adolescent fertility is considered as a major social issue in many countries. One measure used to compare adolescent fertility internationally is the 'annual number of births per 100 women aged 15-19 years'. Currently, this measure is 5.1 per 100 for Aruba. The current figure is a little lower than in 1991, when 5.8 children were born to every 100 adolescent women. To compare the Aruban figures with other countries we present a number of recent figures from Population Action International on

[45] The Net Reproduction Rate (NRR) indicates the average number of female children born per woman in a (fictitious) cohort subject to a given set of age-specific fertility rates, a given set of age-specific mortality rates and a given sex ratio. The Net Reproduction Rate is calculated as the sum of the products of the fertility rates between ages x and x+5 and the survivorship probability of women from birth to age x+2.5.

teenage fertility (Table 19). The highest level of adolescent fertility in the world is in Angola, where 21.9 children are born annually per 100 women 15-19 years.

Compared with European countries, Aruba scores quite high in terms of teenage fertility. The Netherlands scores extremely low: only 0.4 children per 100 15-19 year-old girls. Information on sexuality is widely available and use of contraception at young ages is quite common in the Netherlands. The US, where teenage pregnancy is considered to be a social problem, has exactly the same number of births per 100 women aged 15-19 years as Aruba. This is an indication that in Aruba, too, more attention should be paid to teenage pregnancy. Other countries in the region, such as Colombia, Venezuela, Jamaica and the Dominican Republic have levels higher than Aruba's. And in the Netherlands Antilles, too, the level of adolescent fertility is higher than in Aruba (8.0 per hundred).

Table 19. Annual Births per 100 women aged 15-19 years (2001).

Country	Annual births per 100 women aged 15-19 years.
Angola	21.9
Senegal	11.9
Bangladesh	11.5
Venezuela	9.8
Jamaica	9.1
Dominican Republic	8.9
Colombia	8.8
Netherlands Antilles	8.0
Cuba	6.6
Peru	5.8
USA	5.1
Aruba	5.1
Philippines	4.3
Canada	2.3
Spain	0.8
Netherlands	0.4

A total of 156 children were born to 15-19 year-olds on Aruba from April 2000 to March 2001: 12.5 percent of all births in this period. The majority of these babies were born out of wedlock (83.3 percent). Having a child at a very young age hampers the mother's own educational development. Table 20 shows the percentage of girls between 15 and 20 years with and without a child or children, and for each group whether or not they are still in school. The table clearly shows that school dropout rates are much higher for girls who had a baby at a very young age.

Table 20. Percentage of women 15-19 years with and without child(ren), age and school going status

	Without a child		With one or more child(ren)	
	In school	Not in school	In school	Not in school
15	95.8	4.1	25.0	75.0
16	93.3	6.6	72.7	27.3
17	88.8	10.8	47.4	52.6
18	76.7	23.1	41.8	58.2
19	67.3	32.4	24.2	75.8
	86.3	13.7	36.0	64.0

Source: Population and Housing Census 2000

Girls aged between 15 and 20 who do not have a child yet have an 86.3 percent chance of still being at school; for their peers with children, the chance drops to 36.0. It should be taken into account when interpreting these percentages that only nine girls in the very young ages (15 and 16) already have a baby. Most of the young women who have one or more children are not currently living together on a durable basis with a partner: only 40 percent live with a partner, and for under-18s even fewer (respectively 28.9 percent at age 17 and 18.2 at age 16).

Out of wedlock

Extra-marital (or 'illegitimate') fertility remains high in Aruba. It has even risen slightly in the last ten years while total fertility has declined. The total extra-marital fertility rate is 1.44 children per unmarried woman in the age group 14-49. The mean age of the illegitimate fertility schedule is about 0.5 years higher than that for total fertility (27.5 years). Another way to look at legitimate and illegitimate fertility is through component age-specific fertility rates. In this way we divide the age-specific fertility rates into their constituent parts. The sum of the age-specific legitimate and illegitimate fertility rates then becomes equal to the age-specific total fertility rate.

Table 21 shows the componential fertility rates for the period 1960–2000. Over the years, extra-marital fertility as a component of total fertility has increased significantly. In 1960, it constituted 17.3 percent of the TFR. At the time of the subsequent censuses these percentages were respectively 20.2 (1972), 26.3 (1981) and 38.9 (1991). Today, extra-marital fertility makes up 46.3 percent of total fertility. Figures 30a-b show the componential age-specific fertility rates for 1991 and 2000.

The figures clearly show that, while overall fertility has declined, the proportion of illegitimate fertility has increased drastically. The proportion of births out of wedlock is highest in the lower age groups, say below 25. First order births are also relatively more often extra-marital: sixty percent of all first children are born outside marriage.

Figure 30a. Componential Fertility Rates 1991

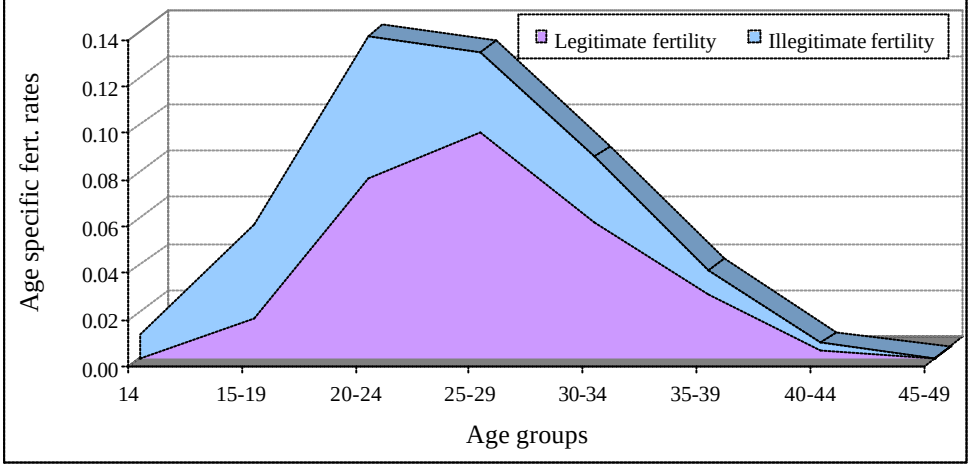
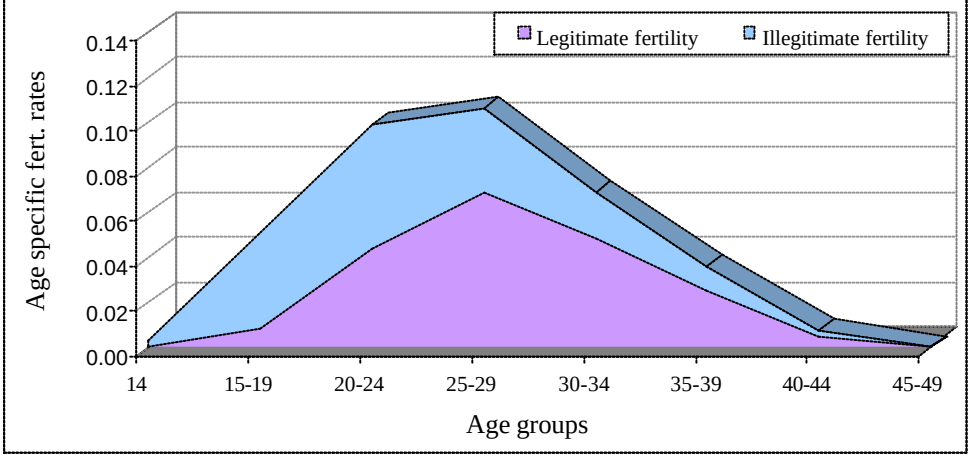


Figure 30b. Componential Fertility Rates 2000



In the last ten years many foreign women have come to Aruba, and many have found a husband or partner here. It is interesting to investigate whether the proportion of children born out of wedlock is higher or lower among foreign than among local women. One could argue that, since most of these young women come to Aruba alone, social control would be less intensive and the proportion of illegitimate births would thus be higher. Table 22 presents data from the Population Registry, classifying the number of births for a two-year period (1999 and 2000) by place of birth of the mother and legitimacy status of the baby. Unfortunately, as practically all these women were born before the Status Aparte (1986), the country of birth for Aruban women is reported as 'Netherlands Antilles', making it impossible to differentiate between Aruban and Antillean women. Therefore, Aruban and Antillean women were grouped into one category. The data in table 22 clearly show that Aruban/Netherlands Antillean women have much higher levels of extra-marital births than women born in other countries. Currently, 51.7 percent of all births to women born in Aruba/Netherlands Antilles are born outside marriage. Women from countries where most of the foreign partners of Aruban men come from, namely Colombia, the Dominican Republic and Venezuela, have extra-marital birth rates of respectively 20.3, 32.8 and 20.7 percent. Foreigners are granted a residence permit for only one year at a time. It may well be possible that because of their semi-permanent status on the island these women only want a child with their partner if there is a legal bond between them.

Table 21. Componential fertility rates (legitimate and illegitimate) 1991 - 2000

	Legitimate fertility					Illegitimate fertility					Total fertility		
	1960	1972	1981	1991	2000	1960	1972	1981	1991	2000	1960	1972	1981
14	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.010	0.003	0.000	0.000	0.000
15-19	0.024	0.021	0.018	0.016	0.008	0.017	0.019	0.021	0.041	0.042	0.041	0.040	0.039
20-24	0.159	0.104	0.081	0.077	0.044	0.040	0.027	0.037	0.060	0.056	0.199	0.131	0.118
25-29	0.205	0.127	0.095	0.097	0.068	0.038	0.021	0.023	0.034	0.038	0.243	0.148	0.118
30-34	0.166	0.09	0.062	0.058	0.048	0.032	0.017	0.013	0.028	0.021	0.198	0.107	0.075
35-39	0.110	0.044	0.023	0.027	0.025	0.014	0.010	0.007	0.010	0.011	0.124	0.054	0.030
40-44	0.050	0.017	0.005	0.003	0.004	0.007	0.006	0.001	0.003	0.003	0.057	0.023	0.006
45-49	0.004	0.001	0.001	0.000	0.000	0.002	0.001	0.000	0.000	0.000	0.006	0.002	0.001
Total	3.59	2.02	1.43	1.39	0.99	0.75	0.51	0.51	0.89	0.86	4.34	2.53	1.94
% illegitimate as part of total fertility											17.3	20.2	26.3
% of births above 35	22.8	15.3	10.1	10.9	15.0	15.3	16.7	7.8	7.1	8.4	21.5	15.6	9.5
Mean age	29.9	28.6	27.6	27.7	28.8	28.0	26.9	25.1	24.9	24.9	29.6	28.2	26.9

Source: Population Censuses 1961, 1972, 1981, 1991 and 2000; data for births according to illegitimate status from the Population Registry

Table 22. Legitimate/illegitimate births by mother's country/region of birth, 1999-2001

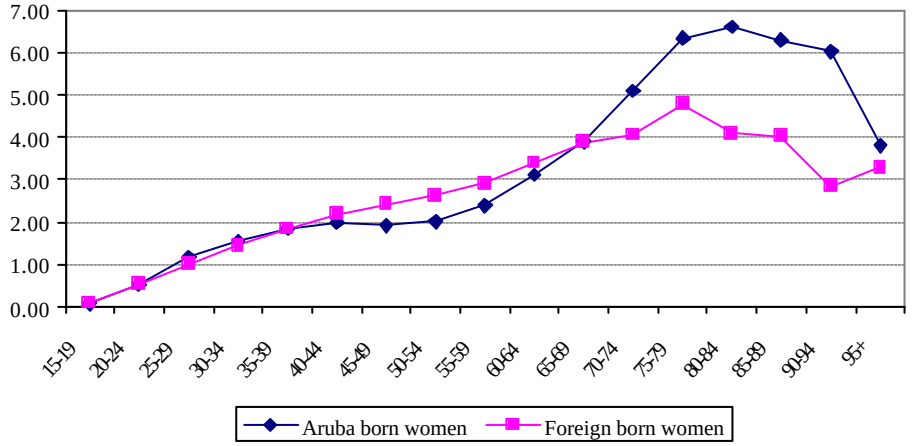
Country/region	Legitimate	Illegitimate	Total	% of Total	Percentage illegitimate
Netherlands Antilles	963	1029	1992	64.0	51.7
United States	11	3	14	0.4	21.4
Other North America	2	0	2	0.1	0.0
Netherlands	106	60	166	5.3	36.1
Other Europe	15	4	19	0.6	21.1
Colombia	259	66	325	10.4	20.3
Surinam	31	18	49	1.6	36.7
Venezuela	92	24	116	3.7	20.7
Peru	28	8	36	1.2	22.2
Other Latin America	23	5	28	0.9	17.9
Dominican Republic	131	64	195	6.3	32.8
Haiti	37	14	51	1.6	27.5
Jamaica	31	5	36	1.2	13.9
Other Caribean	17	10	27	0.9	37.0
China	34	3	37	1.2	8.1
Philippines	6	4	10	0.3	40.0
Other Asia	10	1	11	0.4	9.1
African	2	0	2	0.1	0.0
Total	1796	1318	3114	100.0	42.3

Source: Population Registry

Local and foreign mothers

Table 20 shows that 36 percent of all children born on Aruba in the period 1999-2000 had a mother who was born outside the Netherlands Antilles/Aruba. The most important countries of birth of mothers are in descending order Colombia (10.4 percent), Dominican Republic (6.3 percent), the Netherlands (5.3 percent) and Venezuela (3.7 percent).

Figure 31. Number of children ever born per woman by age, Aruba and foreign born women



Many women come to Aruba from neighboring countries with different fertility patterns. In many cases they leave their children behind and come to work on Aruba, often to earn money for their families at home. Another group of women who come to Aruba are young and unmarried. In the census all women aged 14 years and older were asked about the number of births (boys/girls) they had had. The results of these questions are plotted in Figure 31 for native and foreign-born women. The reader should keep in mind that births to foreign-born women include both children born on Aruba and those born overseas. The data for this graph can be found in appendix 16. Up to age 40, the number of children ever born to local and foreign-born women is almost the same. Between ages 40 and 70 foreign-born women have had more children. This age group includes many women from countries with much higher (past) levels of fertility than Aruba, and it is therefore not surprising that the total number of children of middle-aged foreign women is higher than for local women. After age 70 the number of children ever borne becomes higher for local women, an indication of the very high levels of fertility prior to the fertility transition.

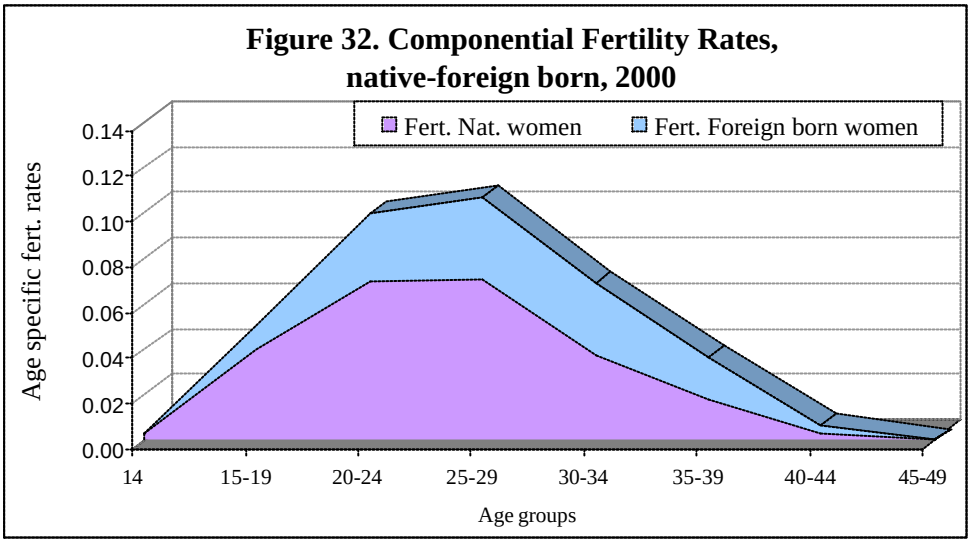
We have calculated fertility schedules separately for local[46] and foreign-born women. Numbers of births to local and foreign women were taken from the Population Registry and combined with the number of local and foreign-born women by age from the Population Census. Only babies born on Aruba were taken into account. Table 23 presents the fertility schedules for local and foreign-born women, and the overall fertility schedule. The TFR for native women is currently 2.16 against 1.46 for foreign-born women. This means that fertility for local women is still somewhat above replacement level. It is clear from these results that the reduction in the overall level of TFR between 1991 and 2000 is largely caused by the influx of large groups of foreign women who manifest lower fertility when living on the island. The fertility of these women is lower because some of them already have families at home, and others see their stay on the island as temporary and do not enter a relationship. As we saw before, many other foreign women come with a partner or find a partner here on the island. As such they contribute significantly to the number of births on Aruba.

Table 23. Fertility schedule for local and foreign born women, 2000.

	Fertility native women	Fertility foreign born women	Total fertility
14	0.0000	0.0000	0.0031
15-19	0.0545	0.0411	0.0509
20-24	0.1182	0.0729	0.0997
25-29	0.1402	0.0726	0.1065
30-34	0.0799	0.0593	0.0690
35-39	0.0341	0.0390	0.0364
40-44	0.0057	0.0071	0.0064
45-49	0.0000	0.0000	0.0000
	TFR- native women	TFR - for.born women	Overall TFR
	2.16	1.46	1.85
Mean age	26.78	27.56	26.93

Source: Populationand Housing Census 2000; Population Registry

[46] Because of the limitations of the data from the population register 'local' again refers to women who are born in the Netherlands Antilles and Aruba. For the remainder of this chapter we will use 'local' in this way.



We calculated a compositional fertility schedule in which total fertility is divided into its constituent parts: in this case, fertility of local born women and fertility of foreign-born women. The results of this analysis are presented in Figure 32. The graph shows that the contribution of foreign women to the overall fertility schedule is considerable. It also shows that the timing of fertility is slightly later for foreign-born women than for local women. The mean age of the fertility schedule for local women is 26.8, compared with 27.6 for foreign-born women.

Sterility

Couples who have been married for a long time and have remained childless have done do so either voluntarily or because of physiological incapacity, either of the husband or the wife. In the discussion on sterility a distinction should be made between total and partial sterility. Total sterility prevents a couple having children from the beginning of their sexual union. Partial sterility begins later on after the birth of one or several children. There is also such a thing as temporary sterility. For instance, breastfeeding after childbirth has an effect on the non-susceptible period for young mothers (post-partum amenorrhea). More extreme cases of temporary sterility are those caused by famine or over-training by female athletes.

Table 24. Percentage of married women above the age of 50 who have remained childless, by five year age groups (1991-2000).

	1991	2000
50-54	7.4	7.4
55-59	7.6	8.5
60-64	6.7	7.6
65-69	5.1	5.6
70-74	7.8	6.6
75-79	7.8	6.5
80+	11.8	7.5
Total	7.3	7.4

In many Western countries, an increasing number of young couples decide not to have any children or to postpone children to a later stage in their lives. Young women often put off the choice between children and a career. Other reasons for waiting may be the lack of a partner or financial insecurity. Postponing birth does pose some risks. Generally, among healthy couples in their mid-twenties who are not using contraception, one in four will conceive each month. Fecundability[47] starts to fall after age 30, and by their late thirties and early forties, women's chance of conceiving drops by 5 to 10 per cent per year. Not only does the chance of genetic abnormalities of the fetus increase with age, but also the chance of becoming sterile. If they delay childbearing therefore, some couples will not be able to have the number of children they would like. Even modern technology, with all its success stories, is often unable to help these couples. In the US this is becoming a concern for many health experts. A recent article in Newsweek (August 2001) paid ample attention to this problem.

At the moment, these trends do not really seem to be a serious problem for Aruba. The mean age of the fertility schedule, and the percentage of children born to women over the age of 35, have fallen since 1960 (see table 21). In 1960, when fertility was still high, 21.5 percent of all children were born to mothers aged 35 and older. In 1991, this had dropped to 9.4, although since then it has slightly increased again, to a level of 11.9 percent.

When women who are now older than 50 were in their most fertile years, voluntary childlessness was practically unknown in Aruba. Therefore, the percentage of currently married women over 50 years of age who have no children can be taken as a good indicator of the proportion of infertile couples. This estimate refers to total sterility and not to partial sterility. In 1991, the same procedure resulted in an estimated sterility of 7.3 percent. Table 24 presents the results on the basis of the 2000 census; the outcome, 7.4 percent, is almost the same as in 1991. This estimate carries various disadvantages. First, it takes only women above 50 into account. No estimate of sterility is made for couples in younger age groups. Second, some women may have (re)married at older ages and may have spent a large part of their reproductive lifespan outside a sexual union. Third, no estimate is possible for partial sterility and subfecundity of couples currently in their reproductive period.

Intermediate determinants of fertility

If a woman started having children at age 15 and had them continuously until age 45, she would have 36 children, disregarding the incidence of one or more sets of twins. Seven intermediate fertility variables[48] are responsible for this maximum mathematical fertility never being achieved (Bongaarts, p. 179). These variables are:

1. Proportion of females in a sexual union
2. Contraceptive use and effectiveness
3. Prevalence of induced abortion
4. Duration of postpartum infecundability
5. Frequency of intercourse
6. Spontaneous intrauterine mortality
7. Prevalence of permanent sterility

Each of these variables contributes to the differences between fertility levels in time and space. The first four are the most discriminating factors in the study of fertility levels and trends. If we take frequency of intercourse, spontaneous intrauterine mortality and sterility into account we can

[47] Fecundability is the probability that a married woman will conceive during one menstrual cycle. A sterile couple thus has a fecundability of zero.

[48] These variables are called 'intermediate' because they act in an intermediate way between social, economic and environmental reality and fertility outcome.

calculate the total fecundity rate (TF). It has been observed that the TF for most populations falls between 12 and 17, with an average of 15.3 (Bongaarts & Potter, 1983).

The model we shall use in this analysis is developed by Bongaarts. The effect of the four important intermediate fertility variables is measured by four indices: Cm, Cc, Ca and Ci. The indices take values between 0 and 1. When there is no fertility inhibiting effect of a specific intermediate variable, its index equals 1; if its effect were to reduce fertility to zero, its corresponding index would be 0.

- Cm: index of 'marriage', which in the case of Aruba was taken as an index of living together on a permanent basis. Cm = 1 if all women are living together with a partner; Cm = 0 if no women are living together on a permanent basis.
- Cc: index of contraception. Cc = 1 in the absence of contraception (=natural fertility) and Cc = 0 if protection of all women through contraception were to be complete.
- Ca: index of abortion. Ca = 1 if no abortion takes place and Ca = 0 if all pregnancies were to be terminated with an induced abortion.
- Ci: Index of post-partum infecundability. The period of infecundity after birth is closely linked at the population level to the duration of breastfeeding. Ci = 1 in the total absence of breastfeeding and Ci = 0 if the duration of infecundity is infinite.

Bongaarts shows that the total fertility rate (TFR) can be expressed as a multiplicative function of the total fecundity rate (TF) and the intermediate fertility variables.

$$TFR = TF \times Cm \times Cc \times Ca \times Ci. \quad \text{or,}$$

$$TFR = 15.3 \times Cm \times Cc \times Ca \times Ci$$

In our case the value of TFR has been calculated and was found to be equal to 1.85 in 2000 and 2.28 in 1991. The purpose of our analysis is to determine which of the four intermediate fertility variables has the largest impact on the level of TFR. Because of a lack of data, it will not be possible to discern the effects of contraception and abortion. The combined effect of these two factors will therefore be calculated. For a clear understanding of the model the reader should remember that Cm, for instance, shows the extent to which living or not living together with a partner has an effect on fertility per woman. A value of Cm = 0.6 for the population indicates that total fertility is reduced by 40 percent because women do not live with a partner for their whole reproductive lifespan. It lies outside the scope of this report to go into the mathematics of the model. We refer the interested reader to the article by Bongaarts and Potter (1983).

Table 25 gives estimates of the values of the four intermediate fertility variables. No information was available on the use of contraceptives and the periods of breastfeeding, although it is a well-known fact that duration of breastfeeding is very short on the island. Therefore, a non-susceptible period of three months was taken, which leads to a Ci of .932 for all subgroups. Values of Cc*Ca were calculated as TFR/(TF*Ci*Cm).

Table 25. Proximate determinants of fertility, Aruba 2000

	2000			1991
	Total population	Native pop.	Foreign born pop.	Total population
TFR	1.85	2.16	1.46	2.28
TF	15.3	15.3	15.3	15.3
Ci	0.930	0.930	0.930	0.930
Cm	0.372	0.320	0.445	0.341
Cc*Ca	0.350	0.474	0.231	0.469

Source: Population and Housing Census 1991 and 2000.

Data on most aspects of reproductive health are completely missing on Aruba. Table 25 gives some insight into aspects of fertility. First, the effect of Cm is considerable. Overall fertility is reduced by almost 63 percent because women spend so much time outside sexual unions. In the chapter on nuptiality we saw that a significant proportion of women stay alone, that divorce rates are very high and marriage quite late. These factors combined lead to a significant reduction in fertility. The effect is larger for native than for foreign women. Compared with 1991 there is a slight reduction in the effect of Cm. Second, it is clear that the effect of contraception is high. A Cc of .350 is definitely high. It is interesting to see that the effect of the use of contraception is higher among foreign-born than among native women. This is probably because so many local women are not in a sexual union. The effect of contraception on fertility of the total population has increased since 1991. As we mentioned, we are looking at the combined effect of contraception and abortion. There is good reason to believe that abortion rates on the island are very low and that the effect of Cc*Ca can practically solely be attributed to use of contraception.

5. Migration

People from all over the world have settled on Aruba. The island's population comes from no fewer than 124 different countries. Aruba has always been a place where foreigners are welcomed and treated in a friendly manner. Aruban society is the result of many waves of migration, each rapidly becoming integrated in Aruban society and contributing to the ethnic and cultural diversity of the island.

In the last ten years migration has been of an unprecedented magnitude in Aruba. Between the censuses of 1991 and 2000, the population on the island increased from 66,687 to 90,506, a rise of 35.7 percent, most of which was caused by immigration. Unsurprisingly migration has become a topic of serious public debate on Aruba in this period. The supposedly large number of undocumented migrants[49], in particular, has caused some anxiety among the local population. Aruba is located very close to Colombia, which harbors some of the worlds most active drug cartels in a politically unstable environment.

Migrants have filled specific niches on the local labor market. Many migrants come from low-income countries and are willing to work for much lower wages and on less favorable labor conditions than their local colleagues. This has created a certain tension on the labor market, and Arubans are often heard to voice concern that foreigners are taking away their positions. Many local people are unemployed, and they naturally feel frustrated when they see that foreign workers are being hired. Because of the sheer size of the group of foreigners, many people are also worried that Aruban culture and society will change drastically with the influx of so many people from abroad.

Demographics of foreign-born population

Out of the total 90,506, people living on Aruba 59,886 (66.1 percent) were born on the island, the other 30,104 (33.9 percent) elsewhere. Figure 33 depicts the relative age distribution of the native and the foreign-born populations in two population pyramids. The pyramid for the native population shows an age-structure quite similar to the overall age-structure (see figure 6). The effect of the rapid fertility transition in the 1960's is clearly reflected by the number of persons in age group 20-24, which is much smaller than in the groups 25-29 and 30-34.

Fertility for native women is highest in age group 25-29 (see table 23). Fertility is expected to remain more or less constant in the next few years. In the coming five to ten years there will be fewer native women in age groups where fertility is highest, and there is therefore is a good chance that in the coming years the absolute number of births to native women will decrease.

The age structure of the foreign-born population is the direct result of past migration trends to the island. There is a significant group of older foreign-born people on the island. Many came to Aruba in the heyday of the Lago refinery before the 1960's. There is also a large group of migrants between ages 25 and 45. These have arrived since the late 1980's, many of them to work in the tourist sector.

[49] Legality of residency was not covered by the census. There are indications that many illegal migrants were counted during the census. Obviously, many others may have evaded enumeration. After the enumeration, estimates were made of the number of persons not counted during the census. This group includes undocumented migrants.

Many migrants brought young children to Aruba. As we shall see later, this has created a series of new problems, as many of these children entered a school system where they do not understand the language used.

Figure 33. Age pyramids for native born and foreign-born population, 2000.

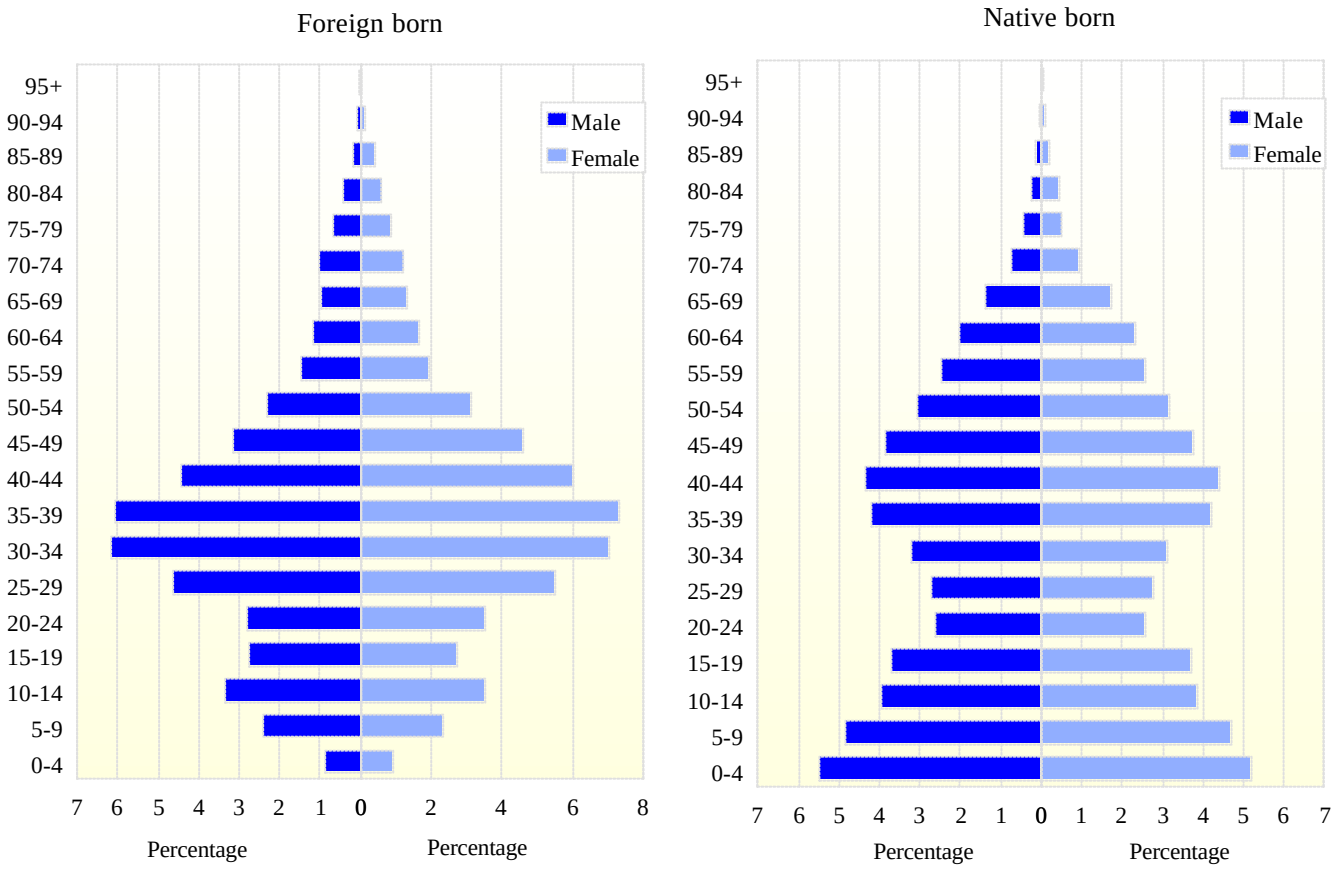
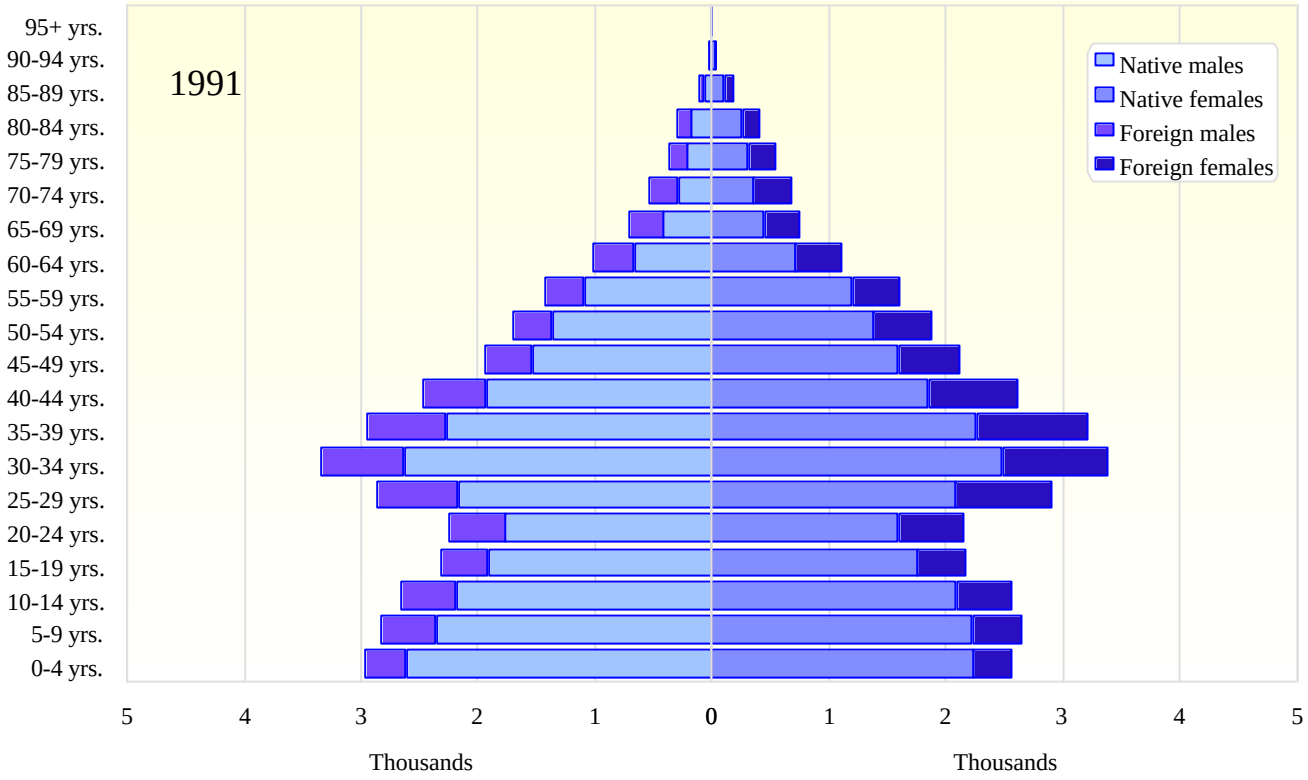


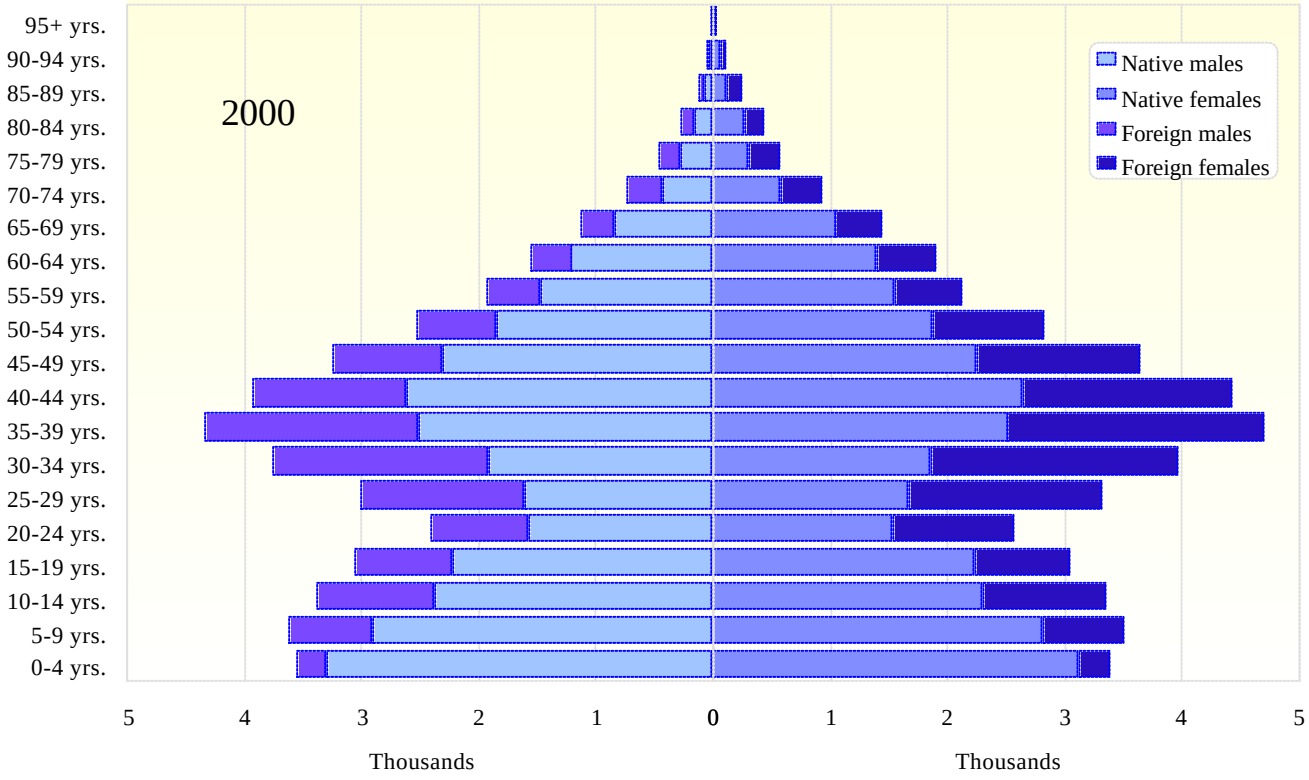
Figure 33 presents the population pyramids for the native born and foreign-born population as observed in the census, with the relative age-distribution for each group. The relatively large number of children among the native born population clearly stands out. The limited number of children among the foreign-born population compensates this large number. The reason for the large number of local born children is not because fertility among the native-born population has suddenly shot up. The explanation for this is that the Aruba-born children of many foreign-born women are classified as native born.

Most of the migrants who have come to Aruba in the last ten years are in the age groups between 25 and 40. The large proportion of local people in age groups 40-49 shows the aging of the population on Aruba. In contrast, the group of native persons between 20 and 30 is very small. There are two reasons for this. First, every year a large number of students leave the island to study overseas. The exact number of young Arubans studying overseas is unknown. A total of 1,225 Arubans were studying abroad in 2000 on a loan provided by the Aruban government[50], and other students are abroad without financial support from the government. Second, the rapid decline in fertility levels had an effect on the number of persons in age groups 20 to 35.

[50] Ensenza na Aruba, 2000-2001, p. 70.

Figure 34. Population pyramid, absolute numbers of native and foreign born, 1991-2000.





The sex ratio of the native born population is 98.1. Many more women than men have come to Aruba during the last 15 years. Currently, the sex ratio among the foreign born population is 81.5, in other words: for every 100 foreign-born women, there are 81.5 foreign-born men on the island. Figure 34 depicts the number of native and foreign-born persons in combined population pyramids, for 1991 and 2000. The graph clearly shows the enormous impact migration has had on the demographic constitution of Aruba in the last ten years.

Compared with the census of 1991, the proportion of foreign-born persons has increased. At that time, 23.9 percent of the population was born outside the island. In 1981, this percentage was 18.5. No figures on native/foreign born are available for 1972. Hawley[51] calculated that 13 percent of the people residing on Aruba in 1960 was foreign born. According to the 2000 census 30,104 foreign-born persons live on Aruba, against 15,910 in 1991, an increase of no less than 89.2 percent.

Tables 26a and 26b show the absolute and relative numbers of native and foreign-born persons in the age groups 15 to 60 years, the age groups constituting the active working age population. Among women aged 20 to 45, in each five-year age group more than 40 percent were born outside Aruba. There are more foreign than native women between ages 25 and 35 on Aruba. In all age groups, the presence of foreign-born persons is significant.

Will migrants stay?

An important question concerning migration is whether the migrants will stay. Up to 2000, the tourism sector constantly expanded: the demand for labor was high and, compared with neighboring countries, the salaries were very good. In 2001, there were increasing signs that the tourist sector was heading for a crisis. The economic slowdown in the US and the lack of funds dedicated to promoting tourism may have had a negative effect on the number of tourists coming to Aruba. The situation was exacerbated by the tragic events of 11 September 2001 and the subsequent war on terrorism, which have affected Aruba's tourism industry. If this negative trend continues, the tourism sector and other related sectors will probably have to cut back employment. It is uncertain whether migrants will stay if they lose their jobs.

The 1997 Labor Force Survey included a question on how long foreigners who came to Aruba after October 1984 intended to stay on the island. About two-thirds (64.4 percent) of these migrants indicated that they wanted to settle on Aruba permanently. In the 1994 Labor Force Survey, this was just under half (48.8 percent)[52].

To get an idea of how long people really stay on the island, we have combined information from the Population Register with data from the 2000 Population Census. In the census, persons born outside Aruba were asked when they had settled on the island. This information was linked to the number of domiciliations from the Population Register. Actually, there is some bias because the Population Register indicates when a person was registered, which is not always the same as the year they came to the island. The results of this comparison are presented in figure 35. Data for this graph can be found in appendix 17. The percentages in figure 35 are calculated by dividing the number of men/women who indicated in the census that they came to Aruba in a certain year by the number of men/women the Population Register domiciliated in the same year.

[51] Hawley, A.H. (1960), The population of Aruba.
[52] See: Labor Force Survey 1997 and 1994.

Table 26a. Number of native and foreign born males by 5 year age-group

	Native males		Foreign born males		
	No.	Percentage	No.	Percentage	Total
15-19	2227	72.8	831	27.2	3058
20-24	1571	64.7	857	35.3	2428
25-29	1613	53.4	1408	46.6	3021
30-34	1911	50.6	1866	49.4	3777
35-39	2516	57.7	1843	42.3	4359
40-44	2609	66.0	1344	34.0	3953
45-49	2303	70.6	959	29.4	3261
50-54	1840	72.4	702	27.6	2542
55-59	1478	76.7	448	23.3	1927
Total	18067	63.8	10257	36.2	28325

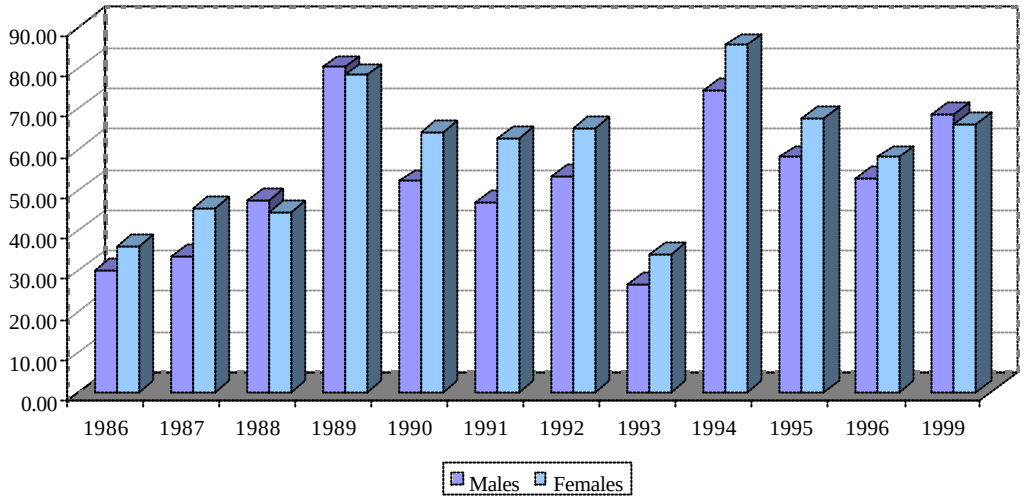
Table 26b. Number of native and foreign born females by 5 year age-group

	Native females		Foreign born females		
	No.	Percentage	No.	Percentage	Total
15-19	2238	72.9	834	27.1	3071
20-24	1531	59.0	1066	41.0	2597
25-29	1669	50.1	1663	49.9	3333
30-34	1864	46.6	2134	53.4	3997
35-39	2520	53.2	2213	46.8	4733
40-44	2645	59.2	1823	40.8	4468
45-49	2259	61.7	1401	38.3	3659
50-54	1888	66.6	948	33.4	2836
55-59	1551	72.3	593	27.7	2144
Total	18164	58.9	12675	41.1	30839

Source: Population and Housing Census 2000

Of all persons domiciliated between 1986 and 1990, 54.8 percent are still on the island. Of those domiciliated between 1991 and 1995, 51.3 percent are still present. It is interesting to see that the figure of those who domiciliated between 1991 and 1995 (51.3 percent) comes very close to the percentage of persons in the 1994 LFS who indicated that they wanted to stay on the island indefinitely (48.8 percent).

Figure 35. Percentage of males and females still on the island by year of domiciliation



The proportion of those registered in 1993 is much smaller than for the other years. In 1993, migrants living on the island without being registered were granted clemency if they had a guarantor.

Many of these migrants had already been living on Aruba for some years. It is not exactly clear what caused them to leave. Figure 35 shows that women tend to stay on the island longer than men. As we saw before, many foreign women marry Aruban men and this is probably one of the main reasons why they stay much longer.

Generally, we can state that about 50 percent of all migrants coming to Aruba are long-term or perhaps even permanent migrants. Of course, this depends on a continuing favorable economic climate. It remains to be seen whether they will stay if the economic prospects become bleaker. History has shown that in times of economic crisis many foreigners and Arubans tend to leave the island. The last time this happened was after the closure of the LAGO oil refinery.

Bright city lights

Where do new migrants settle when they arrive on Aruba? We consider migrants who entered Aruba after January 1986 as 'new' migrants. Figure 36 clearly shows that migrants prefer to live in Aruba's urban centers of Oranjestad and San Nicolas[53]. No fewer than eight GAC-zones have a foreign-born population of above 50 percent: Eagle/Paardenbaai, Socotoro/Rancho, Nassaustraat, Klip/Mon Plaisir, Van de Veen Zeppenfeld-straat, Village, Seroe Colorado and San Nicolas South other. Some of these districts even have percentages well above 60 percent. In eleven zones, the foreign-born population is between 40 and 50 percent of the total population.

Compared with 1991, the proportion of foreigners has increased in all but a few districts. The regions of Paradera, Santa Cruz, Savaneta and San Nicolas North had relatively few foreigners in 1991. Some of the zones in these regions had less than ten percent of persons born outside Aruba. In recent years, however, many foreigners have settled in these regions and all of them now have foreign populations above 20 percent. Figure 37 shows the growth of the population in each of Aruba's eight GAC-regions. On the left-hand side of the graph we have plotted the Aruban born

[53] Data on regional distribution of foreigners can be found in appendix 18.

population, on the right-hand side the foreign-born population. In general, both for the Aruban and the foreign-born populations, the region of Noord/Tanki Leendert has grown most rapidly. Many new housing schemes in this region have attracted both native and foreign persons. The graph shows that the majority of migrants have established themselves in Noord and the two regions of Oranjestad. It is obvious that these people decided to live close to their work.

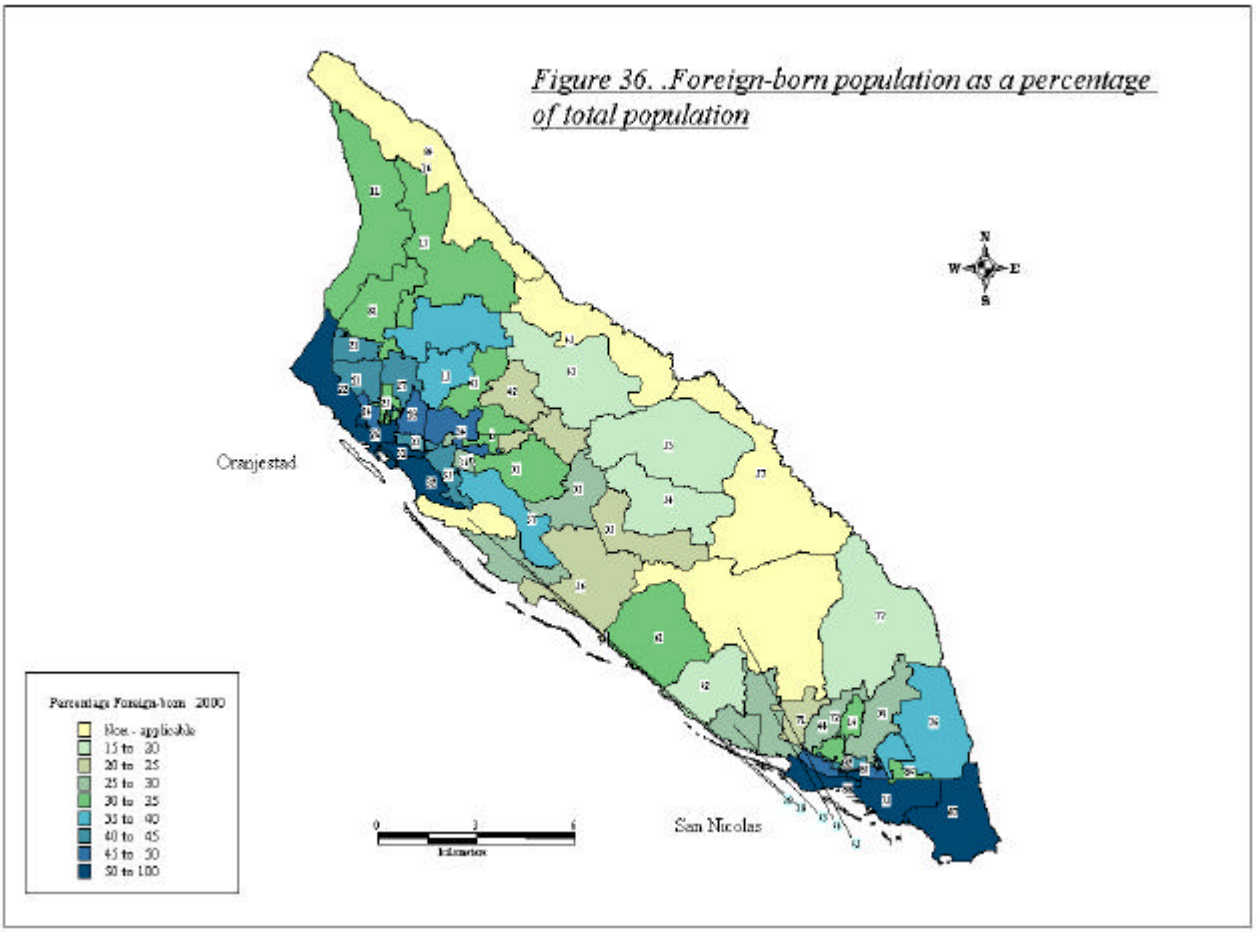
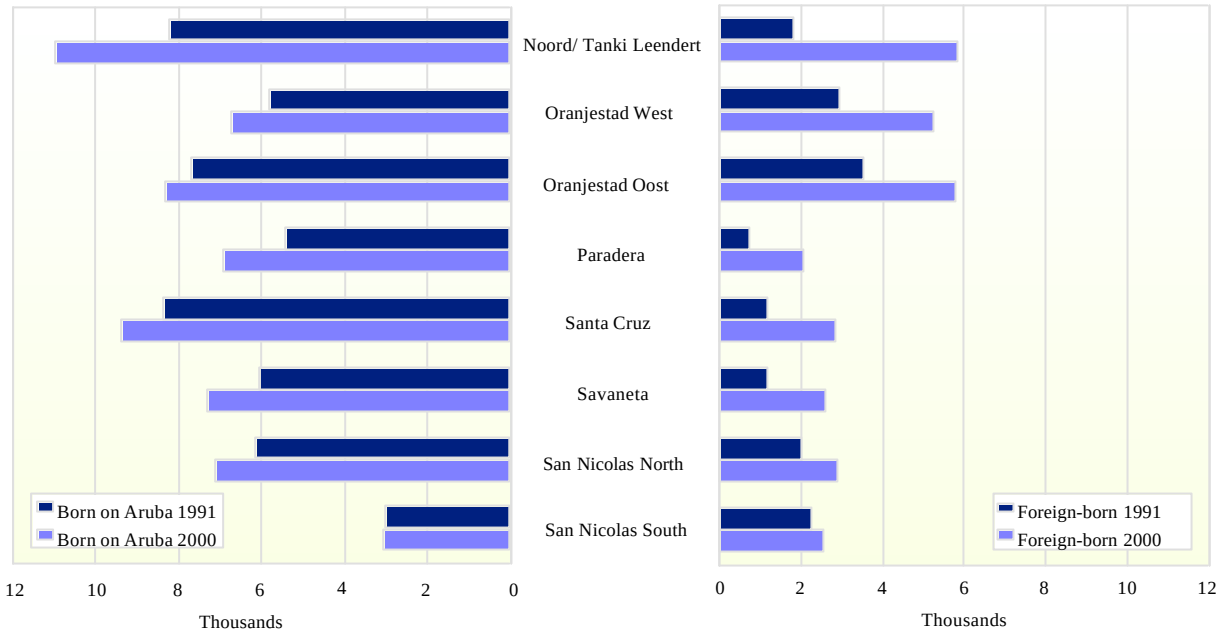


Figure 36. .Foreign-born population as a percentage of total population

Figure 37. Local / foreign-born population by place of residence 1991-2000



From all corners of the earth

Table 27 presents the absolute and relative number of persons by country of birth and sex. Persons who originated from a country where fewer than five persons are living on Aruba were not included for confidentiality reasons. Figure 38 shows the foreign-born population for selected countries for males and females for 1991 and 2000. We selected the 15 countries with the highest number of migrants in 2000. Each of these countries currently has a population of more than 300 persons on the island.

Figure 38. Foreign-born Population in 1991 and 2000, by sex and selected countries of birth

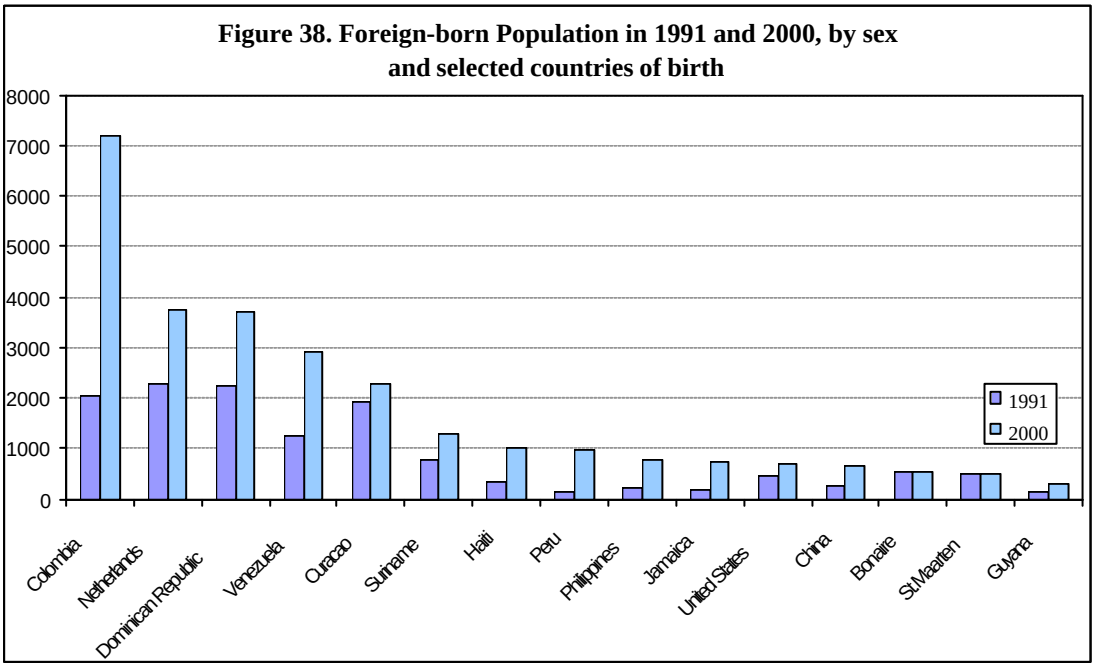


Table 27. Foreign born population by country of birth, by sex

	Country of birth	Male	Female	Total	% Male	% Female	% Total
1	Colombia	2848	4344	7191	21.1	26.2	23.9
2	Netherlands	1923	1832	3755	14.2	11.0	12.5
3	Dominican Republic	1102	2589	3692	8.2	15.6	12.3
4	Venezuela	1570	1344	2914	11.6	8.1	9.7
5	Curacao	1273	999	2271	9.4	6.0	7.5
6	Suriname	630	671	1301	4.7	4.0	4.3
7	Haiti	322	700	1023	2.4	4.2	3.4
8	Peru	517	443	960	3.8	2.7	3.2
9	Philippines	440	328	768	3.3	2.0	2.5
10	Jamaica	228	502	730	1.7	3.0	2.4
11	United States	364	331	695	2.7	2.0	2.3
12	China	336	300	636	2.5	1.8	2.1
13	Bonaire	282	252	534	2.1	1.5	1.8
14	St.Maarten	213	293	506	1.6	1.8	1.7
15	Guyana	161	146	307	1.2	0.9	1.0
16	Grenada	65	219	285	0.5	1.3	0.9
17	India	143	64	207	1.1	0.4	0.7
18	Portugal	106	89	195	0.8	0.5	0.6
19	Trinidad and Tobago	78	79	156	0.6	0.5	0.5
20	Brazil	82	72	154	0.6	0.4	0.5
21	Saint Vincent and the Grenadines	44	94	139	0.3	0.6	0.5
22	Dominica	44	88	132	0.3	0.5	0.4
23	St.Eustatius	46	78	124	0.3	0.5	0.4
24	Saba	44	75	119	0.3	0.4	0.4
25	Germany	48	43	91	0.4	0.3	0.3
26	Ecuador	44	45	89	0.3	0.3	0.3
27	Cuba	30	58	88	0.2	0.3	0.3
28	Canada	34	25	59	0.2	0.2	0.2
29	Indonesia	29	26	56	0.2	0.2	0.2
30	Costa Rica	19	35	54	0.1	0.2	0.2
31	Saint Kitts and Nevis	19	34	53	0.1	0.2	0.2
32	United Kingdom	29	21	50	0.2	0.1	0.2
33	Argentina	28	21	49	0.2	0.1	0.2
34	Belgium	23	25	48	0.2	0.2	0.2
35	Hong Kong Special Administrative Region of China	27	19	46	0.2	0.1	0.2
36	Italy	28	18	46	0.2	0.1	0.2
37	Lebanon	29	14	43	0.2	0.1	0.1
38	Puerto Rico	18	21	39	0.1	0.1	0.1
39	Mexico	17	20	37	0.1	0.1	0.1
40	Chile	22	7	29	0.2	0.0	0.1
41	Anguilla	4	24	28	0.0	0.1	0.1
42	Spain	15	13	27	0.1	0.1	0.1
43	France	13	6	19	0.1	0.0	0.1
44	Saint Lucia	6	13	19	0.0	0.1	0.1
45	South Africa	12	6	18	0.1	0.0	0.1
46	Panama	7	9	17	0.1	0.1	0.1
47	Switzerland	13	4	17	0.1	0.0	0.1
48	Australia	6	8	15	0.0	0.1	0.0
49	Malaysia	6	6	13	0.0	0.0	0.0
50	Barbados	6	5	12	0.0	0.0	0.0
51	Turkey	8	3	12	0.1	0.0	0.0
52	Montserrat	1	8	9	0.0	0.1	0.0
53	Nicaragua	6	3	9	0.0	0.0	0.0
54	United States Virgin Islands	3	6	9	0.0	0.0	0.0
55	Uruguay	6	3	9	0.0	0.0	0.0
56	Singapore	3	5	8	0.0	0.0	0.0
57	Austria	6	1	7	0.0	0.0	0.0
58	Hungary	3	4	7	0.0	0.0	0.0
59	Bolivia	3	3	6	0.0	0.0	0.0
60	Poland	2	4	6	0.0	0.0	0.0
61	Syrian Arab Republic	5	1	6	0.0	0.0	0.0
62	Egypt	5	1	6	0.0	0.0	0.0
63	Antigua and Barbuda	1	4	5	0.0	0.0	0.0
64	British Virgin Islands	2	3	5	0.0	0.0	0.0
65	Taiwan Province of China	2	3	5	0.0	0.0	0.0
66	El Salvador	1	4	5	0.0	0.0	0.0
67	Guadeloupe	2	3	5	0.0	0.0	0.0
68	Guatemala	1	4	5	0.0	0.0	0.0
69	Honduras	4	1	5	0.0	0.0	0.0
70	Iran (Islamic Republic of)	5	0	5	0.0	0.0	0.0
71	Japan	1	4	5	0.0	0.0	0.0
72	Yugoslavia	3	2	5	0.0	0.0	0.0
73	NR	267	250	517	2.0	1.5	1.7
Total foreign born persons		13518	16585	30103	100.0	100.0	100.0

At the time of the census 7,191 persons from Colombia were present on Aruba. This is an increase of no less than 255 percent compared with the census in 1991. In 1981, only 945 Colombians were living on Aruba. It is unclear why Colombians in particular are so attracted to Aruba. One reason may be the difficult living conditions in Colombia because of the unstable economic and political situation.

The largest foreign-born contingent in Aruba in 1991 consisted of people born in the Netherlands. This group has not grown as rapidly as those from many Latin American and Caribbean countries. At the time of the census, 3,755 persons born in the Netherlands lived on Aruba, 63.5 percent more than in 1991. The fastest growing group of migrants on Aruba is that from Peru. In 1991 there were only 157 Peruvians on the island; by 2000 this had grown to 960, an increase of 511 percent.

Citizens from other countries have seen their numbers on Aruba grow considerably in the last ten years: Venezuela (132.3 percent), Haiti (188.1 percent) Philippines (221.2 percent), Jamaica (305.4 percent), China (131.4 percent) and Guyana (151.3). The relatively large group of Filipinos, in particular, who has found its way from the other side of the world to Aruba, is quite remarkable. At the time of the census in 2000, 768 Filipinos were living on Aruba. It is not clear what triggered the migration of these people to Aruba.

In the past many people born in the Netherlands Antilles have lived on Aruba. Many of these had Aruban parents and were born in the Antilles because their parents lived there temporarily. In 1981, 4,115 persons from other islands of the Netherlands Antilles lived on Aruba. Many of them left the island when the Status Aparte came into effect. In 1991, the population born in the Netherlands Antilles had shrunk to 3,289. Although unemployment is high there, Curaçao played only a minor role in the recent immigration boom on Aruba. Between 1991 and 2000 the population from Curaçao increased by only 18.2 percent. Bonaire and St. Martin even played a smaller role; the group from Bonaire has even fallen by three percent in the last nine years.

To get some idea of the timing of immigration into Aruba, we present data from the ten largest sending countries in figure 39. This graph shows the number of persons who are still on the island by year of their arrival. The limitation of the information is that it only provides the year of arrival for those persons who remained on the island. The figure clearly shows the enormous growth of immigration from Colombia. Immigration from the Netherlands, too, has contributed significantly to the growth of the population of Aruba. An interesting feature is that the yearly growth of immigrants from the Dominican Republic has fallen down since 1991. Without a doubt, the reason for this decline is the fact that since May 1992 citizens from the Dominican Republic need a visa to come to Aruba.

Figure 40 shows the mean age of arrival for migrants in Aruba. Overall the average age is 24.2 years for men and 25.0 years for women. Immigrants from the islands of the Netherlands Antilles and the Netherlands are much younger on average than those from other countries. St. Martin scores lowest, with mean ages of only 13.9 for males and 16.0 for females. These ages are so low because many families with children come from the Netherlands and the Netherlands Antilles. Also, children born to Aruban parents living temporarily in the Netherlands Antilles or the Netherlands and who come back to Aruba with their parents bring down the average from these countries. Women from the Dominican Republic come to Aruba at very young ages. The median age for migrants from the Dominican Republic is 21 years. This means that 50 percent of these migrants were younger than 21 when they came to Aruba. Migrants from other countries are between 25 and 30 on average when they arrive on Aruba.

Table 28. Foreign born population by country of birth, by sex

		1991			2000			Percentage change		
	Country of birth	**Male**	**Female**	**Total**	**% Male**	**% Female**	**% Total**	**% Male**	**% Female**	**% Total**
1	Colombia	758	1269	2027	2848	4344	7191	275.7	242.3	254.8
2	Netherlands	1189	1108	2297	1923	1832	3755	61.7	65.4	63.5
3	Dominican Republic	599	1638	2237	1102	2589	3692	84.1	58.1	65.0
4	Venezuela	722	532	1254	1570	1344	2914	117.4	152.6	132.4
5	Curacao	1055	867	1922	1273	999	2271	20.6	15.2	18.2
6	Suriname	419	369	788	630	671	1301	50.4	81.8	65.1
7	Haiti	47	308	355	322	700	1023	585.9	127.4	188.1
8	Peru	93	64	157	517	443	960	455.5	592.3	511.3
9	Philippines	183	56	239	440	328	768	140.4	485.0	221.2
10	Jamaica	30	150	180	228	502	730	659.5	234.6	305.4
11	United States	230	239	469	364	331	695	58.4	38.4	48.2
12	China	172	103	275	336	300	636	95.3	191.6	131.4
13	Bonaire	292	251	543	282	252	534	-3.3	0.4	-1.6
14	St.Maarten	215	279	494	213	293	506	-0.9	5.0	2.4
15	Guyana	59	62	122	161	146	307	172.3	135.4	151.3

Figure 39. Number of migrants from selected regions/countries by year of arrival

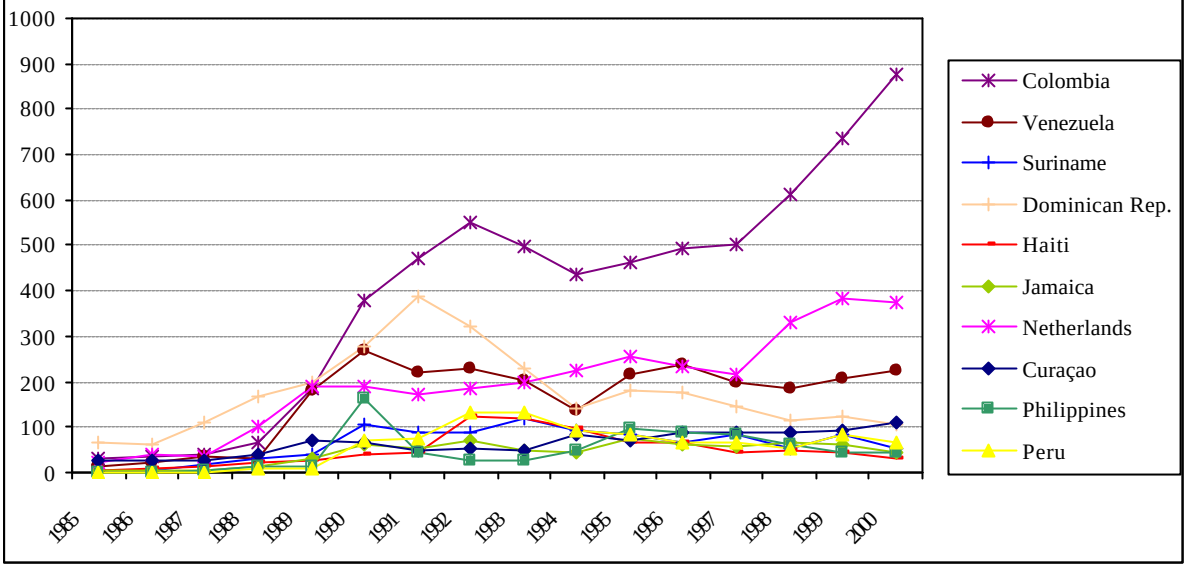
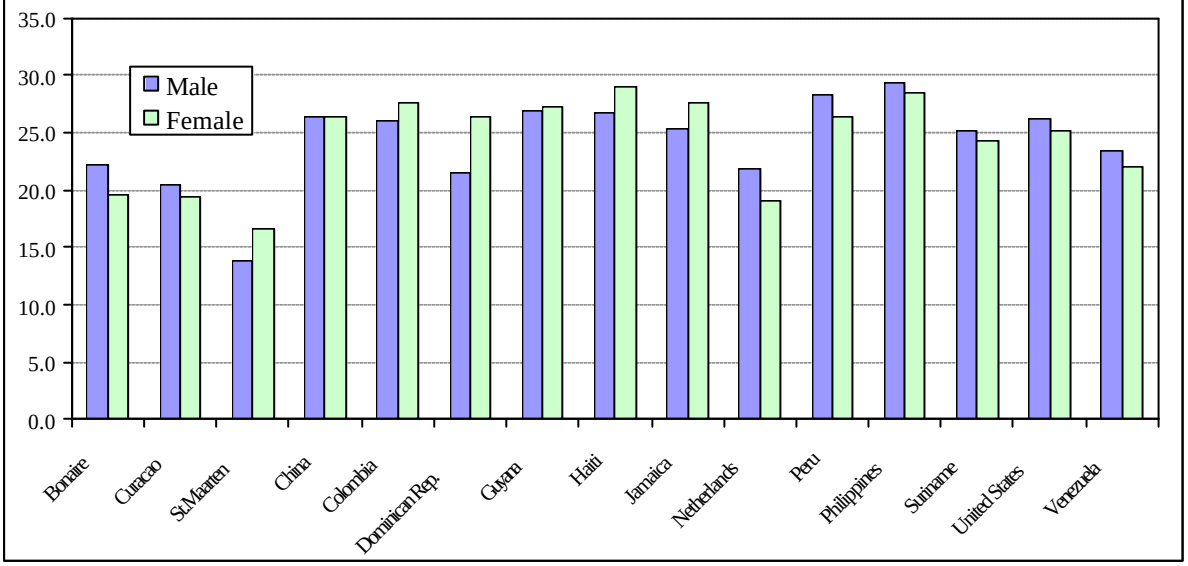


Figure 40. Mean age at immigration for selected countries and sex



Living conditions of migrants

As migrants constitute an important part of Aruban society, it is important to know something of their living conditions. How do they live compared with the local population? Within the migrant community, there is a clear difference between those who come from developed countries and those from developing countries. The former often have higher positions in management and technical jobs, while workers from developing countries are more often employed in menial jobs. It would lead to serious bias if both groups were treated as one.

Obviously, a census is not the ideal means to study living conditions of migrants. Because migration is such an important aspect of Aruban society, the Central Bureau of Statistics is planning to conduct

a migration survey in the coming year. However, the census did gather some information that may shed some light on the living conditions of migrants from lower income countries compared with those from developed countries and with natives.

Table 29 presents the Aruban born population and persons originating from developed and developing countries by type of living quarters. Among the local born population, 90.9 percent live in a house. This percentage is almost the same for migrants born in developed countries (89.1 percent), but only 63.5 percent of migrants from less developed countries live in a house. Renting apartments to migrants has been good business; 6,024 migrants from developing countries live in an apartment. More and more Arubans, too, live in apartments: in 1991, 3,867 persons indicated that they lived either in an apartment or in a separate room in a house. In 2000, this number had increased to 10,685.

Table 29. Type of living quarters Aruba born population and persons from developed and developing countries.

	Aruba born		Developed countries		Developing countries		Not rep.		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
House	54,101	90.9	7,520	89.1	13,656	63.5	266	52.5	75,543	83.9
Apartment	3,867	6.5	729	8.6	6,024	28.0	65	12.9	10,685	11.9
Room in a house	233	0.4	32	0.4	443	2.1	7	1.5	715	0.8
Trailer/container	647	1.1	94	1.1	693	3.2	9	1.9	1,444	1.6
Cuarto	562	0.9	39	0.5	573	2.7	15	2.9	1,189	1.3
Other type	64	0.1	15	0.2	100	0.5	3	0.6	182	0.2
Not reported	53	0.1	15	0.2	25	0.1	141	27.8	233	0.3
Total	59,527	100.0	8,443	100.0	21,514	100.0	506	100.0	89,990	100.0

Source: Population and Housing Census 2000

Table 30. Quality of living quarters, Aruba born population and persons from developed and developing countries.

	Aruba born		Developed countries		Developing countries		Not rep.		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Good	43,536	72.7	6,605	77.7	12,360	57.2	147	28.7	62,647	69.2
Regular	13,221	22.1	1,574	18.5	7,026	32.5	110	21.5	21,930	24.2
Poor	2,227	3.7	231	2.7	1,622	7.5	41	8.0	4,121	4.6
Very poor	579	1.0	56	0.7	413	1.9	21	4.1	1,068	1.2
Not reported	323	0.5	37	0.4	181	0.8	193	37.7	734	0.8
Total	59,886	100.0	8,502	100.0	21,601	100.0	512	100.0	90,501	100.0

Source: Population and Housing Census 2000

The census enumerators were asked to make an assessment of the quality of the living quarters. To avoid a subjective opinion, they were given clear instructions about the procedures for evaluating the quality of the accommodation.[54] Four quality categories were discerned: good, regular, poor and very poor. 'Regular' indicates that the house has deficiencies that can be repaired. 'Poor' means that deficiencies are such that the bad element has to be replaced. Generally, migrants from developing countries live in poorer quality dwellings than local people, while people from developed countries live in better quality quarters. Only 57.2 percent of migrants from poor countries have living quarters

[54] A full overview of this procedure is given in: 'CBS (2000), Handleiding voor de tellers/telsters.

of good quality, 32.5 percent of migrants live in a 'regular' accommodation and 9.4 have poor or very poor housing.

Table 31. Number of persons who have access or fail to have access to certain amenities, Aruba born population and persons originating from developed and developing countries.

	Aruba born		Developed countries		Developing countries		Not rep.		Total	
	No.	Percent	No.	Percent	No.	Percent	No.	Percent	No.	Percent
Persons with no car available in household	8,804	14.7	1,081	12.7	6,317	29.2	96	18.6	16,298	18.0
Persons who have telephone in the living quarter	48,297	80.6	7,134	83.9	12,841	59.4	191	37.3	68,463	75.6
Persons who have cable TV in the living quarter	49,729	83.0	7,335	86.3	16,368	75.8	208	40.6	73,641	81.4
Persons with no AC available in household	15,244	25.5	2,001	23.5	8,394	38.9	116	22.5	25,754	28.5
Persons with no computer available in household	36,114	60.3	3,775	44.4	16,036	74.2	210	41.0	56,134	62.0
Persons with internet connetion in household	9,583	16.0	3,008	35.4	2,447	11.3	26	5.1	15,064	16.6
Persons with fridge in household	59,048	98.6	8,376	98.5	21,003	97.2	278	54.3	88,705	98.0

Source: Population and Housing Census 2000

Table 31 compares some prosperity characteristics of the local born population with those of migrants from developed and developing countries. It reveals that migrants from developing countries have fewer amenities in their households than migrants from developed countries and people born on Aruba. The census asked questions on amenities at the level of the household, not at the individual level. So the data tell us, for instance, that a car is available in the household, but not who owns it: if a foreign housemaid lives in with a family that owns a car, the housemaid will fall in the category 'car available in household', although she herself does not own a car. Although a certain bias is present because of this limitation, we think the information remains quite valuable.

A fridge is a necessity in a tropical climate, and almost everybody on the island has one in the household. Even among migrants from developing countries this percentage is 97.2. Car ownership is much lower among migrants from lower income countries; 29.2 percent do not have a car in the household. Other facilities such as telephone, cable television and air conditioning are all significantly lower for migrants from developing countries than for the other two groups. Migrants from rich countries have slightly more household amenities than Aruban natives. Differences are largest for ownership of a computer and connection to the Internet. Forty-four percent of migrants from rich countries have no computer in the house, against 60.3 percent of Aruban natives and 74.2 migrants from developed countries. Aruba still has a long way to go on the 'Information Highway'. Only 16 percent of the native population has access to the Internet at home, compared with 35.4 percent of immigrants from developed countries and 11.3 percent of immigrants from developing countries.

Foreign voters

Migration is an important political issue on the island. However, not only are migrants a topic of debate, they have also become an important force at election time. The general election held in Aruba in September 2001 resulted in some landslide changes. In recent years, more and more foreign-born voters have participated in elections. Table 32 gives an interesting perspective on foreign voters in the 2001 election. In Aruba everyone aged 18 years and over with the Dutch nationality, and registered at the Population Registry three months before the closure of the electoral poll is eligible to vote. In 2001, this amounted to a total of 56,610 persons, 78.2 percent of whom were born in Aruba. If non-voting were independent of country of birth, 16.4 of the 21 seats in

parliament would be decided by Arubans[55]. A party able to catch all the votes from persons born in the Netherlands would gain a seat; the same holds true for the Netherlands Antilles. Although this will come as a surprise to many politicians, people born in countries other than Aruba, the Netherlands and the Netherlands Antilles decide 2.5 seats in parliament. Voters born in Colombia and the Dominican together account together for one seat.

Table 32. Number of voters in the election 2001 by country of birth with their corresponding number of seats in parliament.

Country of birth	No. of voters	Percentage	Seats
Aruba	44,251	78.2	16.4
Netherlands	2,660	4.7	1.0
Curacao	2,129	3.8	0.8
Dominican Republic	1,485	2.6	0.6
Colombia	1,442	2.5	0.5
Suriname	802	1.4	0.3
Bonaire	537	0.9	0.2
Venezuela	508	0.9	0.2
St.Maarten	403	0.7	0.1
Haiti	263	0.5	0.1
China	248	0.4	0.1
Other	1,883	3.3	0.7
Total	56,610	100.0	21.0

Source: Population and Housing Census 2000 and Population Registry.

Labor market

The economic development of Aruba in the last fifteen years would have been impossible without large imports of foreign labor. Foreign workers now constitute a significant part of the local labor market. The census counted 41,918 people aged 15-64 years who had a job, of whom 24,745 were born on Aruba and 17,173 elsewhere. This means that 41 percent of the employed population came to Aruba from abroad, 39.7 percent of men and 42.4 of women. Figures 41a and 41b clearly show the number of native and foreign workers on Aruba by age for the two sexes. For the actual data, the reader is referred to appendix 19.

[55] As an Aruban we consider a person who is born on Aruba and who carries the Dutch nationality.

Figure 41a. Employed native and foreign born male population by five-year age-group

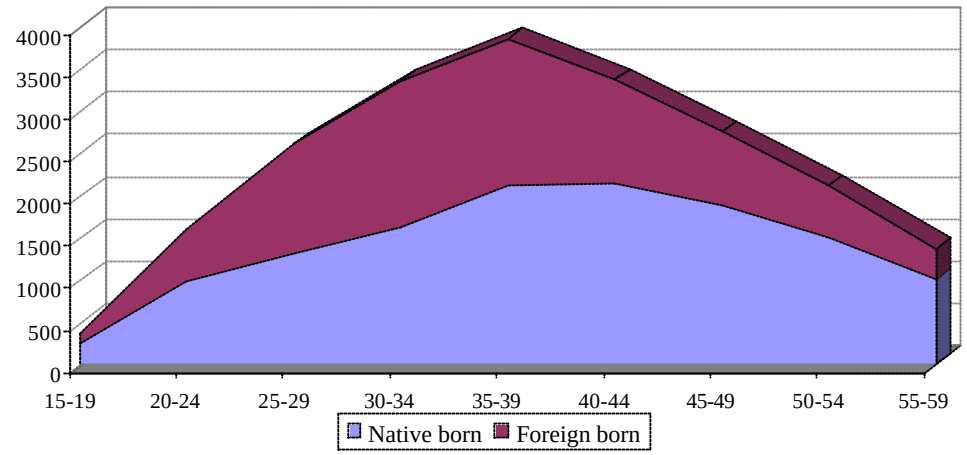
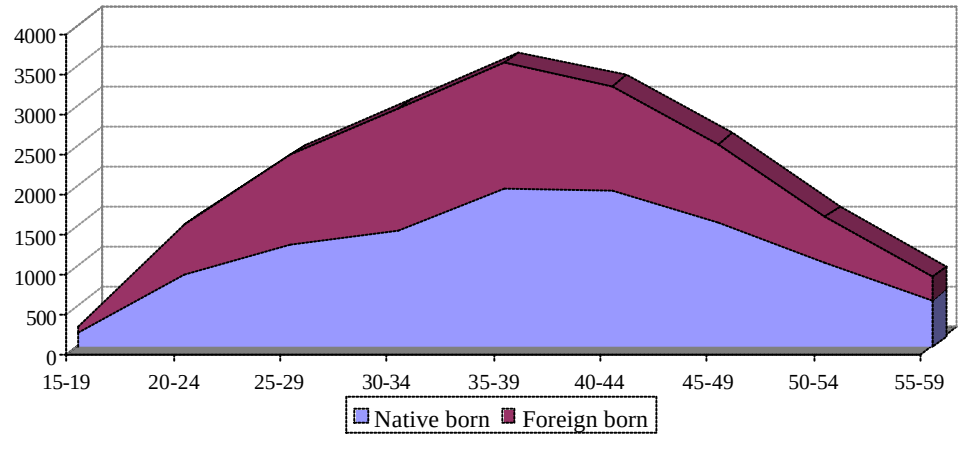


Figure 41b. Employed native and foreign born female population by five-year age-group



In table 33 we include a number of key employment indicators by country of birth for men and women. The current unemployment rate for Aruba is 6.9 percent; 7.4 percent for women and 6.5 percent for men. At the time of the census 3,118 persons were unemployed[56], 1,844 of whom were born on Aruba. In fact, unemployment for native and foreign-born people is exactly the same (6.9 percent). In 1991, unemployment was 5.6 percent for immigrants and 6.2 percent for the native population. However, foreign-born women have much higher unemployment than men. A total of 9.2 percent of foreign women are out of work against 4.7 percent of foreign men.

[56] The 'unemployed' comprise all persons, 14 years of age and over who, during the week before the census, complied with all three of the following conditions: (a) 'Without work', i.e. were not in paid employment or self-employment. (b) 'Currently available for work', i.e. able to start a new job within two weeks time. (c) 'Seeking work', i.e. had taken specific steps to seek employment or self-employment. The specific steps may include: registration at a public or private employment agency; application to employers; checking at work sites; placing or answering newspaper advertisements; seeking assistance from friends and relatives; looking for land, machinery, or equipment to establish an own enterprise; arranging for financial resources; applying for permits and licenses, etc.

Table 30. Key employment indicators, native and foreign born males and females.

		Total	Aruba	Colombia	Netherlands	Venezuela	Curacao	Dominican Republic	Peru	Suriname
Population of working age (15 - 64)	Male	33168	21083	2491	1370	1309	1140	957	476	546
	Female	37008	21992	3983	1243	1104	871	2400	392	569
	Total	70176	43075	6473	2613	2413	2012	3357	867	1115
Total employment	Male	22,498	13,566	2,124	997	1,099	760	687	434	381
	Female	19,420	11,179	2,490	664	528	433	1,398	288	318
	Total	41,918	24,745	4,614	1,661	1,627	1,193	2,084	721	699
Total unemployment	Male	1,563	1,127	111	26	49	46	80	15	14
	Female	1,555	717	332	38	73	32	180	15	9
	Total	3,118	1,844	443	64	123	78	259	29	23
Economically Active Population	Male	24,062	14,693	2235	1,024	1,149	806	766	448	395
	Female	20,975	11,896	2,821	701	602	464	1,577	302	328
	Total	45,037	26,589	5,057	1,725	1,750	1,270	2,344	751	722
Employment rate (%)	Male	67.8	64.3	85.3	72.8	84.0	66.7	71.8	91.2	69.8
	Female	52.5	50.8	62.5	53.4	47.9	49.6	58.2	73.5	55.9
	Total	59.7	57.4	71.3	63.6	67.4	59.3	62.1	83.2	62.7
Unemployment rate (%)	Male	6.5	7.7	5.0	2.6	4.3	5.7	10.4	3.3	3.5
	Female	7.4	6.0	11.8	5.4	12.2	6.8	11.4	4.9	2.9
	Total	6.9	6.9	8.8	3.7	7.0	6.1	11.1	3.9	3.2
Participation rate (%)	Male	72.5	69.7	89.8	74.7	87.7	70.7	80.1	94.3	72.3
	Female	56.7	54.1	70.8	56.4	54.5	53.3	65.7	77.2	57.6
	Total	64.2	61.7	78.1	66.0	72.5	63.2	69.8	86.6	64.8

		Philippines	Haiti	China	US	Jamaica	Bonaire	Guyana	India	Other
Population of working age (15 - 64)	Male	407	307	307	246	194	265	148	137	33,168
	Female	299	671	271	235	461	242	132	57	37,008
	Total	707	978	578	481	655	506	280	193	70,176
Total employment	Male	389	273	252	171	162	132	118	133	820
	Female	247	471	116	100	377	81	58	20	654
	Total	635	744	368	271	539	213	175	153	1,474
Total unemployment	Male	3	15	3	6	16	8	5	2	37
	Female	11	61	2	4	24	3	11	3	41
	Total	14	76	5	11	40	12	16	5	78
Economically Active Population	Male	392	288	255	177	177	141	123	135	857
	Female	257	532	118	104	401	84	68	23	695
	Total	649	820	373	281	579	225	191	159	1,552
Employment rate (%)	Male	95.4	89.0	82.2	69.7	83.2	50.0	79.4	97.7	2.5
	Female	82.5	70.3	42.6	42.4	81.8	33.5	43.7	35.2	1.8
	Total	89.9	76.2	63.6	56.3	82.2	42.1	62.5	79.3	2.1
Unemployment rate (%)	Male	0.8	5.1	1.2	3.6	8.9	6.0	4.3	1.6	4.3
	Female	4.1	11.4	1.8	4.0	6.0	3.8	15.4	13.6	5.9
	Total	2.1	9.2	1.4	3.7	6.9	5.1	8.2	3.3	5.0
Participation rate (%)	Male	96.1	93.8	83.2	72.2	91.4	53.2	83.0	99.2	2.6
	Female	86.0	79.3	43.4	44.2	87.0	34.8	51.6	40.7	1.9
	Total	91.8	83.9	64.5	58.5	88.3	44.4	68.2	82.1	2.2

The figures in table 30 show large differences between the various countries. Unemployment is very low (below 4 percent) among persons born in the Netherlands, Peru, Suriname, the Philippines, China, US and India. The rates are quite high among female migrants from some countries: Venezuela, Dominican Republic, Colombia, Haiti, Guyana and India: all over 10 percent. Most of these countries are sending countries for housemaids and other unskilled female workers. Equally, non-documented migrants come from several of these countries. It is possible that respondents working as housemaids who were on the island illegally reported that they were unemployed because they were afraid to provide information to an official government department.

With the exception of category 'other', employment rates are higher for all other foreign countries of birth than for Aruba[57]. Also, the participation rate[58], which is closely linked to the employment rate, is higher for most foreign countries of birth. Total participation is 64 percent. Some countries, such as the Netherlands and the US, where whole families migrate to Aruba, have participation rates that are close to those for native born. Many of the spouses of workers from these countries are not working. For some countries participation rates for men are extremely high. Of all the countries specified, eight have a male participation rate above 90 percent. For all countries women's participation is lower than for men.

Economic activity

In 1991, the total labor force[59] consisted of 31,111 persons, of whom 8,097 (26.0 percent) born overseas. The 2000 census showed that the labor force had increased to 45,037, a growth of no less than 44.7 percent since 1991. The number of persons in the labor force not born on the island increased to 18,447. This means that currently 40.9 percent of the labor force was born outside Aruba. The foreign labor force increased by 127.8 percent in the space of nine years.

In the last fifteen years, foreign workers have found specific niches on Aruba's labor market. Figure 42 gives more details of the economic activities of the employed foreign population. Appendix 20 shows data on which this graph is based. The figure shows the division of the labor market by major occupational group and sex. To categorize the occupational group we used the *International Standard Classification of Occupation* (ISCO-88), developed by the International Labor Organization (ILO, 1990). A description of ISCO-88 can be found in the 'Selected Tables'.

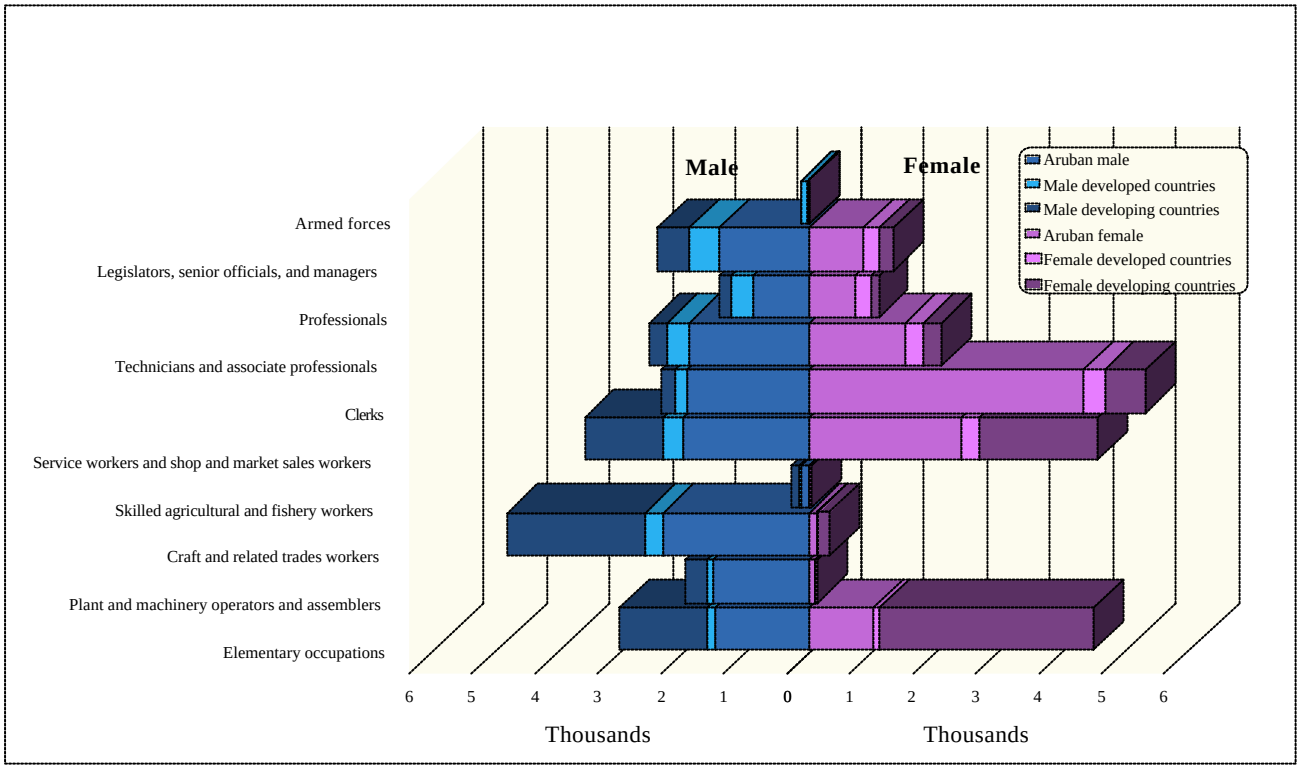
Figure 42 clearly shows the position of migrants on the local labor market. One can see that a significant number of foreign workers are present in each ISCO category. A large proportion of foreign workers – and especially women in this group - can be found in the group of elementary occupations. As expected, the vast majority of these women originate from developing countries. For instance, 1,797 foreign-born women work as housemaids in private homes and 1,402 work as cleaners in offices, hotels or other establishments. Among native women these numbers are respectively 47 and 654. Among men, too, more foreign-born males perform elementary occupations than native men.

[57] Employment rate: number of employed persons expressed as a percentage of the population aged 15 years and over. The employment rate for a particular group (sex, country of birth) is the number employed in that group expressed as a percentage of the population of that group.

[58] Participation rate: Total labor force expressed as a percentage of the population aged 15 years and over. The participation rate for a particular group (age, sex, marital status, etc.) is the labor force in that group expressed as a percentage of the population of that group.

[59] The labor force consists of both the employed and the unemployed population.

Figure 42. Employed population by (ISCO) major occupational group, sex and native/foreign born status

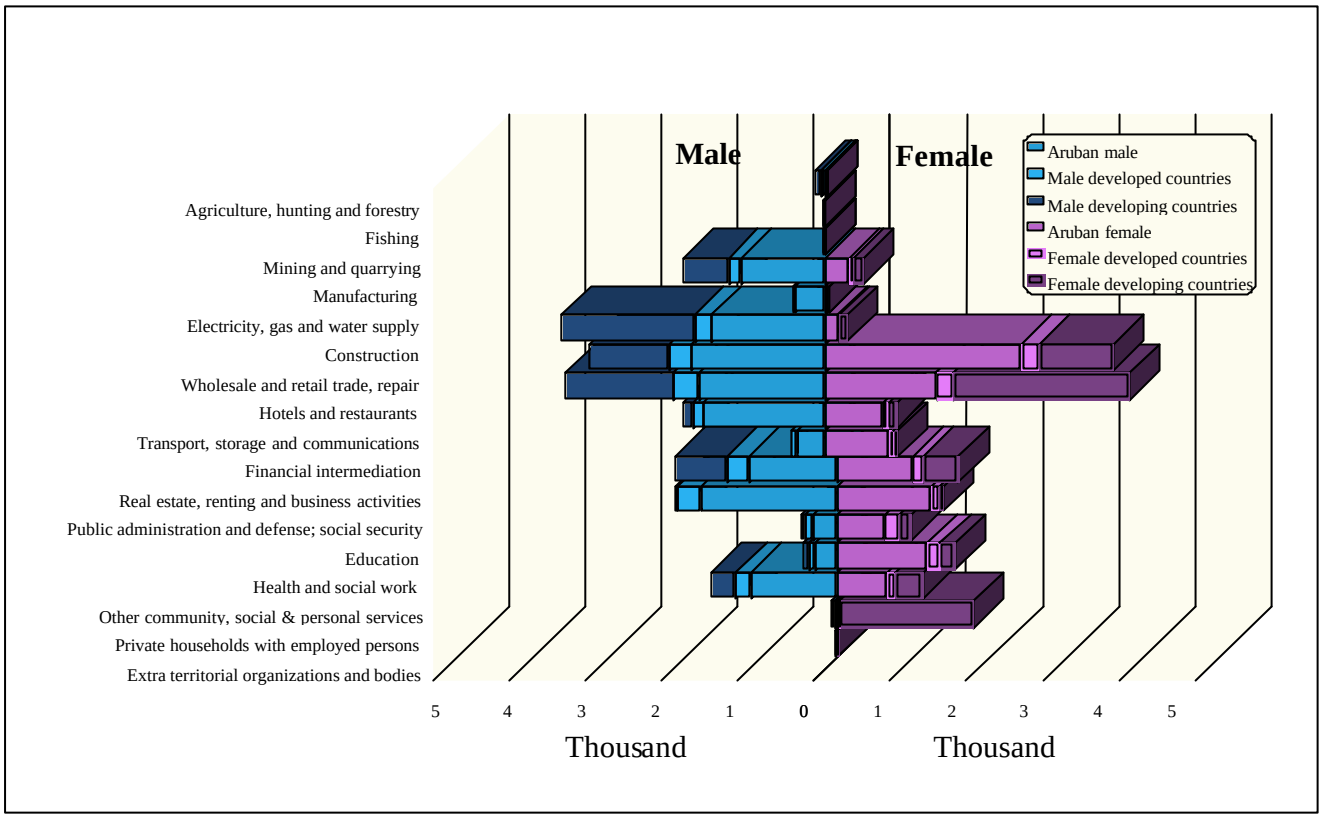


Source: Population and Housing Census 2000

'Craft and related trade workers' is another ISCO category where many foreign laborers are active; 2,497 foreign-born men worked in this category, compared with 2,309 native men. Foreign craftsmen dominate the construction sector in Aruba. For instance, the number of foreign-born masons is 584, against 331 Aruban masons. The numbers of foreign-born and local carpenters are respectively 309 and 235. Also in this category, the number of migrants from developing countries is much higher than that from developed countries.

The majority of 'clerks' are native born; this category includes most government workers. A basic knowledge of Spanish is often handy for shopping on Aruba. Many salesgirls in shops come from Latin countries. In 1991, 25.4 percent of 'Service workers and shop and market sales workers' were born outside Aruba. This proportion increased significantly in the next nine years and in 2000 45.6 percent of workers in this category were foreign born. The proportion of foreign-born staff in the group 'Legislators, senior officials and managers' has increased slightly. In 1991, 36.5 percent of persons in this category were born outside Aruba. This percentage has further increased to 38.9. Migrants from developed countries constitute an important part of the workforce in these three categories

Figure 43. Employed population by branch of industry (ISIC major division), sex and region of birth



Population and Housing Census 2000

Another way to view the position of foreigners on the labor market is by looking at the industrial sector in which they work. For the classification of industrial and business activities in Aruba, the *International Standard Industrial Classifications of all Economic Activities (ISIC, Revision 2)* was used.

Like the ISCO, the ISIC system uses a four-digit code to classify the economic activities of businesses and other economically active organizations in a country. The classifications of the branch of industry are broken down by major division (1-digit code), division (2-digit codes), major group (3-digit codes), and group (4-digit codes). Information obtained in the population census is coded at the group level. Because of space restrictions, the information provided on 'branch of industry' is restricted to the ISIC major divisions. Those interested in more detailed information on the 'branch of industry' can contact the Central Bureau of Statistics.

ISIC Aruba-99 tabulation categories are given below:

1. Agriculture, hunting and forestry
2. Fishing
3. Mining and quarrying
4. Manufacturing
5. Electricity, gas and water supply
6. Construction
7. Wholesale and retail trade; repair of motor vehicles and motorcycles and personal and household goods
8. Hotels and restaurants
9. Transport, storage and communications
10. Financial intermediation
11. Real estate activities

12. Public administration and defense; compulsory social security
13. Education
14. Health and social work
15. Other community, social and personal services
16. Other service activities
17. Extraterritorial organizations and bodies

Figure 43 shows the significance of certain sectors of the economy. After the closure of the Lago, Aruba invested heavily in the development of its tourism industry, and this sector and its related activities are now the main pillar of its economy. The increase in retail trade and construction in particular have been closely linked to the development of the tourism industry. In the hotel and restaurant sector the majority of employees are foreign-born. At the time of the census 4,436 (58 percent) of the 7,651 people employed in the hotel sector were born outside Aruba, mostly in developing countries. The construction sector is heavily male dominated. A total of 2,045 foreign workers were active in construction, 57 percent of the total of 3,588 male construction workers. More native than foreign-born persons work in the 'wholesale and retail trade and repair' sector (4,471 and 2,641 workers respectively).

6. Social characteristics

A population census is an ideal opportunity to portray the social and economic profile of a population. The economic characteristics of the people living on Aruba will be discussed in a separate report. From a demographic perspective, Aruba has experienced some important changes in the last ten years, changes that have had far-reaching effects on the social development of the island. This chapter examines some of the social changes that are taking place on Aruba in more detail.

Language

The Papiamento language was probably introduced after 1780, when the number of white settlers on Aruba increased and the original Indian population mixed with the newcomers. These European settlers spoke the language of Curaçao and introduced Papiamento on the island. The Indian language soon disappeared and was replaced by Papiamento[60].

Table 34. Languages people speak at home on Aruba (1981-2000)

	1981		1991		2000	
	No.	% tot.pop.	No.	% tot.pop.	No.	% tot.pop.
Papiamento	48335	80.1	51061	76.6	59984	70.0
English	6393	10.6	5954	8.9	7001	8.2
Dutch	3013	5.0	3626	5.4	5289	6.2
Spanish	1891	3.1	4946	7.4	11368	13.3
Portuguese	245	0.4	185	0.3	225	0.3
Other	435	0.7	914	1.4	1781	2.1
Total		100.0		100.0		100.0

Population and Housing Census 2000

Table 34 presents the absolute and relative number of persons by the language they predominantly speak at home with other members of the household, according to information from the last three censuses[61]. Unfortunately, no information on language was gathered during the 1960 and 1972 population censuses. To show the development of the various languages spoken on the island, we depict this information in figure 44.

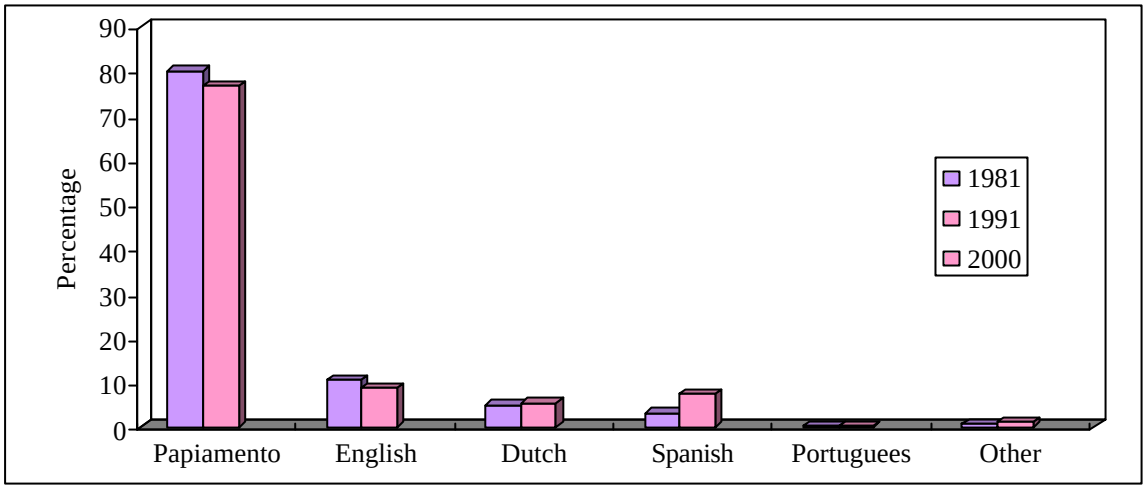
The number of people who speak Papiamento at home has steadily increased in absolute terms since 1981. In 2000, about 60,000 people converse in Papiamento with other members of the household. Relatively, however, the number has decreased in the last twenty years. In 1981, 80.1 percent of the people spoke Papiamento at home; twenty years later this was 70.0 percent. The proportion of the population who speak English at home has also decreased by about 2.5 percent points in the same

[60] Alofs & Merkies (1990), p31.

[61] Information was restricted to children three years of age and older. For the hearing-and-speech impaired, the language in which they express themselves (or think) was selected as the most often spoken. Mental handicapped persons who are unable to speak were put as 'non-applicable'. For persons living alone in the household, the language most often spoken by these individuals was stated.

period. The share of Dutch speakers rose from 5.0 to 6.2 percent. Spanish has seen the largest growth, by ten percent points from 3.1 to 13.3 percent.

Figure 44. Evolution of languages spoken in households on Aruba 1981-2001



The chapter on nuptiality already mentioned that there is a lot of intermarriage between women from Latin American countries and Aruban men. Most of these women learn Papiamento quickly. Papiamento is a relatively young language and like most languages it is changing continuously. It would be interesting to investigate what the linguistic effect of recent migration flows and intermarriage is on the daily use of Papiamento.

The unequal distribution of migrants across the island has an effect on the regional distribution of languages spoken in households. The map of Aruba on the next page illustrates the regional distribution of languages by means of a bar in each GAC zone, which shows the relative number of persons per language spoken in the household. The GAC zones around Paradera and Santa Cruz have the highest proportions of Papiamento-speaking households. In 1991, the percentage of people who used Papiamento as their first language in the household was above ninety in both regions. In 2000, the proportion of the population speaking Papiamento had decreased in both regions: to 82.1 in Santa Cruz and 81.1 in Paradera. In the heyday of the LAGO refinery many migrants came from English speaking Caribbean islands. These oil workers settled around the refinery in San Nicolas. Figure 45 shows that the English Caribbean character is still present in this area. In many GAC zones of San Nicolas, English is still the main language. However, here too Spanish is advancing. In zone ‘van de Veen Zeppenfeldstraat’ 101 of the 278 inhabitants speak Spanish. This is Aruba’s red light district, where quite a few Spanish speaking prostitutes live. The highest concentration of Spanish speakers can be found in Oranjestad, especially in the old town center.

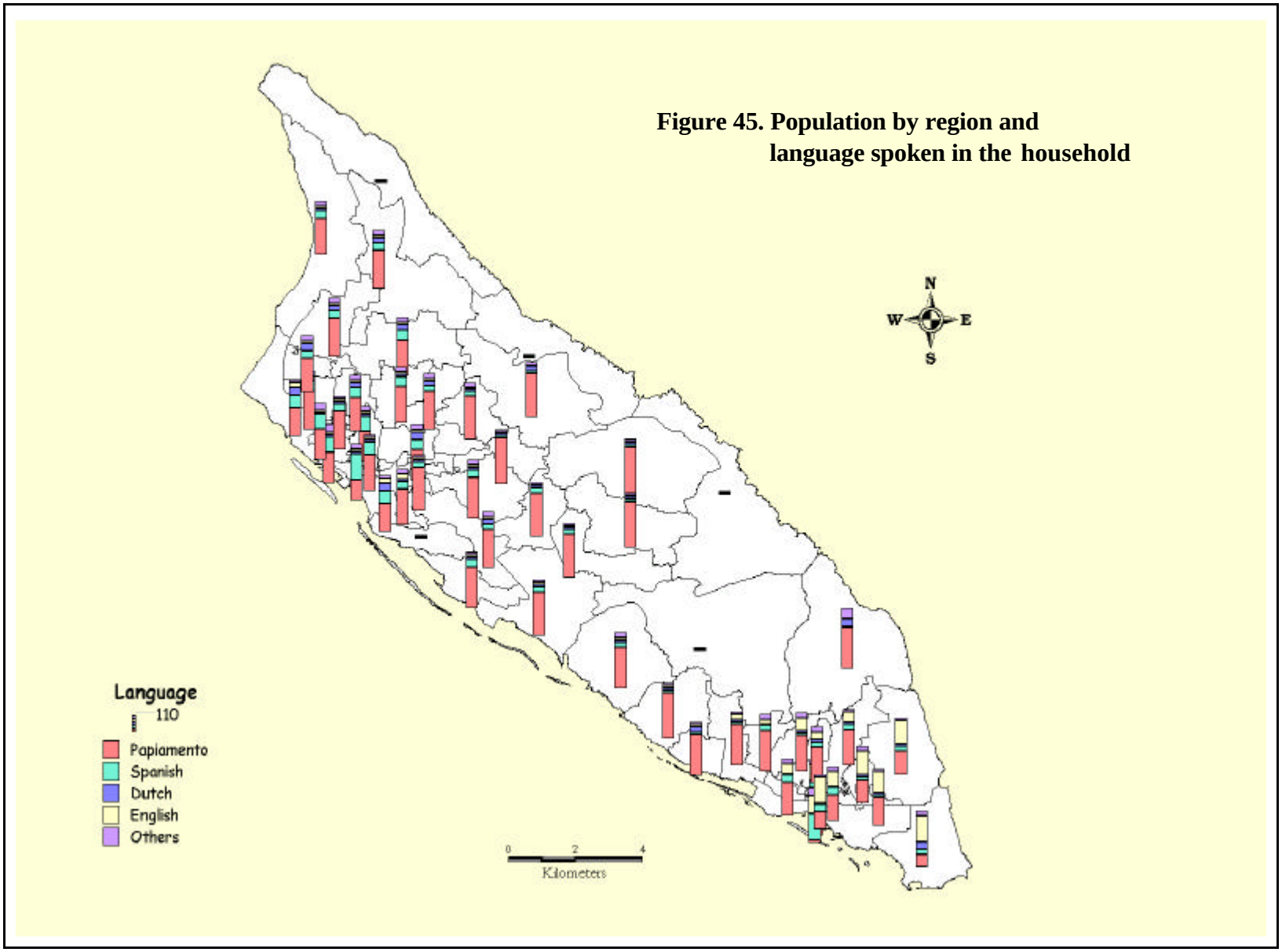


Figure 45. Population by region and language spoken in the household

From early childhood, Arubans come into contact with a variety of languages. They speak Papiamento at home, Dutch at school and they watch Venezuelan *novelas* and American cartoons on television. In school they learn Dutch, English, Spanish and French. Students can even learn German in high school. The average Aruban can easily strike up a conversation in four languages: Papiamento, Dutch, Spanish and English. This proficiency has been an important asset in the development of the tourist industry on Aruba. In the 2000 census, respondents were asked in which languages they could converse about daily matters. Table 35 gives the outcome of this question. We have made a distinction between native and foreign-born persons. Ninety-nine percent of native-born persons speak Papiamento. It is interesting to see that many foreigners also learn Papiamento when they come to live on Aruba; 77.4 percent of all foreign-born people can speak Papiamento. Between 70 and 80 percent of all native persons speak Dutch, English and Spanish. Dutch is the best-known language after Papiamento, not surprising, as it is the language used in education. Of all persons who were not born on Aruba, only 38.8 percent have a working knowledge of Dutch.

Table 35. Percentage of persons who can speak certain languages (native and foreign)

	Native	Foreign
Papiamento	99.2	77.4
English	72.3	57.3
Dutch	79.7	38.8
Spanish	73.8	73.9
Portuguese	1.0	1.9
French	3.3	6.3
Creole	0.3	3.4
German	1.2	4.9
Chinese	0.4	4.9
Sranan Tongo	0.4	2.4
Other	0.4	4.6

Source: Population and Housing Census 2000.

Table 36 shows some remarkable results on language proficiency in Aruba. The table presents the number of languages a person can speak, distinguishing between native born, born in a developed country and born in a developing country. More than 60 percent of people born on Aruba speak at least four languages. This is a very high percentage if we take into account that people of all ages, from the newborn to the very old, are included in the table. The group that does not speak any language includes very young children and seriously mentally handicapped persons. The percentage speaking only one language is highest among persons born in a developing country: 19.5 percent compared with 11.7 for persons born in a developed country and 13.6 percent for those born on Aruba.

Table 36. Number of languages known by native and foreign-born persons

No. of languages	Native born		Developed country		Developing country		Not reported	
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
0	3,935	6.6	120	1.4	112	0.5	502	97.2
1	8,149	13.6	991	11.7	4,206	19.5	12	2.2
2	5,730	9.6	1,140	13.4	7,991	37.0	2	0.4
3	5,559	9.3	1,527	18.0	5,056	23.4	0	0.0
4	33,623	56.1	3,639	42.8	3,270	15.1	1	0.2
5	2,341	3.9	765	9.0	792	3.7	0	0.0
6	454	0.8	265	3.1	149	0.7	0	0.0
7	77	0.1	50	0.6	19	0.1	0	0.0
8	15	0.0	5	0.1	5	0.0	0	0.0
9	3	0.0	0	0.0	1	0.0	0	0.0
Total	59,886	100.0	8,503	100.0	21,601	100.0	517	100.0

Source: Population and Housing Census 2000.

Catholicism still strong

The first European settlers on Aruba were Jewish. Protestants came later from Curaçao to colonize the island. Most of the non-Indian population at the beginning of Aruba's history were either Protestant or Jewish. The Spanish clergy from Venezuela Christianized the local Indian population, and built the chapel in Alto Vista, the first place of worship. In 1777, a second church was built in Noord. Life in Aruba changed drastically after 1780, when settlers and Indians blended into Arubans. New Catholic churches were built and Catholicism became the dominant faith on Aruba. During Aruba's early history, the Roman Catholic faith was the religion of the common man [62].

Table 37 shows the relative number of persons by faith according to the last five censuses. The 2000 census simply asked: "What is your religion?". While in many countries this is considered to be a very sensitive question, on Aruba few people have problems answering. Only 0.7 percent of respondents refused to answer the question.

The 2000 census shows that the Roman Catholic faith remains the largest religion on the island. However, there has been a decrease in the relative number of Catholics on Aruba in the last twenty years. In 1991, 86.2 percent of the population indicated they were Catholic, compared with 80.8 in 2000. This drop is the result of the large influx of migrants with other faiths. A solid 88.0 percent of people born on Aruba consider themselves to be Catholic. There have been some shifts among the smaller churches in the last thirty years. Methodists, Anglicans and Protestants all saw their share go down. Although still small in comparison with the Catholic faith, the number of Evangelists has increased rapidly. In 2000, with 4.1 percent of the population, Evangelism has become the second largest religion on the island. The number of non-believers is growing slowly, but remains small (3.9 percent).

[62] Alofs and Merkies, p.31.

Table 37: Percentage of Population by religion 1960-2001

Religion	1960	1972	1981	1991	2000 Total Population	2000 Aruban Population
Roman Catholic	79.7	88.2	88.5	86.2	80.8	88.0
Methodist	5.9	3.8	2.4	1.7	1.2	0.1
Anglican	1.9	1.1	0.9	0.7	0.4	1.0
Protestant	n.a	3.8	2.9	2.7	2.5	1.8
Adventist	n.a	0.4	0.6	0.6	0.8	0.2
Evangelist	n.a	n.a.	0.6	2.0	4.1	2.9
Jehovah's Witness	n.a	n.a.	1.1	1.3	1.5	0.4
Muslim	n.a	0.0	0.0	0.3	n.a.	n.a.
Jewish	0.4	0.1	0.1	0.2	0.2	1.4
Other	10.4 *	1.4	1.3	1.5	3.9	1.8
No religion	1.7	1.2	1.6	2.7	3.9	2.2
Not Reported	-	-	-	0.1	0.7	0.1
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: Population Censuses 1960, 1972, 1981, 1991 and 2000.

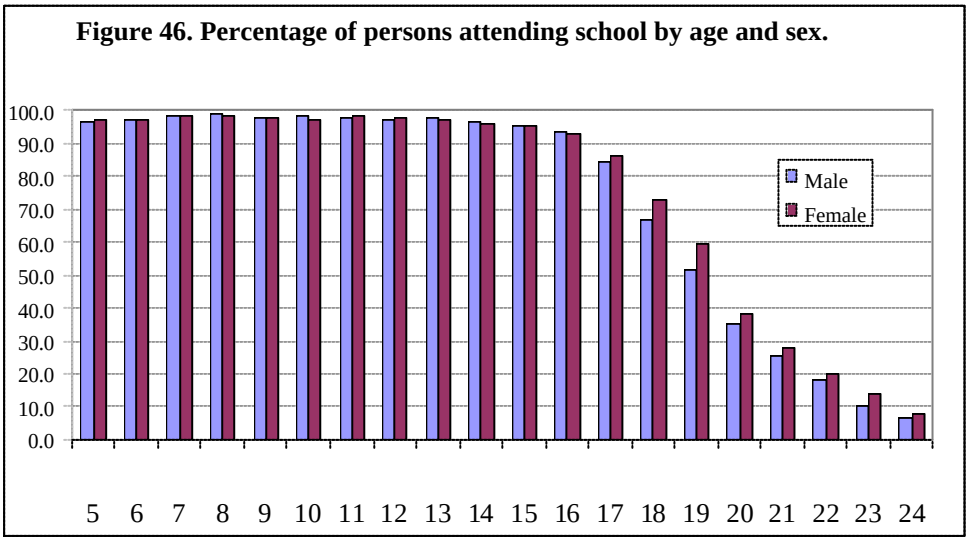
(*) Includes not reported

(n.a.. = not available).

School enrollment

Aruba's school system is based on the Dutch model. Indeed, after finishing school on Aruba, many young people continue their education in the Netherlands. Figure 46 shows that school attendance is very high on Aruba: up to age 15, attendance is well above 95 percent. One should take into account that the steep decline after age 16 does not mean that so many young people stop education. Every year a large group of students leave for overseas education. The exact number is unknown; as we indicated before, 1,225 students are currently abroad on a loan/fellowship provided by the government.

Figure 46. Percentage of persons attending school by age and sex.



In October 2000, 23,387 persons were enrolled in some form of education; 11,652 boys and men, and 11,735 girls and women. The school-going population consists of people participating in a regular education program; such programs normally last for more than a year and lead to an accredited diploma. Persons taking part in evening education programs are also included. Children attending pre-primary schools (play schools, kindergartens and day nurseries) were also taken into account.

Table 38. School-attending population by ISCED level category of program, age, and sex.

ISCED level of program	Males		Females		Total	
	Absolute	Percentage	Absolute	Percentage	Absolute	Percentage
ISCED level category 0	2,536	21.8	2,370	20.2	4,906	21.0
ISCED level category 1	4,780	41.0	4,701	40.1	9,347	40.0
ISCED level category 2	3,047	26.2	2,976	25.4	6,023	25.8
ISCED level category 3	484	4.2	761	6.5	1,245	5.3
ISCED level category 5	616	5.3	680	5.8	1,297	5.5
ISCED level category 6	71	0.6	250	2.1	321	1.4
ISCED level category 7	9	0.1	25	0.2	35	0.1
ISCED level category 9	108	0.9	105	0.9	213	0.9
Total school-attending population	11,652		11,735		23,387	

Source: Population and Housing Census 2000

Table 38 presents the number of students according to the level of education they are in. To classify the level of education we use the *International Standard Classification of Education (ISCED).* ISCED is basically a three-stage classification system, providing successive subdivisions from level of education to field of study to program group. The ISCED level of program incorporates seven categories. A residual category for education not definable by level is added. A description of these categories can be found in appendix 23.

In October 2000, 9,347 children were in primary education, up from 7,140 in 1991, an increase of 31 percent. With an average of 25 children per class this means an increase by 88 classes. ISCED level 3 begins at age 14 or 15 and lasts for about three years. At this level we find general programs (HAVO 4-5, VWO 4-6) and vocational schooling, intermediate level, such as MTO 1-2, MHNO 1-2, MAO 1-2, Associate degree AHS 1-2, Police school, MOVAA 1-2, and a nursing program (first two years). Interestingly, there are many more girls than boys are at this level, 761 against 484. At the higher educational levels too, more girls than boys can be found in schools on Aruba. The number of girls in higher education on Aruba and overseas with a fellowship or loan from the Aruban government is also higher than the number of boys. In June 2001, 906 (58.3%) of the total 1,553 fellowship students were girls[63].

According to the statistics from the Department of Education, 19,346 persons were in school. The figures from the census (23,387) and from the Department of Education (19,346) cannot be compared reliably because the census also includes children at very young ages who are in day care centers. If we look at the number of children in primary education, the census counted 9,096 children in primary schools and 251 children in special-needs education. The Department of Education registered in September 2000 respectively 8,849 and 272 children. The number of children in special-needs education in the census is somewhat smaller than that of the Department of Education. It is possible that some children in special-needs education were not reported as such in the census,

[63] Enseñanza na Aruba 2000-2001, p. 71.

perhaps because of some false sense of embarrassment of parents. The population census counted some more children in primary school than registered by the Department of Education. This may be because some children attend schools not recognized by the government.

At the vocational intermediate level (ISCED-level 5), the census counted 1,297 students compared with 1,132 registered by the Department of Education. Some school types are not included in the statistics of the Department of Education, for instance, the police school and the teachers' training (IPA). This accounts for the difference between both figures.

School enrollment is not compulsory on Aruba. A number of years ago education was not mandatory because almost all children went to school anyway. There is evidence that a number of children were not in school in the eighties and nineties.

According to the Universal Rights of Children, every child –irrespective of his/her legal status- has a right to schooling. To comply with this universal right, the former Minister of Education installed a working group (*Stuurgroep Niet-Schoolgaande Jeugd*) to look into non-attendance. After an extensive publicity campaign the working group registered all children who were not attending school. The registration took place in November 2000, one month after the census. The fact that the registration came right after the census gives us the opportunity to compare both sets of data. In a two-week registration period, 515 children aged 4-16 years who were not going to school were registered. This number includes 68 undocumented migrant children who did not register, but were known to the school administration system. Of all 515 children registered, 442 were undocumented migrants.

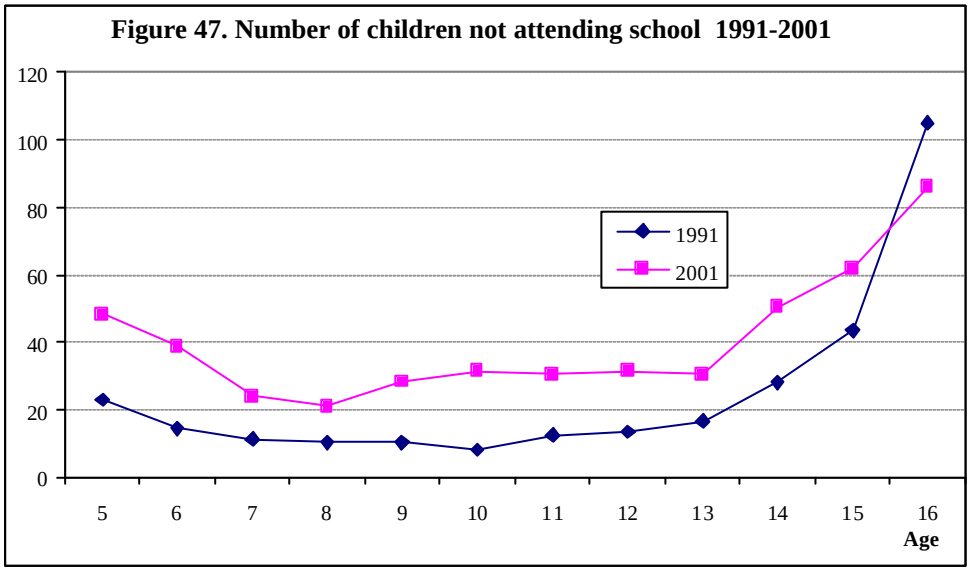
Table 39 shows the number of non-school-going children by age according to the 1991 and 2000 censuses. In 2000, 596 children aged 16 years and younger were not at school, 52.7 percent boys and 47.3 percent girls. Of all children who were not in school 37 were handicapped. If we subtract this group from our total, we get 559 children, which comes close to the number registered by the working group. Non-enrollment is not only a problem among foreign-born children; 169 native-born children between 4 and 17 were not going to school either.

Figure 47 shows that the number of children not attending school has gone up for all ages, except age 16. The government is currently in the process of making school enrollment compulsory between ages 4 and 17. The figures show that the current proposals to make school enrollment compulsory are appropriate. Finding extra room for more than 500 children in a school system that is already complaining about overcrowded classrooms will be a challenge. Other problems include the fact that schools have to deal with pupils from other cultures, who do not speak the local language and who have often been away from school a long period. However, not solving these problems will create far more serious problems in the long run.

Table 39. Number of non-school-attending children 1991-2000

	1991		2000		
Age	No.	Cum.no	No.	Cum.no	2001-1991
4	68	68	113	113	45
5	23	91	48	161	25
6	15	105	39	200	24
7	11	117	24	224	13
8	10	127	21	245	11
9	10	138	28	274	18
10	8	146	32	305	23
11	12	158	30	336	18
12	14	172	32	367	18
13	17	189	30	398	14
14	28	217	50	448	22
15	44	260	62	510	18
16	105	365	86	596	-19
17	188	554	184	780	-4
18	360	914	343	1123	-16
19	526	1440	495	1618	-32

Source: Population Census 1991, 2000



Illiteracy low

"A literate person is one who can, with understanding, both read and write a short, simple statement on his or her everyday life. An illiterate person is one who cannot, with understanding, both read and write such a statement"[64]. We have restricted our analysis to persons aged between 10 and 75 years. Above the age of 75 many people cannot read or write because of some age-related illness.

[64] This definition is given in the UN-publication 'Principles and Recommendations for Population and Housing Censuses" Revision 1, p.76.

Illiteracy is very low on Aruba. Among people aged between 10 and 75 years, 2.0 percent of both males and females are illiterate. Although the level is very low, it is worthwhile to pay some more attention to this important indicator of social development. Figures 48a and 48b depict the percentage of illiterate males and females by age and country of birth. Again we have divided the population into three groups: native born, born in a developed country and born in a developing country. The native male population has slightly higher levels of illiteracy than the two other groups. At older ages the proportions of illiterate persons is higher for all categories. This may be a combination of acquired illiteracy (i.e. through accidents, senility) and lower levels of education in the past.

Figure 48a. Percentage of illiterate males by age and country of birth

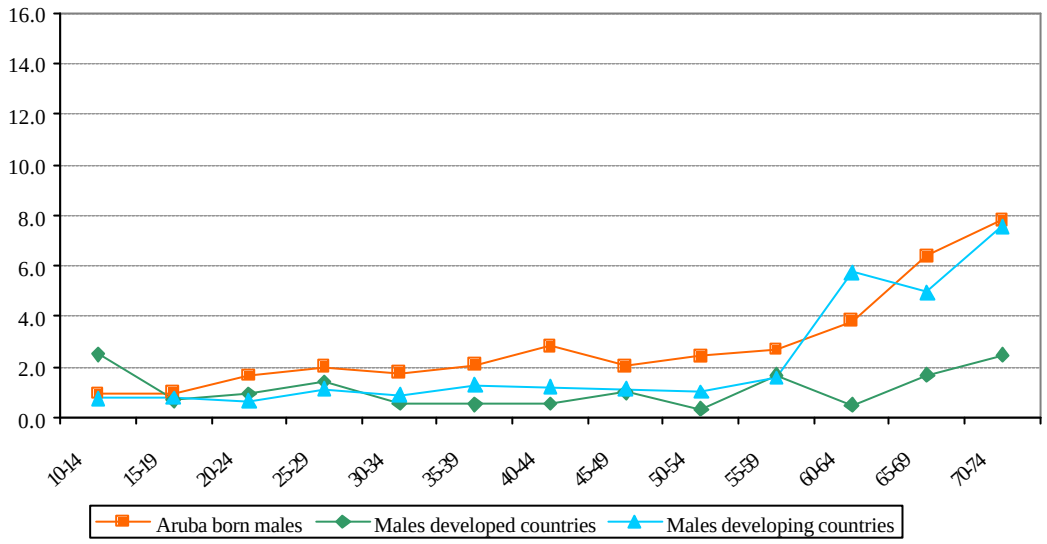
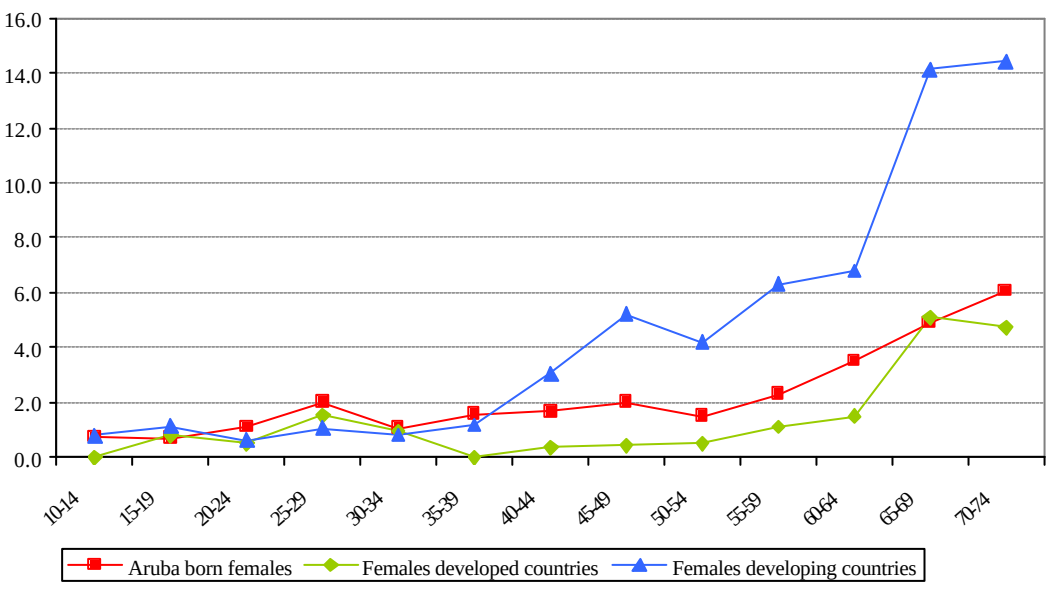


Figure 48b. Percentage of illiterate females by age and country of birth



Up to age 40, illiteracy of women is almost the same for all three groups. Women born in developing countries have higher levels of illiteracy after age 40. Although most countries in the region now have relatively universal basic education, this was certainly not the case when these women were young. Many of these women are unskilled laborers, and they often come from strata in society where an education could not be taken for granted.

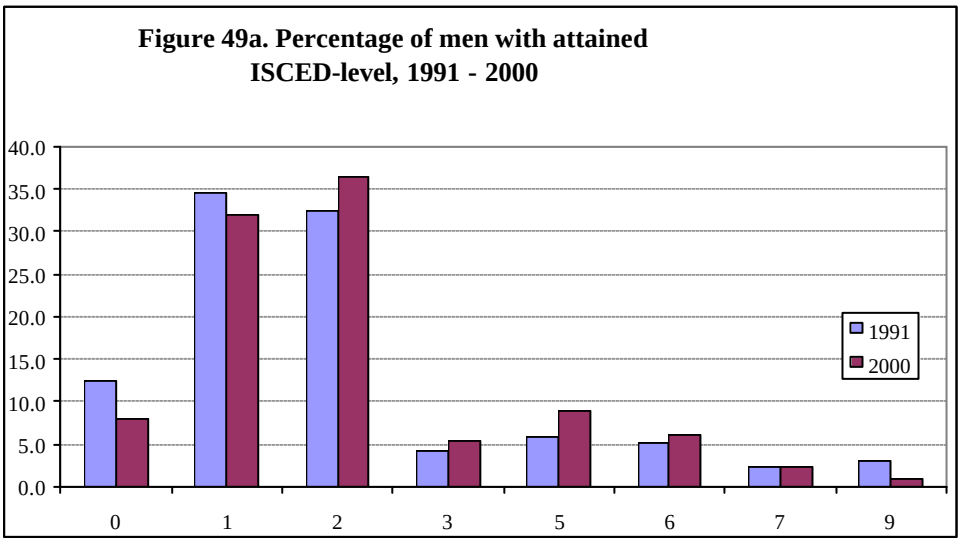
Educational attainment

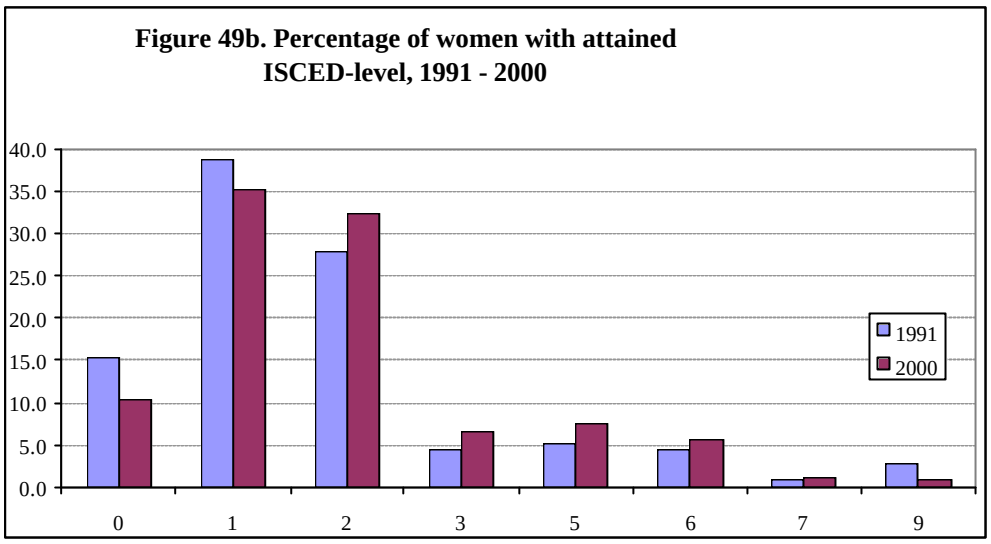
Figures 49a and b show the educational attainment of the population living on Aruba as recorded in the population censuses of 1991 and 2000. We have drawn separate graphs for men and women. For both sexes the percentage of the population with no formal education or with primary education has declined since 1991. There are somewhat more women than men in the lowest two educational categories. This is partly caused by the presence of a large group of unskilled female laborers from developing countries. The proportion of persons with a lower technical education (ISCED level 2) has increased since 1991.

In general, the proportion of the population with ISCED level 3 or higher is relatively small compared with ISCED categories 0, 1 and 2. ISCED category 2 groups education programs that begin at about age 11 or 12 and last for about three years. For instance: general programs such as MAVO, HAVO 1-3, VWO 1-3; lower levels of vocational training (LTO, LHNO, ETAO, AHS-lbo, AHS-llw). Seventy-six percent of the population had a level of education that was lower than level 3. However, progress has been made since 1991, and especially at level 5, the relative number of persons has increased significantly. In 2000, 5.8 percent of the population had a higher non-university diploma and 1.7 percent a university degree.

The Netherlands is the most popular country for those who go to study abroad. In the census, 2,275 native-born persons aged 14 years of age and older were enumerated as having obtained their highest diploma in the Netherlands. The USA is also quite popular: 694 native persons received a diploma from an American educational institution. Curaçao remains the third most popular place for study; 289 native born persons obtained their diploma in Curaçao. These countries are still the most popular foreign venues for Aruban students. The number of students with a fellowship from the government to study in the Netherlands, the USA and Curaçao are respectively 975, 178 and 43.

Figure 49a. Percentage of men with attained ISCED-level, 1991 - 2000

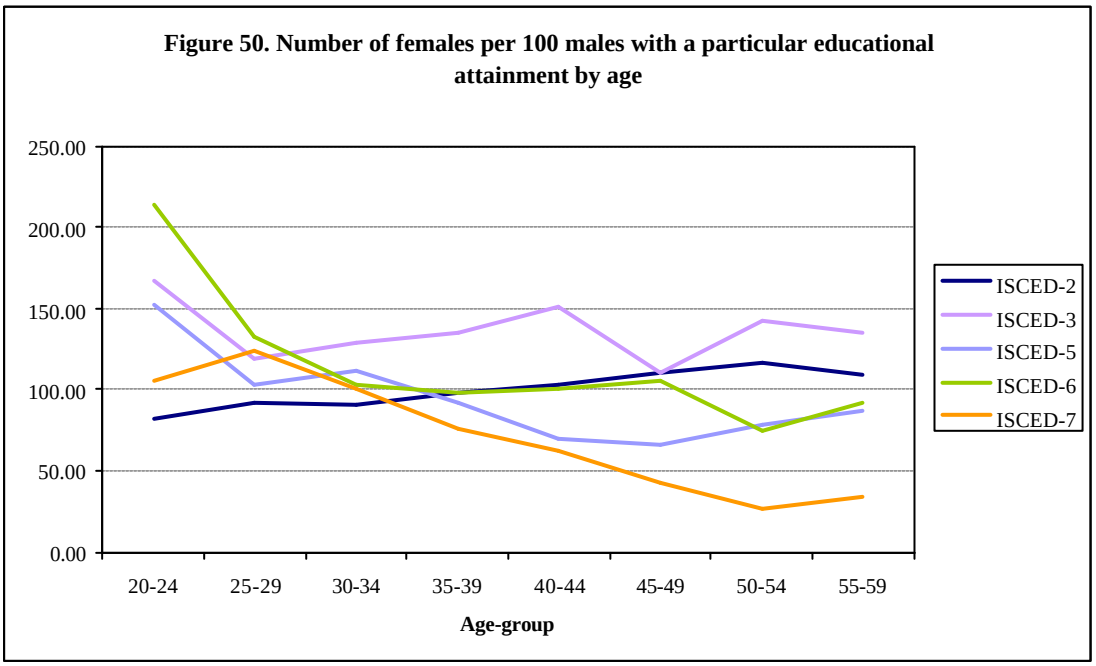




Position of women

Women's rights and equal status are major international issues, and although the position of women has improved, reality falls short of even acceptable levels of equality and autonomy in many parts of the world. Nowhere can women be said to enjoy complete equality with men [65].

A population census is not the appropriate tool to measure all the complicated aspects of the position of women in a society. Because of the importance of the subject and the lack of information in this field, we include some information available from the census. The census provides no information on decision-making within the household, women's autonomy and status of women in society. Also in the field of the position of women in society more research is needed.

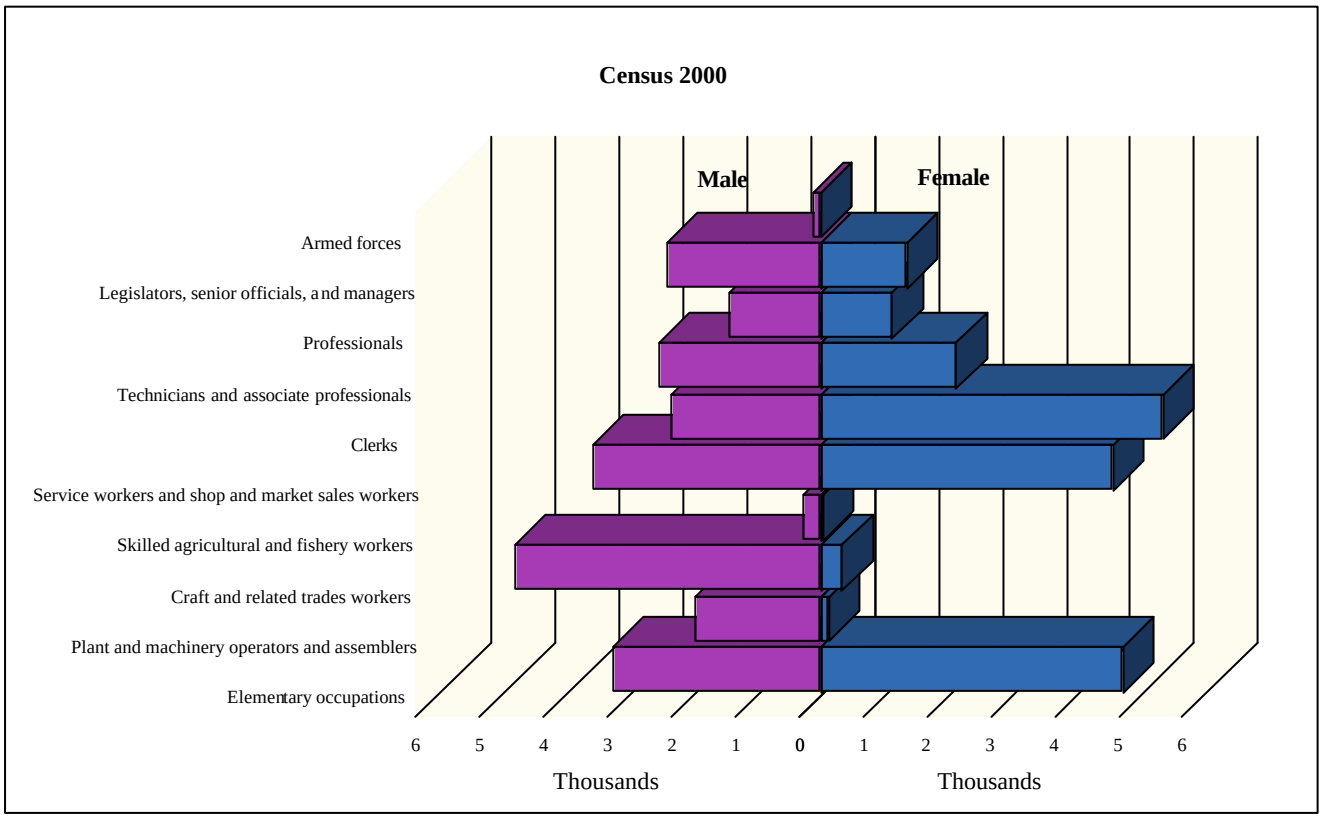


[65] There is extensive literature about the position of women. A good overview of current issues and trends is given in 'Population and Women' (1996), UN-Population Division.

One important indicator of the position of women is educational attainment. Especially at more advanced levels of education, girls in Aruba have higher enrollment in local schools than boys. Also the number of fellowships and loans granted to students to study abroad is higher for girls than for boys. Sex-specific statistical data on fellowships and loans for study abroad are available from 1990 onwards. For all these years more fellowships were granted to girls than to boys.

Figure 50 gives an interesting graphic illustration of the educational attainment of women versus men. Each of the lines indicates the number of women for every 100 men by age with a given level of education. There are more women than men with a university education up to age group 30-34, after that the proportion of women declines rapidly. After age 45 fewer than 50 women have a university degree per 100 men. For higher non-university education (ISCED level 6) too, the number of women at younger age groups is much higher than for men. Between ages 30 and 50 the number of women is about the same as the number of men. After 50 more men than women have ISCED-level 5. A comparison between levels 6 and 7 shows that a number of years ago, boys who studied really well left the island to go to university, while girls followed non-university higher education. In the last ten years this trend has stopped and more girls now go to university and other colleges of higher education than boys. According to the figures of the Department of Education, some 65 percent of all fellowship students in universities are girls. At ISCED-level 3, which includes vocational and administrative training at the intermediate level, girls have always been in the majority. At the lower level (ISCED 2), more women are present than men in the older age groups. At younger age groups there are more men than women in level 2. In terms of the position of women in society, the development in education is very favorable for women. The fact that more women than men pursue a higher education will probably lead to a higher proportion of women in higher positions in the future.

Figure 51 Employed population by (ISCO) major occupational group and sex



Source: Census 2000

Figure 51 shows that there is still some division of labor on Aruba. As in most countries, men and women favor particular employment sectors. The armed forces, fishery, machine operation and crafts are almost exclusively male dominated. Although women do not have exclusive ISCO categories, they represent a large majority in the categories 'Service workers and shop and market sales workers', 'clerks' and 'elementary occupations'. As we saw before, many of the women in 'elementary occupations' and in 'service and sales' are women from developing countries who have come to Aruba for work. Given the higher educational attainment of women, one would expect more women than men in higher positions. However, at the highest ISCO level ('Legislators, senior officials and managers') men are still predominant. Also in the categories 'Professionals' and 'Technicians and associate professionals' men are still in the majority.

To see whether the competitive position of women on the labor market has changed, we can compare the 2000 situation with the census of 1991. Table 40 presents the number of males and females at each ISCO-level for 1991 and 2000, together with the sex ratio (number of women per 100 men). The table clearly shows that the position of women on the higher side of the labor market has improved considerably in the intervening nine years. In 1991, only 41.2 women per 100 men were present at the senior managerial level. By 2000, the sex ratio at this level had increased to 55.9. But although serious progress has been made, there are still some two male senior managers for every female manager. At the professional and associate professional level women are also slowly catching up. The participation of women in these categories has increased rapidly in recent years. In 2000 more than 75 women can be found for every 100 men at these levels.

Table 40. Participation of women in the labor force by ISCO-category, 1991 - 2000.

	1991			2000		
	Male	Female	Sex ratio	Male	Female	Sex ratio
Armed forces	124	0	0.0	134	0	0.0
Legislators,senior officials, and managers	1637	674	41.2	2413	1349	55.9
Professionals	847	480	56.7	1441	1105	76.7
Technicians and associate professionals	1557	1171	75.2	2539	2106	83.0
Clerks	2066	3812	184.5	2361	5335	225.9
Service workers and shop and market sales workers	2585	3013	116.6	3571	4575	128.1
Skilled agricultural and fishery workers	229	17	7.4	292	32	10.8
Craft and related trades workers	3803	187	4.9	4807	319	6.6
Plant and machines operators and assemblers	1487	40	2.7	1976	125	6.3
Elementary occupations	2388	2943	123.2	2883	4417	153.2
Total	16723	12337	73.8	22417	19363	86.4

Source: Populatio censuses 1991 and 2000. Only employed persons are included from whom job information was available

At the other end of the labor market spectrum, the proportion of women has increased. The economic development in the last ten years has pushed up the demand for unskilled labor in shops, restaurants and hotels. Many female migrants were hired in these sectors. The increase in the sex ratios for elementary occupations and sales and service workers is more a consequence of sex-specific migration than of changes in the work status of local women.

Living quarters [66]

To a large extent the quality of a person's life is determined by the type and quality of his/her place of abode. Proper housing is a basic human right. The number of homeless persons on Aruba is very small: the census only counted five homeless persons. This low figure may come as a surprise, given the number of *'chollers*' (drug addicts) roaming the streets. Actually, most local chollers are not homeless; they live either in old abandoned houses or in institutes and are therefore - technically speaking - not homeless.

Table 41 shows the number of households and the number of persons in households by type of living quarters. Among the 29,264 households, only 15 are collective[67], accommodating a total of 510 persons. The number of persons living in collective households has fallen since 1991, mainly because far fewer people live in 'collective households for employees'. In 1991, the Coastal refinery was being upgraded by a team of temporary workers from Turkey. These workers stayed in trailers on the Coastal premises for about a year.

The prison population fell from 201 in 1991 to 114 in 2000. This is because at the time of the census many inmates were foreigners who will be extradited immediately after release; these people were not counted in the census. In 2000 there was a long waiting list for older people who wanted a place in a home for the elderly. At the time of the census 6,616 persons over 65 were living on Aruba, up from 3,578 in 1991, an increase of some 85 percent. By comparison, the number of old people in homes for the elderly only went up from 222 to 237.

The population growth resulted in a construction boom in the 1990's. In the space of nine years the number of households grew from 19,276 to 29,264. A large number of new houses were built, but many house owners also decided to build apartments around their house. In 1991, 1,830 households were living in an apartment. In 2000, this number was 4,838, an increase of more than 3,000 apartments. The number of households living in rooms in houses and in trailers and containers has also increased drastically since 1991.

House ownership is a good indicator of social and economic development. According to the census 17,640 (77.9 percent) out of a total of 22,658 households that lived in a house, owned the house they lived in. Many of the other houses are rented on a temporary basis to foreigners who come to work on Aruba for a few years. Social housing on the island is coordinated by *the Fundacion Cas pa Comunidad Arubano (FCCA).* Currently, a total of 3,564 persons in 1,180 households live in houses rented from FCCA, and another fifty people live in apartments belonging to FCCA houses. The majority of apartments are rented (76.4 percent). The same holds true for *cuartos*[68] (51.6 percent) and separate rooms in a house (67.5 percent).

The quality of living quarters is in general quite good. Out of a total of 29,246 living quarters, 1,895 were either poor or very poor. 'Poor' means that deficiencies are such that the bad element has to be replaced. In 2000, 4,974 people were living in quarters that were not up to standard. There are large differences between the various types of living quarters in terms of quality: only 4.7 percent of

[66] Living quarters consist of a building (or part of a building), or any other construction, in which precisely one household resides. Examples of living quarters are: a house, a trailer, a 'cuarto', etc. According to the definition, a building inhabited by two households consists of two living quarters. The census only included occupied living quarters. Vacant living quarters were not canvassed. Living quarters under construction were only included if they were already occupied.

[67] A collective household is defined as a household of more than ten persons without any family relation to each other. Often these households coincide with institutions such as homes for the elderly, orphanages , prisons, etc.

[68] A *cuarto* usually has the following characteristics: constructed mostly of wood or metal sheets and not movable; separated from the main building; often no facilities such as water and electricity; mostly one room only, sometimes with an improvised section used as a kitchen or bedroom; usually intended for temporary habitation.

houses are in poor or very poor condition, compared with 8.4 percent of apartments. Conditions are worst for those who live in *cuartos*: 41.1 percent of these living quarters are in bad condition. Also, 27.9 percent of people occupying a room in a house live in conditions that are less than satisfactory.

Table 41. Households and population in households by type of living quarters.

	Absolute		Relative	
	Households	Population	Households	Population
Housing units				
House	22658	75543	77.4	83.5
Apartment	4838	10685	16.5	11.8
Room	410	715	1.4	0.8
Trailer/Container	555	1444	1.9	1.6
Cuarto	590	1189	2.0	1.3
Other	61	182	0.2	0.2
Not reported	133	233	0.5	0.3
All housing units	29246	89990	99.9	99.4
Collective living quarters				
Home for the elderly	5	237	0.0	0.3
Orphanage	2	24	0.0	0.0
Nursing home	5	121	0.0	0.1
Collective living quarters for employees	1	14	0.0	0.0
Prison	1	114	0.0	0.1
Other	0	0	0.0	0.0
Not reported	0	0	0.0	0.0
All collective living quarters	15	510	0.1	0.6
Homeless				
Households/Population	3	5	0.0	0.0
Total households/population	29264	90506	100.0	100.0

Cars

The census gathered information about the number of cars owned by the members of the household. Automobile ownership refers to the personal possession of a car by one or more occupants of the households. Thus, commercial vehicles and official cars were not included in the enumeration.

A total of 32,801 cars were counted during the census, a rate of 36 automobiles per 100 citizens. The number of cars per 100 persons has increased significantly since 1991, when 30.3 cars were available per 100 people. The number of cars per 100 persons is only just lower than the level in the Netherlands: in 1996, 37 cars were available per 100 persons in the Netherlands. Some GAC zones in Aruba have a much higher concentration of cars than others. Overall 18.0 percent of the households do not have a car in their possession.

The zone with the highest number of cars per 100 persons is Seroe Colorado[69]. The population in Seroe Colorado is prosperous and live relatively far from community services. The lowest concentration of cars is in the Village. The population in the Village is relatively old, and includes many foreigners from developing countries; also the Village is right in the center of San Nicolas with all necessary services in the immediate vicinity. In general, the number of cars in San Nicolas is lower than in the other regions of Aruba. San Nicolas North and South respectively have 31 and 27 cars per 100 persons.

[69] Figures for car ownership were taken from the 'Selected Tables'; table H.E.2. This extended table has not been printed here.

Table 42. Non-collective households and population occupying housing units by quality of construction of the housing unit, type of housing unit, and period of construction of the housing unit.

Type of housing unit / Period of construction	Quality of construction: Good		Sufficient		Poor		Very poor		Not reported		Total		Percent poor
	Households	Population	Households	Population	Households	Population	Households	Population	Households	Population	Households	Population	or very poor
House	16625	55527	4844	16199	845	2702	222	693	123	422	22658	75543	4.7
Apartment/Room	2649	5729	1739	3930	327	773	80	163	44	90	4838	10685	8.4
Room	129	236	155	288	95	141	20	33	11	18	410	715	27.9
Trailer/Container	232	603	270	686	40	118	9	28	4	9	555	1444	8.9
Cuarto	114	218	230	501	159	324	84	142	3	3	590	1189	41.1
Other	19	58	28	96	9	22	3	4	1	2	61	182	20.7
Type of housing unit not reported	12	25	6	14	0	0	3	5	112	189	133	233	2.4
All housing units	19780	62160	7272	21425	1474	3939	421	1035	298	716	29246	89990	

Source: Population and Housing Census 2000

7. Population projections

Population projections give demographers a glimpse into the future. But a projection is not a forecast. Forecasts of future population size lie beyond the realms of possible knowledge: a crystal ball is not part of a demographer's standard equipment! The world is infinitely rich in factors that influence the future size and structure of populations, and even the most elaborate projection models can only include an infinitesimal part of these operating factors. Projections work as follows: the demographer sets out a possible scenario, then another one and often a third one. On the basis of these scenarios he or she calculates his projections, and offers the results to the client. Subsequently, "It is up to the user to study the assumptions on which the components were projected forward, choose the set of assumptions that seems right to him, and then accept only the demographer's arithmetic to read out the resulting future population…." (Keyfitz, 1987, p.17-3).

The projections for Aruba were made for a period of fifteen years into the future. We thought it unwise to go any further because migration has proven to be very erratic in the last twenty years. The calculations are made in five-year projection cycles, with the population at the end of one cycle used as input for the next. The basis of the projections is taken as 31 December 2000. The applied technique is the cohort-component method, which consists in the separate projection of mortality, fertility, immigration, and emigration. The method is applied to five-year age-sex groups. Appendix 24 gives a brief explanation of the projection methodology.

We used the population size and age-structure according to the 2000 census as the basis for the population projection. First, we set up a set of assumptions, grouped in three scenarios; these are discussed briefly below. Then, for each scenario, we systematically apply the specific survival, fertility and migration schedules for that cycle of the scenario. The projected number of births, deaths, immigrants and emigrants are then added/subtracted to obtain the population at the end of the cycle. Only projections for the total population are made. In the near future the Central Bureau for Statistics will produce some specific projections, among others for education and the labor force.

Scenarios

The various assumptions used in the scenarios are arbitrary, but plausible in terms of possible future trends[70]. We have used three scenarios, which according to their final output we call 'medium', 'high' and 'low'. If we look at the last twenty years of Aruba's demographic history, we can see that neither the level of mortality or fertility have undergone drastic changes. As we have seen, in the last ten years life expectancy has decreased by about a year, both for men and women. Currently, the level of mortality is about the same as it was in 1981. The total fertility rate (TFR) has gone down a little in recent years. This occurred after a slight increase at the end of the 1980's and beginning of the 1990's. At the moment, the level of fertility is again around the level it was at the beginning of the 1980's. As there is little reason to believe that fertility or mortality will change drastically in the course of the next fifteen years, each of the three scenarios is based on the fertility and mortality schedules presented earlier. We present the age-specific fertility rates in table 43. Table 44 gives the survivorship ratios[71] of the life table. The variety we have built into the scenarios is completely on account of migration.

[70] The Central Bureau of Statistics is planning to publish population projections on a yearly basis. Each year the assumptions used in these projections will be adapted to incorporate the demographic changes that took place.

[71] The survivorship ratio is in fact the probability of surviving between two completed periods. These survival

Table 43. Age-specific fertility assumptions for all three scenario's, Aruba 2001-2016.

Age group	2001/2005	2006/2011	2011/2016
15-19	0.0538	0.0538	0.0538
20-24	0.0994	0.0994	0.0994
25-29	0.1062	0.1062	0.1062
30-34	0.0688	0.0688	0.0688
35-39	0.0363	0.0363	0.0363
40-44	0.0078	0.0078	0.0078
45-49	0.0000	0.0000	0.0000
TFR	1.86	1.86	1.86
GRR	0.90	0.90	0.90
Mean age at childbearing	26.93	26.93	26.93

Source: Population and Housing Census 2000.

Table 44. Survivorship ratios assumed for the low projections Aruba 2001-2016

	Males			Females		
Age group	2001/2006	2006/2011	2011/2016	2001/2006	2006/2011	2011/2016
0-1	0.9934	0.9934	0.9934	0.9877	0.9877	0.9877
1-4	0.9989	0.9989	0.9989	0.9972	0.9972	0.9972
5-9	0.9989	0.9989	0.9989	0.9989	0.9989	0.9989
10-14	0.9960	0.9960	0.9960	0.9988	0.9988	0.9988
15-19	0.9893	0.9893	0.9893	0.9955	0.9955	0.9955
20-24	0.9857	0.9857	0.9857	0.9948	0.9948	0.9948
25-29	0.9680	0.9680	0.9680	0.9945	0.9945	0.9945
30-34	0.9900	0.9900	0.9900	0.9931	0.9931	0.9931
35-39	0.9869	0.9869	0.9869	0.9934	0.9934	0.9934
40-44	0.9795	0.9795	0.9795	0.9914	0.9914	0.9914
45-49	0.9688	0.9688	0.9688	0.9860	0.9860	0.9860
50-54	0.9494	0.9494	0.9494	0.9659	0.9659	0.9659
55-59	0.9097	0.9097	0.9097	0.9431	0.9431	0.9431
60-64	0.8524	0.8524	0.8524	0.9240	0.9240	0.9240
65-69	0.7874	0.7874	0.7874	0.8706	0.8706	0.8706
70-74	0.7218	0.7218	0.7218	0.8081	0.8081	0.8081
75-79	0.6100	0.6100	0.6100	0.7165	0.7165	0.7165
80+	0.3400	0.3400	0.3400	0.4796	0.4796	0.4796
e0	70.01	70.01	70.01	76.02	76.02	76.02

Source: Population and Housing Census 2000.

Migration is the most unpredictable factor in the projection equation. Imagine a demographer who had to do the population projections in 1985. Up to 1985 population growth was quite stable and migration moderate. No way could he or she have predicted that in 1986 the population would have decreased and that several years later Aruba would experience massive immigration levels with growth rates of up to 5 percent. In the same way it is impossible to forecast how migration will develop in the next 15 years. Migration is very unpredictable and depends almost completely on the course of the economy. Developments in tourism, in particular, will have a major impact on the number of foreign workers who will come to Aruba for work, or who will leave because there is no longer work for them. In recent years the level of immigration has gone down, and in 2000 the

probabilities (in fact improperly called ‘ratios’) between completed years are commonly used in population projections to estimate the number of survivors

growth rate is much smaller than it was some years previously. This trend will be incorporated in the projections.

Table 45. Net migration assumptions 2006-2016, by age and sex

	Net Migration men	Pop. Males	Net migr. Rate	Net Migration women	Pop.females	Net migr. Rate
0 - 4	0	3560	0.0000	0	3420	0.0000
5 - 9	0	3625	0.0000	0	3525	0.0000
10 - 14	0	3385	0.0000	0	3373	0.0000
15 - 19	-100	3058	-0.1635	-160	3071	-0.2605
20 - 24	60	2428	0.1236	150	2597	0.2888
25 - 29	30	3021	0.0497	45	3333	0.0675
30 - 34	10	3777	0.0132	15	3997	0.0188
35 - 39	0	4359	0.0000	0	4733	0.0000
40 - 44	0	3953	0.0002	0	4468	0.0000
45 - 49	0	3261	0.0000	0	3659	0.0000
50 - 54	0	2542	0.0000	0	2836	0.0000
55 - 59	0	1927	0.0000	0	2144	0.0000
60 - 64	0	1562	0.0000	0	1911	0.0000
65 - 69	0	1135	0.0000	0	1450	0.0000
70 - 74	0	738	0.0000	0	949	0.0000
75 - 79	0	466	0.0000	0	579	0.0000
80 - 84	0	279	0.0000	0	452	0.0000
Total	0			50		

We used the following strategy to incorporate migration in the projections. We assume that the biggest changes in migration will take place in the next five years. For the subsequent ten years in the projection (2006-2016) we assume very moderate levels of migration. For each of the three scenarios the same net migration schedule is used. This schedule is given in table 45. The schedule is based on the following assumptions. First, it is assumed that the levels of net migration will be very limited during this period. We expect that the real boom years are over. Second, for the younger and older age groups it is assumed that net migration is zero. It is assumed that net migration is negative in age groups 15-19, as many Aruban youngsters leave the island at these ages to study abroad. Third, we assume that net migration for women is slightly higher than for men. In absolute terms the total net migration for women is 50. For men we assume that total net migration is 0. In the projection model the total number of male and female migrants was included, and not the net migration rates.

There are two reasons why we assume that net migration for women is somewhat higher than for men. As we saw before, the number of foreign-born women who marry Aruban men is substantial; many of these women will settle on Aruba permanently. Another reason is that in recent years the number of female migrants has surpassed the number of males. The labor market has changed. The construction boom has come to an end, now that most of the big projects (hotels, airport, supermarkets, shopping malls) have been completed. The number of foreign (male) workers in construction can be expected to shrink. On the other hand, service workers in shops, restaurants and hotels may still continue to expand moderately. As women dominate the jobs in these sectors, this will have an effect on the net migration sex ratio.

The migration assumptions we used in the scenarios for the period 2001-2006 are as follows:

- *Medium:* in this scenario we assume that the level and age pattern of migration will not change in the period 2001-2006. This means we use the net migration schedule observed at the time of the census, for the period 2001-2006. This schedule is presented in table 46. As can be seen, net migration of men was negative in 2000 (-268) while it was positive for women (298). This means

that after one year of being exposed to this schedule, 566 more women than men were living on the island because of migration.

Table 46. Net migration assumed in the population projections, by sex & age; Aruba 2001-2016

	Men			Women		
	2001/2006	2006/2011	2011/2016	2001/2006	2006/2011	2011/2016
0 - 4	-64	0	0	-3	0	0
5 - 9	-71	0	0	12	0	0
10 - 14	-25	0	0	-8	0	0
15 - 19	-180	-100	-100	-134	-160	-160
20 - 24	-91	60	60	20	150	150
25 - 29	115	30	30	193	45	45
30 - 34	79	10	10	115	15	15
35 - 39	22	0	0	94	0	0
40 - 44	0	0	0	-4	0	0
45 - 49	21	0	0	6	0	0
50 - 54	-14	0	0	8	0	0
55 - 59	-11	0	0	9	0	0
60 - 64	-28	0	0	0	0	0
65 - 69	-9	0	0	-5	0	0
70 - 74	-6	0	0	0	0	0
75 - 79	-5	0	0	-5	0	0
80 - 84	-1	0	0	1	0	0
	-268	0	0	299	50	50

- *Low*: in the second scenario we assume that the dramatic events of September 11th 2001 and the 'War against Terrorism' will have a profound effect on the tourism industry in Aruba. The months after the WTC drama showed a large drop in the number of tourists visiting the island. If this trend continues it will lead to layoffs in the hotel, restaurant and retail sectors. As many workers in these sectors are migrants, we expect that many of them will move back to their country of birth. We expect that more men than women will do this, as many of the women have married on the island (or have a steady relationship with an Aruban man) and will not leave. It is impossible to estimate the magnitude of this return migration with the current information. We constructed a net migration

Table 47. Net migration assumed for the low projections, by sex & age; Aruba 2001-2016

	Men			Women		
	2001/2006	2006/2011	2011/2016	2001/2006	2006/2011	2011/2016
0 - 4	-100	0	0	-100	0	0
5 - 9	-150	0	0	-150	0	0
10 - 14	-175	0	0	-175	0	0
15 - 19	-250	-100	-100	-300	-160	-160
20 - 24	-200	60	60	-175	150	150
25 - 29	-500	30	30	-300	45	45
30 - 34	-600	10	10	-375	15	15
35 - 39	-500	0	0	-300	0	0
40 - 44	-100	0	0	-50	0	0
45 - 49	-75	0	0	-50	0	0
50 - 54	-25	0	0	-25	0	0
55 - 59	0	0	0	0	0	0
60 - 64	0	0	0	0	0	0
65 - 69	0	0	0	0	0	0
70 - 74	0	0	0	0	0	0
75 - 79	0	0	0	0	0	0
80 - 84	0	0	0	0	0	0
	-2,675	0	0	-2,000	50	50

table by assuming that the reduction in tourism would lead to an increase in emigration and a reduction in current immigration. Obviously, many different scenarios are possible on how extensive emigration will be. After some trial and error we came up with the net migration figures presented in table 47. Both for males and for females emigration would be substantial, with 2,675 males and 2,000 females leaving the island in the period 2001 and 2006. This would be comparable with the relative reduction in the population after the closure of LAGO in 1986. We assume that migrant workers will not return quickly after 2006.

- *High:* the third scenario looks at Aruba's economy from a brighter perspective. In this scenario we assume that the current economic slowdown will be very temporary. Some large hotels, shopping malls and supermarkets will be constructed and will attract a group of foreign workers. The net migration schedule for this scenario is given in table 48. The assumptions here are that in the period 2001-2006, a total of 650 male and 890 female migrants will come to Aruba in the five years after the census, and that after this five-year period of growth, migration will fall back to a moderate level.

Slower growth

In the 1990's Aruba experienced a very rapid population growth. After some years of demographic turbulence, the growth rate of the population has decreased substantially in the past few years. Unless serious economic problems arise, Aruba's population will grow further at a moderate pace in the coming years. It can be expected that growth will be slower than in the boom years of the early 1990's.

Table 48. Net migration assumed for the high projections, by sex and age; Aruba 2001-2016

	Men			Women		
	2001/2006	2006/2011	2011/2016	2001/2006	2006/2011	2011/2016
0 - 4	0	0	0	0	0	0
5 - 9	0	0	0	0	0	0
10 - 14	0	0	0	0	0	0
15 - 19	-100	-100	-100	-160	-160	-160
20 - 24	100	60	60	150	150	150
25 - 29	200	30	30	250	45	45
30 - 34	200	10	10	250	15	15
35 - 39	125	0	0	175	0	0
40 - 44	75	0	0	125	0	0
45 - 49	50	0	0	75	0	0
50 - 54	0	0	0	25	0	0
55 - 59	0	0	0	0	0	0
60 - 64	0	0	0	0	0	0
65 - 69	0	0	0	0	0	0
70 - 74	0	0	0	0	0	0
75 - 79	0	0	0	0	0	0
80 - 84	0	0	0	0	0	0
	650	0	0	890	50	50

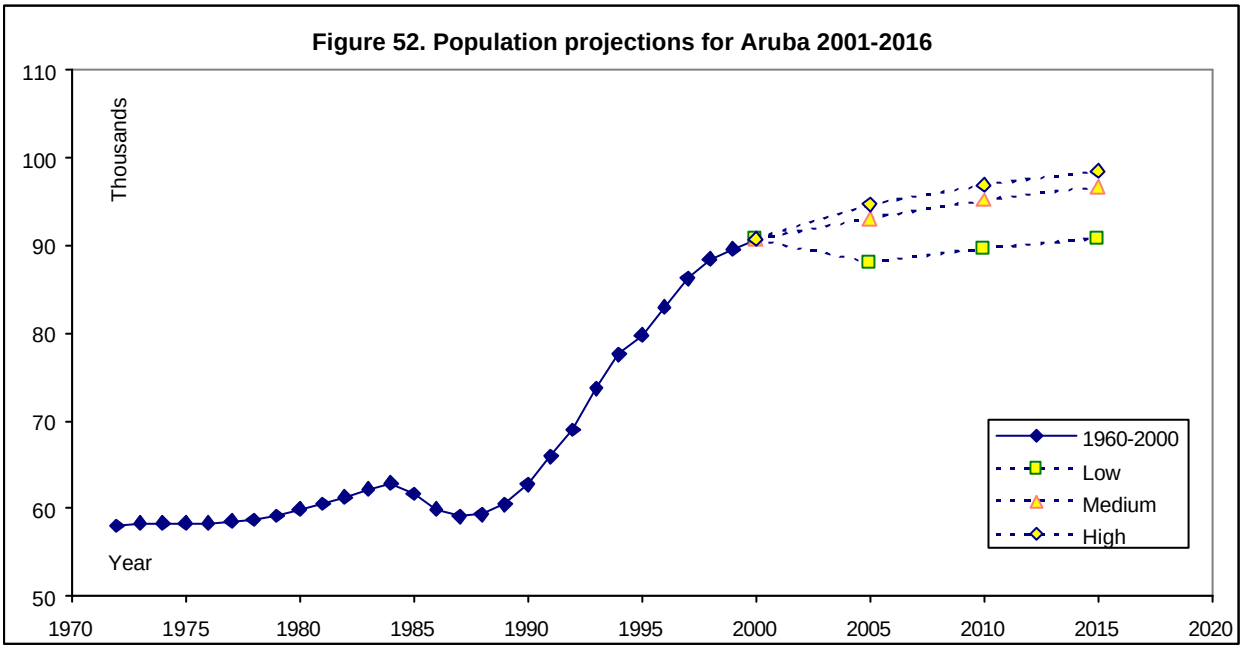
Table 49. Evolution of Aruban population according to three scenarios

	2006			2011			2016		
	Males	Females	Total	Males	Females	Total	Males	Females	Total
Low	41,822	46,298	88,120	42,500	47,175	89,675	42,984	47,846	90,830
Medium	44,394	48,751	93,145	45,337	49,889	95,226	46,020	50,756	96,776
High	45,352	49,379	94,731	46,337	50,573	96,910	47,029	51,466	98,496

Table 49 shows the sizes of the projected populations for each of the three scenarios[72], and figure 52 gives a graphical representation of the population size from 1972 to 2016. According to the three scenarios (low, medium and high) the ultimate population size is respectively 90,830, 96,776 and 98,476.

Table 50 shows that growth rates are quite small in all three scenarios. In each of the three projections, population growth remains below one percent. These levels are much lower than the growth rates in the first half of the nineties, when Aruba had one of the fastest growing populations in the world. There is little reason to believe that Aruba will return to that state in the near future. As mentioned earlier, migration is by far the most important determinant of population dynamics in Aruba, and each projection scenario assumes that net migration will be rather moderate and far below the levels of the early nineties.

Figure 52. Population projections for Aruba 2001-2016



[72] The data on which this table is based are presented in Appendix 25a, b, c.

Table 50: Summary measures. Low projection Aruba 2001-2016.

	Growth rates (%)	No.of births (000's)	No.of deaths (000's)	Projected natural increase (000's)	Crude birth rate	Crude death rate	Nat.increase rate
Low							
2001-2006	-0.53	5.83	3.55	2.29	13.06	7.94	5.12
2006-2011	0.35	5.41	3.91	1.51	12.18	8.79	3.39
2011-2016	0.26	5.61	4.51	1.1	12.43	9.99	2.45
Medium							
2001-2006	0.57	6.16	3.55	2.61	13.41	7.73	5.68
2006-2011	0.44	5.99	3.96	2.03	12.71	8.4	4.31
2011-2016	0.32	6.06	4.56	1.5	12.62	9.49	3.12
High							
2001-2006	0.91	6.23	3.55	2.68	13.46	7.67	5.80
2006-2011	0.45	6.12	3.99	2.13	12.77	8.32	4.44
2011-2016	0.32	6.13	4.60	1.54	12.55	9.41	3.14

Births and deaths

There is no doubt that whatever the scenario, the absolute number of deaths in the population will increase. As the population grows older, more and more people will enter the age groups where probabilities of dying are much higher. For each of the three scenarios, the number of deaths in 2016 will be about a thousand higher than in 2000. Because of this, the crude death rate will increase slightly in the coming years.

The number of births will decrease only slightly. However, because the population is aging, the birth rate will fall somewhat in the next fifteen years. Because of this movement in the birth and death rates, the rate of natural growth will decrease from a level of about five per thousand in 2000-2005 to about two to three per thousand in 2016.

More older people

One of the most serious aspects of Aruba's current demographic development is the rapid pace of aging. Table 51 presents the absolute and relative numbers of men and women aged 60 years and older for various years. Figures for 2006-2016 were taken from the medium projection. These figures are shown graphically in figure 53.

In 1960, only 4.9 percent of the population was over 60 years of age. From 1960 to 1991 the percentage of this age group more than doubled. After 1991, the absolute number of people over 60 continued to grow rapidly, from 6,845 to 10,097, but because of high levels of immigration, their percentage increased only moderately, from 10.3 to 11.2. The medium projection shows that after 2006 the rate of aging will accelerate. Between 2001 and 2006, the percentage of over-60's will increase by 1.2 percent points; between 2006 and 2011 by 2.1 percent points and between 2011 and 2016 by 2.9 percent points. Between 2001 and 2006 another 1,500 persons over 60 will be added to the island's population, and from 2011 to 2016 the number of extra persons aged 60 and over will have more than doubled, to over 3,000.

Table 51. Absolute and relative number of persons 60+ by year and sex

Year	Male		Female		Total	
	No.	% of pop.	No.	% of pop.	No.	% of pop.
1960	1,114	2.1	1,490	2.8	2,604	4.9
1972	1,962	3.4	2,339	4.0	4,301	7.4
1981	2,504	4.2	3240	5.4	5,744	9.5
1991	3,046	4.6	3799	5.7	6,845	10.3
2001	4,357	4.8	5740	6.4	10,097	11.2
2006	4,922	5.3	6,656	7.1	11,578	12.4
2011	5,834	6.1	7,984	8.4	13,818	14.5
2016	7,070	7.3	9,772	10.1	16,842	17.4

Life expectancy is about 76 years for women and 70 for men. The longer lifetime of women results in an overrepresentation of women in older age groups. For instance, the projected population of women above 60 would account for 10.1 percent of all women on the island, while men over 60 would represent 7.3 percent of the overall male population. In absolute terms, there are about 2,700 more women than men among the 16,842 people in this age group.

Figure 54 comprises four population pyramids to illustrate the aging of Aruba's population. We have selected the pyramids from the medium scenario. Pyramids from the other two scenarios are slightly different, but present a similar picture. Figure 54 clearly shows how the 'big generation' will progress through the age categories. By the year 2016, the 'big generation' will have reached retirement. In that year the age group containing the most people will be 50-54 years. The median age (the age at which half the population is older and half younger) is projected to rise from 34.3 in 2000 to around 39 in 2016.

Figure 53. Absolute number and percentage of persons 60+ years

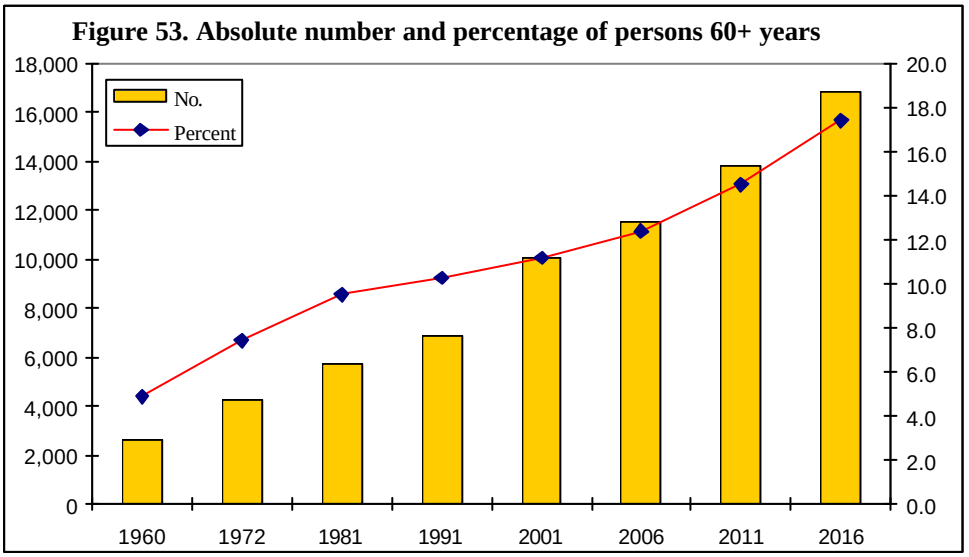


Table 52. Projected dependancy ratios at end of projection period by broad age groups, Aruba 2001-2016

	Low			Medium			High		
	65 & over	Dep.ratio 65+	Median age	65 & over	Dep.ratio 65+	Median age	65 & over	Dep.ratio 65+	Median age
2001	11.2	10.6	34.3	11.2	10.6	34.3	11.2	10.60	34.3
2006	13.2	12.8	37.5	12.4	12.0	36.4	12.3	11.80	36.2
2011	15.5	14.4	39.2	14.5	13.4	38.1	14.3	13.20	38.0
2016	18.5	17.1	39.6	17.4	15.9	39.0	17.2	15.60	39.0

Depending on the scenario, the percentage of the population aged over 60 will rise from 11.2 to between 17.1 and 18.5 percent. An important measure in this respect is the 'dependency ratio 65+'. This ratio indicates the number of persons aged 65 and over per 100 persons in the working age groups (15-64 years). Obviously the dependency ratio will be highest in the 'low scenario', as this scenario assumes that a group of migrants in working ages will leave the island. At the moment the dependency ratio is 10.6. This means that there are just over ten older persons on Aruba for every 100 persons aged 15-64. In the medium projection the dependency ratio will increase to 15.9 by 2016.

The age pyramids in figure 54 show that Aruba's population will age radically between 2016 and 2026. To prove the point let us look for a moment at the medium scenario. In 2016, 17.4 percent of the population will be over 60; 6.2 percent will be between ages 60 and 65. Most people in Aruba already retire at the age of 60.[73] If the assumptions made for the medium scenario become reality, 17.1 percent of the population will be between 50 and 60 in 2015. These people would reach retirement age somewhere between 2016 and 2026. This group constitutes a total of 16,544 people, of whom 8,850 are women. Obviously, not all of them will live to reach retirement, but still, more than 90 percent of people in these age groups will eventually reach age 60.

It is clear that at this stage in Aruba's demographic growth, the social system will come under serious pressure. It will only be able to cope with this situation successfully if measures are taken well in advance. Financial reserves will have to be built up to cover the extra costs in the retirement and health systems.

Fewer children

As a result of the high levels of fertility in the 1940's and 1950's, Aruba had a very young population in 1960: 41.3 percent of the population was under fifteen years of age. Because of the drop in fertility between the end of the 1950's and the beginning of the 1970's, the proportion of people under 15 decreased rapidly after 1960. Between 1972 and 1981 this age group fell from 36.3 to 25.8 percent. At each point in time the number of boys was slightly higher than the number of girls, a result of the fact that more baby boys than baby girls are born. We saw before that the sex ratio at birth in Aruba is 106.9.

[73] The 2000 census showed that 27.4 percent of the population in age group 60-65 was employed. More than 50 percent were income recipient.

Figure 54. Population pyramids 2001-2016, medium scenario.

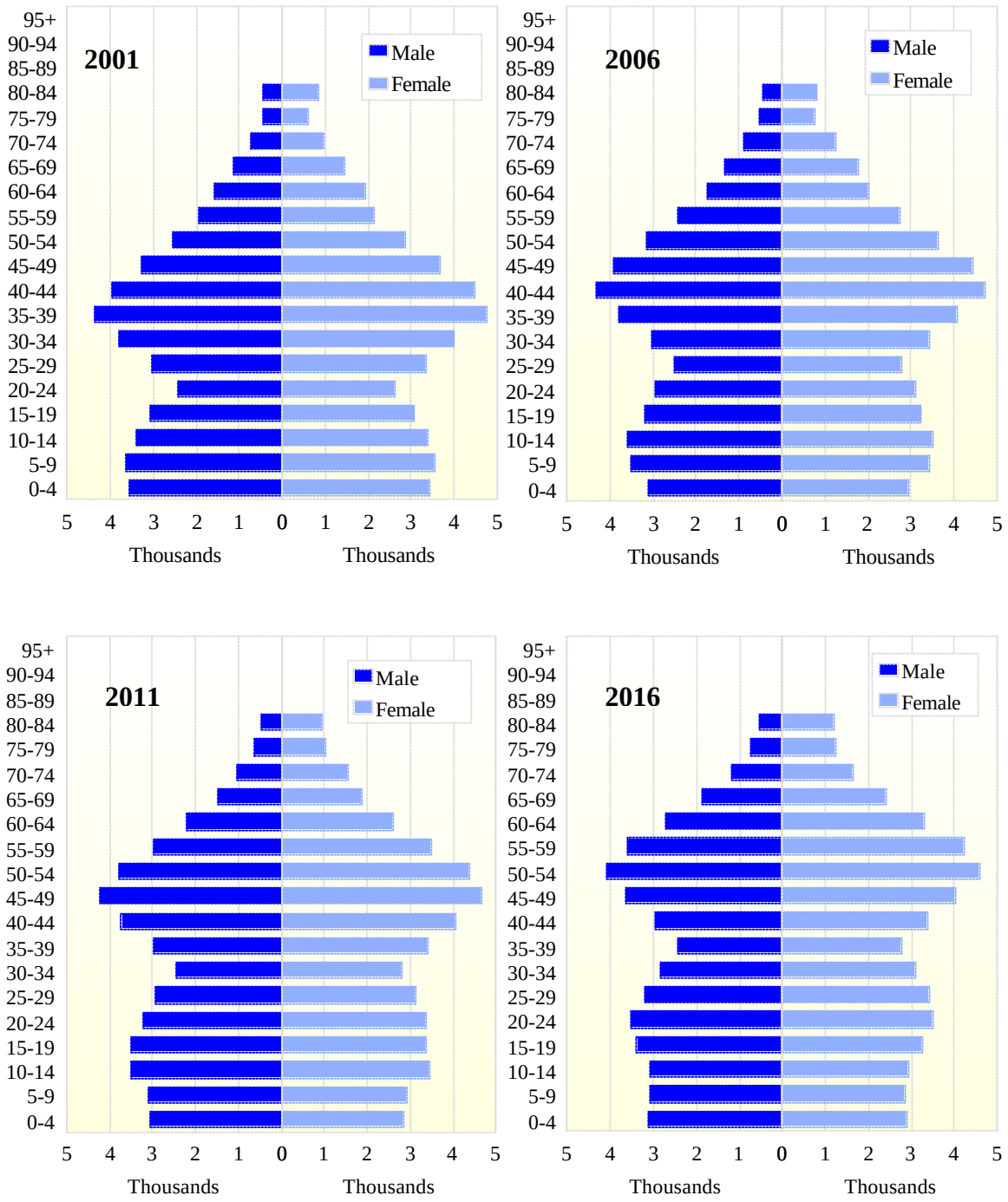
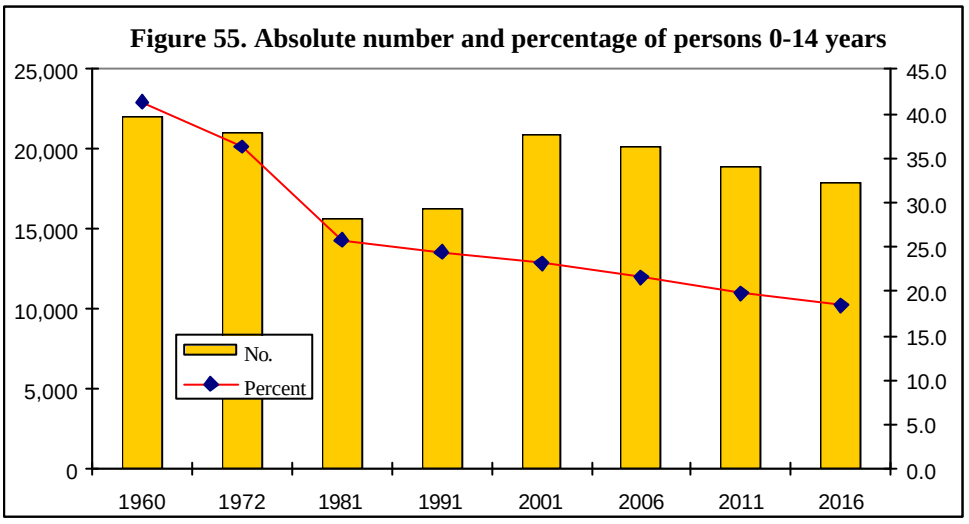


Table 53. Absolute and relative number of persons 0-14 year by year and sex

Year	Male		Female		Total	
	No.	% of pop.	No.	% of pop.	No.	% of pop.
1960	11,091	20.8	10,912	20.5	22,003	41.3
1972	10,722	18.5	10,294	17.8	21,016	36.3
1981	7,979	13.2	7,636	12.6	15,615	25.8
1991	8,451	12.6	7,812	11.8	16,263	24.4
2001	10,569	11.7	10,317	11.4	20,887	23.2
2006	10,207	11.0	9,898	10.6	20,105	21.6
2011	9,662	10.1	9,218	9.7	18,880	19.8
2016	9,267	9.6	8,666	9.0	17,933	18.5



The Total Fertility Rate did not change drastically between 1981 and 2000. The number of children however did increase significantly between 1991 and 2000, from 16,263 to 20,887, an increase of 28.4 percent in the space of nine years. This increase was caused by two factors: a) the fact that many immigrants brought children to the island: among all children under 15, 3,310 came to Aruba after 1991; and b) the 'baby blip': children born to parents of the 'big generation'. When the big generation entered the reproductive age groups, the absolute number of births increased, even though fertility levels remained the same. Because of the very rapid increase in the overall population size, the percentage of persons under 15 decreased slightly.

In each of the three projection scenarios, the number of under-15's will gradually fall between 2001 and 2016. If migration rates of young people remain at the same level as in 2000, the total number of children will drop by about 2,900 to 17,993 by 2016.

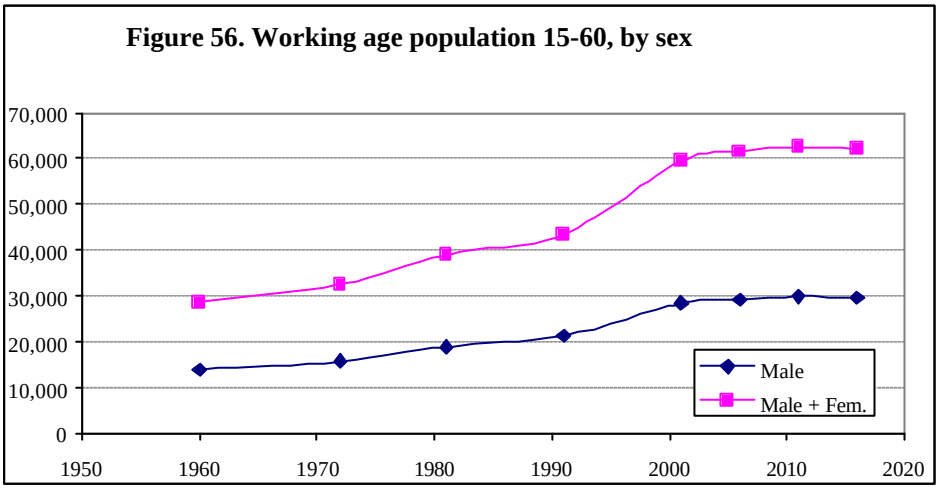
Working age population

The main working age population (15-60 years)[74] more than doubled between 1960 and 2000. In 1960, 28,592 people were in the working age groups, against 59,399 in 2000 (see figure 56). The working age population is projected (medium scenario) to reach 62,000 by 2016. Their share of the total population will drop slightly from 65.6 percent in 2000 to 64.1 percent in 2016, because of the aging of the population.

The aging of the big generation will lead to an older workforce in the coming years. At the moment 10.1 percent of the total population are between 50-59. In 2016 the share of this age group will have grown to 17.4 percent (Table 53). As a percentage of the total working age population, the age group 50-59 will grow from 16.0 percent in 2000 to 26.7 in 2016.

Table 54. Medium projection scenario Aruba 2001-2016, working age population by sex

	2001			2006			2011			2016		
Age group	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
15-49	23958	25954	49912	23694	25809	49502	23055	24792	47847	21988	23468	45456
% 15-49	55.2	55.1	55.1	53.4	52.9	53.1	50.9	49.7	50.2	47.8	46.2	47.0
50-59	4488	4999	9487	5572	6389	11960	6787	7895	14682	7695	8850	16544
60+	4374	5762	10136	4922	6656	11578	5834	7984	13818	7070	9772	16842
% 50-59	10.1	12.2	11.2	11.1	13.7	12.4	12.9	16.0	14.5	15.4	19.3	17.4
15-60	28446	30953	59399	29266	32198	61462	29842	32687	62529	29683	32318	62000
% 15-60	65.5	65.8	65.6	65.9	66.0	66.0	65.8	65.5	65.7	64.5	63.7	64.1
Total pop.	43435	47071	90506	44395	48752	93145	45338	49889	95227	46020	50756	96775



Dependency ratios

Dependency ratios link the number of persons in dependent age groups (0-14 years and 65 years and older) to the population in the age group 15–64. In a way, dependency ratios present a somewhat biased picture because they do not take into account the people between 0-14 and 65 and over who are not dependent but actually work, and people between 15-64 who do not work. Table 54 gives the dependency ratios for the three scenarios. In addition to the dependency ratio, specific ratios are computed for the population under 15 years and 65 years and older.

[74] Normally the working age group is taken as 15-65. As most people in Aruba retire at age 60, we have taken 60 as the cut-off point. In the case of the dependency ratios we keep 65 as cut-off point to allow international comparability.

Table 55. Projected dependency ratios at end of projection period, Aruba 2001-2016

		Under 15	65 & Over	Under 15 and 65 and over
	2001	33.3	10.6	43.9
Low scenario	2006	31.2	12.8	44.0
	2011	28.0	14.4	42.4
	2016	25.9	17.1	43.0
	2001	33.3	10.6	43.9
Medium scenario	2006	30.8	12.0	42.8
	2011	28.0	13.4	41.4
	2016	26.4	15.9	42.2
	2001	33.3	10.6	43.9
High scenario	2006	30.6	11.8	42.4
	2011	28.0	13.2	41.2
	2016	26.3	15.6	42.0

All three scenarios show a similar trend. On the one hand we see that the dependency ratios for people under 15 will decline rapidly in the next 15 years. At the moment the ratio under 15 is equal to 33.3. In 2016, the ratios for all three projection scenarios hover around 26 percent. On the other hand, the dependency ratios for people aged 65 and older will increase from 10.6 percent to levels between 15.6 and 17.1 percent. Because of the opposite directions of dependency ratios for the young and the old, the overall dependency ratio is projected to remain about the same in the next 15 years. A very slight decrease, from 43.9 to a level around 42, will be realized in the next five years. Compared with the 1960's and 1970's, the dependency ratio is much lower now because the proportion of people under 15 has decreased significantly. In 1960, the dependency ratio was still as high as 79.9; by 1981 it had plummeted to 48.1.

Appendices

Appendix 1. Population Aruba, annual changes since 1972

Year	Population Aruba		Deaths		Livebirths		Natural growth		Emigration		Immigration		Net migration		Net growth		Corresponding Doubling Time
	mid year[1]	end of year	absolute	death rate	absolute	birth rate	absolute	n.g. rate	absolute[1]	em. rate	absolute	im. rate	absolute	n.m. rate	absolute	growth rate	
72	58047	58189	275	4.74	1201	20.69	926	15.95	2584	44.51	1942	33.46	-642	-11.06	284	4.89	141.6
73	58299	58409	287	4.92	1003	17.20	716	12.28	2667	45.75	2171	37.24	-496	-8.51	220	3.77	183.9
74	58349	58290	298	5.11	962	16.49	664	11.38	2479	42.48	1696	29.07	-783	-13.42	-119	-2.04	-
75	58295	58299	286	4.91	968	16.61	682	11.70	2414	41.41	1741	29.87	-673	-11.54	9	0.16	4413.8
76	58368	58437	300	5.14	941	16.12	641	10.98	2194	37.59	1691	28.97	-503	-8.62	138	2.36	293.2
77	58580	58722	320	5.46	993	16.95	673	11.49	2376	40.56	1988	33.94	-388	-6.62	285	4.87	142.4
78	58776	58829	284	4.83	1058	18.00	774	13.17	2445	41.60	1778	30.25	-667	-11.35	107	1.82	381.6
79	59191	59553	318	5.37	1065	17.99	747	12.62	2063	34.85	2040	34.46	-23	-0.39	724	12.23	56.7
80	59909	60264	288	4.81	1125	18.78	837	13.97	2023	33.77	1897	31.66	-126	-2.10	711	11.87	58.4
81	60563	60866	317	5.23	1051	17.35	734	12.12	2082	34.39	1950	32.20	-132	-2.19	602	9.93	69.8
82	61276	61690	313	5.11	1036	16.91	723	11.80	2281	37.22	2382	38.87	101	1.65	824	13.45	51.5
83	62228	62770	339	5.45	1133	18.21	794	12.76	2275	36.57	2562	41.17	287	4.61	1081	17.36	39.9
84	62901	63037	323	5.14	1169	18.58	846	13.45	2325	36.96	1745	27.74	-580	-9.21	266	4.24	163.6
85	61726	60419	334	5.41	1109	17.97	775	12.56	4726	76.56	1333	21.60	-3393	-54.97	-2618	-42.41	-
86	59929	59444	377	6.29	1014	16.92	637	10.63	3059	51.05	1447	24.15	-1612	-26.90	-975	-16.27	-
87	59156	58873	370	6.25	992	16.77	622	10.51	2779	46.98	1587	26.83	-1192	-20.16	-570	-9.64	-
88	59329	59789	335	5.65	949	16.00	614	10.35	1909	32.18	2211	37.27	302	5.09	916	15.44	44.9
89	60441	61096	372	6.15	1141	18.88	769	12.72	2205	36.48	2743	45.38	538	8.90	1307	21.63	32.1
90	62751	64410	419	6.68	1140	18.17	721	11.49	1843	29.37	4436	70.69	2593	41.32	3314	52.81	13.1
91	65943	67382	429	6.51	1157	17.55	728	11.04	1887	28.62	4229	64.13	2342	35.52	3070	46.56	14.9
92	69005	70628	424	6.14	1292	18.72	868	12.58	2091	30.30	4469	64.76	2378	34.47	3246	47.05	14.7
93	73685	76741	402	5.46	1337	18.14	935	12.69	2101	28.51	7279	98.79	5178	70.27	6113	82.96	8.4
94	77595	78449	431	5.55	1315	16.95	884	11.39	2463	31.75	3287	42.36	824	10.62	1708	22.01	31.5
95	79804	81159	504	6.32	1419	17.78	915	11.47	2299	28.80	4094	51.30	1795	22.50	2710	33.96	20.4
96	83021	84882	469	5.65	1452	17.49	983	11.84	2210	26.62	4950	59.62	2740	33.00	3723	44.84	15.5
97	86300	87719	497	5.76	1457	16.88	960	11.12	2130	24.68	4007	46.43	1877	21.75	2837	32.87	21.1
98	88451	89182	505	5.71	1315	14.87	810	9.16	2763	31.23	3416	38.62	653	7.39	1463	16.55	41.9
99	89658	90134	561	6.26	1251	13.95	690	7.70	3082	34.38	3344	37.30	262	2.92	952	10.62	65.3
00	90734		276	-	624	-	348	-	1262	-	1514	-	252	-	600	-	-
		91064	255	-	670	-	415	-	2106	-	2021	-	-85	-	330	-	-

Notes : 1. The emigration figures are adjusted figures.

Sources: Population Census 1971, 1981,1991, 2000 and Population Register.

Appendix 2: Age structure population of Aruba by sex according to censuses 1960-2000

	Census 1960		*Census 1972*		*Census 1981*		*Census 1991*		*Census 2000*	
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*
0-4	3729	3499	2965	2884	2629	2496	2965	2574	3560	3420
5-9	4034	3990	3608	3484	2566	2480	2833	2664	3625	3525
10-14	3328	3423	4149	3926	2784	2660	2653	2574	3385	3373
15-19	2585	2690	3455	3432	3367	3254	2313	2188	3058	3071
20-24	2172	2177	2414	2595	3204	3069	2244	2168	2428	2597
25-29	1740	2083	1913	2216	2642	2942	2859	2921	3021	3333
30-34	1494	1639	1947	2104	2310	2570	3349	3404	3777	3997
35-39	1404	1443	1728	1951	1902	2175	2954	3216	4359	4733
40-44	1321	1401	1367	1439	1791	2074	2476	2627	3953	4468
45-49	1277	1316	1173	1091	1547	1774	1941	2137	3261	3659
50-54	1212	1162	846	1032	1179	1308	1699	1887	2542	2836
55-59	717	759	875	1013	915	930	1429	1626	1927	2144
60-64	443	515	841	899	773	978	1013	1113	1562	1911
65-69	278	361	513	580	644	785	708	770	1135	1450
70-74	177	263	324	396	604	694	534	685	738	949
75-79	109	174	161	246	291	415	368	553	466	579
80-84	59	90	69	123	142	222	292	418	279	452
85-89	25	52	54	95	40	104	100	199	121	251
90-94	10	15	-	-	7	32	23	51	44	112
95+	13	20	-	-	3	10	8	10	12	37

Source: Population Censuses 1960, 1972, 1981, 1991 and 2000.

Appendix 3a: Population by abridged age groups 1991-2000, native and foreign born population

	Census 1991						*Census 2000*					
	Native born			*Foreign born*			*Native born*			*Foreign born*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
0-14	7140	6576	13716	1311	1237	2548	8566	8245	16811	1987	2048	4034
15-29	5841	5457	11298	1576	1821	3397	5411	5438	10849	3067	3537	6605
30-39	4891	4757	9648	1411	1863	3274	4427	4384	8811	3682	4326	8008
40-54	4824	4843	9667	1293	1808	3100	6752	6791	13543	2973	4141	7114
55-64	1754	1923	3677	687	815	1503	2684	2953	5636	799	1096	1895
65+	1142	1556	2698	891	1130	2022	1790	2416	4205	1000	1411	2411
Total	25591	25112	50703	7170	8674	15843	29629	30226	59854	13507	16560	30067

Source: Population and Housing Censuses 1991 and 2000.

Appendix 3.b: Relative population by abridged age groups 1990-2000 (percentage)

	Census 1991						*Census 2000*					
	Native born			*Foreign born*			*Native born*			*Foreign born*		
	Male	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*	*Male*	*Female*	*Total*
0-14	27.9	26.2	27.1	18.3	14.3	16.1	28.9	27.3	28.1	14.7	12.4	13.4
15-29	22.8	21.7	22.3	22.0	21.0	21.4	18.3	18.0	18.1	22.7	21.4	22.0
30-39	19.1	18.9	19.0	19.7	21.5	20.7	14.9	14.5	14.7	27.3	26.1	26.6
40-54	18.8	19.3	19.1	18.0	20.8	19.6	22.8	22.5	22.6	22.0	25.0	23.7
55-64	6.9	7.7	7.3	9.6	9.4	9.5	9.1	9.8	9.4	5.9	6.6	6.3
65+	4.5	6.2	5.3	12.4	13.0	12.8	6.0	8.0	7.0	7.4	8.5	8.0
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Mean age	30.2	31.9	31.0	37.1	39.3	38.3	31.8	33.3	32.5	35.6	37.5	36.7

Source: Population and Housing Censuses 1991 and 2000.

Appendix 4: Sex ratios by abridged age groups 1991-2000, native and foreign born population

	1991								
	Native born			*Foreign born*			*Total*		
	Male	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*
0-14	7140	6576	108.6	1311	1237	106.1	8451	7812	108.2
15-29	5841	5457	107.0	1576	1821	86.5	7416	7278	101.9
30-39	4891	4757	102.8	1411	1863	75.8	6302	6620	95.2
40-54	4824	4843	99.6	1293	1808	71.5	6116	6651	92.0
55-64	1754	1923	91.2	687	815	84.3	2442	2738	89.2
65+	1142	1556	73.4	891	1130	78.8	2033	2686	75.7
Total	25591	25112	101.9	7170	8674	82.7	32761	33785	97.0

	2000								
	Native born			*Foreign born*			*Total*		
	Male	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*	*Male*	*Female*	*Sex ratio*
0-14	8566	8245	103.9	1987	2048	97.0	10553	10292	102.5
15-29	5411	5438	99.5	3067	3537	86.7	8478	8975	94.5
30-39	4427	4384	101.0	3682	4326	85.1	8109	8710	93.1
40-54	6752	6791	99.4	2973	4141	71.8	9724	10933	88.9
55-64	2684	2953	90.9	799	1096	72.9	3483	4049	86.0
65+	1790	2416	74.1	1000	1411	70.8	2790	3827	72.9
Total	29629	30226	98.0	13507	16560	81.6	43136	46786	92.2

Soure: Population and Housing Censuses 1991 and 2000.

Appendix 5. Geographical Address Classification (Zones)

1. Noord/Tanki Leendert
   - 11 Palm Beach/Malmok
   - 12 Washington
   - 13 Alto Vista
   - 14 Moko/Tanki Flip
   - 15 Tanki Leendert
   - 16 Noord Other

2. Oranjestad West
   - 21 Pos Abao/Cunucu Abao
   - 22 Eagle/Paardenbaai
   - 23 Madiki Kavel
   - 24 Madiki/Rancho
   - 25 Paradijswijk/Santa Helena
   - 26 Socotoro/Rancho
   - 27 Ponton
   - 28 Companashi/Solito

3. Oranjestad East
   - 31 Nassaustraat
   - 32 Klip/Mon Plaisir
   - 33 Sividivi
   - 34 Seroe Blanco/Cumana
   - 35 Dacota/Potrero
   - 36 Tarabana
   - 37 Sabana Blanco/Mahuma
   - 38 Simeon Antonio
   - 39 Oranjestad East Other

4. Paradera
   - 41 Shiribana
   - 42 Paradera
   - 43 Ayo
   - 44 Piedra Plat
   - 45 Paradera other

5. Santa Cruz
   - 51 Hooiberg
   - 52 Papilon
   - 53 Cashero
   - 54 Urataca
   - 55 Macuarima
   - 56 Balashi/Barcadera
   - 57 Santa Cruz other

6. Savaneta
   - 61 Pos Chiquito
   - 62 Jara/Seroe Alejandro
   - 63 De Bruynewijk
   - 64 Cura Cabai
   - 65 Savaneta other

7. San Nicolas North
   - 71 Brasil
   - 72 Rooi Congo
   - 73 Watapana Gezaag
   - 74 Standard Ville/Rooi Hundo
   - 75 Kustbatterij
   - 76 Juana Morto
   - 77 San Nicolas North other

8. San Nicolas South
   - 81 Zeewijk
   - 82 Pastoor Hendriksstraat
   - 83 van de Veen Zeppenfeldstraat
   - 84 Village
   - 85 Essoville
   - 86 Lago/Esso Heights
   - 87 Seroe Colorado
   - 88 San Nicolas South Other

9. Abroad/ Unknown
   - 91 Abroad
   - 99 Unknown

Appendix 6.

Geographical Address Classification

Regional Division Aruba

1. Noord/Tanki Leendert
2. Oranjestad West
3. Oranjestad East
4. Paradera
5. Santa Cruz
6. Savaneta
7. San Nicolas North
8. San Nicolas South

0 2 4
Kilometers

Appendix 7. Nuptiality table, based on rate of first marriage computed from census 2000.

	Male						Female					
Age	Never marr	Percent	Smoothed %	Ever Married	Percent	Total	Never marr	Percent	Smoothed %	Ever Married	Percent	Total
14	665	99.53	99.84	3	0.47	668	638	99.67	99.84	2	0.33	640
15	651	100.00	99.83	0	0.00	651	702	99.85	99.68	1	0.15	703
16	627	99.83	99.79	1	0.17	628	647	99.52	99.28	3	0.48	650
17	627	99.67	99.59	2	0.33	629	612	98.48	98.03	9	1.52	622
18	573	99.27	98.67	4	0.73	578	541	96.08	95.96	22	3.92	563
19	555	97.06	97.65	17	2.94	572	498	93.31	92.48	36	6.69	533
20	510	96.62	95.66	18	3.38	528	457	88.06	87.28	62	11.94	519
21	454	93.30	92.84	33	6.70	486	424	80.48	81.18	103	19.52	527
22	424	88.60	88.47	55	11.40	479	353	75.00	74.98	118	25.00	470
23	394	83.52	83.52	78	16.48	471	375	69.46	69.12	165	30.54	540
24	363	78.46	77.29	100	21.54	463	340	62.91	62.97	201	37.09	541
25	371	69.90	72.06	160	30.10	530	331	56.55	55.82	254	43.45	585
26	354	67.81	66.57	168	32.19	522	265	48.00	49.85	287	52.00	551
27	396	62.01	61.76	243	37.99	638	279	45.01	47.01	341	54.99	621
28	362	55.47	56.78	291	44.53	653	357	48.02	45.93	386	51.98	743
29	358	52.87	50.64	319	47.13	677	373	44.77	43.88	460	55.23	833
30	342	43.58	46.06	443	56.42	785	311	38.85	40.90	489	61.15	800
31	302	41.74	41.40	422	58.26	724	290	39.09	38.76	452	60.91	741
32	292	38.88	38.51	459	61.12	751	327	38.35	38.37	525	61.65	852
33	266	34.90	37.76	496	65.10	761	295	37.67	36.38	488	62.33	783
34	298	39.50	35.88	457	60.50	755	272	33.12	34.67	549	66.88	821
35	277	33.25	35.29	557	66.75	834	306	33.22	32.41	614	66.78	920
36	281	33.13	31.37	568	66.87	849	302	30.90	31.87	676	69.10	979
37	246	27.73	30.14	640	72.27	886	298	31.49	30.59	649	68.51	947
38	260	29.56	29.56	621	70.44	881	281	29.39	30.34	676	70.61	958
39	255	28.09	28.09	653	71.91	908	280	30.14	29.64	650	69.86	930
40	265	30.96	27.54	590	69.04	855	297	29.39	29.58	714	70.61	1011
41	190	23.57	26.53	616	76.43	806	250	29.20	29.26	606	70.80	856
42	207	25.06	24.40	618	74.94	825	269	29.19	29.19	652	70.81	921
43	191	24.56	23.66	587	75.44	778	253	29.83	28.38	595	70.17	848
44	147	21.34	21.88	542	78.66	689	217	26.14	26.53	614	73.86	832
45	138	19.73	20.29	560	80.27	697	196	23.64	26.00	634	76.36	831
46	130	19.81	18.70	527	80.19	657	192	25.52	25.76	561	74.48	753
47	109	16.56	17.40	550	83.44	659	196	27.91	25.69	507	72.09	703
48	106	15.83	16.31	564	84.17	670	168	23.85	25.10	537	76.15	705
49	96	16.55	15.59	482	83.45	578	175	26.26	23.64	492	73.74	668
50	87	14.38	14.38	519	85.62	606	139	20.82	20.82	527	79.18	666
Total	12170			12960		25130	12507			14658		27165

	Male						Female					
Age	Smoothed %	t(x,x+1)	n(x,x+1)	p(x,x+1)	C(x)	M(x,x+1)	Smoothed %	t(x,x+1)	n(x,x+1)	p(x,x+1)	C(x)	M(x,x+1)
14	99.84	0.0001	0.0001	0.9999	100000	13	99.84	0.0016	0.0016	0.9984	100000	162
15	99.83	0.0004	0.0004	0.9996	99987	40	99.68	0.0040	0.0040	0.9960	99838	397
16	99.79	0.0020	0.0020	0.9980	99947	200	99.28	0.0127	0.0126	0.9874	99441	1250
17	99.59	0.0093	0.0092	0.9908	99748	920	98.03	0.0211	0.0209	0.9791	98191	2051
18	98.67	0.0103	0.0102	0.9898	98828	1012	95.96	0.0362	0.0356	0.9644	96139	3419
19	97.65	0.0204	0.0202	0.9798	97816	1973	92.48	0.0562	0.0547	0.9453	92720	5072
20	95.66	0.0295	0.0291	0.9709	95843	2787	87.28	0.0699	0.0676	0.9324	87648	5921
21	92.84	0.0470	0.0460	0.9540	93056	4277	81.18	0.0764	0.0736	0.9264	81727	6013
22	88.47	0.0559	0.0544	0.9456	88780	4831	74.98	0.0781	0.0752	0.9248	75714	5690
23	83.52	0.0746	0.0719	0.9281	83949	6038	69.12	0.0890	0.0852	0.9148	70024	5964
24	77.29	0.0678	0.0655	0.9345	77911	5106	62.97	0.1136	0.1075	0.8925	64060	6884
25	72.06	0.0761	0.0733	0.9267	72804	5338	55.82	0.1069	0.1015	0.8985	57176	5803
26	66.57	0.0723	0.0698	0.9302	67467	4706	49.85	0.0570	0.0555	0.9445	51373	2849
27	61.76	0.0806	0.0775	0.9225	62760	4864	47.01	0.0229	0.0227	0.9773	48524	1100
28	56.78	0.1082	0.1026	0.8974	57896	5941	45.93	0.0447	0.0437	0.9563	47424	2075
29	50.64	0.0904	0.0865	0.9135	51956	4492	43.88	0.0678	0.0656	0.9344	45350	2975
30	46.06	0.1012	0.0963	0.9037	47464	4573	40.90	0.0523	0.0510	0.9490	42374	2160
31	41.40	0.0699	0.0676	0.9324	42891	2898	38.76	0.0101	0.0101	0.9899	40214	405
32	38.51	0.0194	0.0192	0.9808	39993	768	38.37	0.0519	0.0506	0.9494	39809	2014
33	37.76	0.0497	0.0485	0.9515	39225	1903	36.38	0.0470	0.0459	0.9541	37795	1735
34	35.88	0.0164	0.0163	0.9837	37322	608	34.67	0.0651	0.0630	0.9370	36060	2272
35	35.29	0.1112	0.1053	0.8947	36714	3868	32.41	0.0168	0.0167	0.9833	33788	563
36	31.37	0.0392	0.0385	0.9615	32846	1263	31.87	0.0401	0.0393	0.9607	33225	1306
37	30.14	0.0192	0.0190	0.9810	31583	599	30.59	0.0083	0.0083	0.9917	31919	265
38	29.56	0.0497	0.0485	0.9515	30983	1503	30.34	0.0231	0.0228	0.9772	31654	721
39	28.09	0.0196	0.0194	0.9806	29480	572	29.64	0.0021	0.0021	0.9979	30932	64
40	27.54	0.0367	0.0360	0.9640	28908	1041	29.58	0.0107	0.0106	0.9894	30868	327
41	26.53	0.0804	0.0773	0.9227	27867	2153	29.26	0.0024	0.0024	0.9976	30541	73
42	24.40	0.0304	0.0300	0.9700	25714	770	29.19	0.0276	0.0272	0.9728	30468	829
43	23.66	0.0752	0.0724	0.9276	24944	1807	28.38	0.0652	0.0631	0.9369	29639	1871
44	21.88	0.0724	0.0699	0.9301	23136	1617	26.53	0.0202	0.0199	0.9801	27768	554
45	20.29	0.0785	0.0756	0.9244	21519	1626	26.00	0.0092	0.0092	0.9908	27214	250
46	18.70	0.0695	0.0672	0.9328	19893	1336	25.76	0.0027	0.0027	0.9973	26964	73
47	17.40	0.0625	0.0606	0.9394	18557	1125	25.69	0.0230	0.0227	0.9773	26891	611
48	16.31	0.0445	0.0435	0.9565	17433	758	25.10	0.0581	0.0565	0.9435	26281	1484
49	15.59	0.0774	0.0745	0.9255	16674	1243	23.64	0.1193	0.1126	0.8874	24796	2792
50	14.38	0.0000	0.0000	1.0000	15431		20.82	0.0000	0.0000	1.0000	22004	
					84568.73							77996.12

Mean age 1st marriage **29.39**

Mean age at first marriage **26.62**

Appendix 8.Number of marriage unions as recorded in the census by similarity in place of birth of partners and year of marriage

Year	Place of birth of partners (M/F)			
	Aruba/Aruba	Aruba/other	Other/Aruba	Other/other
1932	0	0	0	1
1934	2	0	0	0
1935	1	0	0	1
1936	2	0	1	0
1937	1	0	0	2
1938	4	1	2	0
1939	3	1	0	4
1940	7	0	1	0
1941	5	0	1	4
1942	6	0	2	3
1943	14	1	0	7
1944	8	2	4	7
1945	15	1	2	6
1946	23	3	5	9
1947	20	4	3	14
1948	32	3	5	9
1949	42	3	5	15
1950	30	4	6	19
1951	35	5	5	15
1952	41	6	7	16
1953	59	3	7	17
1954	64	7	7	24
1955	82	9	6	15
1956	71	9	14	13
1957	91	9	15	13
1958	81	8	15	25
1959	76	6	6	15
1960	89	14	17	24
1961	100	13	14	17
1962	87	12	11	17
1963	102	15	12	22
1964	138	6	19	18
1965	104	12	19	19
1966	138	15	13	18
1967	131	17	19	23
1968	124	16	14	25
1969	141	19	16	24
1970	163	29	20	41
1971	151	24	27	22
1972	166	22	20	33
1973	174	29	13	28
1974	192	24	21	48
1975	183	22	22	35
1976	146	19	16	42
1977	189	26	22	49
1978	208	40	26	47
1979	184	26	19	42
1980	163	40	21	68
1981	179	30	22	58
1982	185	48	28	67
1983	190	40	25	67
1984	186	41	20	67
1985	191	54	36	64
1986	188	44	29	67
1987	179	50	34	82

Appendix 9a. Divorce table for males and females, where both partners are born on Aruba (2000)

	Males						Females					
	Divorces	Married persons	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)	Divorces	Married per	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)
15-19	0	4	0.0000	0.0000		10000	0	21	0.0000	0.0000		10000
20-24	5	85	0.0588	0.2563	2563	10000	12	204	0.0589	0.2567	2567	10000
25-29	30	300	0.0999	0.3997	2973	7437	32	467	0.0685	0.2924	2173	7433
30-34	37	573	0.0645	0.2779	1241	4465	36	686	0.0525	0.2321	1221	5260
35-39	42	964	0.0436	0.1965	633	3224	35	1029	0.0340	0.1567	633	4039
40-44	32	1077	0.0297	0.1383	358	2591	28	1099	0.0255	0.1197	408	3406
45-49	16	1090	0.0147	0.0708	158	2233	21	1034	0.0203	0.0966	290	2998
50-54						2074						2708
	162	4093.95					164	4540.2				

Source: Population and Housing Census 2000; Population registry

Appendix 9b.Divorce table for males and females, where husband is born on Aruba and wife abroad, 2000

	Males						Females					
	Divorces	Married persons	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)	Divorces	Married per	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)
15-19	0	6	0.0000	0.0000		10000	2	15	0.1361	0.5076		10000
20-24	1	58	0.0173	0.0830	830	10000	7	139	0.0505	0.2242	2242	10000
25-29	17	222	0.0767	0.3219	2952	9170	23	334	0.0689	0.2938	2279	7758
30-34	17	374	0.0455	0.2042	1270	6218	32	490	0.0653	0.2805	1537	5478
35-39	40	415	0.0964	0.3885	1923	4949	37	494	0.0750	0.3157	1244	3942
40-44	29	431	0.0674	0.2883	872	3026	19	351	0.0542	0.2386	643	2697
45-49	22	358	0.0614	0.2663	574	2154	19	315	0.0603	0.2621	538	2054
50-54						1580						1516
	126	1862.7					139	2136.75				

Source: Population and Housing Census 2000; Population registry

Appendix 9c.Divorce table for males and females, where wife is born on Aruba and husband abroad, 2000

	Males						Females					
	Divorces	Married persons	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)	Divorces	Married per	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)
15-19	0	2	0.0000	0.0000		10000	0	8	0.0000	0.0000		10000
20-24	0	32	0.0000	0.0000	0	10000	0	55	0.0000	0.0000	0	10000
25-29	0	128	0.0000	0.0000	0	10000	0	145	0.0000	0.0000	0	10000
30-34	0	212	0.0000	0.0000	0	10000	0	174	0.0000	0.0000	0	10000
35-39	0	249	0.0000	0.0000	0	10000	0	248	0.0000	0.0000	0	10000
40-44	1	186	0.0054	0.0265	265	10000	1	222	0.0045	0.0223	223	10000
45-49	0	143	0.0000	0.0000	0	9735	0	163	0.0000	0.0000	0	9777
50-54						9735						9777
	1	951.3					1	1014.3				

Source: Population and Housing Census 2000; Population registry

Appendix 9d.Divorce table for males and females, where both partners are born outside Aruba.

	Males						Females					
	Divorces	Married persons	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)	Divorces	Married per	s(x,X+5)	d(x,x+5)	D(x,x+5)	M(x)
15-19	0	4	0.0000	0.0000		10000	0	13	0.0000	0.0000		10000
20-24	0	51	0.0000	0.0000	0	10000	1	143	0.0070	0.0344	344	10000
25-29	3	248	0.0121	0.0588	588	10000	1	431	0.0023	0.0115	111	9656
30-34	0	555	0.0000	0.0000	0	9412	0	584	0.0000	0.0000	0	9544
35-39	3	642	0.0047	0.0231	218	9412	3	611	0.0049	0.0242	231	9544
40-44	3	468	0.0064	0.0315	290	9195	0	495	0.0000	0.0000	0	9313
45-49	0	382	0.0000	0.0000	0	8905	1	303	0.0033	0.0163	152	9313
50-54						8905						9161
	9	2350.95					6	2578.8				

Source: Population and Housing Census 2000; Population registry

Appendix 10: Percentage of population with high blood pressure, diabetes and joint ilness

Age group	High blood pressure			Diabetes			Joint illness			Total population		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
0- 4	0.0	0.0	0.1	0.0	0.0	0.1	0.0	0.1	0.1	3560	3420	6979
5- 9	0.0	0.0	0.0	0.0	0.0	0.1	0.1	0.1	0.3	3625	3525	7149
10-14	0.2	0.1	0.3	0.2	0.1	0.3	0.3	0.2	0.5	3385	3373	6758
15-19	0.1	0.3	0.4	0.1	0.3	0.4	0.3	0.4	0.8	3058	3071	6129
20-24	0.4	1.2	1.7	0.1	0.4	0.5	0.5	0.9	1.4	2428	2597	5024
25-29	0.9	1.7	2.6	0.3	0.4	0.7	0.7	0.8	1.4	3021	3333	6354
30-34	1.3	2.3	3.6	0.6	0.7	1.3	1.1	1.4	2.4	3777	3997	7774
35-39	2.2	3.3	5.5	0.8	1.1	1.9	1.5	2.1	3.6	4359	4733	9092
40-44	3.3	5.2	8.4	1.8	1.8	3.6	2.4	3.6	6.0	3953	4468	8421
45-49	5.1	7.8	12.9	2.6	3.0	5.6	3.0	5.4	8.4	3261	3659	6921
50-54	6.7	10.2	16.9	4.0	4.8	8.8	3.9	7.2	11.1	2542	2836	5378
55-59	9.2	14.5	23.8	6.3	7.1	13.4	5.2	11.1	16.2	1927	2144	4071
60-64	10.8	16.7	27.5	6.0	11.0	17.0	6.3	13.4	19.7	1562	1911	3473
65-69	11.2	20.6	31.8	7.4	14.2	21.6	8.2	16.4	24.7	1135	1450	2585
70-74	11.0	21.7	32.7	8.2	14.5	22.7	8.3	18.2	26.5	738	949	1687
75-79	10.1	21.4	31.5	6.6	14.6	21.2	10.9	21.0	31.9	466	579	1045
80-84	7.5	21.8	29.3	5.7	14.2	20.0	9.3	24.7	34.1	279	452	731
85-89	6.5	21.8	28.2	3.7	14.7	18.4	11.0	30.5	41.5	121	251	372
90-94	4.7	15.5	20.2	1.3	10.8	12.1	8.1	35.0	43.1	44	112	156
95+	0.0	17.4	17.4	2.2	8.7	10.9	6.5	34.8	41.3	12	37	48
Not rep.	0.6	0.9	1.5	0.0	0.9	0.9	0.3	0.9	1.2	183	175	358
All Ages	6.5	10.1	8.4	3.8	5.2	4.5	4.6	8.0	6.3	43434	47071	90505

Appendix 11: Number of handicapped persons by age and sex 1991-2000

Age group	1991			1995			2000											
	Male	Fem.	Totaal	Male	Fem.	Totaal	Male	Fem.	Totaal	Male	Fem.	Totaal	Male	Fem.	Totaal	Male	Fem.	Totaal
0- 4	42	30	72	2965	2574	5539	0.8	0.5	1.3	78	53	130	3560	3420	6979	1.1	0.8	1.9
5- 9	72	63	135	2833	2664	5497	1.3	1.2	2.5	142	88	230	3625	3525	7149	2.0	1.2	3.2
10-14	78	67	145	2653	2574	5227	1.5	1.3	2.8	169	111	280	3385	3373	6758	2.5	1.6	4.1
15-19	87	66	153	2313	2188	4501	1.9	1.5	3.4	95	98	192	3058	3071	6129	1.5	1.6	3.1
20-24	84	67	151	2244	2168	4412	1.9	1.5	3.4	93	76	169	2428	2597	5024	1.9	1.5	3.4
25-29	84	83	167	2859	2921	5780	1.5	1.4	2.9	125	104	229	3021	3333	6354	2.0	1.6	3.6
30-34	152	96	248	3349	3404	6753	2.2	1.4	3.7	124	118	242	3777	3997	7774	1.6	1.5	3.1
35-39	124	87	211	2954	3216	6170	2.0	1.4	3.4	187	128	315	4359	4733	9092	2.1	1.4	3.5
40-44	128	96	224	2476	2627	5103	2.5	1.9	4.4	217	185	402	3953	4468	8421	2.6	2.2	4.8
45-49	97	123	219	1941	2137	4078	2.4	3.0	5.4	209	187	396	3261	3659	6921	3.0	2.7	5.7
50-54	157	131	288	1699	1887	3586	4.4	3.7	8.0	198	192	391	2542	2836	5378	3.7	3.6	7.3
55-59	146	142	288	1429	1626	3055	4.8	4.7	9.4	171	193	364	1927	2144	4071	4.2	4.7	9.0
60-64	122	128	250	1013	1113	2126	5.7	6.0	11.7	168	181	349	1562	1911	3473	4.8	5.2	10.0
65-69	110	111	222	708	770	1478	7.5	7.5	15.0	152	164	316	1135	1450	2585	5.9	6.3	12.2
70-74	122	121	242	534	685	1219	10.0	9.9	19.9	110	138	248	738	949	1687	6.5	8.2	14.7
75-79	94	149	242	368	553	921	10.2	16.1	26.3	104	146	250	466	579	1045	9.9	14.0	23.9
80-84	105	137	242	292	418	710	14.8	19.3	34.1	83	144	227	279	452	731	11.4	19.7	31.0
85-89	37	94	131	100	199	299	12.5	31.3	43.8	61	122	183	121	251	372	16.4	32.8	49.2
90-94	11	33	45	23	51	74	15.5	45.0	60.4	24	64	88	44	112	156	15.5	41.1	56.5
95+	6	8	15	8	10	18	34.7	46.2	80.9	8	25	34	12	37	48	17.4	52.2	69.6
Total	1857	1831	3689	32761	33785	66546	5.7	5.4	5.5	2519	2515	5034	43252	46896	90147	5.8	5.4	5.6

Appendix 12: Relative number of persons with limitations with type of limitation, age and sex

Age group	Difficulty learning			Difficulty walking,bathing,dressing			Difficulty to move or go outside			Difficulty to work			Any of previous difficulties			Total population		
	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total	Male	Fem.	Total
0- 4	0.4	0.2	0.3	0.6	0.3	0.5	-	-	-	-	-	-	0.8	0.4	0.6	3560	3420	6979
5- 9	2.4	1.5	1.9	0.6	0.6	0.6	-	-	-	-	-	-	2.6	1.6	2.1	3625	3525	7149
10-14	4.1	2.1	3.1	0.6	0.2	0.4	0.2	0.3	0.3	0.3	0.4	0.4	4.5	2.6	3.5	3385	3373	6758
15-19	2.2	2.2	2.2	0.3	0.4	0.3	0.9	0.9	0.9	1.9	2.0	1.9	3.6	3.8	3.7	3058	3071	6129
20-24	2.1	1.1	1.6	0.5	0.4	0.4	1.1	0.9	1.0	1.6	1.5	1.5	2.8	2.1	2.4	2428	2597	5024
25-29	2.2	1.5	1.8	0.7	0.6	0.6	1.1	1.2	1.1	1.6	1.6	1.6	3.1	2.4	2.8	3021	3333	6354
30-34	1.4	1.3	1.4	0.3	0.4	0.4	0.8	0.9	0.8	1.4	1.8	1.6	2.4	2.7	2.5	3777	3997	7774
35-39	2.1	1.5	1.8	0.5	0.5	0.5	1.0	1.0	1.0	2.3	1.8	2.0	3.6	2.8	3.1	4359	4733	9092
40-44	2.8	2.4	2.6	0.9	0.7	0.8	1.5	1.6	1.6	2.9	2.7	2.8	4.5	4.4	4.4	3953	4468	8421
45-49	2.9	3.0	3.0	1.3	1.3	1.3	1.5	2.0	1.8	3.7	4.0	3.8	5.5	6.0	5.8	3261	3659	6921
50-54	3.4	4.3	3.9	1.6	1.5	1.5	2.2	2.4	2.3	4.9	5.0	4.9	6.7	7.5	7.1	2542	2836	5378
55-59	3.5	4.4	4.0	1.3	2.8	2.1	2.2	4.2	3.3	4.9	7.8	6.4	7.3	10.6	9.0	1927	2144	4071
60-64	4.3	6.2	5.4	2.4	3.3	2.9	4.7	6.3	5.6	7.9	10.1	9.1	9.9	14.5	12.5	1562	1911	3473
65-69	7.2	9.3	8.4	5.4	5.3	5.3	8.0	11.9	10.2	12.5	16.7	14.9	17.3	22.1	20.0	1135	1450	2585
70-74	8.7	12.9	11.1	7.0	7.4	7.2	11.0	20.5	16.3	15.4	24.8	20.7	20.1	32.4	27.0	738	949	1687
75-79	16.7	17.6	17.2	11.3	14.2	12.9	20.0	33.9	27.7	26.8	39.6	33.9	33.5	47.2	41.1	466	579	1045
80-84	21.4	27.9	25.4	18.0	26.5	23.3	31.6	51.2	43.7	39.1	54.4	48.6	45.5	62.5	56.0	279	452	731
85-89	39.1	43.9	42.4	40.9	43.9	42.9	59.1	65.3	63.3	66.1	68.6	67.8	69.6	74.5	72.9	121	251	372
90-94	57.3	50.6	52.5	40.6	45.9	44.4	66.8	73.1	71.3	69.2	75.0	73.4	75.0	83.0	80.8	44	112	156
95+	81.8	57.1	63.0	63.6	65.7	65.2	90.9	91.4	91.3	100.0	88.6	91.3	100.0	92.5	95.2	12	37	48
Not rep.	1.7	0.6	1.2	1.1	0.6	0.9	0.6	0.0	0.3	1.1	0.6	0.9	1.6	1.1	1.4	183	175	358
All	3.1	3.8	6.9	1.4	2.1	3.5	2.1	3.9	6.0	3.5	5.4	8.8	5.5	7.6	13.0	43434	47071	90505

Appendix 13: Reason of handicap by age and sex (absolute and percentage)

	Congenital	Geriatric illness	Infection	Other illness	Wrong habits	Poisoning	Accident	Emotional stress	Wrong eating habits	Other reason	Not Reported	All handicaps
Male												
0-14	258	0	20	12	3	2	14	9	0	66	33	417
15-29	209	0	22	5	4	1	50	6	1	49	11	359
30-44	198	3	14	28	32	6	180	14	2	81	18	575
45-59	125	34	16	75	16	3	211	24	4	113	19	639
60-74	66	113	12	105	14	2	78	3	0	125	12	529
75-89	8	206	6	57	1	7	20	1	1	45	4	357
90+	2	44	0	0	1	0	0	0	0	1	0	48
Not rep.	0	4	0	0	0	0	0	0	0	0	0	4
All ages	867	404	89	281	70	22	552	58	8	481	96	2930
0-14	8.8	0.0	0.7	0.4	0.1	0.1	0.5	0.3	0.0	2.3	1.1	14.2
15-29	7.1	0.0	0.8	0.2	0.1	0.0	1.7	0.2	0.0	1.7	0.4	12.3
30-44	6.8	0.1	0.5	1.0	1.1	0.2	6.1	0.5	0.1	2.8	0.6	19.6
45-59	4.3	1.1	0.5	2.5	0.5	0.1	7.2	0.8	0.1	3.9	0.6	21.8
60-74	2.3	3.9	0.4	3.6	0.5	0.1	2.7	0.1	0.0	4.3	0.4	18.1
75-89	0.3	7.0	0.2	1.9	0.0	0.3	0.7	0.0	0.0	1.5	0.1	12.2
90+	0.1	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.6
Not rep.	0.0	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.1
All ages	29.6	13.8	3.0	9.6	2.4	0.8	18.9	2.0	0.3	16.4	3.3	100.0
Females												
0-14	163	1	18	14	2	0	4	3	1	46	21	273
15-29	190	0	9	16	2	1	23	8	6	55	17	328
30-44	191	3	7	40	3	1	90	18	2	89	20	465
45-59	156	39	22	93	0	1	85	40	6	173	16	632
60-74	68	171	20	90	1	0	56	11	1	118	14	549
75-89	8	376	12	71	0	1	20	4	0	67	9	569
90+	0	120	1	3	0	0	6	0	0	7	2	140
Not rep.	1	0	0	0	0	0	0	0	0	0	0	1
All ages	778	710	89	328	8	4	285	84	17	555	99	2957
0-14	5.5	0.0	0.6	0.5	0.1	0.0	0.1	0.1	0.0	1.6	0.7	9.2
15-29	6.4	0.0	0.3	0.5	0.1	0.0	0.8	0.3	0.2	1.8	0.6	11.1
30-44	6.5	0.1	0.2	1.3	0.1	0.0	3.1	0.6	0.1	3.0	0.7	15.7
45-59	5.3	1.3	0.7	3.2	0.0	0.0	2.9	1.3	0.2	5.9	0.5	21.4
60-74	2.3	5.8	0.7	3.1	0.0	0.0	1.9	0.4	0.0	4.0	0.5	18.6
75-89	0.3	12.7	0.4	2.4	0.0	0.0	0.7	0.1	0.0	2.3	0.3	19.2
90+	0.0	4.0	0.0	0.1	0.0	0.0	0.2	0.0	0.0	0.2	0.1	4.7
Not rep.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
All ages	26.3	24.0	3.0	11.1	0.3	0.1	9.6	2.8	0.6	18.8	3.3	100.0

Appendix 14. Number of persons with particular type of handicap, age, and sex and number of handicaped persons.

Age group	Sex	Motor handicap	Visual handicap	Auditory handicap	Organ handicap	Idiocy/ Imbecility	Moronity	Other handicap	Total
0-14	Male	44	35	34	189	12	47	57	389
	Female	27	35	22	119	13	27	30	252
	Total	71	69	56	308	24	75	87	641
15-29	Male	40	40	48	78	38	64	51	313
	Female	46	49	34	85	16	54	44	277
	Total	86	89	82	163	54	118	96	590
30-44	Male	140	86	46	63	35	102	104	528
	Female	117	62	37	108	27	62	53	431
	Total	256	148	83	171	62	164	156	959
45-59	Male	207	103	69	61	35	74	91	579
	Female	163	124	62	105	27	64	87	572
	Total	370	227	131	166	62	138	179	1151
60-74	Male	187	109	78	50	21	28	56	431
	Female	171	133	75	72	15	39	44	482
	Total	358	243	152	123	36	67	100	912
75+	Male	114	101	84	26	26	28	25	280
	Female	269	161	89	34	57	72	27	501
	Total	383	261	173	60	83	101	53	781
Total	Male	732	474	359	467	166	343	384	2519
	Female	793	564	318	523	154	318	286	2515
	Total	1525	1037	677	990	320	662	670	5034

Source: Fourth Population and Housing Census, 2001

Appendix 15. Life expectancy in the various marital states by age and sex.

	Males						Females					
Age	*e(x)*	*e(x) Never Marr.*	*e(x) Marr.*	*e(x) Divorced*	*e(x) Separated*	*e(x) Widowed*	*e(x)*	*e(x) Never Marr.*	*e(x) Marr.*	*e(x) Divorced*	*e(x) Separated*	*e(x) Widowed*
0	70.01	32.82	30.03	3.90	0.39	2.83	76.02	35.60	25.06	5.68	0.43	9.07
1	69.40	32.01	30.19	3.93	0.40	2.85	75.71	34.93	25.29	5.73	0.44	9.16
5	65.45	28.03	30.22	3.93	0.40	2.85	71.87	31.00	25.34	5.74	0.44	9.18
10	60.49	23.05	30.24	3.93	0.40	2.85	67.02	26.06	25.40	5.76	0.44	9.20
15	55.57	18.10	30.26	3.94	0.40	2.86	62.02	21.15	25.31	5.75	0.44	9.20
20	50.92	13.62	30.05	3.95	0.40	2.87	57.16	17.08	24.54	5.72	0.43	9.22
25	46.66	10.57	28.88	3.89	0.39	2.91	52.53	14.53	22.62	5.55	0.41	9.25
30	42.27	8.45	26.79	3.67	0.37	2.95	47.71	12.62	20.15	5.16	0.37	9.25
35	37.68	6.88	24.15	3.33	0.33	2.96	43.05	11.13	17.53	4.64	0.32	9.25
40	33.03	5.39	21.46	2.90	0.28	2.97	38.31	9.62	15.08	3.94	0.28	9.22
45	28.54	4.10	18.77	2.41	0.25	2.99	33.55	8.07	12.71	3.25	0.23	9.11
50	24.20	3.14	16.02	1.83	0.20	2.98	28.88	6.68	10.34	2.51	0.18	8.99
55	20.06	2.38	13.16	1.37	0.16	2.96	24.35	5.50	7.93	1.88	0.14	8.73
60	16.26	1.79	10.34	1.04	0.11	2.94	20.52	4.77	5.65	1.31	0.10	8.50
65	13.10	1.33	7.94	0.72	0.08	2.99	16.74	4.02	3.77	0.92	0.07	7.76
70	10.44	0.99	5.82	0.49	0.05	3.05	13.14	3.23	2.19	0.62	0.05	6.84
75	8.11	0.81	3.97	0.26	0.04	2.97	10.37	2.67	1.19	0.37	0.02	5.85
80	5.68	0.72	2.23	0.16	0.04	2.45	7.52	2.38	0.61	0.29	0.01	3.89
85	3.87	0.64	1.17	0.07	0.07	1.73	5.49	1.88	0.20	0.14	0.00	2.73
90	4.03	1.06	0.21	0.00	0.00	1.90	4.73	1.71	0.07	0.00	0.00	1.63
95	3.23	0.00	0.00	0.00	0.00	0.00	3.57	0.00	0.00	0.00	0.00	0.00

Source: Population and Housing Census 2000.

Appendix 16. Number of children ever born per woman by age, Aruba and foreign born women

	Aruba born women			Foreign born women		
	Boys	**Girls**	**Total**	**Boys**	**Girls**	**Total**
15-19	0.03	0.05	0.08	0.04	0.05	0.09
20-24	0.27	0.27	0.54	0.26	0.27	0.53
25-29	0.59	0.58	1.17	0.50	0.50	1.00
30-34	0.80	0.73	1.53	0.72	0.73	1.45
35-39	0.94	0.90	1.84	0.93	0.92	1.84
40-44	1.00	0.99	1.99	1.14	1.04	2.18
45-49	0.94	0.97	1.91	1.21	1.21	2.42
50-54	1.02	0.99	2.01	1.33	1.29	2.62
55-59	1.23	1.16	2.39	1.48	1.43	2.91
60-64	1.56	1.54	3.11	1.77	1.62	3.40
65-69	2.00	1.89	3.89	2.00	1.89	3.88
70-74	2.53	2.56	5.10	2.03	2.03	4.06
75-79	3.18	3.15	6.33	2.40	2.37	4.77
80-84	3.38	3.22	6.60	2.13	1.97	4.09
85-89	3.20	3.08	6.28	2.15	1.88	4.03
90-94	3.29	2.73	6.02	1.45	1.39	2.84
95+	1.76	2.05	3.81	1.93	1.36	3.29

Source: Popultion and Housing Census 2000.

Appendix 17 . Comparison between domiciliation per year with persons who are still present at the time of the Population and Housing Census 2000.

Year person entered Aruba	Tot.immigrant still living on Aruba	Total domiciliation Pop.Registry	Male domiciliation	Female domiciliation	% who have stayed on the island	% males who have stayed on the island	% females who have stayed on the island
1986	258	773	338	435	33.42	30.13	35.97
1987	366	917	416	501	39.96	33.57	45.27
1988	585	1278	555	723	45.76	47.49	44.44
1989	1125	1423	658	765	79.03	80.11	78.10
1990	1848	3236	1869	1367	57.11	52.02	64.06
1991	1821	3332	1703	1629	54.64	46.98	62.65
1992	2034	3456	1803	1653	58.85	53.11	65.11
1993	1848	6141	3251	2890	30.09	26.58	34.04
1994	1666	2086	1060	1026	79.88	74.39	85.56
1995	1844	2927	1407	1520	62.99	57.91	67.70
1996	1871	3367	1578	1789	55.57	52.90	57.93
1997	1744	N.A.	N.A	N.A.	N.A.	N.A.	N.A.
1998	1896	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
1999	2197	3266	1514	1752	67.26	68.52	66.16
NR	881						
Total	21984	32202	1514	1752	68.27		

Source: Population and Housing Census 2000; Population Registry.

Appendix 18. Foreign-born population,who came to Aruba after jan 1986, as a percentage of total population

Zone	Foreign-born Pop.after jan 1986	Total Pop.	Percentage
Palm Beach/Malmok	1067	4024	26.5
Washington	846	3178	26.6
Alto Vista	855	3380	25.3
Moko/Tanki Flip	982	3127	31.4
Tanki Leendert	1003	3233	31.0
Noord other	2	2	100.0
Pos Abao/Cunucu Abao	319	932	34.2
Eagle/Paardenbaai	144	398	36.1
Madiki Kavel	449	1522	29.5
Madiki/Rancho	568	1651	34.4
Paradijswijk/Santa Helena	366	1807	20.3
Socotoro/Rancho	777	2015	38.6
Ponton	536	1789	29.9
Companashi/Solito	685	2016	34.0
Nassaustraat	340	774	44.0
Klip/Mon Plaisir	516	1554	33.2
Sividivi	296	955	31.0
Seroe Blanco/Cumana	854	2403	35.5
Dacota/Potrero	790	2850	27.7
Tarabana	375	2199	17.0
Sabana Blanco/Mahuma	688	2534	27.1
Simeon Antonio	206	955	21.5
Oranjestad Oost other	0	0	0.0
Shiribana	489	2073	23.6
Paradera	401	2211	18.1
Ayo	413	2704	15.3
Piedra Plat	317	2050	15.5
Paradera other	0	0	0.0
Hooiberg	635	2806	22.6
Papilon	522	2468	21.1
Cashero	296	2033	14.6
Urataca	168	1480	11.3
Macuarima	345	1856	18.6
Balashi/Barcadera	280	1683	16.7
Santa Cruz other	0	0	0.0
Pos Chiquito	915	4121	22.2
Jara/Seroe Alejandro	322	2269	14.2
De Bruynewijk	338	1692	20.0
Cura Cabai	358	1914	18.7
Savaneta other	0	0	0.0
Brasil	418	2338	17.9
Rooi Congo	350	2297	15.2
Watapana Gezaag	319	1820	17.5
Standard Ville/Rooi Hundo	192	1191	16.1
Kustbatterij	356	1555	22.9
Juana Morto	176	873	20.2
San Nicolas North other	6	44	14.3
Zeewijk	234	780	30.0
Pastoor Hendriksstraat	299	1073	27.9
van de Veen Zeppenfeldstraat	105	282	37.2
Village	223	753	29.6
Essoville	361	1176	30.7
Lago/Esso Heights	206	1246	16.5
Seroe Colorado	214	377	56.8
San Nicolas South other	33	42	77.5
Total	21954	90506	24.3

Source: Population and Housing Census 2000.

Appendix 19. Native and foreign born male population by five-year age-groups, with or without occupation

	Native born						Foreign born					
	Occupation		No occupation		Not reported		Occupation		No occupation		Not reported	
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
15-19	259	11.65	1968	88.35	0	0.00	112	13.53	713	85.84	5	0.63
20-24	983	62.57	588	37.43	0	0.00	621	72.43	225	26.23	12	1.35
25-29	1324	82.10	289	17.90	0	0.00	1288	91.50	105	7.46	15	1.04
30-34	1619	84.73	290	15.16	2	0.11	1744	93.47	108	5.80	14	0.73
35-39	2134	84.81	375	14.90	7	0.29	1729	93.85	100	5.41	14	0.74
40-44	2147	82.29	456	17.46	6	0.24	1226	91.25	104	7.73	14	1.02
45-49	1896	82.35	402	17.46	4	0.18	865	90.25	81	8.43	13	1.31
50-54	1514	82.31	322	17.52	3	0.17	608	86.55	86	12.26	8	1.20
55-59	1015	68.68	461	31.18	2	0.14	355	79.16	89	19.91	4	0.94
Total	12892	71.35	5150	28.51	25	0.14	8549	83.35	1611	15.70	98	0.95

Appendix 19. Native and foreign born female population by five-year age-groups, with or without occupation

	Native born						Foreign born					
	Occupation		No occupation		Not reported		Occupation		No occupation		Not reported	
	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
15-19	179	7.98	2058	91.98	1	0.05	78	9.32	750	89.92	6	0.76
20-24	892	58.30	634	41.43	4	0.27	624	58.52	433	40.59	9	0.89
25-29	1279	76.60	387	23.21	3	0.19	1107	66.54	546	32.83	11	0.63
30-34	1450	77.80	412	22.08	2	0.11	1501	70.37	619	29.04	13	0.59
35-39	1978	78.50	540	21.42	2	0.08	1549	69.97	653	29.51	12	0.52
40-44	1942	73.44	702	26.56	0	0.00	1302	71.43	505	27.71	16	0.86
45-49	1551	68.67	706	31.24	2	0.09	978	69.79	416	29.69	7	0.52
50-54	1035	54.84	850	45.05	2	0.11	573	60.47	369	38.87	6	0.66
55-59	576	37.17	974	62.83	0	0.00	291	49.03	299	50.44	3	0.53
Total	10883	59.92	7264	39.99	17	0.09	8002	63.13	4590	36.21	83	0.65

Appendix 20. Employed population by occupation (ISCO major division), sex and native and foreign born persons

	Male				Female			
	Aruba	Developed countries	Developing countries	NR	Aruba	Developed countries	Developing countries	NR
Armed forces	29	103	2	0	0	0	0	0
Legislators,senior officials, and managers	1422	482	509	0	877	235	237	0
Professionals	879	357	205	0	726	250	129	0
Technicians and associate professionals	1892	359	288	0	1534	275	297	0
Clerks	1946	184	232	0	4367	330	638	0
Service workers and shop and market sales workers	2007	317	1247	0	2424	276	1874	0
Skilled agricultural and fishery workers	128	11	153	0	6	0	25	0
Craft and related trades workers	2309	282	2215	0	135	13	171	0
Plant and machines operators and assemblers	1509	111	355	1	100	5	20	0
Elementary occupations	1401	125	1357	1	980	63	3371	4

Population and Housing Census 2000.

Appedix 21. Employed population by branch of industry (ISIC major division), sex and native and foreign born persons

	Male				Female		
	Aruba	Developed countries	Developing countries	NR	Aruba	Developed countries	Developing countries
Agriculture, hunting and forestry	47	6	89	0	16	3	17
Fishing	28	2	2	0	0	0	1
Mining and quarrying	17	4	14	0	3	0	0
Manufacturing	1139	183	607	0	328	50	132
Electricity, gas and water supply	422	18	9	0	45	1	5
Construction	1543	239	1806	0	170	24	110
Wholesale and retail trade, repair	1811	320	1075	0	2660	242	1004
Hotels and restaurants	1717	339	1479	0	1498	235	2382
Transport, storage and communications	1648	149	145	1	779	76	107
Financial intermediation	392	71	46	0	864	65	46
Real estate, renting and business activities	1158	275	697	0	997	138	458
Public administration and defence; social security	1786	295	51	0	1242	112	41
Education	302	126	35	0	625	205	139
Health and social work	287	78	78	0	1192	168	185
Other community, social and personal services	1133	193	326	0	668	107	350
Private households with employed persons	20	1	54	0	38	7	1747
Extra territorial organizations and bodies	4	17	4	0	3	8	8

Appendix 22: School-attending population by age and sex (1991-2000)

Age	1991						2000					
	School-attending population (absolute)			School-attending population (degree of participation by age)			School-attending population (absolute)			School-attending population (degree of participation by age)		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
5	586	488	1073	97.2	98.7	97.9	742	696	1439	96.6	96.9	96.8
6	563	562	1124	98.9	98.5	98.7	693	665	1358	97.2	97.2	97.2
7	568	531	1099	99.6	98.3	99.0	711	723	1434	98.4	98.3	98.3
8	571	547	1118	98.9	99.2	99.1	726	697	1423	98.9	98.2	98.5
9	509	504	1013	98.8	99.2	99.0	674	662	1336	98.2	97.7	97.9
5-9	2796	2632	5428	98.7	98.8	98.7	3546	3443	6989	97.8	97.7	97.8
10	538	530	1068	99.0	99.4	99.2	687	652	1339	98.5	96.9	97.7
11	552	528	1081	98.5	99.2	98.9	729	738	1467	97.7	98.2	98.0
12	538	544	1082	98.3	99.2	98.8	627	624	1251	97.4	97.7	97.5
13	534	457	990	98.8	97.8	98.3	620	650	1269	98.2	97.2	97.7
14	449	478	928	97.1	97.0	97.1	645	613	1258	96.5	95.7	96.1
10-14	2610	2538	5148	98.4	98.6	98.5	3306	3277	6584	97.7	97.2	97.4
15	453	418	872	95.6	94.8	95.2	622	671	1293	95.5	95.4	95.4
16	402	405	807	89.4	87.6	88.5	588	604	1192	93.6	92.9	93.3
17	326	359	684	77.5	79.3	78.4	531	536	1067	84.5	86.1	85.3
18	280	227	506	58.0	59.1	58.5	385	412	797	66.7	73.1	69.9
19	217	191	409	44.8	42.6	43.7	295	316	611	51.6	59.3	55.3
15-19	1679	1600	3278	72.6	73.1	72.8	2421	2538	4959	79.2	82.6	80.9
20	111	116	228	25.2	25.7	25.5	186	200	385	35.2	38.5	36.8
21	83	78	161	17.5	18.4	17.9	123	148	271	25.3	28.1	26.7
22	29	42	71	6.6	10.6	8.5	86	92	179	18.0	19.6	18.8
23	26	27	53	5.9	5.7	5.8	48	75	123	10.2	13.8	12.1
24	18	21	38	3.9	4.9	4.4	32	42	74	6.8	7.8	7.3
20-24	475	557	1031	19.6	21.4	20.5	475	557	1031	19.6	21.4	20.5

Source: Population Census 1991, 2000

Appendix 23. Percentage illiteracy by age, sex and type of birth place

Age-group	Aruba born		Born in developed country		Born in developing country	
	Male	Female	Male	Female	Male	Female
10-14	0.9	0.7	2.5	0.0	0.8	0.8
15-19	1.0	0.7	0.7	0.8	0.8	1.1
20-24	1.7	1.1	1.0	0.5	0.7	0.6
25-29	2.0	2.0	1.4	1.5	1.1	1.1
30-34	1.8	1.1	0.6	0.9	0.9	0.8
35-39	2.1	1.6	0.5	0.0	1.3	1.2
40-44	2.8	1.7	0.6	0.4	1.2	3.0
45-49	2.1	2.0	1.0	0.4	1.1	5.2
50-54	2.5	1.5	0.4	0.5	1.0	4.2
55-59	2.7	2.3	1.7	1.1	1.6	6.3
60-64	3.8	3.5	0.5	1.5	5.8	6.8
65-69	6.4	4.9	1.7	5.1	5.0	14.1
70-74	7.8	6.1	2.5	4.7	7.6	14.4
NR	0.0	0.0	0.0	0.0	0.0	4.8
	2.8	2.7	1.6	2.5	1.7	3.4

Source: Population and Housing Census 2000.

Appendix 24. International Classification of Education. Operational categories

The levels of programs used in the ISCED system are:

Level 0 Education preceding the first level usually begins at age 3, 4 or 5 (sometimes earlier) and lasts from one to three years. School types that fall under this level are: crèche, day nursery, playschool, and kindergarten.

Level 1 Education at the first level usually begins at age 5, 6, or 7 and lasts for about five or six years. School types at this level are primary school and special primary schools.

Level 2 Education at the second level, first stage begins at about age 11 or 12 and lasts for about three years. For instance: general programs such as MAVO, HAVO 1-3, VWO 1-3; lower levels of vocational training (LTO, LHNO, ETAO, AHS-lbo, AHS-llw).

Level 3 Education at the second level, second stage begins at age 14 or 15 and lasts for about three years. In this level we find general programs (HAVO 4-5, VWO 4-6) and vocational schooling, intermediate level, such as MTO 1-2, MHNO 1-2, MAO 1-2, Associate degree AHS 1-2, Police school, MOVAA 1-2, and nursing program (first two years).

Level 5 Education at the third level, first stage, of the type that leads to an award not equivalent to a first university degree begins at age 17 or 18 and lasts for about three years. Thus, at about ages 20 or 21, the students who have progressed through the regular school system to complete these programs are usually ready to enter employment. Programs included are vocational education, intermediate level, final year(s) of e.g., MTO, MHNO, MAO, AHS (Associate degree), MOVAA, and nursing program (final year).

Level 6 Education at the third level, first stage, of the type that leads to a first university degree or equivalent also begins at age 17 or 18 and lasts for about four years. Thus, students who have progressed through the school system to complete their first degree are usually ready for employment or for postgraduate study at about age 21 or 22. It includes programs leading to the usual first degrees such as Bachelor of Arts, Bachelor of Science, 'kandidaatsdiploma', 'HBO-diploma'.

Level 7 Education at the third level, second stage, of the type that leads to a postgraduate university degree or equivalent includes all education beyond level 6. The degrees and awards obtained in this level take various forms and have different titles from country to country, some of them being Master of Arts, Master of Science, diplôme d'étude supérieure, doctorates of various kinds.

Level 9 Education not definable by level. The content of this category can only be described in a negative sense, i.e. programs that cannot be fitted into any of the other categories.

Appendix 25. Projection methodology

A population projection is an estimate of the numbers, composition and distribution of a future population given a number of assumptions. The outcome of a projection depends completely on the model used and the assumptions made by the researcher. The principle of 'garbage in, garbage out' is particularly valid in the case of population projections. If the researcher fails to form a reasonable picture of the components of demographic change than the final outcome will be far of the mark. Sometimes the researcher does not have control over historic events. In the case of Aruba, projections were made in 1992. At that time A.Eggink made projections for Aruba. At that time nobody could have predicted the enormous growth in migration during the following years. Consequently his assumptions on migration were off the mark and so the projections were already outdated before they could be published.

Almost all modern population projections are based on some form of 'cohort component' method of projection. The components that bring change to a population at time i are: birth, death, immigration and emigration. The basis of the projection is the 'balancing equation':

$$P_{i+t} = P_i + B_{i,i+t} - D_{i,i+t} + M_{i,i+t}$$

Where:

- P_{i+t} is the population projected at some future date t years distant from the base year x
- P_i is the population at the base year from which the projection starts
- $B_{i,i+t}$ is the number of births between time i and i + t
- $D_{i,i+t}$ is the number of deaths between time i and i + t
- $M_{i,i+t}$ is the amount of net migration between time i and i + t.

It lies outside the scope of this report to go deeply into the methodology of population projections. A vast amount of demographic literature exists about this topic. The interested reader can for instance consult Bogue et al. (1993).

The projections for Aruba were made for a period of fifteen year. We found it unwise to go any further than this because migration has proved to be so erratic during the last twenty years. The calculations were made in 5-year projection cycles. Base data were taken as December 31th, 2000. The number of persons of a given sex and five-year age group five years after the base year is obtained by multiplying the base population by age-sex-specific five-year survivorship ratios. Algebraically:

$$P_{x+5}^{t+5} = P_x^t S_x^{t+2.5}$$

where Px is the number of persons of a given sex at mid-year t in five year-age group x, and S represents the sex-specific five-year survivorship ratio of a given sex. The number of migrants between t and t+5 can be calculated by the following equation

$$NM_x^{t,t+5} = M_x^{t+2.5} * [\, 0.5 \, (\, P_x^t + P_x^{t+5} \,) \,]$$

which can be transformed to

$$M_x^{t+5}\ [0.5(\ P_x^t + P_{x-5}^t\ S_{x-5}^{t+2.5}\ )]\ /\ (\ 1 - .5\ M_x^{t+2.5}\ )$$

The population aged 0-4 at time t+5 poses a specific problem because the number of births between t and t+5 are included in this age group. The projected number of births occurring during the five-year period is calculated by applying age-specific fertility rates to women in each five-year age group between 15 and 49. The formula is:

$$TB^{tt+5} = \sum_{x=1}^{7} [0.5(\ FP_x^t + FP_x^{t+5}\ )\ f_x^{t+2.5}\ .5]$$

where TB is the total projected number of births to women aged 15-49 in the five-year period from mid-year t to t+5; FP_x is the number of women at mid-year t in the five-year age group x (starting from women aged 15-19) and x+2.5 is the age-specific fertility rate at the mid-point of the five-year period Obviously one has to adjust the number of women between ages x and x + 5 for migration. Some of these women may have left during the interval and others may have entered.

The total number of births in each five-year period is then split into males and females by applying sex rations at birth. The population of a given sex at ages 0-4 at time t+5 is then obtained as the survivors of the projected births plus or minus net migrants. The formula used is:

$$P_{0-4}^{t+5} = (\ B^{tt+5} \cdot S^{t+2.5}\ )(+/-)\ NM_{0-4}^{tt+5}$$

The projection was made using the software program 'PEOPLE'.

Appendix 26a: Low projection scenario Aruba 2001-2016, number of persons by sex

	2001			2006			2011			2016		
Age group	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	3,575	3,433	7,008	2,895	2,685	5,580	2,778	2,584	5,362	2,880	2,679	5,559
5-9	3,640	3,538	7,178	3,421	3,273	6,695	2,891	2,678	5,569	2,775	2,577	5,352
10-14	3,400	3,385	6,785	3,461	3,359	6,820	3,418	3,270	6,687	2,888	2,675	5,563
15-19	3,071	3,083	6,154	3,137	3,081	6,217	3,347	3,195	6,543	3,304	3,106	6,410
20-24	2,438	2,606	5,044	2,838	2,894	5,732	3,163	3,217	6,380	3,371	3,331	6,702
25-29	3,034	3,345	6,379	1,903	2,293	4,196	2,827	2,924	5,751	3,148	3,245	6,393
30-34	3,793	4,012	7,805	2,337	2,952	5,288	1,852	2,295	4,147	2,747	2,923	5,670
35-39	4,377	4,751	9,128	3,255	3,685	6,939	2,313	2,931	5,245	1,834	2,279	4,113
40-44	3,970	4,484	8,454	4,220	4,670	8,889	3,212	3,660	6,872	2,283	2,912	5,195
45-49	3,275	3,673	6,948	3,814	4,396	8,209	4,133	4,630	8,763	3,146	3,629	6,775
50-54	2,553	2,847	5,400	3,148	3,597	6,745	3,695	4,334	8,029	4,004	4,565	8,569
55-59	1,935	2,152	4,087	2,424	2,750	5,174	2,988	3,474	6,462	3,507	4,186	7,694
60-64	1,569	1,918	3,487	1,760	2,030	3,790	2,205	2,593	4,798	2,719	3,276	5,995
65-69	1,140	1,455	2,595	1,337	1,772	3,110	1,500	1,875	3,376	1,879	2,396	4,276
70-74	741	953	1,694	898	1,267	2,164	1,053	1,543	2,596	1,182	1,633	2,814
75-79	468	581	1,049	535	770	1,305	648	1,024	1,671	760	1,247	2,007
80+	456	855	1,311	441	826	1,267	476	948	1,424	557	1,188	1,745
All ages	43,435	47,071	90,506	41,822	46,298	88,120	42,500	47,175	89,675	42,984	47,846	90,830
Median age	33.4	35.1	34.3	36.4	38.5	37.5	37.1	40.7	39.2	36	41.9	39.6
Summary												
Under 15	10,615	10,356	20,971	9,777	9,318	19,095	9,087	8,532	17,619	8,544	7,930	16,474
15-49	23,958	25,954	49,912	21,503	23,969	45,471	20,848	22,852	43,700	19,832	21,425	41,257
50-59	4,488	4,999	9,487	5,572	6,347	11,918	6,683	7,808	14,491	7,511	8,751	16,263
60+	4,374	5,762	10,136	4,971	6,665	11,636	5,882	7,983	13,865	7,097	9,740	16,836

Appendix 26b: Medium projection scenario Aruba 2000-2015, number of persons by sex

	2000			2005			2010			2015		
Age group	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	3,575	3,433	7,008	3,096	2,936	6,032	3,073	2,858	5,931	3,108	2,891	5,999
5-9	3,640	3,538	7,178	3,500	3,435	6,936	3,093	2,928	6,021	3,069	2,850	5,919
10-14	3,400	3,385	6,785	3,611	3,526	7,137	3,497	3,432	6,928	3,090	2,925	6,014
15-19	3,071	3,083	6,154	3,207	3,247	6,453	3,497	3,362	6,859	3,383	3,268	6,650
20-24	2,438	2,606	5,044	2,947	3,089	6,036	3,232	3,382	6,614	3,519	3,497	7,016
25-29	3,034	3,345	6,379	2,518	2,786	5,304	2,935	3,118	6,053	3,216	3,410	6,625
30-34	3,793	4,012	7,805	3,016	3,442	6,457	2,448	2,785	5,233	2,851	3,116	5,967
35-39	4,377	4,751	9,128	3,777	4,079	7,855	2,986	3,418	6,404	2,423	2,766	5,189
40-44	3,970	4,484	8,454	4,320	4,716	9,035	3,727	4,052	7,779	2,946	3,395	6,342
45-49	3,275	3,673	6,948	3,910	4,452	8,361	4,231	4,675	8,906	3,651	4,017	7,668
50-54	2,553	2,847	5,400	3,159	3,630	6,789	3,788	4,389	8,177	4,099	4,610	8,709
55-59	1,935	2,152	4,087	2,413	2,759	5,172	2,999	3,506	6,505	3,596	4,240	7,835
60-64	1,569	1,918	3,487	1,732	2,030	3,762	2,195	2,602	4,797	2,728	3,306	6,034
65-69	1,140	1,455	2,595	1,328	1,767	3,096	1,477	1,875	3,352	1,871	2,404	4,275
70-74	741	953	1,694	892	1,267	2,158	1,046	1,538	2,584	1,163	1,633	2,795
75-79	468	581	1,049	530	765	1,295	644	1,024	1,667	755	1,243	1,998
80+	456	855	1,311	440	827	1,267	473	945	1,418	553	1,187	1,740
All ages	43,435	47,071	90,506	44,394	48,751	93,145	45,337	49,889	95,226	46,020	50,756	96,776
Median age	33.4	35.1	34.3	35.4	37.3	36.4	36.5	39.5	38.1	36.6	41	39
Summary												
Under 15	10,615	10,356	20,971	10,207	9,898	20,105	9,662	9,218	18,880	9,267	8,666	17,933
15-49	23,958	25,954	49,912	23,694	25,809	49,502	23,055	24,792	47,847	21,988	23,468	45,456
50-59	4,488	4,999	9,487	5,572	6,389	11,960	6,787	7,895	14,682	7,695	8,850	16,544
60+	4,374	5,762	10,136	4,922	6,656	11,578	5,834	7,984	13,818	7,070	9,772	16,842

Appendix 26c: High projection scenario Aruba 2001-2016, number of persons by sex

	2001			2006			2011			2016		
Age group	Males	Females	Total	Males	Females	Total	Males	Females	Total	Males	Females	Total
0-4	3,575	3,433	7,008	3,200	2,976	6,176	3,139	2,920	6,059	3,147	2,927	6,074
5-9	3,640	3,538	7,178	3,571	3,423	6,995	3,196	2,968	6,164	3,136	2,912	6,047
10-14	3,400	3,385	6,785	3,636	3,534	7,170	3,567	3,420	6,987	3,193	2,965	6,157
15-19	3,071	3,083	6,154	3,287	3,221	6,507	3,522	3,370	6,892	3,453	3,256	6,709
20-24	2,438	2,606	5,044	3,138	3,219	6,357	3,311	3,356	6,668	3,544	3,505	7,049
25-29	3,034	3,345	6,379	2,603	2,843	5,446	3,123	3,247	6,370	3,294	3,384	6,678
30-34	3,793	4,012	7,805	3,137	3,577	6,713	2,530	2,842	5,372	3,033	3,245	6,278
35-39	4,377	4,751	9,128	3,880	4,160	8,039	3,105	3,552	6,657	2,504	2,822	5,327
40-44	3,970	4,484	8,454	4,395	4,845	9,239	3,829	4,132	7,961	3,065	3,529	6,593
45-49	3,275	3,673	6,948	3,939	4,521	8,459	4,304	4,803	9,107	3,750	4,097	7,847
50-54	2,553	2,847	5,400	3,173	3,647	6,820	3,816	4,457	8,273	4,170	4,736	8,906
55-59	1,935	2,152	4,087	2,424	2,750	5,174	3,012	3,522	6,535	3,622	4,305	7,928
60-64	1,569	1,918	3,487	1,760	2,030	3,790	2,205	2,593	4,798	2,740	3,322	6,062
65-69	1,140	1,455	2,595	1,337	1,772	3,110	1,500	1,875	3,376	1,879	2,396	4,276
70-74	741	953	1,694	898	1,267	2,164	1,053	1,543	2,596	1,182	1,633	2,814
75-79	468	581	1,049	535	770	1,305	648	1,024	1,671	760	1,247	2,007
80+	456	855	1,311	441	826	1,267	476	948	1,424	557	1,188	1,745
All ages	43,435	47,071	90,506	45,352	49,379	94,731	46,337	50,573	96,910	47,029	51,466	98,496
Median age	33.4	35.1	34.3	35.1	37.3	36.2	36.3	39.5	38	36.4	41	39
Summary												
Under 15	10,615	10,356	20,971	10,407	9,934	20,341	9,903	9,307	19,210	9,476	8,803	18,279
15-49	23,958	25,954	49,912	24,378	26,384	50,761	23,724	25,303	49,027	22,643	23,836	46,479
50-59	4,488	4,999	9,487	5,597	6,397	11,993	6,828	7,980	14,808	7,793	9,041	16,834
60+	4,374	5,762	10,136	4,971	6,665	11,636	5,882	7,983	13,865	7,118	9,785	16,904

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