

## AGRICULTURE AND FORESTRY TRENDS IN PORTUGAL

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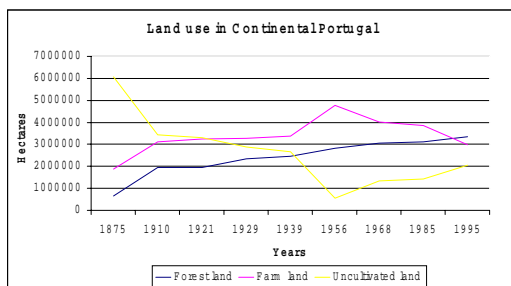
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## A LONG RUN VIEW

- Current trends in land use started in mid 50s

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## LAND USE: 1875-1995



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## LAND USE: 1875-1995

- **1875-50s:**
  - Decline in uncultivated land
  - Increase in farmland and forest land
  - Some complementarity farming/forestry
- **Since 50s:**
  - Increase in uncultivated land
  - Decrease in farmland
  - Increase in forest land
  - Increasing separation farming/forestry

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## 1875-1950s

- **"Extensive" and "introverted" agricultural growth**
  - **"Extensive" growth**
    - Increase in farmland through decrease in uncultivated land
    - Only small farm outmigration (1536000 farmers in 1890; 1523000 farmers in 1950)
    - Farm labour productivity growth
  - **"Introverted" growth**
    - Population growth (416000 inhabitants in 1878; 7920000 in 1950)
    - Growth in real income (+78.2% growth in GDP per capita between 1875 and 1950)

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## 1875-1950s (cont.)

- **"Extroverted" growth of forest production**
  - Increase on forest land through decrease in uncultivated land
  - **Pine forests increase**
    - Public initiative (arborização da dunas e baldios)
    - Domestic market orientation
  - **Cork oak forests increase**
    - Private initiative (proprietários e industriais)
    - Export orientation:
      - Mainly non manufactured cork until the Spanish Civil War
      - Mainly manufactured cork since then

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## 1875-1950s (cont.)

- **Exports in 1875:**
  - Total: 23407 contos
  - Agricultural products: 20000 contos (85,4%)
  - Forest products: 1369 contos (5,8%)
  - Export/Import ratio: agricultural and forest products (116,9%)
- **Exports in 1946:**
  - Total: 4587000 contos
  - Agricultural products: 1110544 contos (24,2%)
  - Forest products: 1189147 contos (25,9%)
  - Export/Import ratio: 50,5% for agricultural products and 1020,5% for forest products

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## SINCE 1950s

- **"Intensive", "introverted" and slow growth in farm production**
  - **"Intensive" growth**
    - Decrease in farmland
    - Decrease in farm labour force (1523000 farmers in 1950; 771300 in 1991)
    - Intensive animal production and increase in agricultural imports (corn and soybeans for feedstuffs)
  - **"Introverted" growth**
    - Population growth (7920000 inhab. in 1950; 9327000 inhab. in 1991)
    - Growth in real income (+ 455,9% growth in GDP per capita between 1950 and 1991)
    - Income elasticities of food products between 0,5 and 0,7 in the 50s and 60s
    - Increase in demand for animal food products

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## SINCE 1950s (cont.)

- **"Extroverted" growth of forest production**
  - Increase in forest land through decrease in farmland
  - **Pine forests decrease**
    - Decline in public initiative
    - Rural outmigration and worsening in risk of forest fires
    - Exports of sawnwood for palets
  - Decrease and then increase (since mid 80s) in **cork oak** forests
    - Private initiative (forest owners)
    - Export orientation
  - **Eucalyptus plantations increase**
    - Private initiative (forest owners and industries)
    - Export orientation
  - Big change in **regional allocation of public funds** since EEC accession (shift from North to South)

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## 1981-1999

### REGIONAL SHIFT IN ALLOCATION OF PUBLIC FUNDS TO FORESTRY

Distribution by species of afforestation and stand improvement

	World Bank	1 <sup>st</sup> EU programme	2 <sup>nd</sup> EU programmes
Maritime Pine	49.3 %	34.1 %	26.7 %
Eucalyptus	28.8 %	4.9 %	0.3 %
Cork Oak	1.4 %	36.0 %	38.1 %
Other	20.5 %	25.0 %	34.9 %

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## SINCE 1950s (cont.)

- **Exports in 1981:**
  - Total: 256.913.000 contos
  - Agricultural products: 22.100.000 contos (8,6%)
  - Forest products: 46.100.000 contos (17,9%)
  - Export/Import ratio: 20,4% for agricultural products and 342,5% for forest products
- **Exports in 1999:**
  - Total: 4.647.800.000 contos
  - Agricultural products: 273.151.000 contos (5,9%) – 7th position
  - Forest products: 489.247.000 contos (10,5%) – 4th position
  - Export/Import ratio: 36% for agricultural products and 135,3% for agricultural products

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## FUTURE PERSPECTIVES (cont.)

- **Agriculture: need for "extroverted" growth**
    - Population growth: 0,1% per year
    - Growth in real per capita income: 2% per year
    - Income elasticity of food demand: 0,25
- ⇓
- Expected growth in domestic demand for food: **0,6% per year**
- ⇓
- Need to increase exports
  - Need to increase non food agricultural production
  - "Quality strategy"

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## FUTURE PERSPECTIVES (cont.)

### ■ Forestry

- "Natural" increase in forest area
- Decrease in export/import ratio since mid 80s
- Current system of public finance may not be sustainable after 2006
- Opportunities to set up a better public finance system may be lost (1996 Forest Law, tax reforms, CAP Reform, etc.)
- "New on the kids on the block": forest owners' associations
- Forest contractors: currently having equipment in excess capacity

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## FUTURE PERSPECTIVES (cont.)

### ■ STRONG PREDOMINANCE OF NON INDUSTRIAL PRIVATE FORESTRY

	TOTAL	CONIFERS	EUCALYPTUS	CORK OAK
<b>NIPF</b>	<b>76.9%</b>	<b>66.1%</b>	<b>60.3%</b>	<b>90.4%</b>
Communal	11.7%	26.5%	3.8%	0%
Industrial	7.6%	2.2%	35.9%	3.8%
Public	2.6%	5.2%	0%	0%
Others	1.2%	0%	0%	5.8%

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## FUTURE PERSPECTIVES (cont.)

### ■ HIGH RISK OF FOREST FIRE (especially pine forests)

- Between 1981 and 1998:
  - 877 804 ha of forests burnt (48 767 ha/year)
  - 764 204 ha of shrublands burnt
- MORE THAN THE AREA REFORESTED AND AFFORESTED (820 890 ha)

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## FUTURE PERSPECTIVES (cont.)

### ■ FOREST STILL ONE OF THE **MAIN SECTORS** IN THE PORTUGUESE ECONOMY:

- 2.6% of the GDP
- 5<sup>th</sup> major employer (225000 workers)
- 4<sup>th</sup> major exporter (was 2<sup>nd</sup> for several years)

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## FUTURE PERSPECTIVES (cont.)

### ■ Forestry (cont.)

- Eucalyptus:
  - Need for renovation of 4th rotation stands
  - Competition from overseas
- Pine:
  - Problems from previous period get worse
  - Need for collective organisation of forest owners to reduce the high risk of forest fires
- Cork oak:
  - Competition from synthetics
  - Some changes in location patterns for industry
  - Supply shortages
  - Vitality problems in some stands (sudden death of trees)

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## FUTURE PERSPECTIVES (cont.)

### ■ PREDOMINANCE OF **SMALL SCALE** FORESTRY

Average size of forest holding	% total forest land
1.35 ha	6.3 %
<b>2.3 ha</b>	<b>37.6 %</b>
<b>5.1 ha</b>	<b>22.8 %</b>
12.3 ha	8.2 %
86.3 ha	25.1 %

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## FUTURE PERSPECTIVES (cont.)

- Forest and rural development is essentially an **organisational and human resource issue**: who is going to take care? With whom?
- Opportunities and need for **voluntary collective action forms** (forest owners associations and others)
  - "Extroverted" growth
  - "Quality strategy"
  - Land ownership distribution
  - Increasing separation farming/forestry
  - Risk of forest fires
  - Absenteeism problem
  - Multifunctionality problem
  - Increasing "environmentalisation" of public policies
  - Increasing outsourcing of public functions
  - CAP Reform (decoupling)
  - Conservation value: willingness of the owner to pay for conservation of his property<sup>9</sup>

## FUTURE PERSPECTIVES (cont.)

- How?
  - Joint provision of public goods and **private services**
  - What kind of private services?: technically and economically complementary of forest owner's activity on the forest and farm holding ("**conservation**" motive)
  - What kind of private services: opportunities for **complementary "specialisation"** (within the same forest and farm holding): "intensive" forest management + "conservative" land management

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## FUTURE PERSPECTIVES (cont.)

- But ...
  - "Natural" extensification (spontaneous forests) and "natural" degradation (fires); need for **conservation of the resource**
  - Also need for "**conservation**" of **industrial base** (keep forestry/industry coupling)
  - Breakdown of **total economic value** of forest production (1998 prices)
    - Wood: 29,9%
    - Cork: 26,6%
    - NWFP: 33,0%
    - Indirect use value (carbon storage, watershed management): 5,8%
    - Conservation value (to owners and others): 4,7%

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## FUTURE PERSPECTIVES (cont.)

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"Fragmented" and "regionally differentiated"  
industry & multifunctionality  
scenario  
(pine, eucalyptus, cork oak)

- Increase in "spontaneous" and planted forests (eucalyptus, cork)
  - More broadleaved species (aesthetic value)
- Grazing (if CAP payments for mountain areas and livestock remain)
  - Recreation, hunting

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## FUTURE PERSPECTIVES (cont.)

- But ...
  - **Forest income**:
    - Very weak **profit motive**
  - Highly concentrated **income distribution**:
    - Only for the size classes above **50 ha** forestry might generate an income equal or above the salary of a worker with an elementary school educational level
    - This corresponds to **1% of the number of NIPFO**, **61% of the total forest area of NIPFO** and **80,3% of the value of total forest production of NIPFO**

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## FUTURE PERSPECTIVES (cont.)

- But ...
  - "**Fragile equilibrium**" problem:
    - weak (but non zero) forest owners' willingness to pay for intensive management (mainly "conservation" motive) + "fragmented" local awareness (special interests of local authorities, firemen associations, etc.) + no long term commitment from the Central Government
    - High risk of loss from forest fires and other risks
    - Increasing opportunity costs for forest management
  - "**Critical mass**" problem: absence of sufficient critical mass at local level for sustained and good leadership

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