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**BATH**

# Protecting Coastal Zones in the Mediterranean

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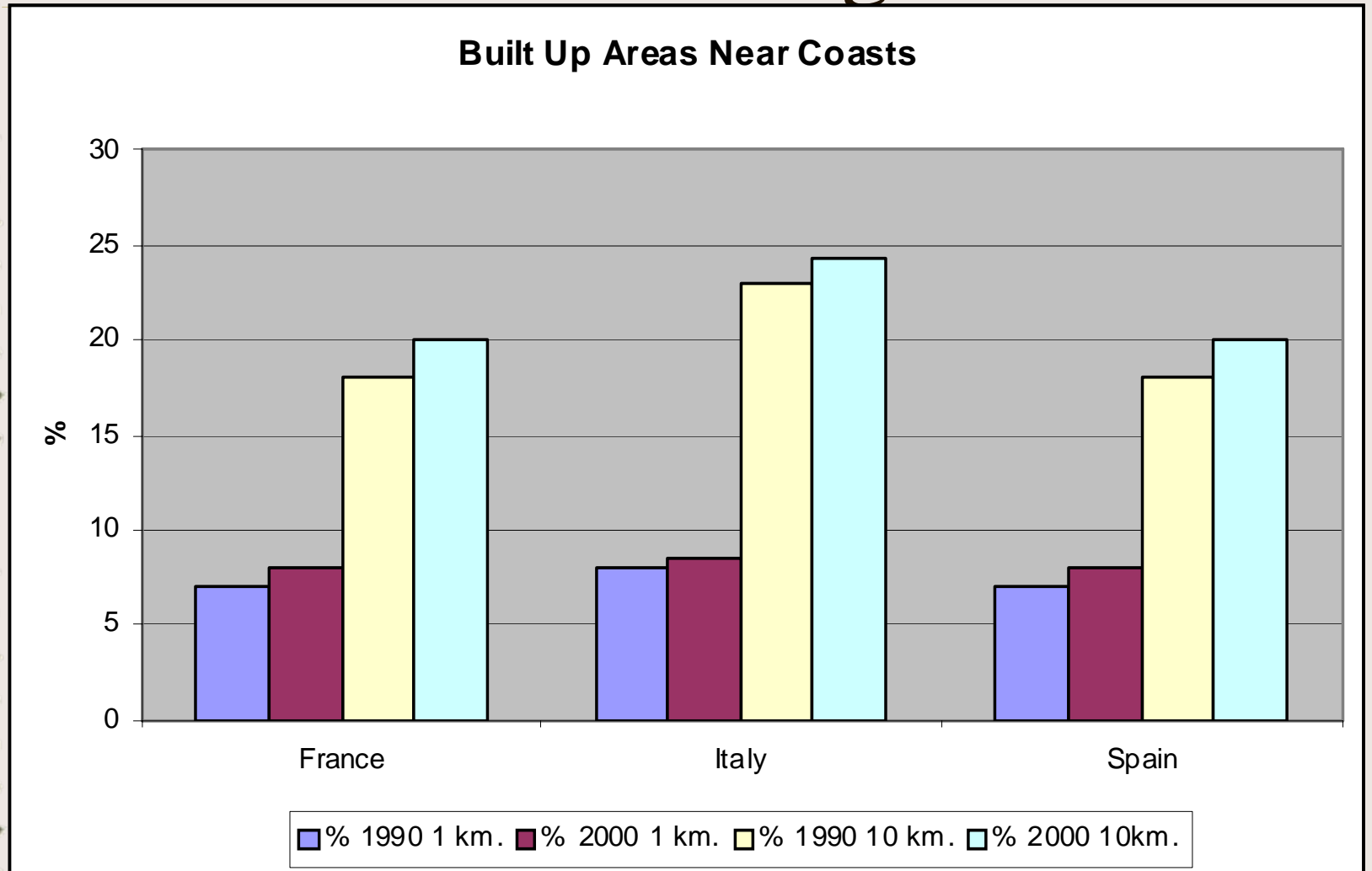
FEEM AND UNIVERSITY OF BATH

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# Pressure on the Coasts In The Mediterranean Is Increasing

COUNTRY	% INCREASE IN COASTAL RESIDENTIAL DENSITY 1970 TO 2000	% INCREASE IN COASTAL TOURIST DENSITY 1970 TO 2000	% CHANGE IN POP. DENSITY IN COASTAL AREAS RELATIVE TO AVERAGE: 1970-2000
Algeria	112	34	-2
Croatia	5	n.a.	4
Egypt	104	-89	-1
France	31	38	12
Israel	92	72	-3
Italy	8	29	1
Malta	22	38	0
Spain	27	25	8
Tunisia	90	50	0
Turkey	107	73	13
All	49		

# Built Up Areas Are Still Increasing



# Regulations to Protect the Coasts is Not Effective

- 6 of the 10 countries have some form of coastal zone legislation regarding development. Others rely on the normal land use regulations. There is, however, in almost all countries, an expressed concern that the planning process is not working adequately.
- ICZM is hampered by poor coordination between the regulating authorities (e.g. those responsible for land and sea and those for different levels of government). The presence of specific coastal legislation does not appear to guarantee a better performance in terms of coastal protection.

# Definitions of Littoral Zones Vary

- Definitions of littoral zones vary: from 100 metres to as much as 2 kilometres. The non-building zone (setback zone) can be as small as 50 metres and as much as 500 metres.
- In several countries the ban on construction of dwellings within this zone is not absolute (non dwellings can be allowed if required for safety or provision of essential services). Exemptions are given, although it is not clear how frequently this happens.

# Sanctions Are There But Amnesties are Frequent

- Sanctions include fines and possible demolitions. The latter are rarely used.
- In a number of countries some form of amnesty is applied for dwellings that have been in place for some time (e.g. Italy and Spain and France).
- Tolerance for infringements seems to be high in these three countries but also in Croatia, Tunisia and Turkey.

# Data on Effectiveness of Regulations is Very Limited

- Data could be obtained only for Italy, which indicated at least two major infringements per kilometre of coast per year.
- Data for other countries was not accessible through the databases and websites to which the public has access.
- This makes it difficult to assess the extent of the problem, but the qualitative reports all reach the same conclusion – i.e. that the regulations are frequently evaded or interpreted in such a way as to suit the developers.

# But Some Positive Signs Are There....

- The cases of Liguria and Sardinia are examples of regional governments taking the problem seriously and making regulations that are substantially protective of coastal zones.
- In Tunisia detailed studies are being undertaken of where protection is most needed and plans in support of these are being drawn up.
- More generally there is an increasing awareness of the need to make the regulations that manage the coastal zones more effective and more protective of these fragile environmentally stressed areas.

# What Is The Value of Coastal Zones?

- Use values to those who occupy land (homes, hotels) near the coast
- Use values to those who use beaches and visit seaside areas for recreation.
- Non-use values to those who want to preserve the coasts independently of whether they visit them.
- Ecosystem services by coastal zones: provision of natural habitats against erosion, as habitat etc.
- Some of these conflict with each other.
- I discuss all except the last category.

# Values of Development

- Properties with uninterrupted sea views have a premium of 25 to 100%
- Premiums are less for partial views (ca. 8%).
- Hotel rooms have a premium of around 40% for uninterrupted sea views
- Decay function suggests value drop sharply: only 9% premium for homes one km. against those less than 0.5km.

# Values of Users and Visitors

- The value of beach access vary according to the services provides and degree of crowdedness. Range is between €5 and €30 per visitor per year for European studies and €5 to €15 for US studies, if we exclude some outliers.
- In Israel, representing a lower income country values are also lower, at about €3.5.
- The Israel study also provides the only non-use value of conservation of €0.4 per household per year.

# Values of Users and Visitors

- While the numbers obtained above are useful, they leave a lot of questions unanswered.
- We do not know the value of an uninterrupted beach view when simply visiting a coastal area, and how this value is affected by coastal development.
- We also do not know the impact on beach visits when access to the nearest beach is impeded. Do individuals go to another beach further away (thus losing welfare) or do they go the same beach but incur a higher cost?

# Coastal Choices: Development Vs. Conservation? Case A

- Case A assumes low density housing development that impedes access to the beach for people who previously used it.
- Assumed number of visitors are taken from Italian studies, as are values of a visit to the beach. No allowance for non-use values.
- Typical values are taken for premiums on household properties.
- Beach is 2.5 km long.

# Coastal Choices: Development Vs. Conservation? Case A

CASE A	LOW €	HIGH €
BENEFITS	291,000	932,000
COSTS		
WITH 5% LOSS	3,000,000	
WITH 10% LOSS	6,000,000	
WITH 20% LOSS	12,000,000	
BREAKEVEN %	0.5%	1.6%

# Coastal Choices: Development Vs. Conservation? Case A

- Decline in use value between crowded and uncrowded beach in Italian study was 28%
- The breakeven value implies a loss equal to 3 minutes of time for someone earning €10 per hour.
- Minimum number of visitors needed to make case for non-development was 146,000 per year.

# Coastal Choices: Development Vs. Conservation? Case B

- Case B assumes high density hotel development that impedes access to the beach for people who previously used it.
- Assumed number of visitors are taken from Israeli studies, as are values of a visit to the beach.
- Typical values are taken for premiums on hotel properties.
- Loss of non-use values is included.
- Beach is 2.5 km long.

# Coastal Choices: Development Vs. Conservation? Case B

BENEFITS €	2,800,000
COSTS €	
WITH 20% LOSS €	3,000,000
WITH 30% LOSS €	6,000,000
WITH 50% LOSS €	12,000,000
BREAKEVEN %	25.2%

# Coastal Choices: Development Vs. Conservation? Case B

- Case is slightly more in favour of allowing development but:
  - Loss of €0.7 per visitor is enough to prevent the development. This is equal to 20% of use value and is very plausible.
  - Loss of time needed to justify non-development is 35 minutes at a wage of €4 per hour.
  - Minimum no of visitors at a loss rate of 40% of use value is 636,000.

# Ribbon Versus Cluster Development?

- Loss of benefits from ribbon development is much smaller than for cluster development (60% lower in the example in the paper).
- Ut still the benefits are not enough to make up for the coss incurred.

# Conclusions/Recommendations

- Pressure has been increasing on the coasts at least since 1970s.
- Even in the 1990s it has continued to increase in spite of attempts to address it.
- ICZM is often ineffectively implemented.
- Coordination between authorities is poor.
- The presence of specific coastal legislation does not guarantee a better performance in terms of coastal protection.
- Lack of compliance is a problem, although the full extent is unknown, except for few countries.

# Conclusions/Recommendations

- Illegal construction is frequent and is encouraged by modest fines, the granting of amnesties for dwellings that have been in place for a number of years and the practice of applying a statute of limitations on legal proceedings against violators.
- It is not possible from the data available to establish how effective the different instruments such as setback policies and other regulations have been in protecting coastal zones. A detailed assessment of the extent of violation of the setback rule therefore is needed.

# Conclusions/Recommendations

- The practice of amnesties for illegal construction must stop and illegal units should be more frequently subject to demolition.
- The use of normal planning regulations for land use needs to be buttressed by special conditions that apply to littoral zones, which need to be extended beyond 100-200 metres. In these zones construction should be completely banned.

# Conclusions/Recommendations

- A second zone, perhaps up to one or even two kilometres, should be subject to special permission from an authority that is responsible of ICZM and that supersedes other planning authorities.
- Decisions on permitting development in this zone should be part of a strategic plan, in which the external costs and benefits as discussed in this paper are fully taken into account.

# Conclusions/Recommendations

- One regulatory tool is transferable development rights. An authority that restricts development in one area would compensate those who lost value as a result of such a restriction by allocating rights in other areas. Such systems have been an effective planning tool in municipalities and districts in the US and elsewhere.
- Alternatively authorities that were given coastal development rights could share the benefits with those where the rights were denied. Such a system has been applied in Italy ('perequazione urbanistica') since the early 1980s.

# Conclusions/Recommendations

- The paper shows the evidence is strongly in favour of conservation for plausible cases. The benefits to owners and developers of beachfront developments are often smaller than the plausible losses to beach users.
- Taking account of important non-use values will make the case for conservation even stronger. Finally we note that the losses are much greater from ribbon development than for cluster development.
- All these results need, however, to be strengthened with further research.

A spiral-bound notebook with a white cover and a silver metal spiral binding on the left side. The notebook is open to a blank white page. The text "THANK YOU!" is printed in a black, serif font at the top center of the page. A thin horizontal line is drawn across the page, just below the text.

**THANK YOU!**