

Forest agencies' early adaptations to climate change



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Joensuu Forestry Networking Meeting 2009
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The Team



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Problem statement

- climate change & forest ecosystems
- long-term planning vs. uncertain future

Source: Maclver & Wheaton 2005; Millar et al. 2007; Eastaugh 2008



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Research Question

→ to what extent are forest agencies changing their policies and management operations to adapt to climate change?



Methods

- 14 case studies



Methods

- select forest policy/ management/ research institutions (~120)
- content analysis
- two expert reviews (40)



Results

- country reports
- adaptation classification
 - timing
 - temporal scope
 - spatial scope
 - function/effects
 - form

Source: Smit et al. 1999, Burton et al. 2001, Lindner et al. 2008



Measure	Timing		Temporal scope			Spatial scope			Funtion/Effects			Form				(from 14)
	reactive	anticipatory	short term	medium term	long term	policy level	forest management	stand level	resistance	resilience	preemption	informational policy	economic policy	regulatory policy	management measures	
Targetted monitoring	X			X			X			X	X				7	
Enabling programmes		X	X			X				X	X				13	
Altered silvicultural regimes, mid rotation	X			X			X		X					X	7	
Altered silvicultural regimes, cross-rotation		X			X		X				X			X	5	
Increased threat suppression capability	X			X			X		X					X	7	
Increased threat protection		X		X			X			X				X	6	
Increased threat prevention		X	X			X			X				X		3	
Tree breeding/genetics		X			X	X					X		X		5	
Altered spatial arrangement of conservation reserves		X			X		X		X				X		1	
Increased management intensity	X			X			X		X					X	2	
Infrastructure development		X		X		X			X					X	2	
Forest converion incentives		X			X	X					X		X		2	
TOTAL	4	8	2	6	4	5	4	3	5	3	4	2	1	3	6	

Discussion

- adaptation science
- managers moving ahead
- anticipatory, medium to long-term
- few economic incentives
- more threat suppression than prevention
- synergies with SFM (Lindner et al. 2008)
- extra funding?



Conclusions

- research & structure
- adaptation country-specific
- diversity of adaptation measures



Acknowledgement

- Great team!
- Great experts!



Questions/Discussion



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Measure	Timing		Temporal scope		Spatial scope			Funtion/Effects			Form			# example (max. 14)	
	reactive	anticipatory	short term	medium term	long term	policy level	forest management	stand level	resistance	resilience	preemption	informational policy	economic policy		regulatory policy
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Enabling programmes		X	X			X				X		X			13
Altered silvicultural regimes, mid rotation	X			X			X		X					X	7
Altered silvicultural regimes, cross-rotation		X			X		X				X			X	5
Increased threat suppression capability	X			X			X		X					X	7
Increased threat protection		X		X			X			X				X	6
Increased threat prevention		X	X			X		X					X		3
Tree breeding/genetics		X			X	X				X			X		5
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Increased management intensity	X			X			X		X					X	2
Infrastructure development		X		X		X			X					X	2
Forest conersion incentives		X			X	X					X		X		2
TOTAL	4	8	2	6	4	5	4	3	5	3	4	2	1	3	6