

Sound, innovative and connective monitoring  
for the Wadden Sea area

## **POPULATION AND POPULATION DEVELOPMENTS IN THE DUTCH WADDEN AREA 1988-2014**

Lourens Broersma

Rijksuniversiteit Groningen

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# 1 INTRODUCTION

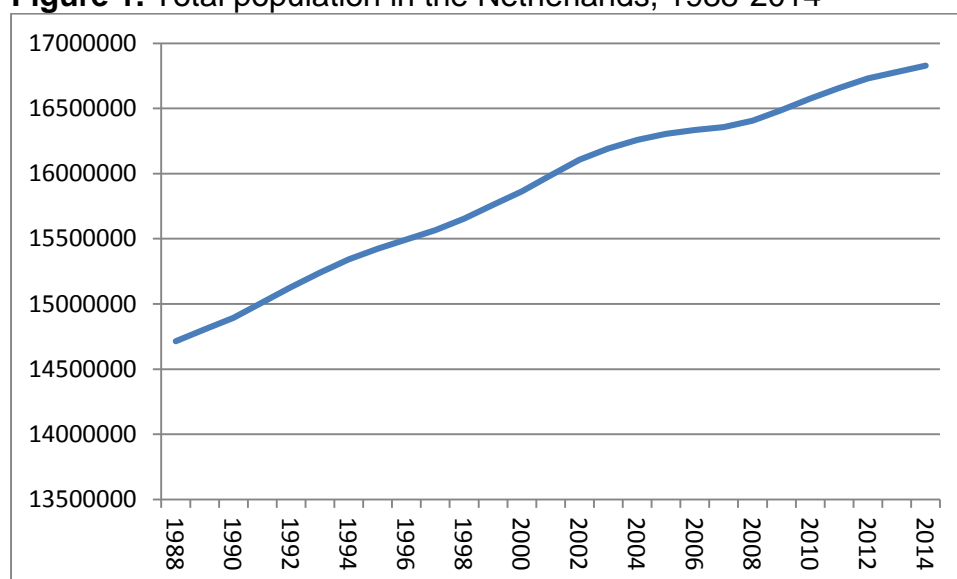
We compare the population on January 1 between 1988-2014 living in the Netherlands, the Dutch Wadden area, the mainland Dutch Wadden coast, specific Dutch Wadden Sea harbour municipalities and on the Dutch Wadden islands. These different Wadden areas are all built on groups of municipalities (see Broersma and Mehnen, 2014). We first consider the developments in the total population between 1988-2014 and next look at the population of specific age groups for the same period. Whenever peculiarities in presented figures of the population development occur, these will be explained. Finally, we will provide an overall conclusion.

## 2 TOTAL POPULATION

### 2.1 Netherlands

Figure 1 presents the total population of the Netherlands on January 1 for the period 1988-2014. The population rises throughout the whole period, where there is a slight dip in 2004, after which there is a slightly lower growth path. The growth rate of the population in the period 1988-2004 was on average 0.6% per year and for the period 2004-2014 this was on average 0.3% per year.

**Figure 1.** Total population in the Netherlands, 1988-2014

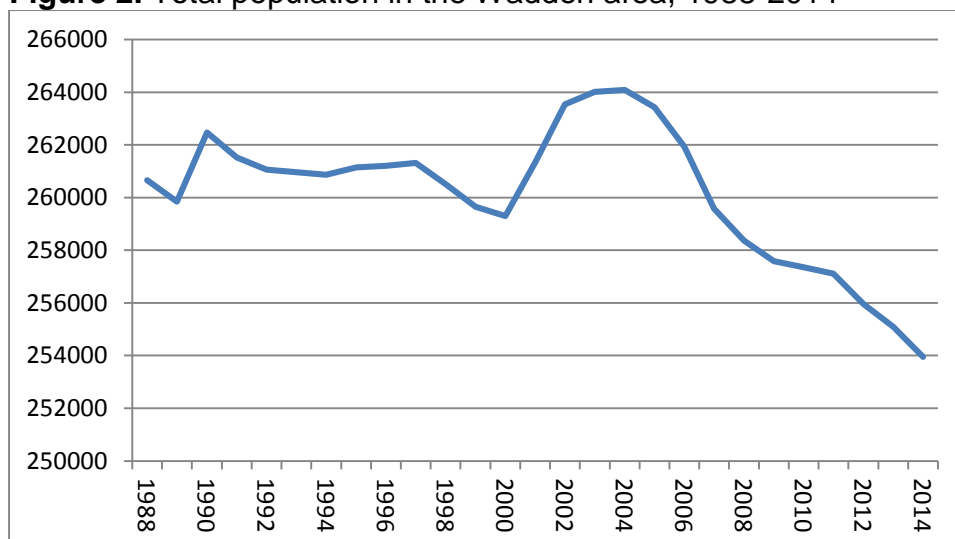


Source: Statistics Netherlands

### 2.2 Wadden area

Figure 2 shows the total population in the Wadden area, based on municipalities directly bordering the Wadden Sea and on the five islands, on January 1 1988 through 2014. Figure 2 is quite different from figure 1. We now see a far less smooth population development. A few phenomena can be noted. First, the population between 1988 and 2000 is more or less constant at about 261 thousand persons. Second, between 2000 and 2006, there is a hump shaped pattern. Third, after 2006, the population keeps declining steadily.

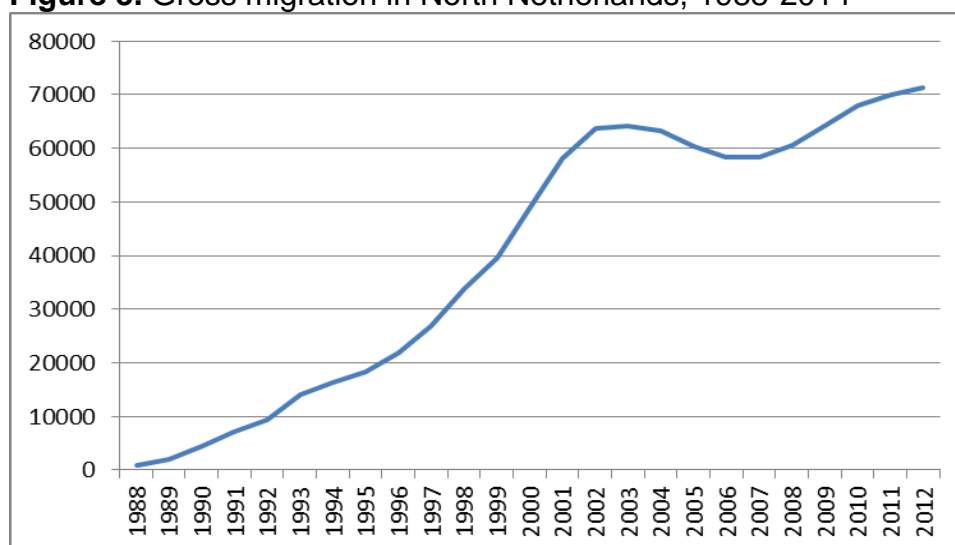
**Figure 2.** Total population in the Wadden area, 1988-2014



Source: Statistics Netherlands

There are numerous differences with the national population development of figure 1. First, between 1988-2000 the national population is on a steady growth path, while in the Wadden area the population no longer grows. In the Wadden area the negative migration balance (out-migration exceeds in-migration) is about the same as the positive net birth rate (births exceed deaths). On the other hand, at a national level both births exceed deaths and immigration exceeds emigration. Second, the hump shaped pattern in the population development between 2000-2006 is caused by a rise in foreign net migration. This hump shape can easily be replicated when the net migration (in-migration minus out-migration) in year  $t$  is added by the net migration in  $t+1$  for every subsequent year. In that way the migration flow is transformed into a state variable of migration. If we do this for total migration in the North of the Netherlands, we get figure 3, where a similar hump shaped pattern between 2000-2004 can be found. Finally, after 2004 the population in the Wadden area starts to fall in figure 2.

**Figure 3.** Gross migration in North Netherlands, 1988-2014



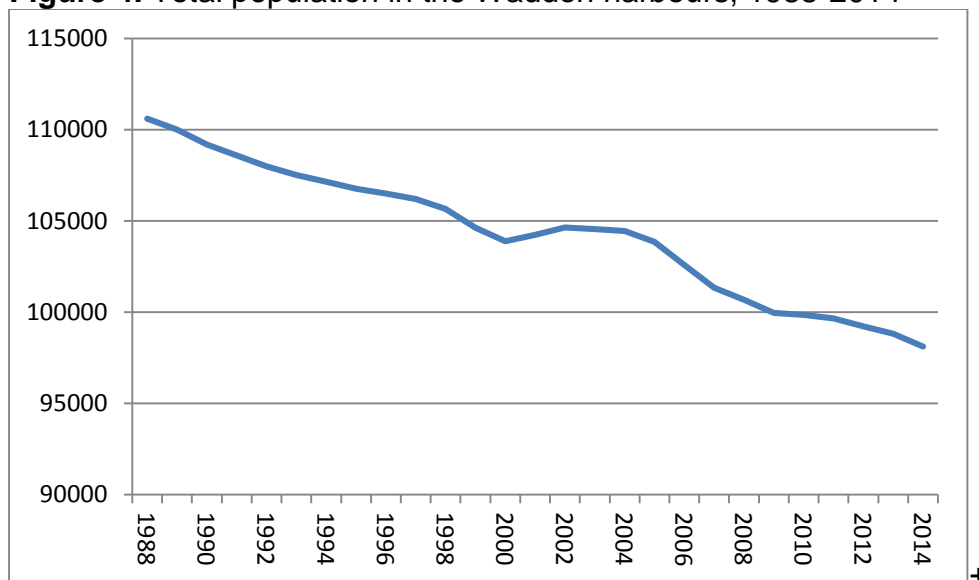
Source: Statistics Netherlands

## 2.3 Wadden harbours

The figures for the Wadden main land coast are all of a similar shape as the figures for the total Wadden, i.e. including the islands, as shown in figure 2. Therefore we do not discuss the figure for the main land Wadden separately. We do consider a specific group of municipalities at the Wadden coast; these concern the harbour municipalities, i.e. municipalities with both a residential and a harbour function.<sup>1</sup>

Figure 4 shows that the population in the larger harbours at the Wadden coast (Den Helder, Harlingen, Delfzijl) has been declining throughout the whole period, apart from a population increase during 2000-2004 (as a result of migration). These harbour cities are facing a strong population decline, maybe with an exception for Harlingen. This is particularly because many inhabitants migrate for the whole period 1988-2014, but also more people die within these cities than there are births, particularly in Den Helder and Delfzijl.

**Figure 4.** Total population in the Wadden harbours, 1988-2014



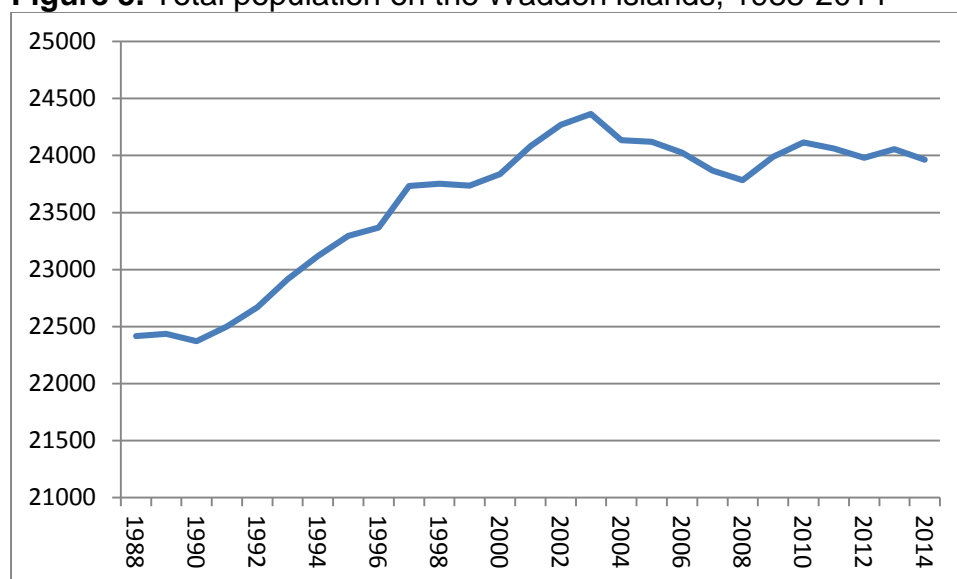
Source: Statistics Netherlands

<sup>1</sup> This implies that municipalities with a harbour that is not coupled with a harbour-city will not be considered here. This means we consider the municipalities of Den Helder, Harlingen and Delfzijl, but do not observe data for Den Oever (Wieringen), Holwerd (Ferwerderadiel) and Eemshaven (Eemsmond), as there are no or only few people living near the harbours of these municipalities.

## 2.4 Wadden islands

The population pattern of the five inhabited Wadden islands more resembles the national pattern shown in figure 1 than the pattern of the Wadden area shown in figure 2. Indeed, instead of a instable development between 1988-2000 as found for the full Wadden area, we now see a steady increase in the population, as figure 1 shows for the total Dutch population. There is not really a humped shape in the pattern of foreign migration to the islands. There is however a more or less stable population development after 2003. Important is that there is no sign (yet) of a strong population decline.

**Figure 5.** Total population on the Wadden islands, 1988-2014



Source: Statistics Netherlands

## 3 POPULATION BY AGE GROUPS: BELOW AGE 15

### 3.1 Netherlands

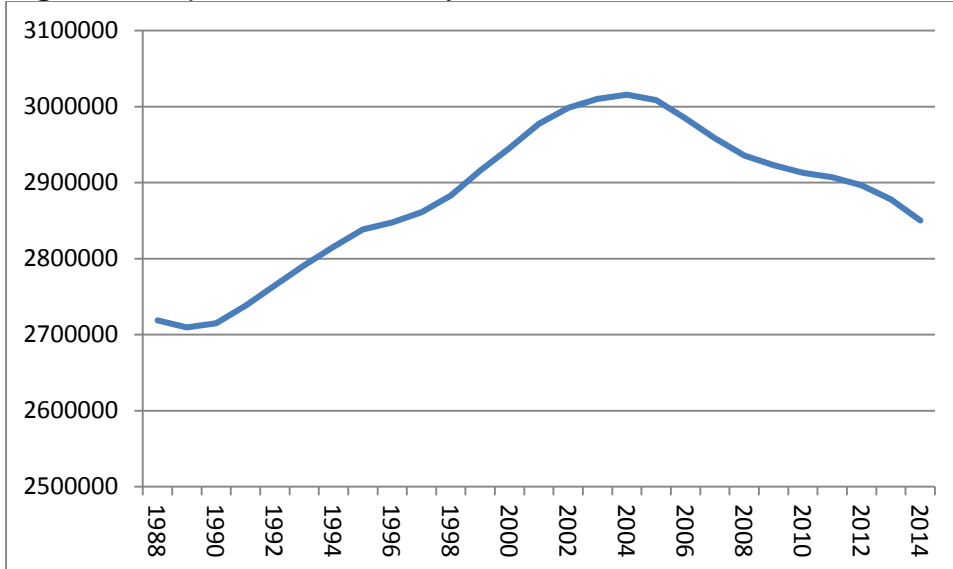
Figure 6 shows the development between 1988 and 2014 for the population under 15 years of age for the Netherlands. Between 1988 and 2004 the number of youth still increased, but after 2004 there was a steady ongoing decline in the number of youths. This can be explained as follows. Following the second World War (1945-1950) there was a baby-boom in the Netherlands. People born during the baby-boom reached the reproductive age themselves after about 25 years, say around 1975-1980, and started to have children. This led to a sort of second baby-boom around 2000-2005. After that the number of youths below 15 of figure 6 started to fall because after about 1975 much less children were born, which in the end resulted in lower births and eventually to less youngsters after about 2005.

Apart from the consequences of the post-war baby-boom, this fall in the number of youths in the Netherlands after 2004, may also be related to the fact that there were a lot of migrant workers ('gastarbeiders') entering the Netherlands in the 1970's from Turkey and Morocco. Also many migrants from the former colony of Surinam entered the Netherlands after Surinam became independent in 1975. The birth rates in these countries were much higher than in the Netherlands. The additional births in the Netherlands that this migration wave caused, came on top of the births due to the baby-boomers having children in that same period (around 1975).

These additional children, from both the 'second' wave of births of baby boomers and from the migrant workers, started to have children of their own. The latter even strengthened the 'second' wave of births of these baby boomers around 2000-2005. These two phenomena, the post-war birth wave and the migration wave and subsequent birth wave of that, both ended around 2005, after which the birth rate dropped to eventually reach more normal levels. These phenomena, rising birth rates from 1988-2004 and falling birth rates thereafter may explain the reverse pattern in figure 6.



**Figure 6.** Population below 15 years in the Netherlands, 1988-2014

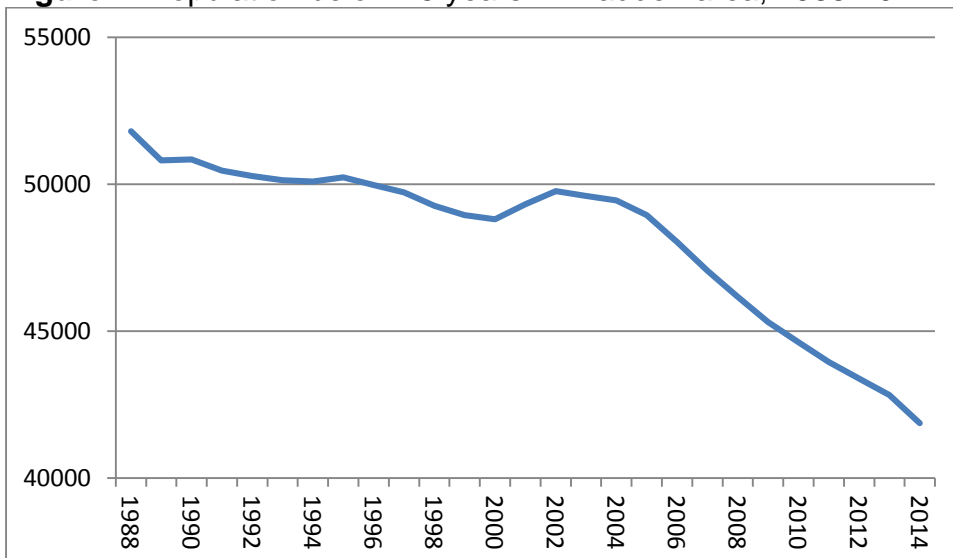


Source: Statistics Netherlands

### 3.2 Wadden area

Figure 7 plots the development of the population under 15 years in the Wadden area. Between 1988-2000, the pattern is slightly decreasing. The national trend in figure 6 shows a clear increase in the number of youths, so there is a clear difference here. There is again the hump shape around 2000-2004, after which the number of youths falls strongly. After 2004 also nationally the number of persons under 15 falls.

**Figure 7.** Population below 15 years in Wadden area, 1988-2014

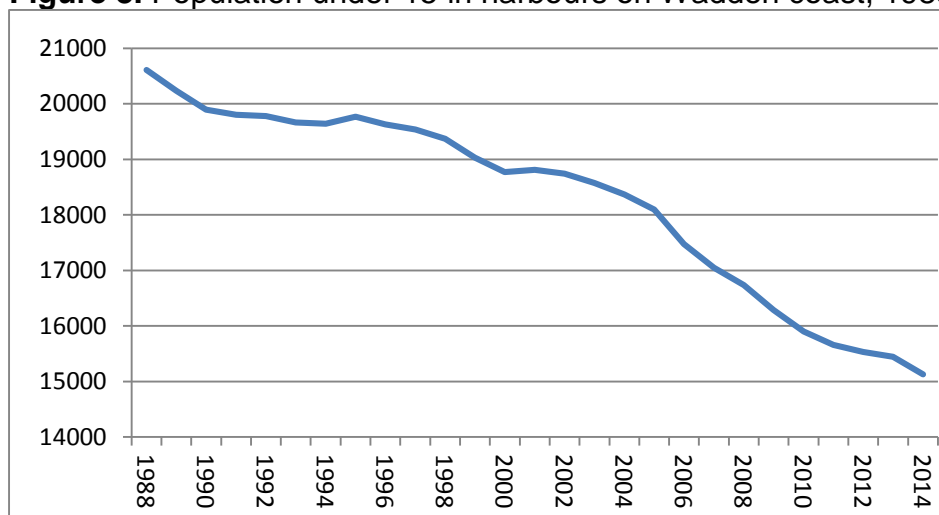


Source: Statistics Netherlands

### 3.3 Wadden harbours

We again refrain from a figure of the population aged below 15 years for the main land Wadden coast because the pattern is basically the same as figure 6 only at a lower level. We do consider the number of youths that live in the three inhabited harbour cities in figure 8. This figure shows a constantly decreasing pattern.

**Figure 8.** Population under 15 in harbours on Wadden coast, 1988-2014

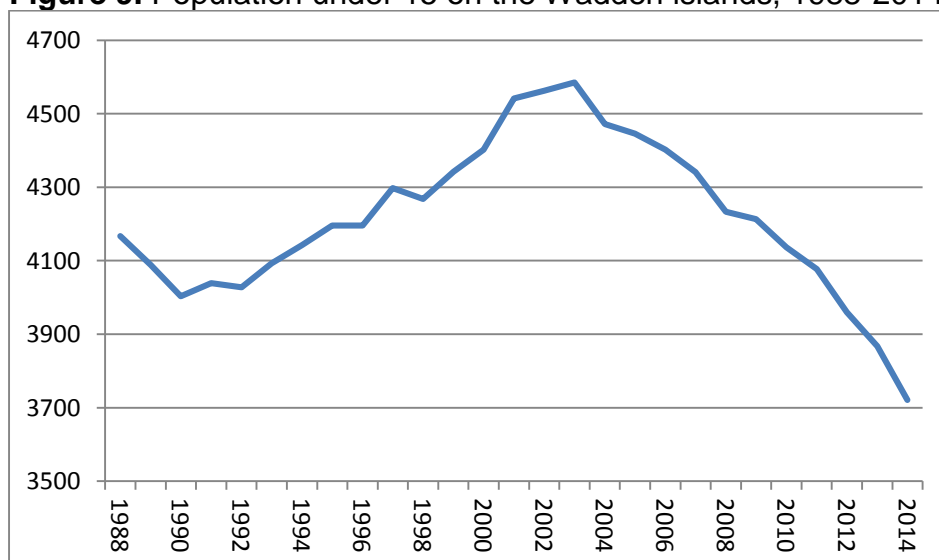


Source: Statistics Netherlands

### 3.4 Wadden islands

Like figure 5 for the total population, figure 9 with the youths living on the Wadden islands has a differing pattern. In fact it resembles the national situation of figure 6 more than that it resembles the total Wadden area of figure 7, of which it is a part. The fall in the population under 15 after 2003 was however much steeper than in figure 6. It might be that less children are born, but also that many families with (young) children migrate from the islands.

**Figure 9.** Population under 15 on the Wadden islands, 1988-2014



Source: Statistics Netherlands

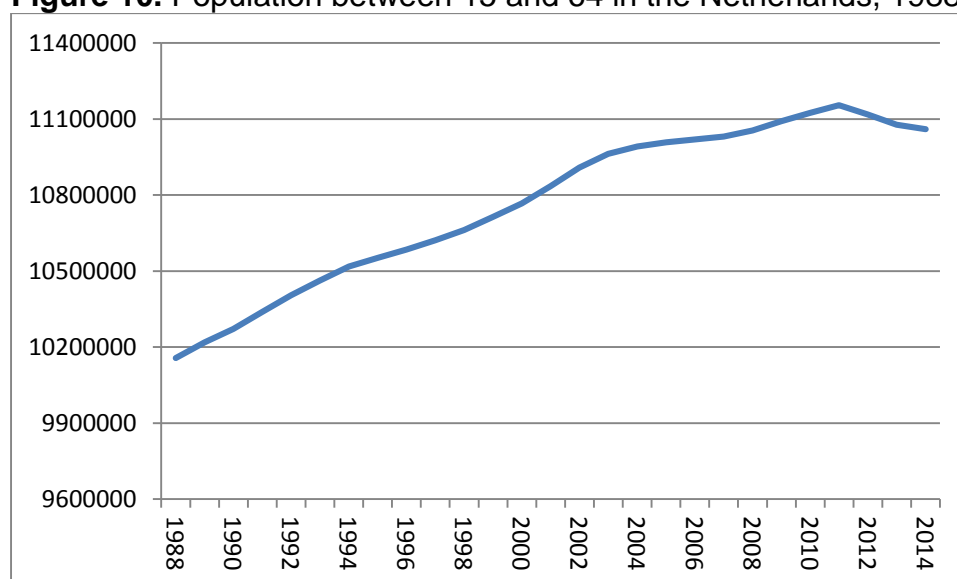
## 4 POPULATION BY AGE GROUPS: AGE BETWEEN 15 AND 64

The population between 15 and 64 years of age is an important group, because they form the potential labour force. This is the group of persons who could potentially be working. Of course not every person in this group may hold a job or search for one. They may still be at school, may be unable to work due to a mental or physical disability, may not want to work, because they raise young children and so on. Once these latter groups are excluded, we end up with the labour force.<sup>2</sup>

### 4.1 Netherlands

The Dutch population between 15 and 64 rises steadily between 1988 and 2011 from roughly 10 million to 11 million persons, after which the number drops. This has to do with the fact that then the first generation of the birth wave after the second world war starts to reach the retirement age of 65. The group of persons aged 15 replacing them is however much smaller than this group of retirees. Therefore after 2011 the number of persons in the age group 15 to 64 falls.

**Figure 10.** Population between 15 and 64 in the Netherlands, 1988-2014



Source: Statistics Netherlands

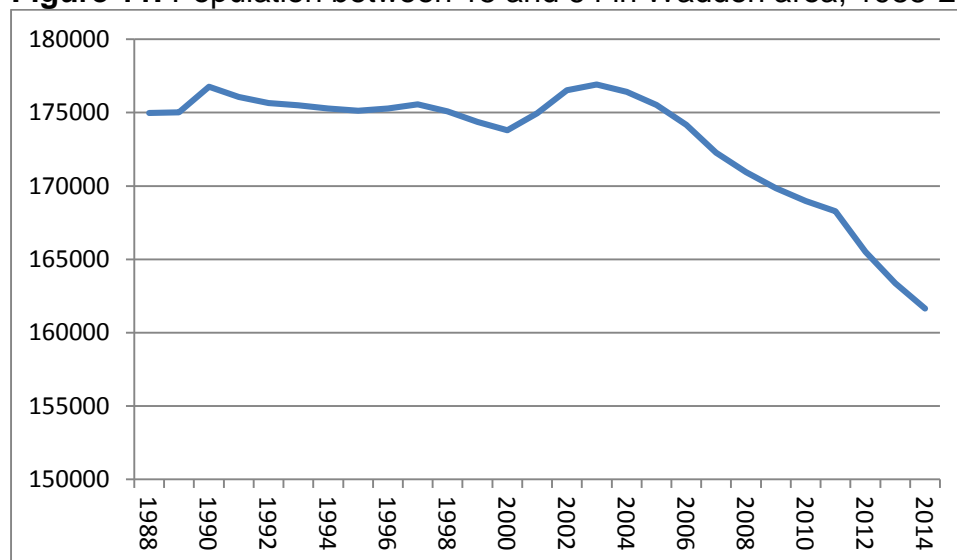
### 4.2 Wadden area

The pattern of the population of a working age in the Wadden area compares well to the patterns of the total population and the youngsters of the Wadden area in earlier figures. Between 1988 and 2000 the population between 15 and 64 is more or less constant. Then we see again the hump between 2000 and 2004 due to foreign migration. After 2004 the population between 15 and 64 starts to fall,

<sup>2</sup> There is an hours restriction. Statistics Netherlands only counts persons in the labour force when they have a job of at least of 12 hours a week or actively search for one.

particularly after 2011. This latter population fall is due to the fact that the first generation of the birth wave after the second World War reaches the retirement age of 65, while the replacing group of 15 years old is much smaller. This comes on top of the already ongoing population decline in the Wadden area after 2004. The population under 15 also fell in these years (figure 7), which implies that particularly families with (young) children migrated out of the area.

**Figure 11.** Population between 15 and 64 in Wadden area, 1988-2014

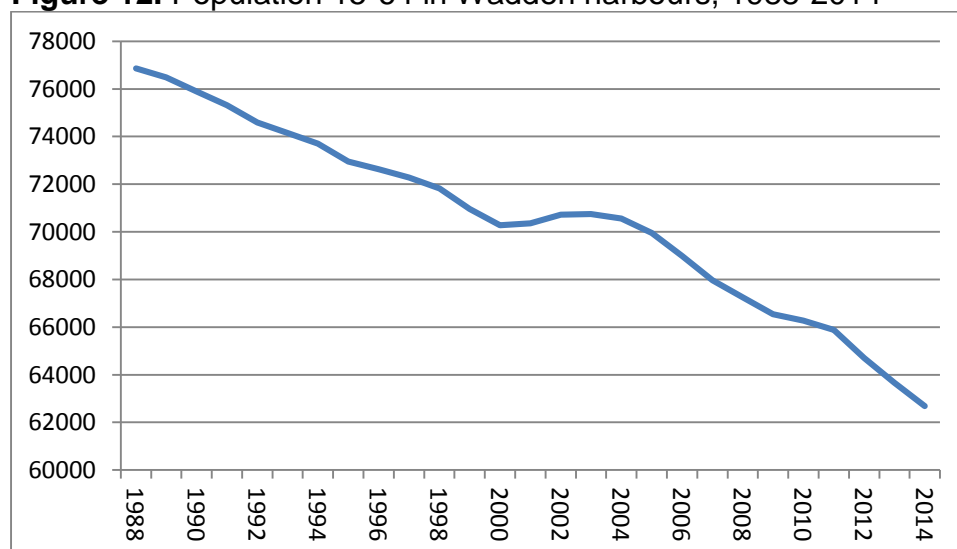


Source: Statistics Netherlands

### 4.3 Wadden harbours

Figure 12 shows for the harbours in the main land Wadden coast exclusively the development of the population that is of working age. Like before, we see a steadily falling population between 15 and 64. Note that figure 12 shows the positive effect of the bump in foreign migration in the early 2000's. This population in the Wadden harbours is on a steadily falling 'growth' path.

**Figure 12.** Population 15-64 in Wadden harbours, 1988-2014

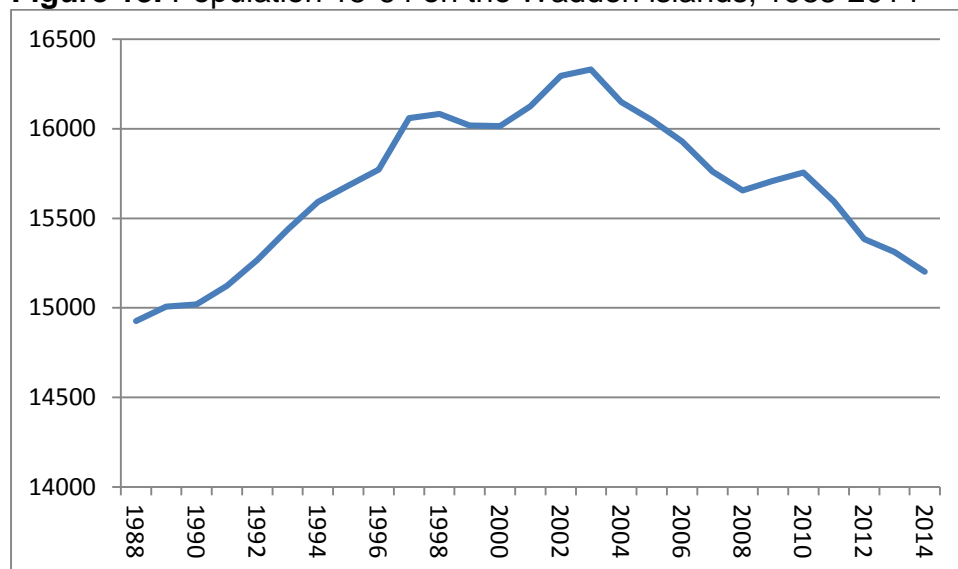


Source: Statistics Netherlands

#### 4.4 Wadden islands

This pattern is similar to the pattern of the population under 15 shown in figure 9. The population drop after 2003 implies that families with children left the Wadden islands to live (and work) elsewhere, perhaps due to the economic recession that year.

**Figure 13.** Population 15-64 on the Wadden islands, 1988-2014



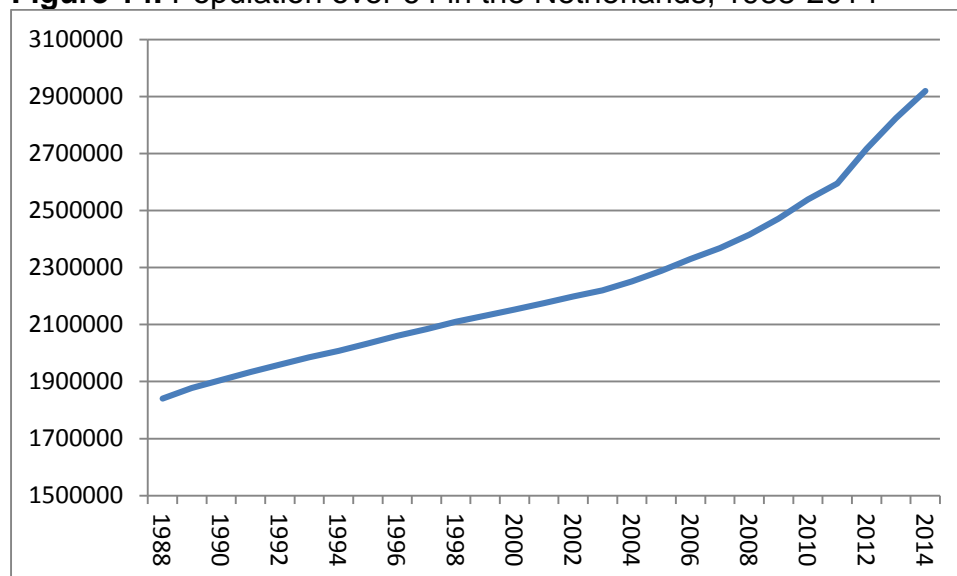
Source: Statistics Netherlands

## 5 POPULATION BY AGE GROUPS: OVER AGE 64

### 5.1 Netherlands

Finally, we distinguish inhabitants with an age over 64, i.e. those who retired. Figure 14 shows that population development of the population of 64 years of age and older for the Netherlands as a whole. This shows again a smooth pattern with an increasing number of retirees, particularly in the second half of the 2000's.

**Figure 14.** Population over 64 in the Netherlands, 1988-2014



Source: Statistics Netherlands

### 5.2 Wadden area

For the entire Wadden area including the islands in figure 15, we get a very similar figure as the one of figure 14. There is again a kind of s-shaped curve with a strong increase in the number of persons over 64 after 2004. In fact this number rose with more than 12.000 persons between January 1 2004 and 2014, which is an increase of almost 32%. For this same period, at a national scale, the population over 64 rose with 29%; so, the Wadden area is ageing more rapidly than the Netherlands as a whole. The mainland Wadden coast has in fact a similar pattern with about 5000 persons less.

### 5.3 Wadden harbours

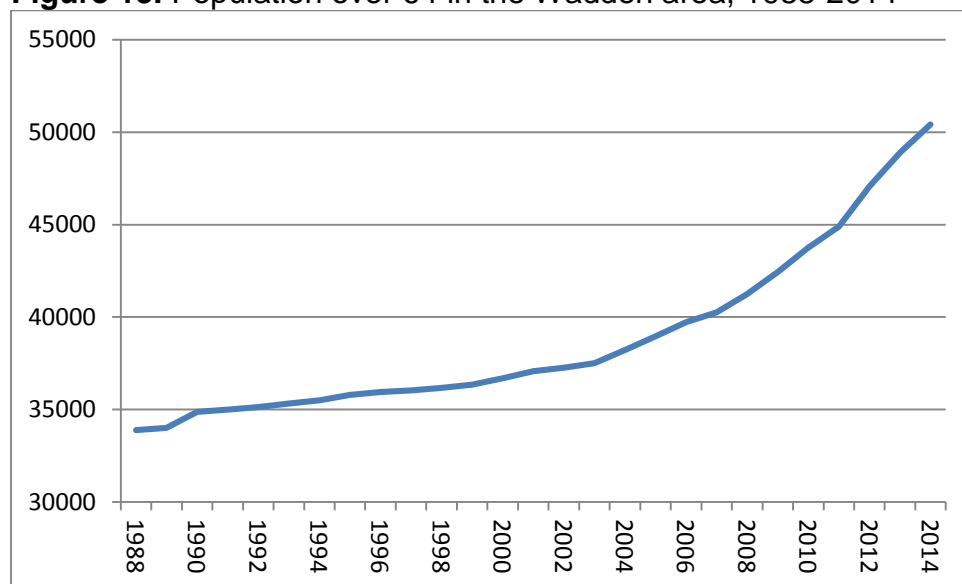
Figure 16 shows the development of the elderly in the three main Wadden harbours. This figure basically shows the same pattern as in figures 14 and 15.

### 5.4 Wadden islands

Finally, figure 17 also shows the same type of figure for the Wadden islands, but now the speed of ageing is much steeper than in figure 15. In fact in the ten years between 2004 and 2014, the number of retirees on the Wadden islands increased

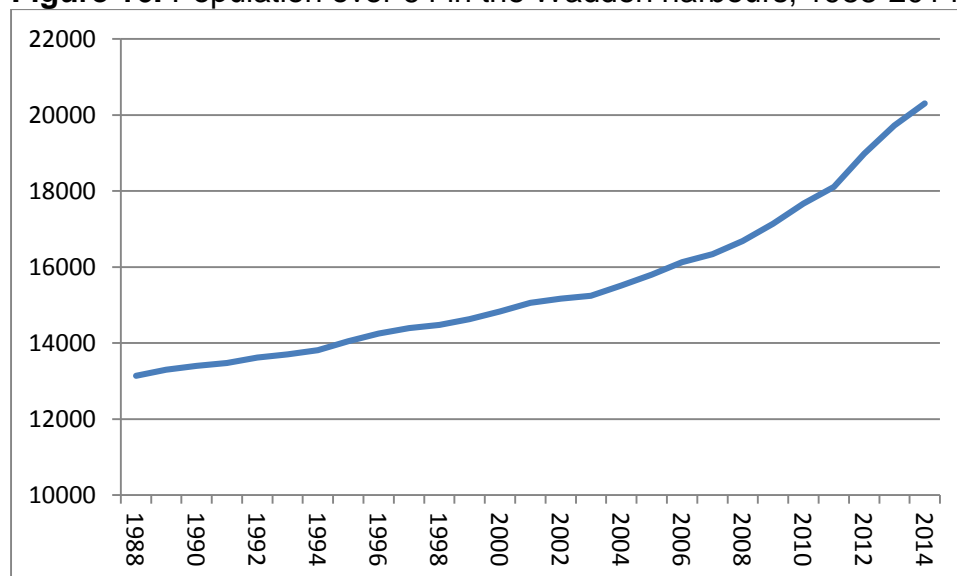
with over 1500 persons to more than 5000, or with almost 44%. So on the islands ageing is much more prominent phenomenon than elsewhere in the Wadden area.

**Figure 15.** Population over 64 in the Wadden area, 1988-2014



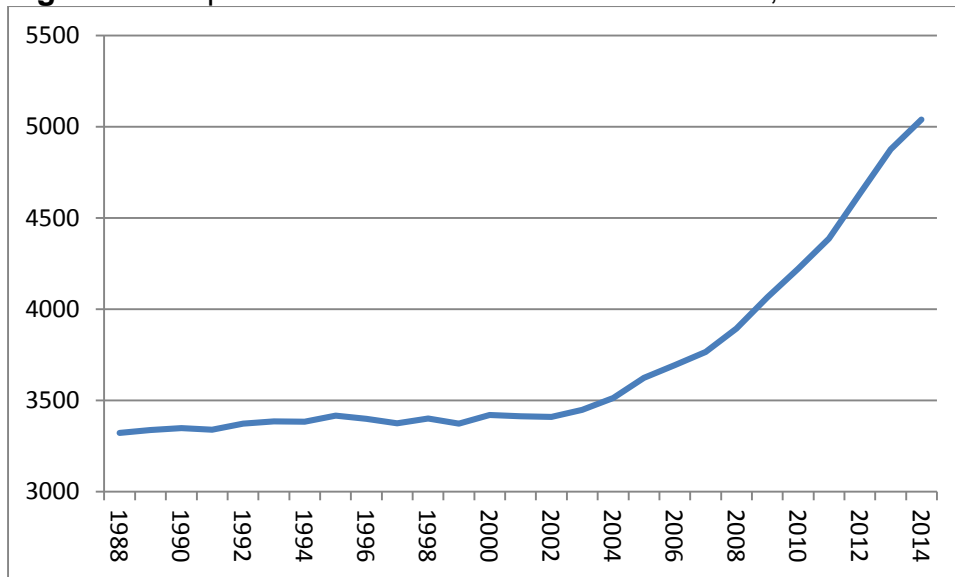
Source: Statistics Netherlands

**Figure 16.** Population over 64 in the Wadden harbours, 1988-2014



Source: Statistics Netherlands

**Figure 17.** Population over 64 on the Wadden islands, 1988-2014



Source: Statistics Netherlands



## 6 CONCLUDING REMARKS

The population in both the mainland Wadden area and the Wadden islands is declining. This decline started in the second part of the new millennium's first decade. From about 2004 (sub)populations decline, except the elderly subpopulation. In contrast, between 1988 and 2000, the population in the Wadden area more or less showed a stable development: no increase but also no decrease. Only the population on the islands still rose, just like the national population.

Between 2000 and say 2004 the population development in the Wadden area aged below 64 had a kind of hump shaped pattern because of a strong rise in the number of foreign migrants, followed by a fall a few years later. After 2004 the population in the Wadden area and on the islands started to decline rapidly. Many families with (young) children migrated out and the elderly, aged over 64, remained. After 2010, the 15 to 64 year old population started to decrease, because the first members of the birth wave after the second World War started to reach the age of 65 and retired, while the group of 15 year olds who replaced them was much smaller. This situation still continues today.