

Chronology Calamities

(bad crop years, dry and wet years, earthquakes, famines, food crises,
pandemics, plagues, starvations, wars, ...)

1309 – **Earthquake** in Lisbon and Algarve (on the 22 February)¹.

1310 – There are records of **pestilence** outbreaks that killed many people².

1315/1319 – **Wet** years that destroyed the crops and caused great **famines**, particularly acute in the years of 1315/1317³.

1318 – **Earthquake** in Portugal (on the 21 September)⁴.

1319/1324 – **Civil war** between king D. Dinis and his son, crown prince D Afonso⁵.

1321 – **Earthquake** in Portugal (on the 9 December)⁶.

1325/1326 – **War** between king Afonso IV and his half-brother Afonso Sanches⁷

1331 – **Famine** spread due to the dryness of the year.

1333/1334 – Another **drought** year led to crops failure, rising of food prices and **hunger** throughout the kingdom⁸.

1337 – **Earthquake** in Lisbon (on the 24 December)⁹.

¹ S Maria (1744:I, 319); Mendonça (1758:43); Costa e Fonseca (2007).

² Pizarro (2005); Sousa (2005); Rodrigues (2008).

³ Graça (2000); Rodrigues (2008).

⁴ Mendonça (1758:43); Costa e Fonseca (2007); Pizarro (2005); Sousa (2005); Tavares *et allia* (2005).

⁵ Moreno (1997); Pizarro (1998); Sousa (2005).

⁶ S Maria (1744: III, 466); Costa e Fonseca (2007); Tavares *et allia* (2005). Mendonça (1758:44) date this earthquake of the previous year (1320).

⁷ Ferreira (2007).

⁸ Graça (2000); Sousa (2005).

1340 – **Earthquake** in Lisbon (in September)¹⁰.

1344 – A major **Earthquake** was felt in Lisbon and surroundings (on the 1st July)¹¹.

1347 – **Earthquake** in Coimbra (on the 28 November)¹².

1348 – **Earthquake** in Coimbra (on the 24 July)¹³.

1348/1349 – **Black Death**. Known as «*the great slaughter*», the pestilence started in September 1348, lasted at least 3 months and killed about 1/3 of the kingdom's inhabitants¹⁴. In the beginning of 1350 the municipalities still complained about the lack of people caused by the plague, and the consequent fall of farm yields¹⁵.

1349 – **Crisis of manpower**¹⁶.

1350 – **Earthquake** in Lisbon¹⁷.
- **Plague** throughout the country¹⁸.

1353 – **Earthquake** in Silves (Algarve)¹⁹.

1355 – **Earthquake** in Lisbon and several municipalities of Alentejo and Algarve (on the 11 July and 4 August)²⁰.

⁹ Costa e Fonseca (2007); Sousa (2005); Tavares *et allia* (2005).

¹⁰ Costa e Fonseca (2007); SPES.

¹¹ Costa e Fonseca (2007); SPES.

¹² *Livro da Noa*.

¹³ Tavares *et allia* (2005).

¹⁴ *Livro da Noa*; S Maria (1744:III, 106).

¹⁵ Marques (1986); Barroca (2003); Sousa (2005); Gabinete de Estudos Olisiponenses (<http://geo.cm-lisboa.pt>).

¹⁶ Sousa (2007).

¹⁷ Costa e Fonseca (2007).

¹⁸ Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

¹⁹ Costa e Fonseca (2007).

- **Dry** year («*the driest men saw* »)²¹.
- Great **lack** of **bread** throughout the country²².

1356 – Strong **earthquake** in Coimbra, Alcobaça, Lisbon and surroundings, Setúbal, Silves and other places from the South of the country (on the 24 August). The quake lasted 15 minutes, destroyed many buildings and gave rise to **starvation**²³.

- **Plague** outbreak²⁴.

1358 – **Plague** outbreaks²⁵.

1361/1363 – **Plague** outbreak²⁶.

1364/1366 – **Food shortages** and **hunger**²⁷.

1365 – **Plague** outbreak²⁸.

1366 – **Earthquake** in Lisbon, Algarve (Silves, Loulé) and other places (on the 18 May)²⁹.

1369 – In December a big **fire** destroyed many buildings of some of Lisbon's main streets (R Nova and R da Ferrara up to the Quay of Ver-o-Peso).

1369/1371 – First “Fernandina” **war** with Castile.

1371/1372 – **Grain crisis**³⁰.

²⁰ *Livro da Noa*.

²¹ *Livro da Noa*.

²² Ferreira (2007)

²³ *Livro da Noa*; Tavares *et allia* (2005).

²⁴ Marques (1986); Gomes (2005); Sousa (2005).

²⁵ Graça (2000).

²⁶ Marques (1986); Gomes (2005); Pimenta (2005); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

²⁷ Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

²⁸ Gomes (2005); Pimenta (2005).

²⁹ Costa e Fonseca (2007).

- Popular **rebellions** or "unions" against the wedding of King Fernando³¹.

1372 – Huge **floods** due to the fact that this was a very rainy year³².

- **Plague** outbreak³³.

1372/1373 – Second “Fernandina” **war** with Castile.

1373 – King Henry II of Castile laid **siege** to Lisbon and set fire to the neighbourhoods outside the walls of the city³⁴.

- Popular **rebellions** or "unions" in several cities and villages all over the kingdom³⁵.

1374/1376 – **Epidemics, drought** and **famine**³⁶.

1376 – **Bad crop** due to this year’s severe **drought**³⁷.

1380 - **Plague** outbreak³⁸.

1381/1382 – Third “Fernandina” **war** with Castile.

1382 – **Drought** year³⁹.

1383/1385 – **Popular uprisings** in several cities and villages of the country⁴⁰.

1383/1385 – “**Revolution**” (1383) and **war** with Castile.

³⁰ Nascimento (2011)

³¹ Gomes (2005); Rodrigues (1996 b).

³² Ferreira (2007); Nascimento (2011)

³³ Gomes (2005).

³⁴ Gomes (2005).

³⁵ Gomes (2005)

³⁶ Marques (1986); Gomes (2005); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

³⁷ Loureiro (2000); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

³⁸ Gomes (2005).

³⁹ Loureiro (2000).

⁴⁰ Rodrigues (1996 b).

- King John of Castile besiege Lisbon (in 1384), but the **pestilence** forced him to raise the siege⁴¹.

1384 – The **plague** outbreak of this year is considered to be one of the greatest in Portugal.

1384/1387 – **Bad crop** years. **Hunger**⁴².
– **War** with Castile

1389 - **Pestilence**⁴³.

1391/1392 – **Food crisis** in Portugal and all over Europe due to bad crop years⁴⁴.

1392 - **Earthquake** in Coimbra and other places (on the 8 Jun)⁴⁵.

1393/1394 – In Europe those were excessively **hot** and **dry** years⁴⁶.

1394 – **Cereals crisis. Famine**⁴⁷.

1395 – **Earthquake** in Coimbra and other places (on the 20 August)⁴⁸.
- **Plague** in Torres Vedras (Lisbon district)⁴⁹.

1397/1400 – **Bad crop** years. **Hunger**⁵⁰.

14th (last quarter)/**15th** (1st half) – **Climate variations** with alternation of dry and wet years.

⁴¹ Marques (1986).

⁴² Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁴³ Marques (1986).

⁴⁴ Ferreira (2007); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁴⁵ *Livro da Noa*.

⁴⁶ Taylor (1838).

⁴⁷ Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁴⁸ *Livro da Noa*.

⁴⁹ Rodrigues (1996 a).

⁵⁰ Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

1400 - Epidemic⁵¹.

1403 – **Hunger** throughout the kingdom, but particularly «*terrible*» in Oporto⁵².

1404 – **Earthquake** in Lisbon and other places (on the 3 May)⁵³.

1408 – **Plague** outbreak⁵⁴.

1412/1414 - Severe **drought** and **food shortages** in Lisbon and all over the country⁵⁵.

1414/1416 – During these years the **plague** hit more intensively the cities of Lisbon and Porto and was the cause of death of the Portuguese queen (Philippa of Lancaster) in 1415⁵⁶.

1418 – **Cereal crisis**⁵⁷.

1420 – **Plague'** outbreak in Vila Nova de Gaia (in front to Oporto)⁵⁸.

1422/1426 – **Cereal crisis** and **hunger**⁵⁹.

1423 – **Epidemic** outbreak⁶⁰.

1426 – The **harvest** was **low** this year⁶¹.

⁵¹ Marques (1986).

⁵² Ferreira (2007); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁵³ *Livro da Noa*.

⁵⁴ Marques (1986); Barroca (2003).

⁵⁵ Oliveira (1885:248); Ferreira (2007); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁵⁶ Oliveira (1885:457); Marques (1986).

⁵⁷ Graça (2000); Duarte (2005).

⁵⁸ Costa (1789:298)

⁵⁹ Graça (2000); Duarte (2005); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁶⁰ Marques (1986).

⁶¹ Oliveira (1885:314).

1427 – **Plague** outbreaks⁶².

1429 – **Epidemic** outbreak⁶³.

1431 – **Food** shortages in Lisbon⁶⁴.

1432/1433 – **Epidemic** outbreaks⁶⁵.

1434 – **Floods** in the river Douro⁶⁶.

1435 – **Earthquake** in Alenquer (Lisbon district)⁶⁷.

- **Epidemic** outbreaks⁶⁸.

1436 – **Food** shortages in Lisbon.

1436/1441 – Repeated **cereal crisis**⁶⁹.

- **Grain shortages** and **epidemic** outbreaks (1437/1439) in Torres Vedras (Lisbon district).

1437/1441 – Recurring **epidemic** outbreaks, which was especially acute in Lisbon, in 1437/1438⁷⁰.

1438/1441 – **Scarcity** and **high prices** of grains in Portugal and all through Europe⁷¹.

⁶² Marques (1986); Barroca (2003).

⁶³ Marques (1986); Graça (2000); Duarte (2005).

⁶⁴ Oliveira (1885:319).

⁶⁵ Marques (1986); Graça (2000); Duarte (2005); Gomes (2006); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁶⁶ Loureiro (2000).

⁶⁷ Costa e Fonseca (2007).

⁶⁸ Graça (2000).

⁶⁹ Graça (2000); Duarte (2005); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁷⁰ Oliveira (1885:458); Marques (1986); Graça (2000); Duarte (2005); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁷¹ Ferreira (2007)

1440 – **Wheat shortage** in Lisbon.

1445/1446 – **Starvation**⁷².

1448 – **Epidemic** outbreaks in different regions of the kingdom⁷³.

- **Insurrections** in some cities of the kingdom, specifically in Oporto⁷⁴.

1449 – **War** between the young King Alfonso V and his uncle, the prince regent Peter⁷⁵.

1452/1455 – **Cereals crisis, famine and plague**⁷⁶.

1453/1454 – **Epidemic**⁷⁷.

1456/1458 – **Plague**⁷⁸.

1458 – Records of **epidemic** outbreaks in several parts of the country, namely in Lisbon between March and September⁷⁹.

1459/1461 – **Starvation**⁸⁰.

1461 – Records of occurring an outbreak of great **pestilence** in Lisbon⁸¹.

1464 – Older news of **floods** of the Mondego river in Coimbra⁸².

1464/1469 – **Epidemic** outbreaks in different places, namely in Setúbal⁸³.

⁷² Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁷³ Marques (1986).

⁷⁴ Gomes (2006).

⁷⁵ Gomes (2006).

⁷⁶ Graça (2000); Gomes (2006); Ferreira (2007); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁷⁷ Barroca (2003).

⁷⁸ Marques (1986); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁷⁹ Oliveira (1885:459).

⁸⁰ Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁸¹ Oliveira (1885:459).

⁸² Loureiro (2000).

1467/1468 – **Cereal crisis** and **hunger**, especially in Algarve⁸⁴.

1469 – **Epidemic outbreaks** in several parts of the kingdom.

1472/1473 – **Cereal crisis**⁸⁵.

1473/1474 – Years during which «*the whole earth seemed on fire*»⁸⁶.

1475/1478 – **Cereal crisis. Starvation**⁸⁷.

1477/1479 – The **plague** devastated Coimbra and spread to Lisbon⁸⁸.

1480 – **Earthquake** in Lisbon⁸⁹.

1480/1481– **Plague** in Lisbon and all over the kingdom, from whose disease died king Afonso V⁹⁰.

1483/96 – During these years are recorded several outbreaks of **plague** in Lisbon and elsewhere in the kingdom⁹¹.

1484/1488 – **Famine** years⁹².

1486 – **Scarcity of grains** in Lisbon.

- **Plague** in Oporto and Alhandra (Lisbon suburbs).

1488 – **Scarcity of meat** in Lisbon.

⁸³ Marques (1986); Graça (2000); Ferreira (2007).

⁸⁴ Graça (2000); Gomes (2006); Ferreira (2007); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁸⁵ Graça (2000).

⁸⁶ Taylor (1838).

⁸⁷ Graça (2000); Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁸⁸ Graça (2000).

⁸⁹ Costa e Fonseca (2007).

⁹⁰ Oliveira (1885); Gomes (2006).

⁹¹ Oliveira (1885).

⁹² Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

1488/1489 – Outbreak of **plague** in Lisbon.

1490 - In the Cortes of Évora people complained that the equalization of measures gave rise to a general **rise of prices**.

1490/1491 – **Famine** years⁹³.

1491 – **Plague** throughout the kingdom.

1494/1496 – Years of **famine**⁹⁴.

1500 – **Earthquake** in Lisbon⁹⁵.

1502 – **Plague**.

1503/1505 – **Adverse climatic** events: winter and spring months exceptionally rainy led to **lost crops** or too insufficient to feed the population⁹⁶.

1503 – **Hunger** and outbreak of **epidemics**⁹⁷.

1504 – **Earthquake** in Lisbon, Ribatejo (Tagus river valley) and Algarve⁹⁸.

1505/1507 – **Typhoid** epidemic which causes many deaths. The « *brave and cruel epidemic*» started in Lisbon (in 1505) and spread to the provinces (until 1507)⁹⁹.

1507 – **Bad crop** year in Braga (North of the country)¹⁰⁰.

⁹³ Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁹⁴ Costa (<http://www.ricardocosta.com/cronologia-da-peninsula-iberica-379-1500>).

⁹⁵ Costa e Fonseca (2007).

⁹⁶ Oliveira (1997a).

⁹⁷ Graça (2000).

⁹⁸ Costa e Fonseca (2007).

⁹⁹ Oliveira (1885:464); Graça (2000).

¹⁰⁰ Oliveira (1997a)

1507/1509 – **Epidemic** in Guimarães, Póvoa do Varzim (North of Portugal) and Lisbon¹⁰¹.

1510/1511 – Outbreak of **plague** throughout the kingdom¹⁰².

1512 – Registered a major **Earthquake** in Lisbon and surroundings, Condeixa-a-Velha (Coimbra district) and other places (on the 28 January)¹⁰³.

1513 – **Plague**.

1515/1516 – **Bad crop** years, namely in Braga (North of the country)¹⁰⁴.

1518 – **Plague** in Lisbon¹⁰⁵.

1520/1521 – **Plague** all over the kingdom, but particularly violent in Oporto (in 1521)¹⁰⁶.

1521 – Due to the **severe drought** this was a «**sterility year**»¹⁰⁷.

1521/1522 – **Bad crop** years, **hunger** and **epidemics**¹⁰⁸.

1522 – **Grain crises. Hunger**¹⁰⁹.

1523/1525 – New outbreak of **epidemics**, namely of lethargic encephalitis in Lisbon that oblige to isolate the city¹¹⁰.

1526 – Major **flood** in Douro's river¹¹¹.

¹⁰¹ Polónia (1999)

¹⁰² Buescu (2005); Graça (2000); Polónia (1999).

¹⁰³ SPES.

¹⁰⁴ Oliveira (1997a)

¹⁰⁵ Buescu (2005); Polónia (2005).

¹⁰⁶ Oliveira (1885:470); Buescu (2005).

¹⁰⁷ Viana (1997); do Loureiro (2000).

¹⁰⁸ Oliveira (1997a); Graça (2000); Polónia (2005).

¹⁰⁹ Polónia (2005).

¹¹⁰ Oliveira (1885:470); Buescu (2005); Polónia (2005).

- 1527** – **Plague** in Lisbon. King João III is constrained to leave the city¹¹².
- 1528** – **Earthquake** in Lisbon, Batalha - Alcobaça (in the district of Leiria) and other parts of the country (on the 12 March)¹¹³.
- 1530** – Violent outbreak of **plague** in Lisbon¹¹⁴.
- 1531** – Strong **earthquake** in Lisbon and surroundings followed by a tsunami (on the 26 January)¹¹⁵. It was estimated that about 2% of the population died, 25% of the buildings were damaged and 10% destroyed¹¹⁶.
- **Plague** all over the country.
 - **Climb** of **food prices**, mainly cereals and olive oil.
- 1531/1532** – Years of **production shortages**¹¹⁷.
- 1535** – **Drought** and **Starvation**¹¹⁸.
- 1536** – **Earthquake** in Lisbon and in the Mediterranean basin¹¹⁹.
- 1538** – **Epidemic outbreaks** in Viana do Castelo (North Portugal)¹²⁰.
- 1539/1540** – Years of **famine, plague** and **sterility** in the Entre Douro e Minho (North Portugal)¹²¹.

¹¹¹ Aires (2000); Arquivo de eventos históricos (meteopt.com).

¹¹² Graça (2000); Polónia (2005).

¹¹³ Costa e Fonseca (2007); SPES.

¹¹⁴ Buescu (2005).

¹¹⁵ According to S Maria (1744:I, 43), there will have been a previous one, on the 7 January, which was felt all over the country.

¹¹⁶ S Maria (1744:I, 161); Oliveira (1885:472); Buescu (2005); Graça (2000); Polónia (2005); Tavares (2005); SPES.

¹¹⁷ Oliveira (1997a).

¹¹⁸ Oliveira (1997a); Polónia (2005).

¹¹⁹ Tavares *et allia* (2005).

¹²⁰ Polónia (1999).

¹²¹ Oliveira (1997a); Polónia (1999).

1540 – The **harvests** have been very **poor** this year¹²².

– **Bread shortage** in Lisbon¹²³.

1545/46 – Years of **crop failure**, **climb** of food **prices** and **hunger**, for the most part in North Portugal¹²⁴.

1545/1551 – **Financial crisis**.

1546 – Big **floods** in the Mondego river compelled the monks to leave the Coimbra's monastery of S Domingos¹²⁵.

1551 – Large **earthquake** in Lisbon that destroyed around 200 buildings and buried more than 2.000 people.

1555 – **Bad crop** year causes lack of bread in the country¹²⁶.

1559 – Another year of **scarce harvest**, mostly in Oporto and in the Northern provinces¹²⁷.

1561 – **Bad crop** year¹²⁸. **Drought** in Alentejo and Ribatejo.
- **Plague** outbreaks¹²⁹.

1564/1565 - **Winter** «*extremely severe over all Europe*»¹³⁰.

1566 - **Epidemic** outbreaks¹³¹.

1568 – **Famine** due to the lack of bread.

¹²² Oliveira (1885:541).

¹²³ Oliveira (1885)

¹²⁴ Oliveira (1997a).

¹²⁵ Loureiro (2000).

¹²⁶ Oliveira (1997a).

¹²⁷ Oliveira (1997a).

¹²⁸ Polónia (2005).

¹²⁹ Polónia (2005).

¹³⁰ Taylor (1838).

¹³¹ Polónia (2005).

- **Plague** outbreaks in the Northwest of the kingdom¹³².

1569/1570 – **Plague** in Lisbon, where the number of victims almost reached 60.000¹³³. Known as “*the great plague for being the most horrific known so far*”, this bubonic epidemic quickly extends to all country and leads the king to authorize, for the first time, the municipalities to tax the population to cover its costs¹³⁴.

1570 – Great **pest** in the province of Minho (North Portugal)¹³⁵.

1573/1575 – **Floods** and **bad crop** years¹³⁶.

1574/75 – **Famine** and **pestilence** in the North of the country, especially in Oporto, Braga and Guimarães¹³⁷. Only in this last municipality these calamities killed around 7.000 people¹³⁸.

1575 – **Earthquakes** in Lisbon (in Jun and July).

- **Starvation** all over the kingdom¹³⁹. Many people from the Northern provinces (Minho and Beiras) migrate towards Lisbon¹⁴⁰.

1576 – **Shortage of grains** all over the country, but particularly in the Northern districts (Beira, Entre Douro e Minho and Trás-os-Montes) and the capital of the kingdom (Lisbon)¹⁴¹.

¹³² Polónia (1999).

¹³³ Or more than 80.000 just in Lisbon, according to Oiveira (1885:472).

¹³⁴ Oliveira (1885:472); Abreu (2004); Capelo (2000); Cruz (2006); Graça (2000); Polónia (2005).

¹³⁵ Correia (2009).

¹³⁶ Rodrigues (2008).

¹³⁷ Oliveira (1997a).

¹³⁸ Machado (2010).

¹³⁹ Oliveira (1885:593); Polónia (2005).

¹⁴⁰ Cruz (2006); Rodrigues (2008)

¹⁴¹ Oliveira (1885: 600-601).

1577 – Outbreak of **plague** in Oporto and several other places in the kingdom¹⁴².

1579/1580 – **Bad crops, hunger and plague**¹⁴³.

1579/80 – 1582/83 – **Plague** hit the country, killing about 35.000 people in Lisbon and 20.000 in Évora¹⁴⁴.

1580 – **Invasion** of the country by the Castilians armies. Philip II of Spain enters in Portugal, takes possession of its crown and begins to reign under the name of Philip I¹⁴⁵.

1580/1590 – Extremely **cold** years¹⁴⁶.

1581 – Due to **food shortages** in spring, **prices climbed**.

1586 – **Epidemic** outbreaks in Viana do Castelo (North Portugal)¹⁴⁷.

1587 – **Earthquake** and strong **storms** in Loulé (Algarve)¹⁴⁸.
- Francis Drake **plunders** the sea coasts of Algarve.

1592 – **Rebellions** in Oporto¹⁴⁹.

1595 – Popular **tumults** in Lisbon¹⁵⁰.

1596 – Faro (in Algarve) is **sacked**¹⁵¹.

¹⁴² Capelo (2000); Polónia (2005).

¹⁴³ Known as small plague. Olival (2006); Oliveira (1885:477); Polónia (2005).

¹⁴⁴ S Maria (1744:III, 42) date the beginning of this plague outbreak from September 1579. See also Costa (1789:298-299)

¹⁴⁵ Olival (2006); Polónia (2005).

¹⁴⁶ Oliveira (2008)

¹⁴⁷ Polónia (1999).

¹⁴⁸ Loureiro (2000); SPES.

¹⁴⁹ Olival (2006)

¹⁵⁰ Capelo (2000)

1596/1600 – Years of **famine, hunger, food crises** and **pestilence**¹⁵².

1597 – **Floods** in the Douro and Guadiana rivers¹⁵³.

1598 – **Earthquake** (on the 28 July)¹⁵⁴.

- The British fleet laid **siege** to Lisbon.

1598/1603 – The **plague**, that started in Lisbon, on October 1598, ravaged the country for the next five years, especially the cities of Lisbon, Coimbra and Évora, and killed about 80.000 people¹⁵⁵.

1600 – **Bad crop** year and **food crisis**.

1601 – **Fire** in the All Saints Hospital (Lisbon main hospital).

1602 – **Floods** in the Guadiana river¹⁵⁶.

1608 – In Oporto were detected signs of **starvation**¹⁵⁷.

1609 – **Flooding** in the river Guadiana forced the monks to abandon the monastery of S Francisco da Ponte¹⁵⁸.

1613 – **Typhus** outbreaks in Lisbon¹⁵⁹.

- **Drought** in the South (Alentejo)¹⁶⁰.

1614 - **Earthquake**¹⁶¹.

¹⁵¹ Capelo (2000).

¹⁵² Capelo (2000); Graça (2000); Rodrigues (2008).

¹⁵³ Loureiro (2000).

¹⁵⁴ Capelo (2000); Olival (2006).

¹⁵⁵ S Maria (1744:III, 172); Oliveira (1885:487); Capelo (2000); Graça (2000); Rodrigues (2008).

¹⁵⁶ Loureiro (2000)

¹⁵⁷ Silva (1985)

¹⁵⁸ Loureiro (2000)

¹⁵⁹ Rodrigues (2008).

¹⁶⁰ Loureiro (2000)

¹⁶¹ Tavares *et allia* (2005).

- **Hunger** in Oporto¹⁶².

1615/1616 – These were «very **dry** years all over Europe»¹⁶³.

1619/1622 - **Crisis** of major **agricultural crops**¹⁶⁴.

1620 – **Bad year** for **cereals** crop¹⁶⁵.

- **Earthquake**¹⁶⁶.

- **Typhus** epidemic¹⁶⁷.

1621– **Famine** and **rebellions** in the North of the country¹⁶⁸.

1621/1622 - The **sterility** was so great in the marshy lands of the river Tejo, that some institutional landlords, like the All Saints Hospital, release their tenants from the obligation to pay this year' rents¹⁶⁹.

- **Food scarcity** in Lisbon.

1622 – The Dutches **attacked** the Portuguese sea coast (Lisbon, Oporto, Aveiro, ...) and the Muslims the Algarve coast¹⁷⁰.

- In Spring Lisbon and all kingdom suffered from **famine**. «*There was no wheat or vegetables in the town and its surroundings. Neither the speculators did business because they had nothing to sell*»¹⁷¹.

1623 – **Rise** of food **prices** and **famine** until the mid of the year¹⁷².

- Huge anti-Castilian **rebellion** in Lisbon¹⁷³.

¹⁶² Silva (1985)

¹⁶³ Taylor (1838).

¹⁶⁴ Oliveira (1989).

¹⁶⁵ Capelo (2000)

¹⁶⁶ Tavares *et allia* (2005).

¹⁶⁷ Capelo (2000); Graça (2000).

¹⁶⁸ Capelo (2000)

¹⁶⁹ "Receita do pão que veio da Lezíria", *Hospital de São José*, Livro 610 (fls. 234-239), ANTT.

¹⁷⁰ Capelo (2000)

¹⁷¹ *Cit in* Rodrigues (2008).

¹⁷² Capelo (2000)

1624/1625 – **Food scarcity** in Lisbon.

1625/1626 – Huge **flooding** in Oporto¹⁷⁴.

1626 - A violent outbreak of **diphtheria** affects Lisbon¹⁷⁵.

1627 – **High prices** of grain and **hunger**¹⁷⁶.

1628 – Anti-Castilian **manifestations** in Lisbon and Oporto¹⁷⁷.

– **Food scarcity** in Lisbon.

1629 – Fiscal **rebellions** in Oporto, Santarém and Alcácer do Sal¹⁷⁸.

1629/1633 – Sudden **drop** of **cereal production**, mainly in the north-western provinces, caused a general **crisis** of **hunger** and **high** of **grains prices**¹⁷⁹.

1630 - **Earthquake**¹⁸⁰.

- Severe **drought** in the province of Ribatejo (north Est Lisbon) led populations to carry out many processions begging for rain¹⁸¹.

- Anti-Jewish **rebellions** in several cities, namely in Lisbon, Coimbra and Évora¹⁸².

1630/1632 - The **typhoid fever** spreads by the city of Coimbra¹⁸³.

¹⁷³ Capelo (2000)

¹⁷⁴ Silva (1985); Loureiro (2000).

¹⁷⁵ Rodrigues (2008).

¹⁷⁶ Capelo (2000)

¹⁷⁷ Costa (1789:305-306) Capelo (2000)

¹⁷⁸ Capelo (2000)

¹⁷⁹ Oliveira (1989). For the years 1730/1631 see also Oliveira (1888:359)

¹⁸⁰ Tavares *et allia* (2005).

¹⁸¹ Loureiro (2000).

¹⁸² Capelo (2000)

¹⁸³ Rodrigues (2008).

1631 – Popular **rebellion** in Beja¹⁸⁴.

1631/1632 – **Food scarcity** in Lisbon.

1634 – **Bread** shortages in Alentejo and Beiras¹⁸⁵.
- Popular **tumults** in Oporto and Viana¹⁸⁶.

1635/1637 – **Food scarcity** in Lisbon.

1635/1638 – Years of **social unrests** and **popular insurrections** in the North West provinces¹⁸⁷.

1636 – Fiscal **rebellions** in the North-East of the country (Vila Real e Chaves)¹⁸⁸.

1636/1637 - Outbreaks of **smallpox** and **fevers** in the Lisbon region, Alentejo and Algarve¹⁸⁹.

1637 – Fishermen's **riot** in Lisbon¹⁹⁰.

1637/1638 - Fiscal **rebellions** in the provinces, mostly in Alentejo and Algarve, but with outbreaks in the north and northeast¹⁹¹.

1638 – Popular **rebellions** in Guimarães (North-West)¹⁹².

1639 – Popular **rebellions** in Coruche (Santarém district), Serpa and Moura (Alentejo)¹⁹³.

¹⁸⁴ Capelo (2000)

¹⁸⁵ Capelo (2000)

¹⁸⁶ Capelo (2000)

¹⁸⁷ Oliveira (1989)

¹⁸⁸ Oliveira (1973); Capelo (2000).

¹⁸⁹ Rodrigues (2008).

¹⁹⁰ Capelo (2000)

¹⁹¹ Oliveira (1996 a:330); Capelo (2000)

¹⁹² Capelo (2000)

¹⁹³ Capelo (2000)

1641 – Popular **rebellions** in Braga (North-West)¹⁹⁴.

– **Food scarcity** in Lisbon.

1641/1644 – **Crisis of cereal production**, mostly in the north-western provinces¹⁹⁵.

1642 – The Castilians **attacked** the Algarve region and laid **siege** to Alcoutim and Castro Marim (in the context of the wars of Restoration)¹⁹⁶.

1642/1647 – **Demographic crisis** particularly acute in the north-western provinces¹⁹⁷.

1644 - **Battle** of Montijo and siege of Elvas (in the context of the wars of Restoration)¹⁹⁸.

1645/1646 – **Plague** in Algarve. In Tavira the epidemic killed 10% of the population¹⁹⁹.

1646/1647 – **Food scarcity** in Lisbon.

1647 - **Cereals shortage** affects particularly the city of Lisbon²⁰⁰.

1647/1650 - The bubonic **plague** reappeared in the country and acquires «*great virulence*» in Lisbon in 1649²⁰¹.

1650/1651 – **Food scarcity** in Lisbon.

1653 – **Battle** of Arronches (in the context of the wars of Restoration)²⁰².

¹⁹⁴ Capelo (2000)

¹⁹⁵ Oliveira (1989).

¹⁹⁶ Capelo (2000)

¹⁹⁷ Oliveira (1989).

¹⁹⁸ Capelo (2000)

¹⁹⁹ Rodrigues (2008).

²⁰⁰ Capelo (2000)

²⁰¹ Rodrigues (2008).

1654 – The **drought** was so severe in the province of Alentejo (South of the country), that the bed of the River Guadiana reached to dry²⁰³.

1655 - Outbreak of **famine** throughout the kingdom²⁰⁴.

1657 – Naval **siege** of Lisbon by the Dutch that last for 3 months²⁰⁵.

1657/1659 - **Epidemics** of typhus and influenza outbreaks²⁰⁶.

1659 – New outbreak of **famine** throughout the kingdom²⁰⁷.

- **Battle** of the “Linhas de Elvas” (in the context of the wars of Restoration)²⁰⁸.

1660/1661 – **Food scarcity** in Lisbon.

1661 – **Bad crop** year and subsequent **famine**²⁰⁹.

- Fiscal **rebellions** in Oporto (May-October)²¹⁰.

1662/1663 – New outbreaks of **typhus** and **influenza**²¹¹.

1663/1665 - **Battles** of Ameixial, Castelo Rodrigo and Montes Claros (in the context of the wars of Restoration)²¹².

1664/1665 – Very **cold winter** in Coimbra that destroyed olive production²¹³.

²⁰² Capelo (2000)

²⁰³ Loureiro (2000)

²⁰⁴ Capelo (2000)

²⁰⁵ Capelo (2000)

²⁰⁶ Rodrigues (2008).

²⁰⁷ Capelo (2000)

²⁰⁸ Capelo (2000)

²⁰⁹ Capelo (2000)

²¹⁰ Costa (1789:307-309); Capelo (2000)

²¹¹ Rodrigues (2008).

²¹² Capelo (2000)

²¹³ Daveau (1997).

1665 – **Food scarcity** in Lisbon.

1667/1668 – **Food scarcity** in Lisbon.

1677 - Major **floods** of the Mondego river in Coimbra, forced the nuns to abandon the convents of Santa Clara and Santa Justa²¹⁴.

1680 - Bubonic **plague**²¹⁵.

1683 – One of the **driest years** in the region of Elvas (North Alentejo)²¹⁶.

1693 – One of the **coldest** and **dry** winters on people memory²¹⁷.

1694/1695 – Years of **food shortage, high prices** and "intolerable" **hunger** throughout the country²¹⁸.

1696 - **Earthquake**²¹⁹.

1697 – The wine and olive harvests were affected by the **frosts** that fell in Jun²²⁰.

1699 – On the 27 October began a period of «*terrible earth tremors*» that hit mostly Lisbon and lasted for much of November²²¹

1704/1711 – Foreign (Castilian) attacks against the country borders (Beira and Alentejo) in the frame of the **War** of the Spanish Succession²²².

1708/1709 – **Bad crop** years, **high** of **food prices** and **famine**²²³.

²¹⁴ Loureiro (2000)

²¹⁵ Alves (2005).

²¹⁶ Loureiro (2000)

²¹⁷ Cabral (1948).

²¹⁸ Cabral (1948).

²¹⁹ Tavares *et allia* (2005).

²²⁰ Cabral (1948).

²²¹ S Maria (1744:III, 246).

²²² Capelo (2000)

- 1709** – This winter was so **cold** all over Europe that was called, «*by distinction, the cold winter*». The olive plantations from the South of France «*were almost entirely destroyed (...) and the citron and orange trees suffered extremely in the finest parts of Italy*»²²⁴.
- 1718** – The weather was «*extremely hot and dry all over Europe*»²²⁵.
- 1719** – Strong **earthquake** in Lisbon and Algarve²²⁶.
- 1720** – Cholera **plague** in the Algarve region²²⁷.
- 1722** – Strong **earthquake** in the south of the country (Algarve on the 27 December)²²⁸.
- 1723** – **Yellow fever** in Lisbon²²⁹. It is estimated that the number of deaths will have been about 6.000²³⁰.
- 1724** – A strong **earth tremor** was felt all over the country (Lisbon, Oporto, Santarém, Elvas, Portimão, ...) on the 12 October²³¹.
- A **hurricane** hit Lisbon on the 19 November and destroyed 62 ships²³².
- 1727** – On December, 28, started the largest **flood** of the river Douro during the 18th century. The flood caused over a hundred deaths; destroyed fields,

²²³ Cabral (1948).

²²⁴ Taylor (1838).

²²⁵ Taylor (1838).

²²⁶ Capelo (2000)

²²⁷ Capelo (2000)

²²⁸ S Maria (1744:III, 546); Tavares *et allia* (2005); SPES.

²²⁹ Graça (2000); Alves (2005); Estrela (2006).

²³⁰ Oliveira (1855:493).

²³¹ S Maria (1744:III, 162); SPES ; Capelo (2000).

²³² S Maria (1744:III, 360-361); Capelo (2000).

houses, wine and olive-oil warehouses and boats at the river mouth. The damages were valued at more than 150.000 cruzados²³³.

1729 – Another big **flood** in Douro river²³⁴.

1731 – Big **floods** on the Tagus River²³⁵.

1732 – **Earthquake** in Loulé (Algarve)²³⁶.

1734 – Strong **earth tremors** in the Algarve region, above all in Portimão and Faro²³⁷.

- A big **fire** in one of the main streets of Lisbon (Rua Nova do Almada) dislodged 59 families²³⁸.

- Major **flooding** in Douro river.

1738 – **Earth tremor** in Portimão (Algarve)²³⁹.

- **Hurricane** in Figueiró dos Vinhos (Leiria district, in Jun).

1739 – Several **earth tremors** were felt in Portimão (Algarve, in October).

- Major **flooding**, caused by great waterspouts, was recorded in the basins of the river Tagus, Mondego and Douro (in December)²⁴⁰.

1740 – Great **flood** in Tagus river (January).

- Another very **cold** year all over Europe. In Spain and Portugal the snow «lay eight or ten feet deep»²⁴¹.

²³³ S Maria (1744:III, 551); Costa (1789; 300); Loureiro (2000); Arquivo de eventos históricos (meteopt.com).

²³⁴ Costa (1789; 300).

²³⁵ Capelo (2000).

²³⁶ Capelo (2000).

²³⁷ Capelo (2000).

²³⁸ Capelo (2000).

²³⁹ Capelo (2000).

²⁴⁰ Costa (1789:300); Loureiro (2000); Taborda (2006); Arquivo de eventos históricos (meteopt.com).

1741 – **Fire** in S Francisco Monastery (Lisbon).

1744 – One more **cold** winter in Europe. In Évora (South Portugal) the winter was so cold, that «*people could not creep out of their house for heaps of snow*»²⁴².

1745/1749 – Very **cold** winters all over Europe²⁴³.

1748 - **Earthquake**²⁴⁴.

1749 - Heavy rains cause **floodings** in the province of Minho (January).

1751 – Huge **floods** in Beja (January).

- **Earthquake** in Moncorvo (on the 19 December)²⁴⁵.

1754 - Big **fire** in the neighborhood of Ribeira Grande in Lisbon (October).

1755 – A **fire** completely destroys the Prince Street, in Lisbon (February).

- A catastrophic **earthquake** followed by a **tsunami** and a huge **fire** destroyed completely Lisbon (on the 1st November) and had big impact in other places (Algarve, for instance). Several aftershocks were felt in the next days and weeks (namely on the 8, 11 and 21 November). The number of deaths may have reached 40,000 people²⁴⁶.

1757 – **Rebellion**, in Oporto, against the tavern' privileges conceded to the Company of Alto Douro's vineyards (February)²⁴⁷.

²⁴¹ Taylor (1838).

²⁴² Taylor (1838).

²⁴³ Taylor (1838).

²⁴⁴ Tavares *et allia* (2005); SPES.

²⁴⁵ SPES.

²⁴⁶ SPES. Amongst the extensive literature on this earthquake we highlight Araújo (2005) and Rolo (2008).

²⁴⁷ Costa (1789;309-312).

1758 – **Flooding** in the in the basins of the rivers Douro, Vouga and Guadiana²⁴⁸.

1759/1764 – **Cereal crisis** in Southern Europe²⁴⁹.

1761/1763 - Spanish–Portuguese **War**, also known as Fantastic War, in the context of the Seven Years' War.

1762 – The Spanish troops **invaded** Portugal by the northern and north eastern provinces (Trás-os-Montes, in May, and Beiras, in August), occupied the towns of Miranda, Bragança, Chaves and Almeida and left the country by the end of the year, after the signature of an armistice between the Anglo-Portuguese and Franco-Spanish armies.

1763 – The year was too **rainy** in the north (Braga and Guimarães) affecting the crops and causing many illnesses and deaths²⁵⁰.

1765 – **Earth tremor** in Lisbon (on the 1st January and the 13 September).

1766/1768 – The winters were, once more, very **cold** all over Europe²⁵¹.

1767/1770 – **Crisis** in Northern provinces characterized by **bad crops**, food shortages, dizzying **rise** of **prices** and **epidemic** outbreaks²⁵².

1774 – Big **flood** in Douro river²⁵³.

1779 – **Drought** year²⁵⁴.

²⁴⁸ Costa (1789:300); Loureiro (2000).

²⁴⁹ Rodrigues (2008).

²⁵⁰ Oliveira (1996 b).

²⁵¹ Taylor (1838).

²⁵² Oliveira (1996 b).

²⁵³ Costa (1789: 300).

²⁵⁴ Capelo (2000).

- 1784** – A **hurricane** caused serious damages in Santarém and the Ribatejo region²⁵⁵.
- 1788** – **Flooding** in the rivers Douro and Mondego²⁵⁶. In this one the water crossed the Coimbra bridge and the boats entered the church of Sta Cruz²⁵⁷.
- 1789/1793** – **Crop crisis** (high prices of grains) in the Northern provinces related with **climatic changes**²⁵⁸.
- 1790** - The **weather** was too **rough** during this year's winter²⁵⁹.
- 1793** – **Drought** year in Algarve²⁶⁰.
- 1796** – Strong **earth tremor** in Lisbon²⁶¹.
- Very **cold** winter, in particular in Lisbon²⁶².
- 1798/1799** – The **harsh** winter of 1798/1799 (very rainy and cold) emphasized the **crisis** of **food** shortage and **climb** of **prices** that already lasted for several years, especially in the North²⁶³.
- 1800** – The **rain** that fell almost continuously during winter and spring **ruined** the wheat and barley **harvests**²⁶⁴.

²⁵⁵ Capelo (2000).

²⁵⁶ Costa (1789:300-304).

²⁵⁷ Loureiro (2000).

²⁵⁸ Oliveira (1997b).

²⁵⁹ Oliveira (1997b).

²⁶⁰ Cartas de Francisco Gomes de Avelar, Bispo do Algarve, para o P. Bonifácio Ferreira em 12.2 e 14.5.1793. Biblioteca da Ajuda.

²⁶¹ Capelo (2000).

²⁶² Capelo (2000).

²⁶³ Oliveira (1996 b).

²⁶⁴ Silva (1815); Silva (1993),

- 1807/1808** – First **French Invasion** (November 1807/September 1818). The French army, under Junot's command, invaded the country by its eastern borders (Segura and Elvas), occupied the major cities, but was compelled to leave the country after being defeated by the Anglo-Portuguese troops at the Roliça and Vimieiro battles (17 and 21 August 1807).
- 1808** - **Insurrections** against the French in numerous localities (Lisbon, Oporto, Coimbra, Évora, Faro, Bragança, Olhão, ...)
- 1809** – Second **French Invasion** (February/May 1809). Soult invaded Portugal by its northern border (Vila Nova da Cerveira and Chaves), but was forced to leave the country a few months later owing to the stout resistance he encountered.
- In March the city of Oporto was **attacked** and **plundered** by Soult's army, and thousands of its inhabitants (about 4.000) died while fleeing the city by the bark's bridge (29 March).
- 1810** – The city of Coimbra is **occupied** and **plundered** by Massena's army (between 1 and 7 October).
- 1810/1811** – Third **French Invasion** (July 1810-April 1811). Once more the French army, this time leaded by Massena, invaded Portugal by its north-eastern border (Almeida), was defeated by the Anglo-Portuguese troops (at Buçaco, Pombal, Redinha and Sabugal battles) and must leave the country definitively.
- 1811** – Outbreak of **typhus** in Lisbon, with origin in the army. This disease made many victims in Lisbon, whose population had increasing considerably «*by continuing emigration of provinces in consequence of the war*»²⁶⁵

²⁶⁵ Oliveira (1885:495).

1816/1817 – Extremely **cold** and **dry** years. 1816 is known as the year without summer and 1817 was considered to be «*the scarcest known in the kingdom;(once) the happier (farmers) will just reap the seed*»²⁶⁶.

1820 – Start of the **Liberal Revolution** in Oporto (on the 24 August).

1821 – Another very **rainy year**, with **floods** and **crops destroyed**²⁶⁷.

1823 – **Flood** in the rivers Douro and Guadiana²⁶⁸.

1828/1834 – **Civil war** opposing liberals to royalists (partisans of the ancient regime).

1829/1830 – **Freezing years**²⁶⁹.

1832/1833 – Oporto's **siege** (July 1832/August 1833) by the royalists in the frame of the liberal struggle. Beyond the bullets, the Oporto's population was decimated by the **cholera**, the **typhus** and the **famine**.

1833 - **Cholera morbus** outbreak kills more than 40 thousand people²⁷⁰.

1836 – The year begins under this sign: **riots**, **tumults** and **wanton**²⁷¹.

- On July 14 there was a «dreadful **fire**» in Lx that destroyed the former palace of the Estaos (north of Rossio) that had been rebuilt after the 1755 earthquake²⁷².

1839 – The weather was too **cold and wet** in the North (Minho and Trás-os-Montes provinces), loosing this year's crops²⁷³.

²⁶⁶ Franzini (1817); Oliveira (2008); Miranda (2010).

²⁶⁷ Oliveira (2008).

²⁶⁸ Garcia (1996).

²⁶⁹ Oliveira (2008)

²⁷⁰ And about 13.5 thousand just in Lisbon between April and October. Oliveira (1885:497). See also Graça (2000).

²⁷¹ Aldemira (1937).

²⁷² Aldemira (1937).

1845/1846 – **Bad crop years** all over Europe.

1847/1849 - **Typhoid** and **yellow fever epidemics**²⁷⁴.

1850/1851 – **Yellow fever** outbreaks in Oporto²⁷⁵.

1852/1854 – Successive **floods** in the Mondego river destroyed the crops of the adjacent fields²⁷⁶.

1854 - Excessively **dry** year²⁷⁷.

- **Cholera** outbreaks in the South of the country (Alentejo and Algarve provinces)²⁷⁸.

1855 – Extremely **rainy** year²⁷⁹.

- Huge **floods** in the Tagus and Mondego rivers²⁸⁰.

1855/1857 - Spread of **Cholera Morbus** and **yellow fever** throughout the country, but more intensely in Lisbon where it infected more than 10% of the population (16.000 to 18.000 people)²⁸¹.

1856 - **Earthquake** in the south of the country (Algarve) that caused major damages in the Sotavento (on the 12 January)²⁸².

- Due to the fact that it **rain** continuously from January till Jun, this was the **worse crop** year of the 19th century²⁸³.

²⁷³ Oliveira (2008)

²⁷⁴ Oliveira (1885:503); Graça (2000).

²⁷⁵ Alves (2005).

²⁷⁶ Melo (2010).

²⁷⁷ Monteiro (2001).

²⁷⁸ Melo (2010).

²⁷⁹ Monteiro (2001); Melo (2010).

²⁸⁰ Melo (2010).

²⁸¹ Estrela (2006). Between October 1855 and November 1856 those diseases killed around 3,5 thousand people and in 1857 5,6 thousand. Oliveira (1885:500 and 502). See also Graça (2000); Melo (2010).

²⁸² SPES.

1856/1857 – **Epidemic** outbreaks spread all over the country²⁸⁴.

- The **oidium** crisis reaches its peak.

1856/1858 – The **yellow fever** is spreading in Lisbon infecting more than 10% of the population (16.000 to 18.000 people) and killing about 5.000²⁸⁵.

1858 - **Earthquake** in Moncorvo (on the 19 March) and in Setúbal (on the 11 November)²⁸⁶.

1860 – **Economic crisis**.

- Big **flooding** in the rivers Douro and Mondego²⁸⁷.

1862/1863 – **Drought** years²⁸⁸.

1872 – Large **floods** in the Tagus and Mondego rivers²⁸⁹.

1874/1875 – Extremely **dry** years²⁹⁰.

1876 - Very **wet** year²⁹¹.

- **Floods** in the rivers Douro, Tagus and Guadiana, where this was regarded as one of its biggest floods (December)²⁹².

1879 - **Yellow fever** outbreaks in Lisbon²⁹³.

1881/1885 - The **phyloxera** crisis reaches its climax in the Douro's valley.

²⁸³ The fall in production was huge and reached all cultures. Cf., Lains & Silveira (1998); Melo (2010).

²⁸⁴ Melo (2010).

²⁸⁵ Estrela (2006).

²⁸⁶ SPES.

²⁸⁷ Aires *et al* (2000), Loureiro (2000).

²⁸⁸ Monteiro (2001); Melo (2010).

²⁸⁹ Loureiro (2000); Melo (2010).

²⁹⁰ Loureiro (2000); Monteiro (2001).

²⁹¹ Monteiro (2001).

²⁹² Garcia (1996); Loureiro (2000); Arquivo de eventos históricos (meteopt.com).

²⁹³ Alves (2005).

- 1885** – Large **flooding** in the Ribatejo region, exacerbated by the destruction of dykes for the protection in the Tagus valley²⁹⁴
- 1890** –**Earthquake** in the Oeste subregion of Batalha-Alcobaça (on the 21 February)²⁹⁵.
- 1891** – **Economic and financial crisis.**
- 1895** - Extremely **rainy** year²⁹⁶.
- 1898** – Year of great **drought** and **poor harvests**, which forced to import large quantities of cereals²⁹⁷.
- 1899** – **Earthquake** in Lisbon and surroundings (on the 13 August)²⁹⁸.
- **Bubonic plague** in Oporto²⁹⁹.
- 1901** – **Cold** winter. The river Tagus *is «full of drift»* and the provinces *«have been swept by a snow storm»* (in December)³⁰⁰.
- 1907** –**Flood** in the river Guadiana (November)³⁰¹.
- 1909** – **Earthquake** in Lisbon and surroundings that completely destroyed the village of Benavente (on the 23 April)³⁰².
- Violent storms and major **floods** throughout the country. In the river Douro this was one of its biggest floods (between 17 and 25 December)³⁰³.

²⁹⁴ Loureiro (2000).

²⁹⁵ SPES.

²⁹⁶ Monteiro (2001).

²⁹⁷ Loureiro (2000).

²⁹⁸ SPES.

²⁹⁹ Alves (2005).

³⁰⁰ Arquivo de eventos históricos (meteopt.com).

³⁰¹ Garcia (1996).

³⁰² SPES.

³⁰³ Loureiro (2000); Arquivo de eventos históricos (meteopt.com).

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