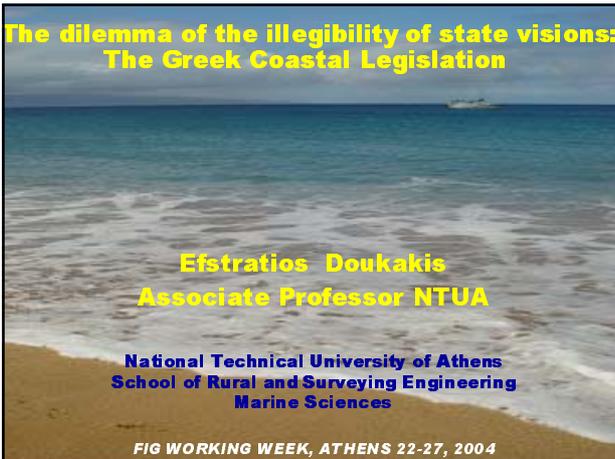


**The dilemma of the illegibility of state visions:  
The Greek Coastal Legislation**



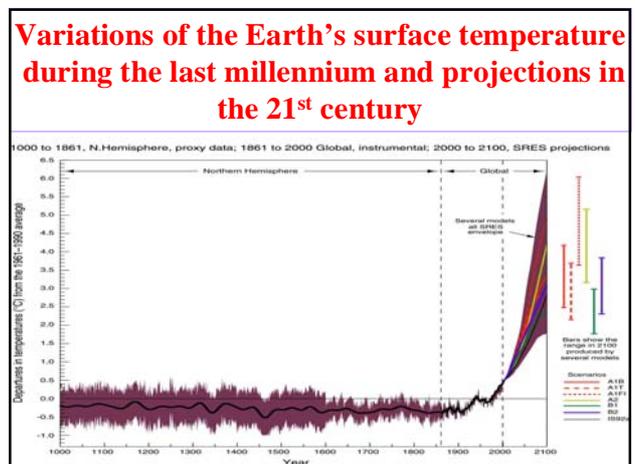
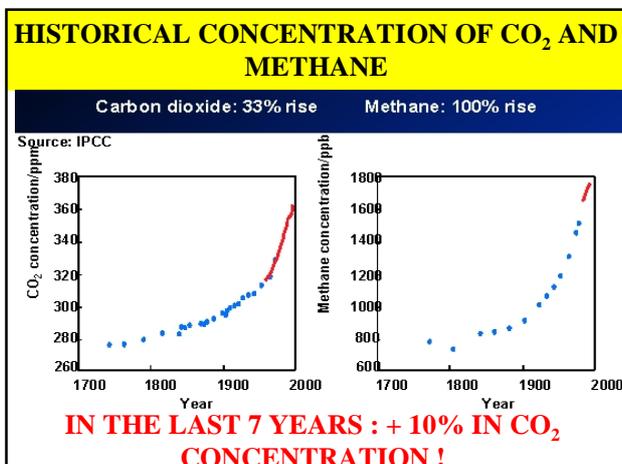
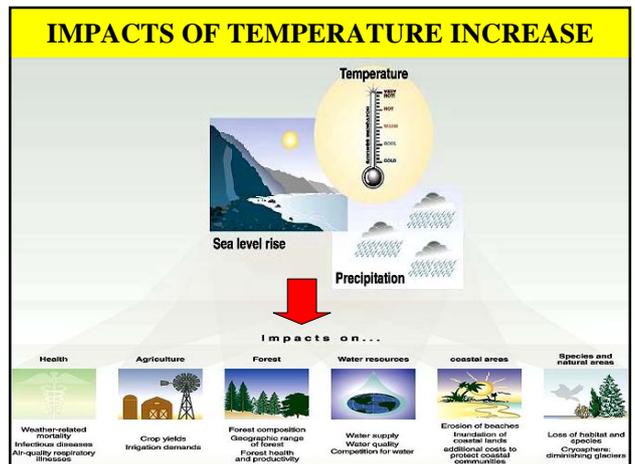
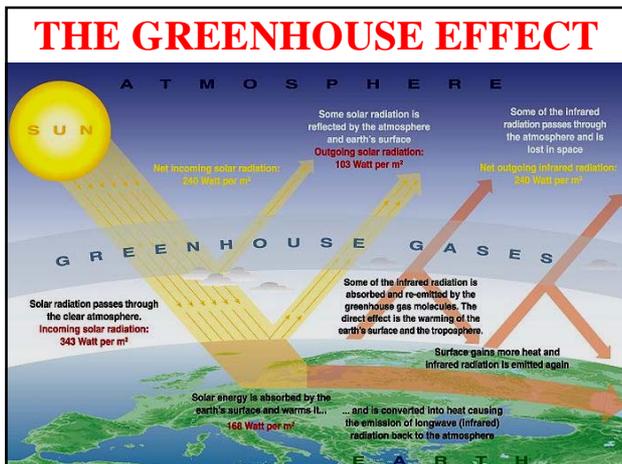
**Efstratios Doukakis**  
**Associate Professor NTUA**

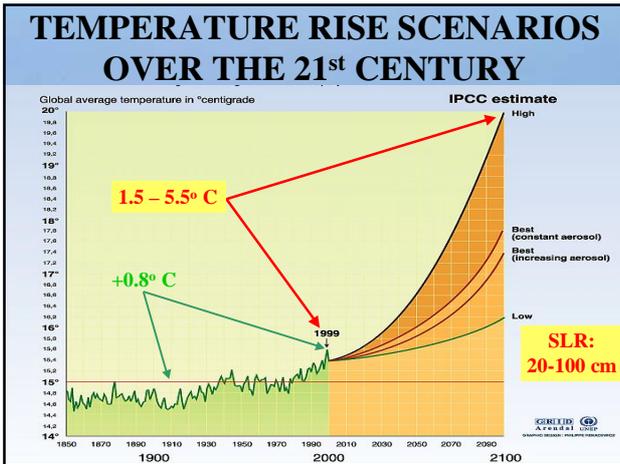
**National Technical University of Athens**  
**School of Rural and Surveying Engineering**  
**Marine Sciences**

**FIG WORKING WEEK, ATHENS 22-27, 2004**

**CONTENTS OF THE PRESENTATION**

1. CLIMATE CHANGES AND PREDICTIONS
2. THE USE OF THE SEASHORE AND BEACH ZONES
3. MODELS TO STUDY SHORELINE CHANGE
4. STUDY OF THE STRATEGIC RETREAT IN GREECE
5. RESULTS AND CONCLUSIONS



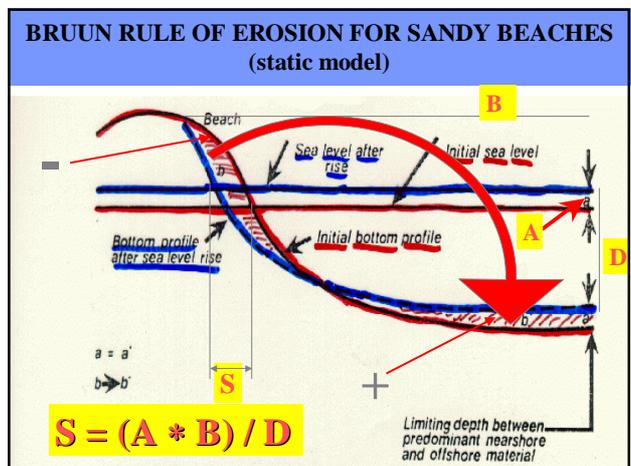
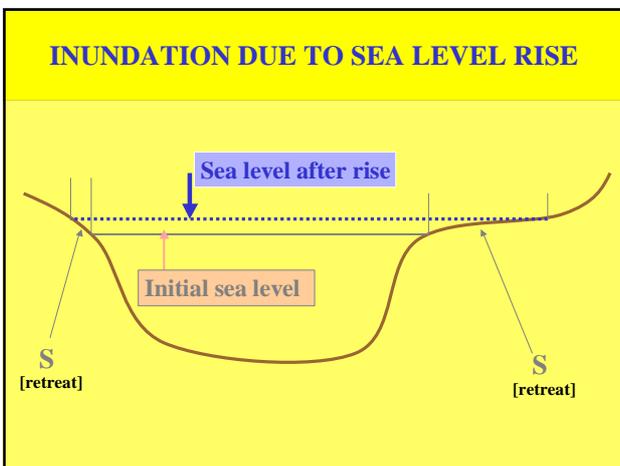
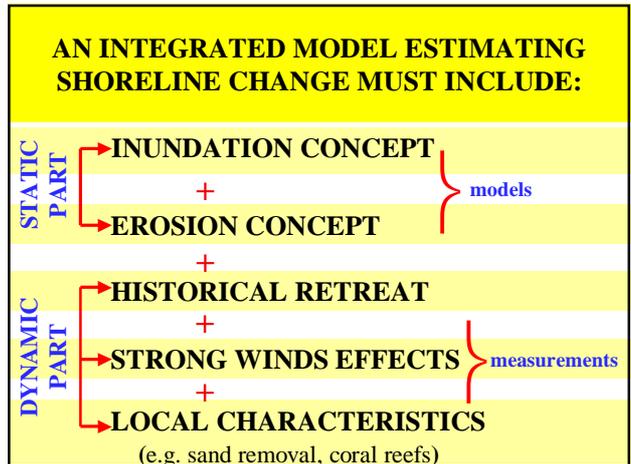


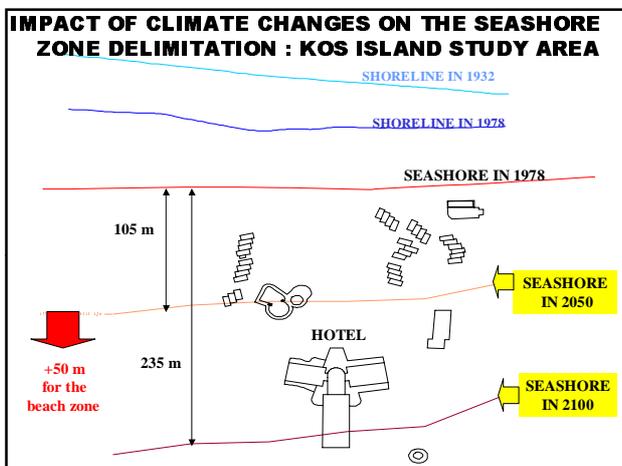
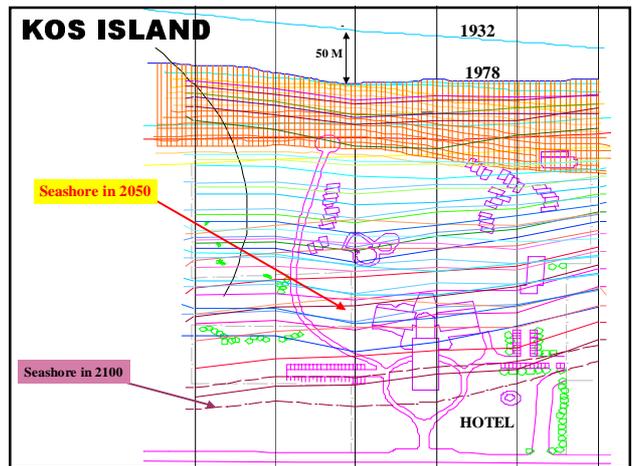
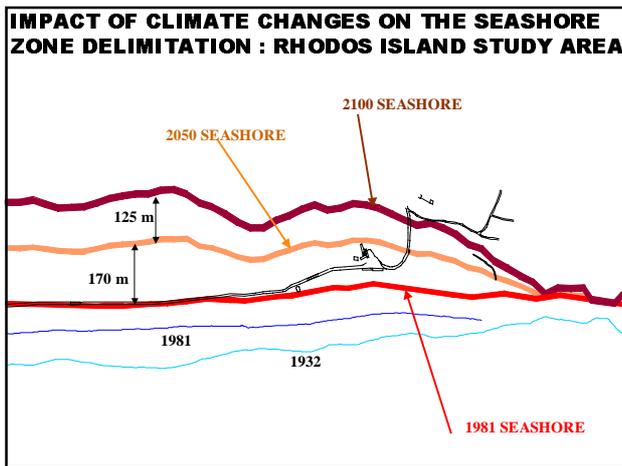
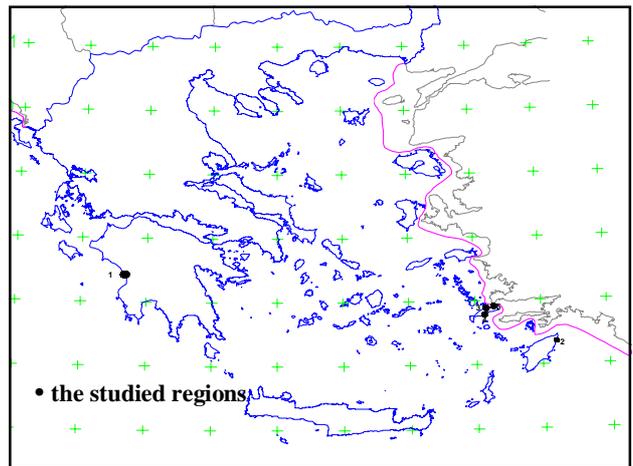
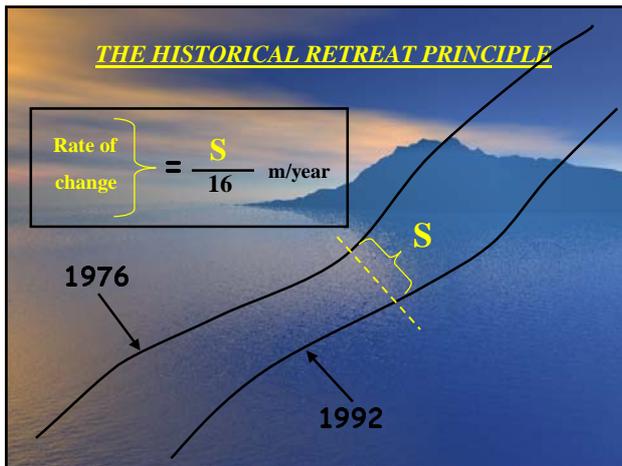
- ### THE USE OF SEASHORE AND BEACH ZONES
- the seashore limit ends up where the usual but maximum waves run up the beach
  - the seashore zone is the buffer zone of a coastal area absorbing the wave impact energy and accommodates the high tidal waters
  - the beach zone extends 50 m from the landward limit of the seashore zone
  - no private construction is permitted (in the seashore and beach zones). They have to remain free for public use, defense etc.

### LEGIBLE GREEK STATE VISIONS (?) : THE COASTAL LEGISLATION (Law 2971/2001)

- artcl. 12 : *“in case of beach erosion, hard protection measures can be exercised by the threatened owner. The structures are approved by the state and belong to it”*.
- there is not a single reference of re-delimitating the public zone (seashore and beach zones) in the future by any reason (e.g. climatic)

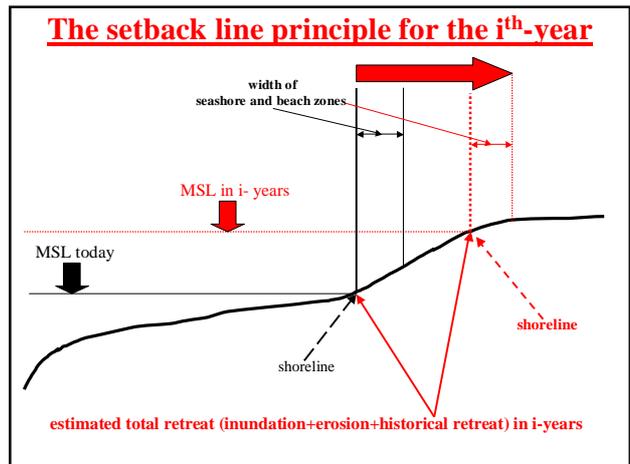
**The sustainability principle is absent!**





	VARTHOLOMIO	AFANDOU	TIGAKI	KARDAMAINA	AMMOGLOSSA
Shoreline Length (Km)	2.7	2.4	2.7	0.6	0.3
Shore type	Undeveloped	Heavily developed	Undeveloped	Semi-developed	Hotel
Coastal slope (%)	0.025	0.031	0.022	0.032	0.027
Geom/hology	Sandy beach	Sandy beach	Sandy beach	Sandy beach	Sandy beach
Relative SLR (mm/yr)	3.3	2.0	3.5	3.5	3.5
Historical retreat (m)	11	55	2.8	5.7	38.6
[period]	[1960-2000]	[1932-1981]	[1932-1987]	[1932-1988]	[1932-1978]
Total retreat (m)					
Sum of impacts SLR = 0.5m	58.6	156.6	58.4	34.8	137.0
Total retreat (m)					
Sum of impacts SLR = 1.0m	113.6	182.3	118.3	54.8	205.2

	VARTHOLOMIO	AFANDOU	TIGAKI	KARDAMAINA	AMMO GLOSSA
Seashore displacement SLR = 0.5m	58.5	100.2	55.8	29.7	95.0
Seashore displacement SLR = 1.0m	113.6	182.3	118.3	57.6	205.2



**FORMULATION OF THE SETBACK LINES**

$$SB_i = I_i + [ ER_i + HR_i ] \cdot i + [\alpha + \beta]$$

where

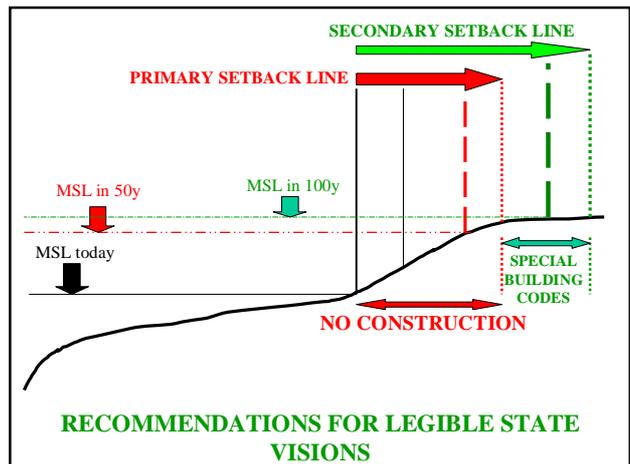
$I_i$  : the inundation displacement due to SLR (in the  $i$ -th year)

$ER_i$  : the local erosion rate/y

$HR_i$  : the local historical retreat/y as projected in the future

$\alpha + \beta$  : the width on the seashore and beach zone today

$i$  : the number of years of the applied policy



**CALCULATION OF PRIMARY AND SECONDARY SETBACK LINES**

	VARTHOLOMIO	AFANDOU	TIGAKI	KARDAMAINA	AMMOGLOSSA
Primary Setback Line (m)	109	207	109	85	187
Secondary Setback Line (m)	164	232	168	105	255

- CONCLUSIONS AND RECOMMENDATIONS**
- All five regions examined will exercise shoreline retreat from 30 to 100 m (middle climate changes scenario). The seashore and beach zones will retreat accordingly.
  - To prevent new future construction in private property, **primary setback lines** must be introduced and extend inland to the width of the estimated shoreline retreat plus the width of both seashore and beach zones under middle climate changes scenario.
  - The **secondary setback lines** will add up a further zone beyond the primary setback lines which will include the pessimistic climate changes scenario. In the secondary setback zone special building codes should be introduced.
  - The Greek state's visions for coastal development via the new legislation (2001) do not support legible visions because sustainability is absent. And *"no matter how likely the hazard, it will not be serious unless the consequences are serious"*

Thus, if the state wants to have legible visions, a flexible institutional and legislative setting should call for ADAPTATION due to climate change impacts on the coastal zone

