

# Chapter 4

## Quality of Life: A Poor and Vulnerable People



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**Abstract** Well-being is achieved by means of four resources (that is, the four capitals: natural, economic, human and social) of which natural capital is the basis. The previous chapter emphasised the natural capital of the Netherlands and the way this was exploited with the aid of the other capitals. This chapter asks what the outcome of this exploitation was in terms of well-being. What were the most important issues around well-being in the Netherlands at the middle of the nineteenth century? In terms of present-day norms for extreme poverty, around 21% of the population at that time lived in extreme poverty. From a present-day perspective, extreme poverty is among the most important issues in well-being around 1850.

A study of newspaper articles between 1830 and 1850 reveals that from a contemporary perspective too, extreme poverty was one of the most important societal issues of the time. The poor led not only a meagre, but also a vulnerable, existence. The latter also applied to a large part of the Dutch population. It had to cope with the elements in their extreme forms: heat waves, bitter cold, violent storms, heavy rains and hailstorms.

A component of well-being specific to the Netherlands as a country located in the delta of multiple rivers was the struggle against water. This was waged along three main fronts: the management of inner (fresh) water, the struggle against the sea, and the interminable fight with the rivers.

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Finally, by present-day lights, in the past all the cities in the Netherlands were filthy and polluted with organic waste, including human and animal faeces. This was in large part responsible for low life-expectancy and poor public health. From a present-day perspective this touched on an important aspect of well-being.

**Keywords** Poverty · Vulnerability · Water management · Hygiene

## 4.1 ‘How Can We Combat Pauperism?’

Pauperism is the sickness that eats at the heart of all contemporary societies; it is the most fearsome epidemic that assaults the nations, and for which... appropriate means are lacking to heal the sickness once and for all...<sup>1</sup>

This was the opinion advanced in 1849 in a lead article by the editors of the *Arhemse Courant* as part of a short but heated debate on the causes of poverty. The provocation was an article in *Het Dagblad van 's-Gravenhage* titled ‘How can pauperism be combated?’<sup>2</sup> Its author was Augustus Elink Sterk jr., son of a Lutheran minister, senior official in the Ministry of Finances and elected member of the Provincial Estates of South Holland. He was a well-known in Hague circles and published on a wide range of topics.

According to Elink Sterk, poverty was for ‘... nine tenths the victim’s own fault... whether due to sluggishness or neglect, intemperance and dissolute behavior, rushing into unconsidered marriages without hope of means of support...’ In short, because of ‘chaotic living and lack of reflection.’ The editors of the *Arnhemsche Courant* protested this portrayal.

It is a grave untruth... One has to dig deeper if one wants to discover the source of the evil. Suppressing the means of exchange between nations and peoples, artificial industries kept alive only by main force and prohibitions, concentration of capitals in few hands, a production that consistently exceeds the needs of the users and in consequence too many hands and too little work – behold some of the causes ... of pauperism that has only become evident nowadays.<sup>3</sup>

Here in a nutshell are summarized the standpoints and arguments of contemporaries regarding the question of poverty.

Pauperism refers to quality of life, a concept that occupies a central position in this study with broad implications that relate, among other things, to health, domestic life, existential security and safety. Welfare is the core and has to do with the degree to which the population is able to meet its needs with scarce means, while well-being indicates how people perceive their quality of life. Well-being is realized with four resources (in other words the four capitals: natural, economic, human and social) of which natural capital is the foundation. The previous chapter dealt with natural capital in the Netherlands, its exploitation, the consequences for nature and

<sup>1</sup>Hoe is het pauperismus te stuiten’, *Arnhemsche Courant* 28-08-1849.

<sup>2</sup>Hoe is het pauperismus te stuiten’, *Dagblad van 's-Gravenhage* 13-08-1849.

<sup>3</sup>*Arnhemsche Courant* 28-08-1849.

the yields in terms of gross domestic income. The question for this chapter is: what is the well-being of inhabitants of the Netherlands in the mid-nineteenth century? Does pauperism belong to the ‘most fearsome epidemic’ of the Netherlands and with that to the most important problem of well-being and sustainability?

## 4.2 Poverty in the Netherlands

### 4.2.1 *The Scope of Poverty*<sup>4</sup>

From a present-day perspective, poverty ranks among the most important problems of the mid-nineteenth century. The historian Allen has developed a method to evaluate the living standard of the lowest classes in the past.<sup>5</sup> He starts with the disposable income that a person absolutely needs to survive. If he falls below this level then he will starve or die of cold. The cost of the minimum necessary consumption ( $C_{\min}$ ) is based on a ‘basket,’ containing the minimum quantities of food and fuel (for heating and illumination) and the minimum sums for clothing and housing. The magnitude of the entire sum depends on place and time. The cost of living is different for example in 1850 and in 1750 and for London and Amsterdam. We estimate  $C_{\min}$  for the Netherlands in 1850 to amount to an average of 19 guilders per inhabitant per year (see Table 4.1).

In addition, Allen defines a basket that he somewhat euphemistically calls ‘respectable.’ The disposable income is a bit bigger and the individual can enjoy a menu with more variety (bread instead of porridge, better beer and a modest quantity of eggs, cheese and meat). He can also clothe himself better and enjoy more warmth and better housing. The ‘respectable’ basket serves to define the poverty line. Below this, people enter into the danger zone. They will often feel hungry, possibly have to dress in rags and in a moderately stringent winter will suffer bitter cold. The costs of living at the poverty line are  $C_{\text{line}}$  and these are estimated at 43 guilders per inhabitant per year (Table 4.1). That roughly corresponds to the line that the World Bank nowadays defines for extreme poverty.<sup>6</sup>

In 1850, with its four capitals, the Netherlands was able to generate a gross domestic income of 659 million guilders (Table 4.1). Of that amount, fl. 466 million was spent on private consumption. Had consumer expenditure in 1850 been equally distributed across all inhabitants, then all would have lived far above the poverty line:  $C_{\text{average}}$ , after all, amounted to 150 guilders/year. But because of social inequality the situation was entirely different. The gini – a measure of social inequality – in

<sup>4</sup>See for the calculations in this subsection: H. Lintsen, M. Anthonissen en B. Gales, *Berekening omvang extreme armoede in Nederland 1820–1913* (research report Eindhoven University of Technology, 2017).

<sup>5</sup>R.C. Allen, *Poverty lines in history, theory and current international practice* (Oxford 2013).

<sup>6</sup>The line of extreme poverty is set at \$1.9 per day, i.e. \$694 per person per year (constant prices 2016).

**Table 4.1** Private consumer expenditure and magnitude of poverty 1850 (estimates)

	1850
Total private consumer expenditure	466 mln gld
Total population	3,098,000
$C_{\text{average}}$ (consumer expenditure per capita)	150 gld/year
$C_{\text{min}}$ (costs consumption subsistence level)	19 gld/year
$C_{\text{line}}$ (costs consumption poverty line)	43 gld/year
Gini in relation tot GDP	0.48
Gini in relation to consumer expenditure	0.41
Percentage of population under $C_{\text{line}}$	21%
Number Dutch under $C_{\text{line}}$	658,000

Remark: Consumer expenditure in constant 1913 prices. All levels of consumption are determined for an 'average' inhabitant, taking account of the differences among men, women and children

Source: H. Lintsen, M. Anthonissen en B. Gales, *Berekening omvang extreme armoede in Nederland 1820–1913* (research report Eindhoven University of Technology, 2017)

relation to the consumer expenditure is estimated at 0,40 (1 is maximum inequality and 0 is maximum equality). This means that about 21% of the Dutch population lived under the poverty line ( $C_{\text{line}}$ ), i.e. about 650,000 inhabitants of the Netherlands suffered extreme poverty.

On the basis of estimates for poor relief in 1850 it appears that 14% of the population was on the dole. This percentage does not, however, reveal how much was received *in natura* in the form of food and fuel. Moreover records of charitable organizations were sometimes missing. 1850 was not an especially problematic year. Quite the contrary. According to the papers, the number of the poor had decreased relative to previous years which were marked by the potato famine, high grain prices and cholera (Sect. 1.2). Our estimate of 21% poor therefore seems to accord with the magnitude of contemporary percentages (Table 4.2).

There are striking differences among the provinces. Drenthe, Overijssel and Gelderland scored low relative to the other provinces. Noord-Holland had the most poor in an absolute sense, more than 150,000 persons, while in a relative sense Friesland topped the list. There were also big differences between towns and the countryside: the number of the poor was higher in the city than in rural areas.<sup>7</sup>

<sup>7</sup>See for example the table in: J.L. Van Zanden, *Nederlandse landbouw in de negentiende eeuw 1800–1914* (dissertation Wageningen 1985), 218 and J.L. Van Zanden, 'Den zedelijke en materiële toestand der arbeidende bevolking ten platten lande'. *Een reeks rapporten uit 1851* (Historia Agriculturae XXI, Groningen 1991), 36.

**Table 4.2** Number of people on dole in the Netherlands in 1850

	Population	On dole	Percentage (%)
Drenthe	83,000	4896	5.9
Overijssel	216,000	16,206	7.5
Gelderland	365,000	34,844	9.5
Noord-Brabant	393,000	49,033	12.5
Limburg	204,000	32,589	16.0
Groningen	185,000	20,674	11.2
Friesland	248,000	47,982	19.4
Zeeland	160,000	22,330	13.9
Utrecht	153,000	25,263	16.5
Noord-Holland	472,000	90,740	19.2
NETHERLANDS (excl. Zuid-Holand)	2,513,000	344,557	13.7

Source: Nederlandsche Staatscourant 17-08-1851

Could poverty, as the most important factor in well-being, already have been solved at that time? Could, in other words, the level of extreme poverty in 1850 have been reduced to nearly nil? There were in principle three options. First, a further decrease in social inequality. This option was the bugaboo of the bourgeoisie: the possibility that the poor would rise up, that revolution would be propagated and the social order be attacked.<sup>8</sup> As noted above, extreme poverty would have disappeared in 1850 given an equal distribution of consumer expenditure (a gini of 1).

**Table** Numbers of those on poor relief and living at home as percentage of the population in 1817, 1832 and 1850

Province	1817	1832	1850	1850 countryside
Drenthe	4.8	3.9	5.6	5
Overijssel	5.6	5.4	6.7	5
Gelderland	7.1	6.8	8.8	6
Noord-Brabant	10.2	6.5	11.9	10
Limburg	–	–	14.0	9
Groningen	5.2	5.9	9.0	7
Friesland	8.5	11.1	15.7	14
Zeeland	8.1	5.7	12.3	10
Utrecht	9.3	13.6	15.2	9
Zuid-Holland	11.3	10.6	15.7	10
Noord-Holland	21.9	15.3	23.0	–
NETHERLANDS	11.0 excl. Limburg	9.4 excl. Limburg	13.8	

<sup>a</sup>Poor relief distinguished between those on the dole *living at home*, or the 'outside poor' and the 'inside poor.' The *inside poor* were those on poor relief that were permanently or temporarily housed in institutions: an orphanage, a hospital, an old age home, a widows' home and almhouse courts

<sup>8</sup>M.H.D. van Leeuwen, *Bijstand in Amsterdam ca. 1800–1850. Armenvoorzorg als beheersings- en overlevingsstrategie* (Zwolle 1992), 123–125.

**Table 4.3** Social inequality and economic growth if the poor in 1850 had been less than 5% of the population

	Situation 1850	In case of less social inequality	In case of greater economic growth 1820–1850
$C_{\text{ine}}$ (costs of consumption at poverty line)	43 gld/year	43 gld/year	43 gld/year
Portion of the population under $C_{\text{ine}}$	21%	<5%	<5%
Gini in relation to GDP	0.48	<b>0.35</b>	0.48
Gini in relatie tot consumer expenditure	0.42	<b>0.30</b>	0.42
Growth of Gross Domestic Income 1820–1850	1.4%	1.4%	<b>3.3%</b>
Growth private consumer expenditure 1820–1850	1.2%	1.2%	<b>3.1%</b>

Source: H. Lintsen, M. Anthonissen en B. Gales, *Berekening omvang extreme armoede in Nederland 1820–1913* (research report Eindhoven University of Technology, 2017)

But even at today's degree of inequality (gini relative to consumer expenditure of 0.30) poverty at the time would in our estimation have been considerably less (Table 4.3).

The second option consisted of creating such a degree of economic growth that even with social inequality at the same level almost all the poor would be lifted above the poverty line. At the time this option was referred to as encouraging 'popular (or national) prosperity' (*volkswelvaart*).<sup>9</sup> In that case the total magnitude of consumer expenditure would have had to amount to 810 million guilders in 1850, or 261 guilders per inhabitant. This means that the growth of the Gross Domestic Product over the period 1820–1850 would have had to amount to 3.3%. This level of growth seems impossible with the then existing natural capital and the contemporary (agricultural) technology. Agriculture in the 1830s grew by only 1.4%. This in combination with the growth of industry and trade produced an increase of 2.3% in the GDP.

There was a third option, namely the exploitation of natural capital and populations elsewhere in the world. This was one of the aims of colonial policy. That policy was beholden to reap benefits for the development of 'national prosperity' in the Netherlands.<sup>10</sup> The construction of the 'colonial complex' certainly contributed to the decline in the level of poverty in the Netherlands, particularly in the 1830s, but not enough. This option would become a bone of contention after 1850.

<sup>9</sup> See the following Chaps. 5 and 6.

<sup>10</sup> J.L. Blussé, 'Koning Willem I en de schepping van de koloniale staat', in I. de Haan et al. (Eds.) *Een nieuwe staat: Het begin van het Koninkrijk der Nederlanden* (Amsterdam 2013), 169. Blussé notes that the originator of the Cultivation System, Johannes van den Bosch, was also concerned with improving life for the native population.

### 4.2.2 *The Perception of the Poverty Question*

In the mid-nineteenth century, many inhabitants of the Netherlands lived beneath the poverty line. In 1850 some 650,000 inhabitants of the Netherlands were extremely poor and lived from day to day. Their budgets approached the absolute minimum for survival. Poverty must have been visible everywhere in the Netherlands.

From today's perspective, the quality of life in those days – in terms of poverty – was one of the most important well-being and sustainability issues, if not the most important. The question is whether contemporaries also saw it this way. Was poverty an important issue for them? The answer is important if we are to avoid an anachronistic approach to well-being and sustainability. The elaborate system of poor relief suggests that poverty was an important theme, but was it also a problematic one? The system might have functioned so efficiently that contemporaries regarded the question as solved and felt themselves at liberty to turn their attention to other matters. What was the relationship of poverty to other societal issues?

One of the (few) ways to address this question is a systematic survey of newspapers, journals, pamphlets or ego documents. We limit our investigation here to all newspapers in the Netherlands from 1830 to 1850 and use as indicator those newspaper accounts in which 'misery' or a related concept appears. From a collection of more than 10,000 accounts we extracted an a-select sample (see Table 4.4).<sup>11</sup>

Poverty played a major role in accounts of 'misery' (29% of the articles). Much misery had to do with poverty and was often portrayed in heart-wrenching terms.

...There I saw the Father or Mother struggling with death; there I saw the despairing Man or Woman, now gazing on the dying, now at the poor uncared-for brood. There I saw in another family again children surrounding the poor deserted Mother, weeping with her for the death of the loved Father, and the last bit of bread, charily divided...<sup>12</sup>

Along with 'Poverty,' 'Politics' pertains to the biggest category of newspaper accounts containing the term 'misery.' These accounts announced debates in parliament, political decisions, lawmaking, import duties and suchlike. These issues were nearly always discussed in combination with 'Poverty' or one of the other categories.

'Fate' is such a category (15% of the accounts). These articles recounted fires, floods, epidemic diseases, hurricanes, harsh winters and other natural violence and calamities. Some of the accounts made a connection to poverty. In these accounts misery was a question of fate and fate could lead to poverty.

'War' and 'insurrection' were other categories (respectively 13% and 11% of the accounts). Europe was restless in the 1830s and 40s. Belgium seceded from the Netherlands. Civil war threatened in Spain. In Portugal there was a struggle for power. Russia had occupied Poland. Turkey was at war with Egypt. France fought in Algeria. Great Britain conquered the Falkland Islands, etc. Several accounts made

<sup>11</sup> L. Laan, Ö. Nomaler en H. Lintsen, *Perceptie en kranten, 1830–1850* (research report Eindhoven University of Technology, 2017).

<sup>12</sup> 'St-Nicolaasfeest', *Rotterdamsche Courant* 09-12-1848.

**Table 4.4** Theme in newspaper accounts between 1830 and 1850 in which ‘misery’ (‘ellende’) or a similar term appears (n = 346)

	Total	Domestic	Abroad
Poverty	101 (29%)	26	75
Politics	99 (29%)	31	68
Fate	52 (15%)	20	32
War	46 (13%)	19	27
Insurrection	38 (11%)	7	31
Morality	38 (11%)	20	18
Charity	36 (10%)	29	7
Miscellaneous	84 (24%)	35	49

Remark: The total exceeds the number of selected articles (n = 346) because a number of the articles was assigned to more than one category

Source: L. Laan, Ö. Nomaler en H. Lintsen, *Perceptie en kranten, 1830–1850* (research report Eindhoven University of Technology, 2017)

a direct connection with poverty. War and insurrections brought misery, chaos and poverty. Poverty could be the cause of wars and insurrections.

For the rest, the newspapers were a well-trodden podium for moralistic narratives; histories with a moral turn, a personal tragedy framed as a warning, an exciting serial with moralistic overtones or strong condemnation of behavior like opium trading or alcoholism (11% of the articles). These articles containing the term ‘misery’ fall into the category of ‘morality.’ These accounts also regularly made a connection to poverty. Poverty could be prevented by ‘...more frequent attendance at public religious services, quiet, stillness on Sunday evenings...’<sup>13</sup> An elevated moral sensibility inspired the charity that combatted poverty.

Finally, there was a great number of articles containing the term ‘misery’ that dealt with a rich variety of subjects (the category ‘diverse’ with 24% of the accounts). They dealt with, for example, misery due to religious tensions, misery in prisons, the misery of vulnerable groups in the overseas colonies and emigration in consequence of misery and need. Miscellaneous notices also fell into this category.

This analysis reveals poverty to have been the most important social question. Contemporaries saw it as a condition that brought much misery for individuals and social groups, both domestically and abroad. It had political aspects and was related to other social questions like morality and war. Poverty had to do with life’s risks. Anyone could be a victim of fate. Chaos was ever-threatening and put existential security on the line. Contemporaries could have proclaimed poverty and vulnerability to be important, if not the most important, limits to well-being of their time.

To which contemporaries do we refer in this connection? Whose opinions were ventilated in the newspaper? Who was allowed to speak? Who read the paper? The newspaper was certainly not a ‘podium for the people.’ The newspaper was still for the most part the masculine domain of the upper middle class and the elite; the masses and the poor were not heard there. The authors were judges, writers and

<sup>13</sup>*De Noord-Brabander* 13-04-1844.



government officials. Newspaper readership was composed of the educated and the wealthy. These were the classes from which the officers of charitable organizations were recruited. They shaped the policies of and were responsible for poor relief. But to whom did they extend their helping hands? Who were the poor?

### 4.2.3 *Poverty in the City and in the Countryside*

In the city three categories of the poor could be distinguished.<sup>14</sup> First were the aged, the sick and the invalids. Around 1850 they comprised a significant portion of the urban population.<sup>15</sup> Depending on the institution, percentages ranged from 30% to 60%. Living with old age, illness and invalidity was in any case a heavy burden in those days. For those lacking financial resources it was punishing.

The employable poor formed another category. This could be divided into a group of workers holding often temporary jobs at the lowest wages and the group of minor craftsmen, small shopkeepers and the lowest-ranking civil servants.<sup>16</sup> The lowest-paid workers were referred to as day labourers, labourers or helpers or more specifically with, for example, porters, wagon loaders, barrow-men, and bag loaders. The lowest-paid female workers were called maids or more specifically washerwomen and cleaning ladies. Every city had a large class of unschooled and low-paid workers, who had a good chance of falling under the poverty line because of ‘the ... difficulty, not to say the impossibility, for many heads of households to earn their keep by means of their labour...’<sup>17</sup> Having a trade, shop or job as civil servant was no guarantee of being able to avoid the trap of poverty. Tailors, seamstresses, pin-makers, spinners, vegetable sellers, teachers etc. often found it extremely difficult to keep their heads above water. Winter was an especially hard time. Business was slow, while the costs of heating and clothing increased.

<sup>14</sup>P. de Rooy, ‘De armen hebt gij altijd met u: armenzorg en onderwijs’, in: I. de Haan, P den Hoed and H. te Velde, *Een nieuwe staat. Het begin van het Koninkrijk der Nederlanden* (Amsterdam 2013), 221–222.

<sup>15</sup>See among others: Van Leeuwen, *Bijstand in Amsterdam ca. 1800–1850*; M. Prak, ‘Overvloed of onbehegen. Armoede, armen en armenzorg in ’s-Hertogenbosch, 1770–1850, in: J. van Oudheusden and G. Trienekens, *Een pront wijf, een mager paard en een zoon op het seminarie: aanzetten tot een integrale geschiedenis van oostelijk Noord-Brabant 1770–1914* (’s-Hertogenbosch 1993), B.P.A. Gales, L.H.M. Kreukels, J.J.G. Lujten and F.H.M. Roebroeks, *Het Burgerlijk Armbestuur. Twee eeuwen zorg voor armen, zieken en ouderen te Maastricht, 1796–1996* (Maastricht 1997), band 1 en 2. On poverty in earlier periods: H. Gras, *op de grens van het bestaan. Armen en armenzorg in Drenthe 1700–1800* (Zuidwolde 1989) and H.F.J.M. van den Eerenbeemt, *In het spanningsveld der armoede. Agressief pauperisme en reactie in Staats-Brabant* (Tilburg 1968). See also: C. Lis and H. Soly, *Armoede & kapitalisme in pre-industrieel Europa* (Amsterdam 1980) and A. de Swaan, *Zorg en de staat. Welzijn, onderwijs en gezondheidszorg in Europa en de Verenigde Staten in de nieuwe tijd* (Amsterdam 2004).

<sup>16</sup>Van Leeuwen, *Bijstand in Amsterdam ca. 1800–1850*, 30.

<sup>17</sup>Van Leeuwen, *Bijstand in Amsterdam ca. 1800–1850*, 189–190 and Prak, ‘Overvloed of onbehegen’, 26–34.

The third category of the poor were the social outcasts who were all but excluded from the labor process: beggars, drifters, paupers. They were most to be pitied. They were beyond the pale of poor-relief and were often chased away or locked up in workhouses.

For women, life was more difficult than for men and relatively speaking they turned more often to poor relief. They typically encountered difficulties when their husbands died or absconded and they were left to fend for themselves. Women earned less than men, even for similar work. Income from simple labour was far from adequate to maintain a family with children. In addition, women also typically had to run a household.

The category of the elderly and the sick and that of the beggars, drifters and paupers were also well-represented in the countryside. The category of the employable poor consisted of three groups: day-labourers, maids and hired hands, and small-holders. Day-labourers in 1850 were to be pitied.<sup>18</sup> In Zeeland there was a large population of such temporary labourers, an estimated 2/3 of the agrarian population. Their situation was lamentable: they barely had an income, were in poor health, and were poorly clothed and housed:

When we see our eyes drawn to so many pale faces and emaciated bodies, and one sees the masses of weak and sickly beings... then assuredly we must admit that the material condition of the labouring class demands an investigation...<sup>19</sup>

Similar reports came from other provinces, describing day-labourers ‘whose existence...is extremely uncertain, and most grievous, if illness prevents them from working.’<sup>20</sup> They often lived in shacks with a ‘great number of children who, like little cave-dwellers, emerge half-naked from the ground.’<sup>21</sup>

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<sup>18</sup>Van Zanden, ‘*Den zedelijke en materiële toestand der arbeidende bevolking ten platten lande*’. See for the analysis and discussion of sources: H. Lintsen, *De schraalheid van het bestaan, een reeks rapporten uit 1850* (research report Eindhoven University of Technology, 2017).

<sup>19</sup>‘[Zeeland] Rapport naar aanleiding van een ingesteld onderzoek omtrent den zedelijken en materiëlen toestand der arbeidende en dienstbare bevolking ten platten lande’, in van Zanden, ‘*Den zedelijke en materiële toestand der arbeidende bevolking ten platten lande*’. Originally published as a report to the annual meeting of the Zeeuwse Maatschappij van Landbouw (Zeeland Agricultural Association) at Tholen on June 7, 1849 (Middelburg 1849), 12.

<sup>20</sup>A. Martini van Geffen (1991), ‘Zedelijke en materiële toestand der arbeidende bevolking ten platten lande. I. Nopens Noord-Brabant’, in van Zanden, ‘*Den zedelijke en materiële toestand der arbeidende bevolking ten platten lande*’. Original source: *Verslag van het verhandelde op het vijfde Nederlandsche Landhuishoudkundig Congres, gehouden te Leiden van den 10den tot den 14den junij 1850* (Leiden 1850), Appendix no 12, 101.

<sup>21</sup>B.W.A.E. Sloet tot Oldhuis (1991), ‘Statistieke beschouwing van den toestand der geringe plat-telands bevolking op de Veluwe langs de Zuiderzee, (gemeenten Putten, Ermelo, Elspeet, Harderwijk, (Hierden), Doornspijk, Oldenbroek, Heerde en Epe)’, in van Zanden, ‘*Den zedelijke en materiële toestand der arbeidende bevolking ten platten lande*’. Original source: *Tijdschrift voor Staathuishoudkunde en Statistiek* 9(1853), 291.

Hired hands and maidservants earned about the same as day-labourers. If that was all they could count on, they were condemned to an abject life.<sup>22</sup> But they enjoyed various advantages. They had more security because they were a permanent part of the farm. They were housed in the farm and could piggy-back on the farmer during prosperous times.<sup>23</sup>

Other inhabitants of the countryside that found it hard to make ends meet were the smallholders. Their small farms gave them a bit of security, but they had to exert themselves to the utmost to keep their heads above water. Discipline and frugality were the necessary ingredients; 'were this not the case, many farmers would soon sink into the estate of day-labourers or that of poverty.'<sup>24</sup>

Regional differences in rural poverty were large in 1850 and varied with the nature of the farm and the orientation to the market. Misery was no stranger, for example, to the clay-grounds in Zeeland. The mixed large farms there faced hard times. The wheat farmers suffered. The potato farmers were hard hit by the potato blight. This in the wake of a crisis in madder production due to strong competition from French madder. Farmers had to cut back on the high costs of wages and other expenditures like those for the blacksmith and the shopkeeper. Hence it was not only the farmers, their workers and the day-labourers who suffered from the agricultural malaise.

The livestock farms in Holland, by contrast, did rather well. There were fewer day-labourers. The farmers on the large farms generally employed permanent personnel for the regular work and had recourse to migrant labour during peak times in the summer.

On the sand grounds the smallholders were less dependent on the market, more self-reliant, less specialized and more flexible. If the market allowed, they could work their land more intensively or switch to other products. Moreover these small farmers were able to earn income from sources other than agriculture. That was enough to clothe themselves and to eke out an existence, albeit on an extremely sober footing.

The differences among the regions did not, however, hide the fact that hired hands, maidservants and smallholders lived around the poverty line and that day-

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<sup>22</sup>M. van Geffen, 'Noord-Brabant' Bijlage no 12, 101–102. According to the Brabant report, there was an annual surplus of about five guilders with which to clothe a family of five children, meet miscellaneous household expenses, buy firewood, pay school fees etc.

<sup>23</sup>A report on Zeeland noted that maids and hired hands were well housed - on the farm or in the village - and that from the farmer 'they could obtain...at reasonable prices...grains, while most of them were granted a small plot of land for a modest rent on which to grow potatoes...' [Zeeland]... 13.

<sup>24</sup>J. Zeehuisen (1991), 'Statistieke bijdrage tot de kennis van den stoffelijken en zedelijken toestand van de landbouwende klasse in het kwartier Salland, provincie Overijssel', in van Zanden, 'Den zedelijke en materiële toestand der arbeidende bevolking ten platten lande'. Original source: *Tijdschrift voor Staathuishoudkunde en Statistiek* 6(1851), 380.

labourers regularly fell below it. ‘Over against the other members of society they are slaves...’ as one investigator summarized the existence of agricultural workers (hired hands and maidservants, smallholders and day-labourers):

‘...slaves in body and spirit, labouring, if they have work, from early morning to the evening to earn a meagre bit of bread for themselves and theirs...having almost no hope of ever raising themselves to the status of independent citizens in society...’<sup>25</sup>

The poor had not only a meagre, but also a vulnerable existence. The smallest setback led to big problems and immersed them in a bitter struggle for survival. But not only the poor were vulnerable. Other large groups of the population were in the same boat. Prosperity, property, well-being and health could be threatened in numerous ways. Economic development was one of the factors that made life in the city and the countryside unpredictable and vulnerable. We discussed the fickle economic circumstances in Chap. 3. Here we will focus on factors associated with natural capital: life with natural forces, the struggle against the waters, and living in a delta. Natural capital was (in combination with human and economic capital) the most important source of subsistence. At the same time it was the source of an existential uncertainty that also played a part in shaping the quality of life.

### 4.3 Cold, Heat and Storm<sup>26</sup>

Well-being was heavily influenced by weather and the seasons. Every season brought its own problems. In the winter the theme was the ‘cold.’ Harsh winters were a common and regular occurrence in the Netherlands from the fifteenth up to and including the nineteenth century – a period also known as the little ice age.

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<sup>25</sup>J.H. Beucker Andrea, ‘Rapport ingediend voor het vijfde, Landhuishoudkundig Congres te Leyden, 11, 12, 13 juni 1850, betreffende een onderzoek naar den zedelijken en materiëlen toestand der arbeidende bevolking ten platten lande en van den middelen om dien zoveel mogelijk te verbeteren. [Friesland]’, in van Zanden, ‘*Den zedelijke en materiële toestand der arbeidende bevolking ten platten lande*’. Original source: *Tijdschrift voor Staathuishoudkunde en Statistiek* 6(1851), 166.

<sup>26</sup>An exhaustive investigation into the history of the weather in the Netherlands has been undertaken by J. Buisman. This has resulted in a fascinating series with numerous data, observations, anecdotes, announcements etc. At the time of writing of the present volume, five volumes of Buisman’s study have been published, covering the period from about 800 to 1750. J. Buisman, *Duizend jaar weer, wind en water in de lage landen* (Franeker 1995–2006), volumes 1 t/m 5. Mr. Buisman has generously provided us with the manuscripts for the years 1800–1850. Page references refer to the manuscript. Thanks to the chronological references, when the time comes citations and data will be easily traceable in the volumes to published.

In the first volume Buisman provides a description of the threats that natural forces presented to the survival of the Dutch in the middle ages, see: J. Buisman, *Duizend jaar weer, wind en water in de lage landen* (Franeker 1995) Vol. 1, to 1300, 97–100. We presume that up to 1850 not much had changed. Buisman’s research does not in any case suggest that we should assume that the situation improved. After 1850 conditions would improve dramatically thanks to industrialization and modernization.

People were always wondering how harsh the winter would be and how long it would last. Did one have sufficient turf or wood to survive these months? Would food supplies be spoiled by the frost? The long and harsh winter of 1830 had already set in by the end of the previous November. On February 3 a farmer from Wirdum wrote that.

... the former bitter frost, ever-increasing up to now, is accompanied by a stiff east wind and clear skies. The frost has penetrated into the houses all the way to their hearths... This condition of frost and bitter cold will greatly deepen the misery of numerous people, in view of the general lack of turf and fuel, the need for food and shelter especially among the common folk. Potatoes that many still have in storage, and up to now have kept from the frost, will no longer be able to be saved from it...<sup>27</sup>

If during the winter months the supply of fuel was insufficient, a search for brushwood was undertaken or the few pieces of furniture were burned. There was no money to buy extra, expensive fuel. Commercial and industrial activity came to a standstill and unemployment rose precipitously. Appeals to poor relief were already frequent in normal winters, in harsh winters even more so: 'During harsh winters the worn out day-labourers, and those burdened by a large family and without work, are supported by the poor relief.'<sup>28</sup>

The coming of spring was joyously celebrated. At last there was light and mild weather. Nature came alive again and economic activities began to resume. What remained was the danger of frost. Now it was not the danger of freezing to death, but damage to crops for the farmer in the countryside and for the city dweller with his vegetable patch. Moreover if the frost held on too long, peat extraction was delayed which gave the turf too little time to dry, diminishing the quality.<sup>29</sup> The period of the so-called Ice Saints (saints with name days between 11 and 15 May) was taken to mark the definitive transition to summer; folk wisdom held that 'It can freeze until May, with the Ice-Saints it goes away.' But spring might hold another unpleasant surprise, namely long and heavy periods of rain. In such extremities, the windmills in the low Netherlands could no longer pump all the water away, especially when the rain was accompanied by a long windless period. Polders became swampy fields or were flooded. Farms were cut off from the world. Cows had to remain in the barn. Summer grain was lost. Sowing had to be postponed.<sup>30</sup>

<sup>27</sup>J. Buisman, *Duizend jaar weer, wind en water in de lage landen*, manuscript, 571 (to be published, presumably volume 7, 1825–1875).

<sup>28</sup>F.H.C. Drieling, 'Verslag over den toestand der arbeidende klasse, vooral ten plattelande, in de provincie Utrecht, en over de middelen tot verbetering van hunne zedelijke en stoffelijke welvaart', in van Zanden, *'Den zedelijke en materiële toestand der arbeidende bevolking ten platten lande'*. Original source: *Tijdschrift voor Staathuishoudkunde en Statistiek* 8(1853), 28.

<sup>29</sup>Hölsgens (2016), forthcoming.

<sup>30</sup>In the worst cases the dikes were breached. '... Much damage was done on May 14, 15 and 16 [of 1844] by the hard wind. In the new polder named Eijerland the summer barley and also a great quantity of oats have been beaten down by the hard wind and there are more places in Holland where much damage has been done. Due to the floodwaters on Kamper Island the houses were submerged to the attic and on Ameland hundreds of hay-wagons floated away...' Buisman, *Duizend jaar weer, wind en water...*, manuscript, 557, (to be published, presumably volume 7, 1825–1875).

The summer too had threats in store. Heavy thunderstorms or heat could destroy harvests. That led to food shortages in a matter of months. If these were not capably managed, famine ensued. Dry periods also affected cattle:

Due to the extreme drought, moisture escapes not only from the earth, but also to such an extent from ditches and pools that they dry up, and if this continues, the animals can no longer be maintained on the land. Among farmers there is no greater burden than cattle wandering aimlessly over the fields.<sup>31</sup>

Shortages of water, grass and hay could lead to massive starvation of cattle.<sup>32</sup> Sometimes in dry summers farmers were confronted with plagues of mice that destroyed supplies of hay and grain. Friesland had such a summer in 1832. The plague was so bad that children on one farm caught 230 mice in a few days.<sup>33</sup>

The fall was among other things the period of the autumn-storms. These could wreak havoc in the countryside: crops that were lost; chimneys that came down; roof tiles that flew through the air; roofs that were lifted up; houses that collapsed; runaway windmills that caught fire from the heat of friction; polders that flooded (because now there was too much wind for the windmills). The first November storm of the nineteenth century set the tone. In Woensel (Noord Brabant) the church tower blew over and in Haren 43 of the 60 houses were damaged. Crop failure was a regular occurrence. In addition to bad weather, crop diseases were also to blame, such as the infamous potato blight of 1845.

#### 4.4 The Vulnerable Dutch Delta<sup>34</sup>

The Dutch struggled heroically to survive in their delta. Nature's elements had to be resisted in their most extreme forms: heat waves, bitter cold, extreme storms, heavy and prolonged rainfall and hailstorms. The clothing and housing of large parts of the

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<sup>31</sup> Buisman, *Duizend jaar weer, wind en water...*, manuscript, 557, (to be published, presumably volume 7, 1825–1875).

<sup>32</sup> An example, although from the eighteenth century: In the second half of July in 1750 a heat wave occurred that was '...so unbearably hot that many people and animals very quickly died from the heat. The animals in the fields suffered so much from this heat that throughout our entire fatherland they produced half as much milk as usual ... and the fish in the water died by the thousands of pounds...it seemed as though the water was everywhere strewn with dead fish.

Cited in: J. Buisman, *Duizend jaar weer, wind en water in de lage landen*, (Franeker 2006), Vol. 5, 1675–1750, 833.

<sup>33</sup> Buisman, *Duizend jaar weer, wind en water...*, manuscript, 557, (to be published, presumably volume 7, 1825–1875).

<sup>34</sup> This section is based on: G.P. van de Ven, *Leefbaar laagland. Geschiedenis van de waterbeheersing en landaanwinning in Nederland* (Utrecht 1993); A. Bosch and W. van der Ham, edited by H.W. Lintsen, *Twee Eeuwen Rijkswaterstaat 1798–1998* (Zaltbommel 1998); A. Bosch, *Om de macht over het water. De nationale waterstaatsdienst tussen staat en samenleving 1798–1849* (Zaltbommel 2000, dissertation); A. van Heezik, *Strijd om de rivieren. Tweehonderd jaar rivierenbeleid in Nederland of de opkomst en ondergang van het streven naar de normale rivier* (dissertation TUDelft 2007); H.W. Lintsen and N. Disco, 'Het nijvere verbond', in: H.W. Lintsen et al.,

population were ill-suited to the struggle. Bodies had a hard time of it. Moreover there was the perpetual war against the waters. This was fought on three fronts: management of 'inner water,' the fight against the sea and the incessant struggles with the rivers. The plodding toil in the Dutch mud was a war of attrition, one that repeatedly came to a premature and inglorious end.

The management of inner water entailed two kinds of risks, namely the risk of soil subsidence and that associated with lakes and ponds. Extraction of peat by drainage initiated an unintended process of soil subsidence that could not be stopped. Hydraulic engineering projects like polder drainage and reclamations accelerated the process. Increased habitation and continuing investments behind the dikes and in the polders exacerbated the consequences and risks of calamities. Lakes and ponds, of which there were hundreds at the beginning of the nineteenth century, were the second problem in managing inner water.<sup>35</sup> Especially problematic were large bodies of inner water, like the Haarlemmermeer, where the wind could blow unhindered for long distances. But for all that there were few fatalities and material losses were not dramatic.

The risks in these two cases did not in the first place concern a lack of safety. The big problem was an excess of water. This came home to farmers when business as usual (e.g. sowing in spring) became impossible. Sometimes, however, too much water became catastrophic. Extremely heavy rainfall, exceedingly high 'outer water' or long periods of no wind preventing the windmills from draining enough water could all, separately or in combination, cause damage to crops or cattle.<sup>36</sup>

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*Made in Holland. Een techniekgeschiedenis van Nederland [1800–2000]* (Zutphen 2005), 75–93; H.W. Lintsen and A. van Heezik, 'In gevecht met de rivieren', in H.W. Lintsen et al., *Made in Holland. Een techniekgeschiedenis van Nederland [1800–2000]* (Zutphen 2005), 95–113.

<sup>35</sup> A brief and lucid description of the problems of polders and reclamations can be found in T. Stol. *Wassend water, dalend land. Geschiedenis van Nederland en het water* (Amsterdam 1993), particularly 21–58; 73–98.

<sup>36</sup> 'Danger' was not the motivation for the many reclamations. It was all about acquiring new land. The reclaimed land consisted for the most part of fertile clay. Investments could be attractive because the reclamations subsequently produced cereals, vegetables, meat and dairy products. Cereal and ground prices of course had to be favorable. Hence there was a clear relationship between the prices of cereal crops and the number of new reclamations. Initially private parties risked the investments. By the end of the eighteenth century governments were also taking initiatives.

King William I turned the reclamation of the Haarlemmermeer into a state project. The gigantic enterprise, he argued, provided work for thousands of families both in the short term (reclamation and the creation of an agricultural infrastructure) as well as in the long term (agriculture). It also produced an enormous amount of agricultural acreage to feed the kingdom and grow export products. The reclamation could also be financed from the sale of land. Public safety and loss of land due to erosion by waves were certainly important arguments for the reclamation. But they were not decisive in the deliberations. It was more the case that society no longer accepted the risks of flooding in the political and economic heart of the Netherlands and the destruction of agricultural products, capital goods and infrastructure. There was also opposition to the reclamation of the Haarlemmermeer. The lake was an important drainage catchment for the Rijnland Water Board, into which excess water from nearby polders could be pumped, whence it would gradually make its way to the sea. Where would that water be stored in the future? Similar problems with the

Danger from the sea was an especially impressive feature of Dutch history due to the storms accompanied by storm surges and claiming thousands of victims like the Saint Elisabeth Flood of 1421 and the All-Saints flood of 1570.<sup>37</sup> In 1825 there was another serious storm surge. Large parts of Groningen, Friesland and Overijssel were submerged. 380 people died.<sup>38</sup> The brackish water presumably caused additional indirect casualties. The following summer malaria erupted. In the Frisian countryside mortality exceeded normal levels by 4000 deaths.<sup>39</sup>

Storm surges were rare. Storms, on the other hand, occurred with great regularity. Damage was mostly local and the number of casualties small, but over the years losses could be significant and the number of deaths add up to hundreds. Acute loss of land did not occur on a large scale, but was a piecemeal affair. The old village of Egmond aan Zee, for example, gradually disappeared into the sea, church and all, between 1700 and 1850.

In general, invocations of the ‘waterwolf’ are assumed to refer to the struggle against the sea. But nature’s elements could also wreak havoc in the region of the large rivers and cause heavy flooding.<sup>40</sup> These were above all a result of harsh winters, frozen rivers, sudden thaws and ice floes. Under these conditions, large masses of ice blocked the flow of water. In the eighteenth century river floods occurred with great frequency: 1726, 1740, 1751, 1757, 1781, 1784, 1799. In the first half of the

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management of drainage catchments was expected for other reclamations. They required extra facilities. S.J. Fockema Andrea, ‘Wat er aan de droogmaking van de Haarlemmermeer voorafging’, in *Med. Der Kon. Ned. Akademie van Wetenschappen, afd. Letterkunde*, 18 (1955), 379–428; H.W. Lintsen, R.A. Lombaerts and R. Moerenhout, ‘De droogmaking van het Haarlemmermeer: Wind of stoom’, in: M.L. ten Horn-van Nispen, H.W. Lintsen and A. J. Veenendaal: *Nederlandse ingenieurs en hun kunstwerken. Tweehonderd jaar civiele techniek* (Zutphen 1994).

<sup>37</sup> Surprisingly, the last big storm surge before 1850 took place in 1717. The northern part of the country was hardest hit. In Groningen 2200 died and 37,000 head of cattle were lost. In the entire coastal area of the Netherlands, Germany and Scandinavia, 14,000 dead were mourned. Then for more than a century it remains ‘quiet’ on the coast. The storm surge of 1825 was regarded as a serious one. But precisely what was a period of ‘quiet’ with no storm surges? A heavy storm like that in January 1808 didn’t make it into the history books. The epicenter was in Zeeland. The island of Walcheren suffered greatly. The Westkappele sea-dike was damaged. Near Domburg part of the dunes were blown away. Vlissingen and Middleburg were partly flooded. People died in Vlissingen, including a number of children. Household attributes, clothing and goods floated everywhere. Houses collapsed. Quays disintegrated. Walls were dislocated. Similar scenes were enacted in Zeeuws Flanders and other islands. More than 50 people died. Cattle were lost. And of course the storm tormented ships at sea in the coastal waters. Buisman, *Duizend jaar weer, wind en water...*, manuscript, 431 en 469, (to be published, presumably vol. 6, 1750–1825)

<sup>38</sup> Buisman, *Duizend jaar weer, wind en water...*, manuscript, 431 en 469, (to be published, presumably vol. 6, 1750–1825).

<sup>39</sup> Buisman, *Duizend jaar weer, wind en water...*, manuscript, 431 en 469, (to be published, presumably vol. 6, 1750–1825).

<sup>40</sup> See for the following: Lintsen and Van Heezik, ‘In gevecht met de rivieren’, 97–100; Van Heezik, *Strijd om de rivieren*, 44–52; Van de Ven (ed.), *Leefbaar laagland*, 227–232; Bosch and Van der Ham, *Twee Eeuwen Rijkswaterstaat*, 55–58; Bosch, *Om de macht over het water*, 177–184.



nineteenth century similar dramas occurred in 1805, 1809, 1820, 1827 and 1850. Before 1850 river floods were never absent from the collective memory. They were frequent occurrences.

That said, it is quite surprising how few deadly casualties there were. The river flood of 1809 was the most catastrophic ever and caused 275 deaths. The Dutch were in part able to defend themselves against these disasters. They generally inhabited the higher portions of the landscape. It was also the case that due to the many dikes the polders flooded one after the other in a gradual process. The inhabitants had time to get themselves and their cattle to safety. Moreover every farm had a rowboat that could be used to save people and cattle in case of a flooded polder.<sup>41</sup>

Inner water, the sea and the rivers all harbored specific risks for living in a delta. Water was also a problem in another respect. Life in the subsiding low portion of the Netherlands was increasingly confronted with saline water and the deterioration of water quality. Agriculture suffered. Drinking water supply became problematic. This makes water quality another important theme. The theme was broader than just increasing salinity. Water polluted by feces and organic waste was also part of the problem.

## 4.5 Organic Waste As the Biggest Environmental Problem<sup>42</sup>

As we now know, water is an important medium of contamination for infectious diseases. Bacteria and viruses flourish in water. Most of them are hardly a problem for humans. But among them are notorious perpetrators of disease. Some are responsible for innocent-sounding infections like diarrhea. But well into the twentieth century they were life-threatening for many inhabitants of the Netherlands, especially those with a poor condition. Other infectious diseases have never lost their fearsome auras, for example cholera and paratyphus. All these infectious diseases are transmitted in large part by drinking polluted water. But spoiled or contaminated food is also an important source of infection. The same goes for bathing or washing in polluted water. This knowledge was all but lacking in the first half of the nineteenth century. Only a small vanguard – a new generation of medical

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<sup>41</sup>P. van Dam, *De amfibische cultuur: een visie op watersnoodrampen* (VU Amsterdam 2010, inaugural lecture).

<sup>42</sup>H. van Zon, 'Openbare hygiëne', in: H. Lintsen et al. (ed.), *Geschiedenis van de techniek in Nederland: De wording van een moderne samenleving 1800–1890* (Zutphen 1993), volume II, 49–55. Further: H. van Zon, *Een zeer onfrisse geschiedenis: Studies over niet-industriële vervuiling in Nederland, 1850–1920* (dissertation, Rijksuniversiteit Groningen 1986); A. van der Woud, *Koninkrijk vol sloppen: Achterbuurten en vuil in de negentiende eeuw* (Amsterdam 2010); H. Buijter and H. Lintsen, 'De stad, de stank en het water', in: H. Lintsen et al., *Made in Holland. Een techniekgeschiedenis van Nederland [1800–2000]* (Zutphen 2005), 55–73.

doctors, engineers and architects: the ‘hygienists’ as they would later be called – were aware of the problem.<sup>43</sup> Their activities had as yet little impact. The problems were most visible in the cities.

By today’s standards all Dutch cities in the past were nothing short of filthy. Various studies have provided us with graphic images of the stench and the filth. Markets, squares and streets were strewn with vegetable waste, meat and cadavers and the feces of cows and pigs. Hide tanners were infamous for the harmfulness of their ‘fumes and effluents.’ Paints and other substances spread foul odors in the open air. In general, waste products of home-workers and workshops polluted many locations in the city.

That was also true of household garbage. Almost all households dumped their garbage in the street, on the city ramparts, or in the canals. Domestic sewers led directly to the street or the nearest water. Cesspools were often poorly maintained and rarely emptied. City dwellers dumped their feces in gutters and canals. The situation was most abysmal in alleyways and slums. Not only because of the massive ‘impurity and filth’ but also because of the dampness of the dwellings and the ‘different households living in very close proximity.’<sup>44</sup>

Though all cities were dirty, there was still an important distinction. In many cities in the low-Netherlands the situation was worse than in the high-Netherlands. And that had everything to do with water management. Water was a defining aspect of the Dutch situation. By today’s standards, the low-lying Netherlands of the nineteenth century was a gruesome world: soggy polders, sluggish flows of water, crowded slums, a glut of organic waste and heavily polluted surface and ground water.

In the 1850s the western part of the country (North and South Holland, Zeeland and Utrecht) had the highest mortality rates.<sup>45</sup> Whether we look at large or small cities, town or countryside, men, women or infants – in all cases death was a more immanent presence in this region. It is noteworthy that in the west there was hardly any difference between the city and the countryside. Apparently the problem of water quality – closely associated with increasing salinity – pervaded the entire region and influenced rates of mortality everywhere.

In the rest of the country there was a clear difference between town and country. Organic wastes and polluted water (in combination with food quality) contributed to higher mortality rates in the city due to diarrhea, cholera and other diseases of the digestive tract. Moreover, mortality due to tuberculosis, flu, measles, whooping

<sup>43</sup>E.S. Houwaart, ‘Medische statistiek’, in: H. Lintsen et al. (ed.), *Geschiedenis van de techniek in Nederland. De wording van een moderne samenleving 1800–1890* (Zutphen 1993), Vol. II, 19–45.

<sup>44</sup>Quotes from: *Verzameling van stukken, betrekkelijk de aanstelling eener Commissie van Geneeskundig toezicht te Amsterdam en daarin opgenomen een serie Rapporten* (Amsterdam 1797). For a commentary on these reports see: van Zon, ‘Openbare hygiëne’, 49–55. Further: van Zon, *Een zeer onfrisse geschiedenis. Studies over niet-industriële vervuiling in Nederland, 1850–1920*, 29–32.

<sup>45</sup>See for the following, F.W.A. Poppel, *Stad en platteland in demografisch perspectief: de Nederlandse situatie in de periode 1850–1960* (Voorburg 1984) internal report nr.19, ch. 2, Sterfteverschillen tussen stad en platteland, 7–21.

cough etc. was significantly higher in the city. These respiratory diseases could spread more easily in the cities due to the high population density.

From today's perspective, the contamination of the environment with organic waste presents itself as the biggest environmental problem of society in the past. Whether contemporaries also saw things this way is another matter to which we shall return.

## 4.6 Poverty, Vulnerability and Sustainability

The quality of life in the Netherlands was *the* problem of well-being and sustainability in the mid-nineteenth century and that for two reasons. In the first place a considerable part of the population lived around and under the poverty line (an estimated 21%). In the second place existence was vulnerable due to the open economy, natural forces, the risks of the delta and epidemic diseases. All inhabitants of the Netherlands shared in this vulnerability but the rich were better able to protect themselves than the poor. They could attempt to escape from epidemics, flee the city and closet themselves in their country estates. But they could not escape altogether. That is evident from the differences in life-expectancy.

The average life-expectancy at birth in the period 1840–1851 was 37 years (men 36.1 year and women 38.5 years). A sample of the Dutch population in the period 1840–1859 distinguished among the life expectancies of different social classes. It is striking that the upper-bourgeoisie had the lowest life expectancy (about 30 years), while farmers possessed the highest (about 43), followed by the small-bourgeoisie (with about 39 years), skilled workers (with 38 years) and unskilled workers (36 years). The differences in life expectancy disappeared by the age of 15. Presumably the low figure for the upper classes had to do with breast feeding. Upper class babies received less breast feeding than other babies, were fed more often with porridge and milk, looked blooming and healthy, but had significantly less resistance to diseases.

Rich and poor did not differ so much in the struggle for existence, in which the poor would inevitably get the worst of it, but in the struggle for the basic necessities of life, which the rich could acquire more easily and more amply. In these respects they did not face big uncertainties, did not have to occupy themselves with scraping an existence together, were well-clothed and lived in relative comfort. Their quality of life was in those respects considerably higher than that of the poor.

Poverty and vulnerability had many faces in the first half of the nineteenth century. They differed per period, per region and per season. They had another face in the city than in the countryside. They were experienced differently by smallholders than by day-labourers and skilled workers. Much of the differences nevertheless disappeared in the catch-all category of 'pauperism.' That was how the elite and the middle classes referred to it. They recognized it as a problem and asked themselves how to deal with it.

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