



RUHR-UNIVERSITÄT BOCHUM

**Destination Management in a Time of Climate Change and Systemic Crisis  
The case of Majorca, Balearic Islands**

International Geographical Union Pre-Conference Symposium  
Transforming and Managing Destinations:  
Tourism and Leisure in a Time of Global Change and Risks

University of Trier  
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Centre for Mediterranean Studies



Universitat de les Illes Balears  
Departament de Ciències de la Terra  
Grup d'Investigació sobre Sostenibilitat i Territori

# The *Balearization* reloaded by the capitalism crisis

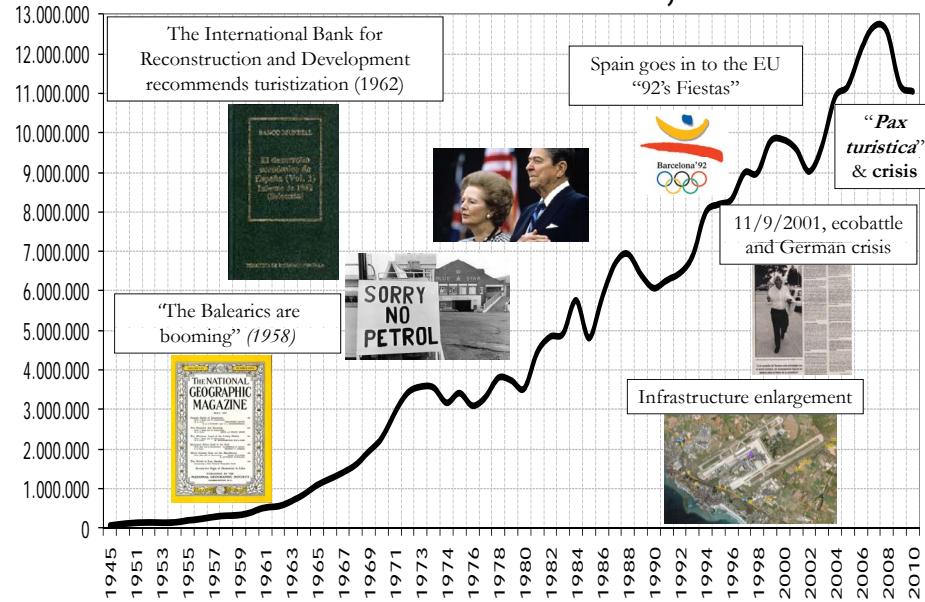


Platja de Palma and S'Arenal

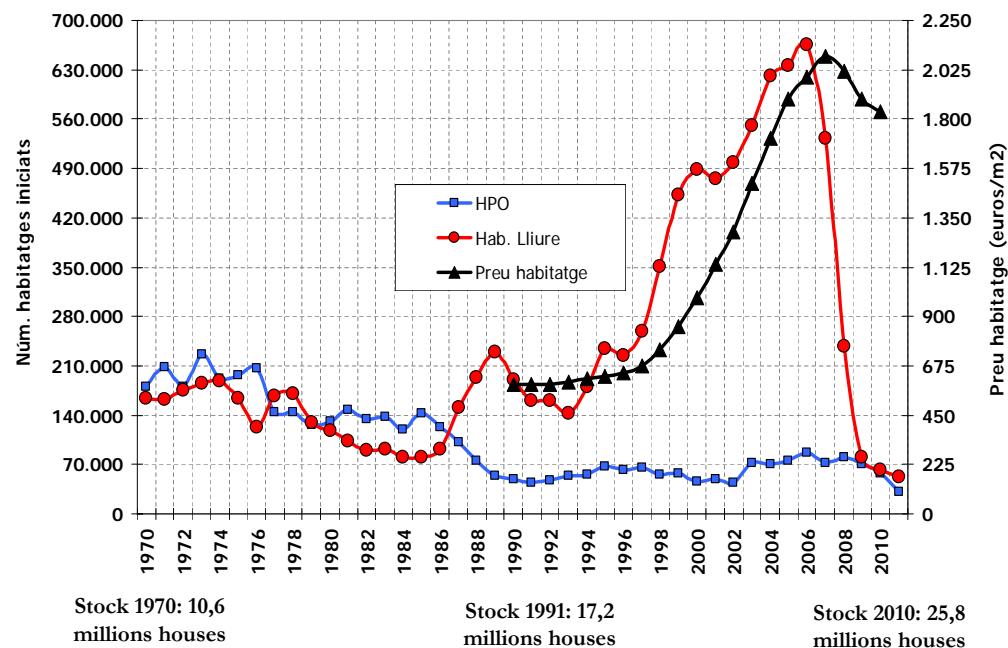


Magalluf

## Tourist arrivals to the Balearic Islands, 1945-2010



## Housing property bubble



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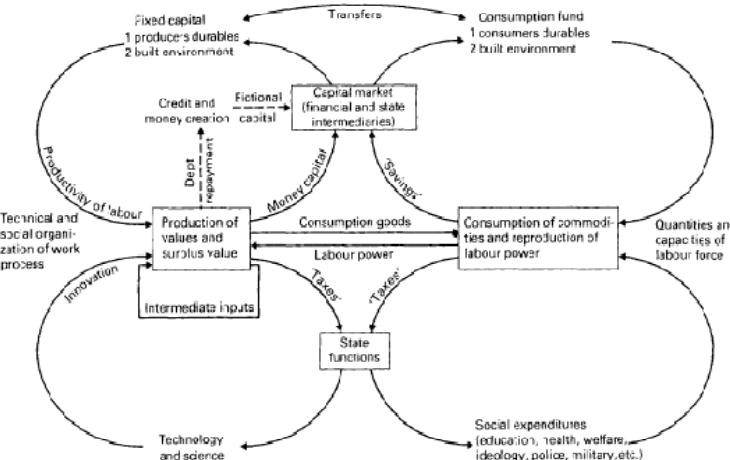
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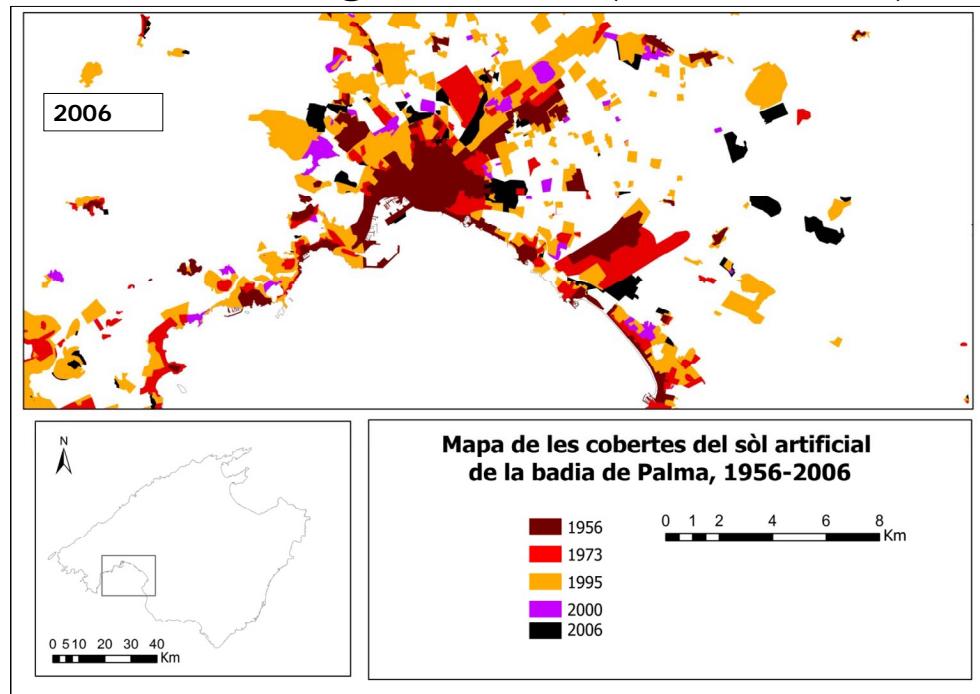
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## The circuits of capital accumulation

David Harvey (1978). *The urban process under capitalism: a framework for analysis*



# Land use changes of Palma (CITTIB-GIST)



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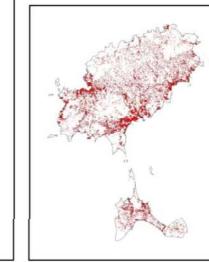
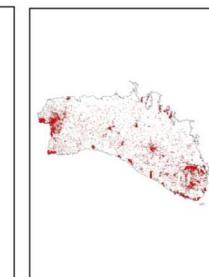
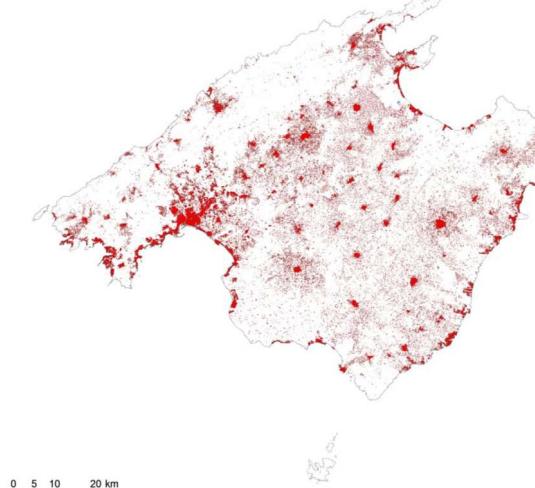


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## Balearic Islands urban sprawl



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Geographie

Gewissenschaften Bochum 2007

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### Qualitätstourismus auf Mallorca: „Ballermann“ war besser

Thomas Schmitt  
Ballermann, Betonburgen, Billigtourismus: Von diesem Negativimage will Mallorca weg, hin zum umweltverträglicheren, hochwertigen und teuren Qualitätstourismus auf einer grünen behüteten Insel. Aber ist der Qualitätstourismus tatsächlich verträglicher als der Massentourismus? Langjährige Studien zur Landschaftsveränderung auf Mallorca zeigen das Gegenteil.



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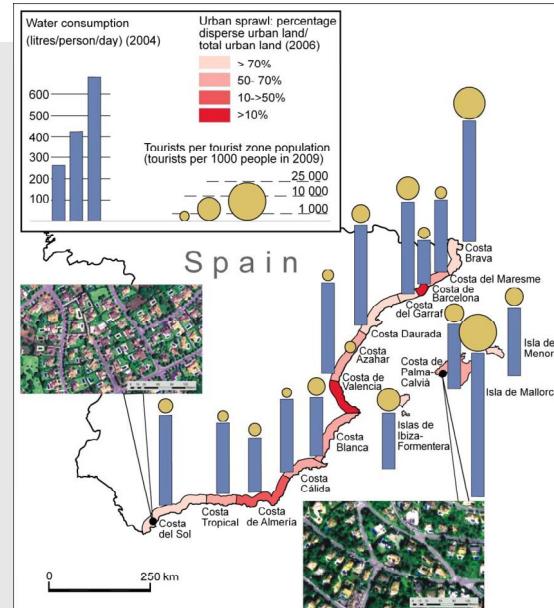
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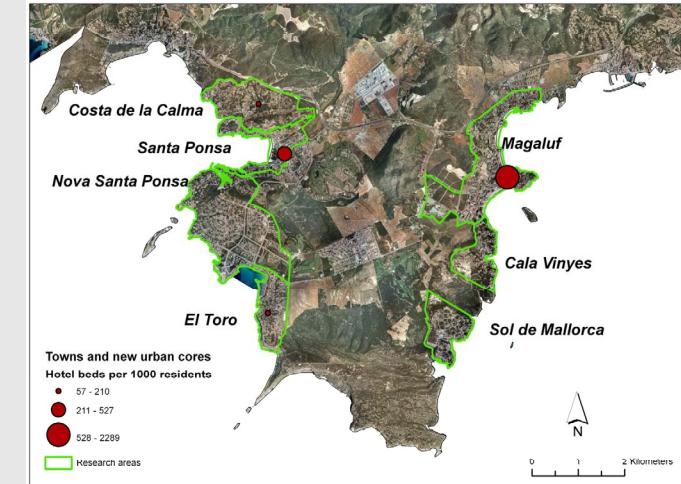
Compiled with data from  
Saurí et al. 2011

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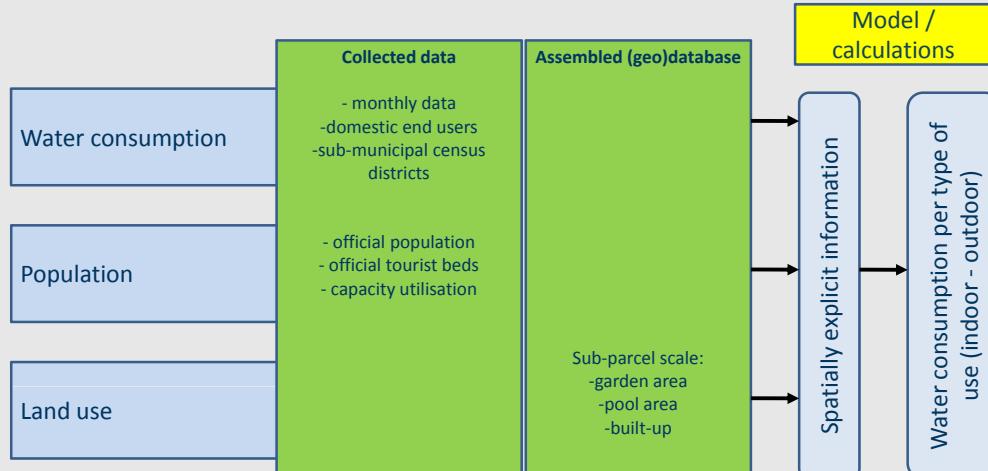
## Water – climate – society nexus and vulnerability

- Vulnerability = f(exposure to stressors, sensitivity to associated impacts, and the capacity of a system to adapt to these impacts) (Turner et al. 2003)
- Signals of vulnerability:
  - Stressors: variations in temperature and precipitation (meteorological exposure)
  - Precipitation shortfall, groundwater overdraft, water demand, dependence on desalination
  - Sensitivity to impacts: 'socio-economic drought'
- Adaptation (*maladaptation*) strategies - facing tradeoffs:
  - Unconventional sources of water supply, energy demand ...

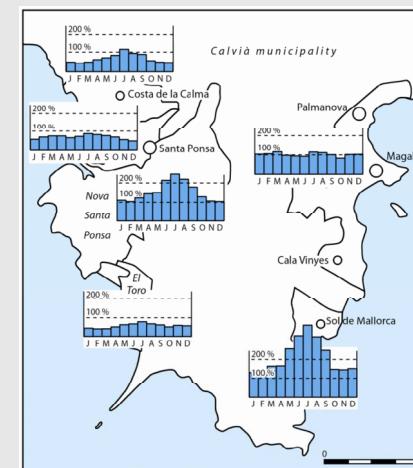
## Analysis of urban form and water consumption



## Materials and Methods: Concept for Deriving residential water budgets by use of geoinformation



## Water consumption and urban-tourist form



Litres/person/day	Santa Ponsa (mass tourism)	Nova Santa Ponsa (residential tourism)
Garden irrigation	60.6	570
Pool	7.3	59
In-house	142	142
Total	210	771

## Results: water-relevant leisure infrastructure and geographic pattern in climate sensitivity (2007)

Study area	Pool area /capita z-score (rank)	Garden area /capita z-score (rank)	Ratio of summer to winter water consumption level
Santa Ponsa	-0.92 (7)	-0.79 (7)	1.14
Palmanova/ Magaluf/Cala Vinyes	-0.87 (6)	-0.76 (6)	0.85
Sol de Mallorca	-0.59 (5)	-0.57 (5)	2.06
El Toro	-0.05 (4)	-0.33 (4)	1.37
Costa de la Calma	0.05 (3)	-0.16 (3)	1.44
Nova Santa Ponsa	0.43 (2)	0.62 (2)	1.63
Son Vida	1.96 (1)	1.99 (1)	2.99

Hof (2011) ; Hof & Blázquez-Salom 2012

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Thank you for your attention!

Angela Hof and Macià Blázquez-Salom

## Results, discussion, and conclusion

- Average  $\Delta\text{Cons}/\Delta\text{Temp}$  is 52.2 litres/ person/ day per 1° Celsius
  - Positively and significantly related to percent of garden area on single residential parcels (Spearman correlation 0.89)
  - Relationship with parcel size and levels of ownership of swimming pools is positive but not significant (Spearman correlation 0.68 and 0.71, respectively)
- Average  $\Delta\text{Cons}/\Delta\text{Prec}$  is -1 litre/ person/ day per 1 mm
  - not significantly related to single residential parcels' percent of garden area, level of swimming pool ownership or parcel size
- Vulnerability more related to variations in temperature than variations in the area's precipitation
- Outdoor uses of water contribute to high levels of water consumption and climate sensitivity

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