SUPPLY FORECASTS FOR TIMBER FROM THE RUSSIAN FAR EAST AND LINKS WITH THE PACIFIC RIM MARKET

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Final Harvest in Far East Russia

(thousand cubic meters)

10-year Average

1948–1957	1958–1967	1968–1977	1978–1987
22,281	26,322	34,912	38,443

Annual Harvest

1988	1989	1990	1991	1992	1993	1994	1995	1996
40,301	38,734	36,408	31,945	26,943	21,376	15,375	14,533	12,774

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Map of Far East Russia with Administrative Units

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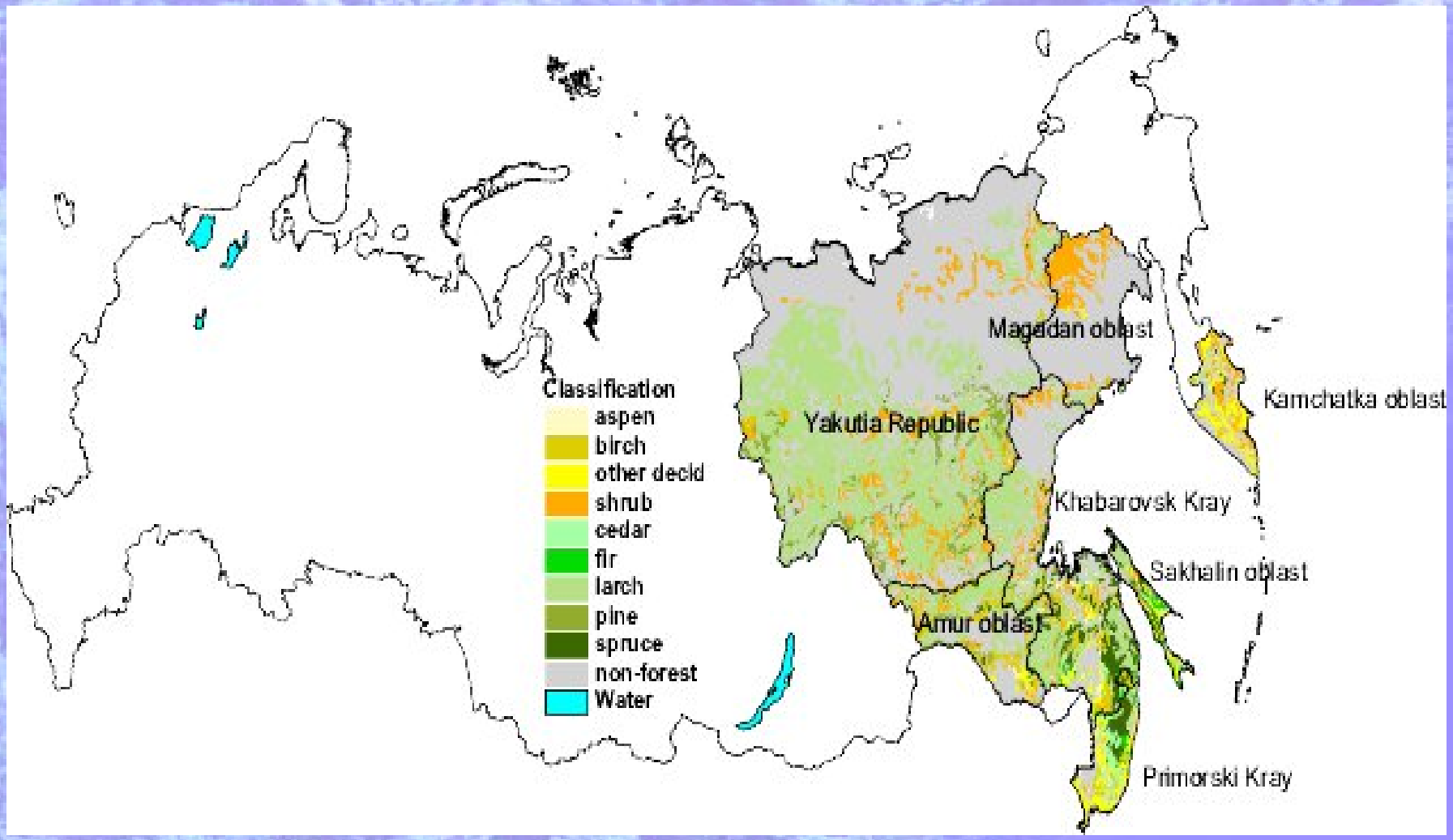
Distribution of Forest Types in Far East Russia



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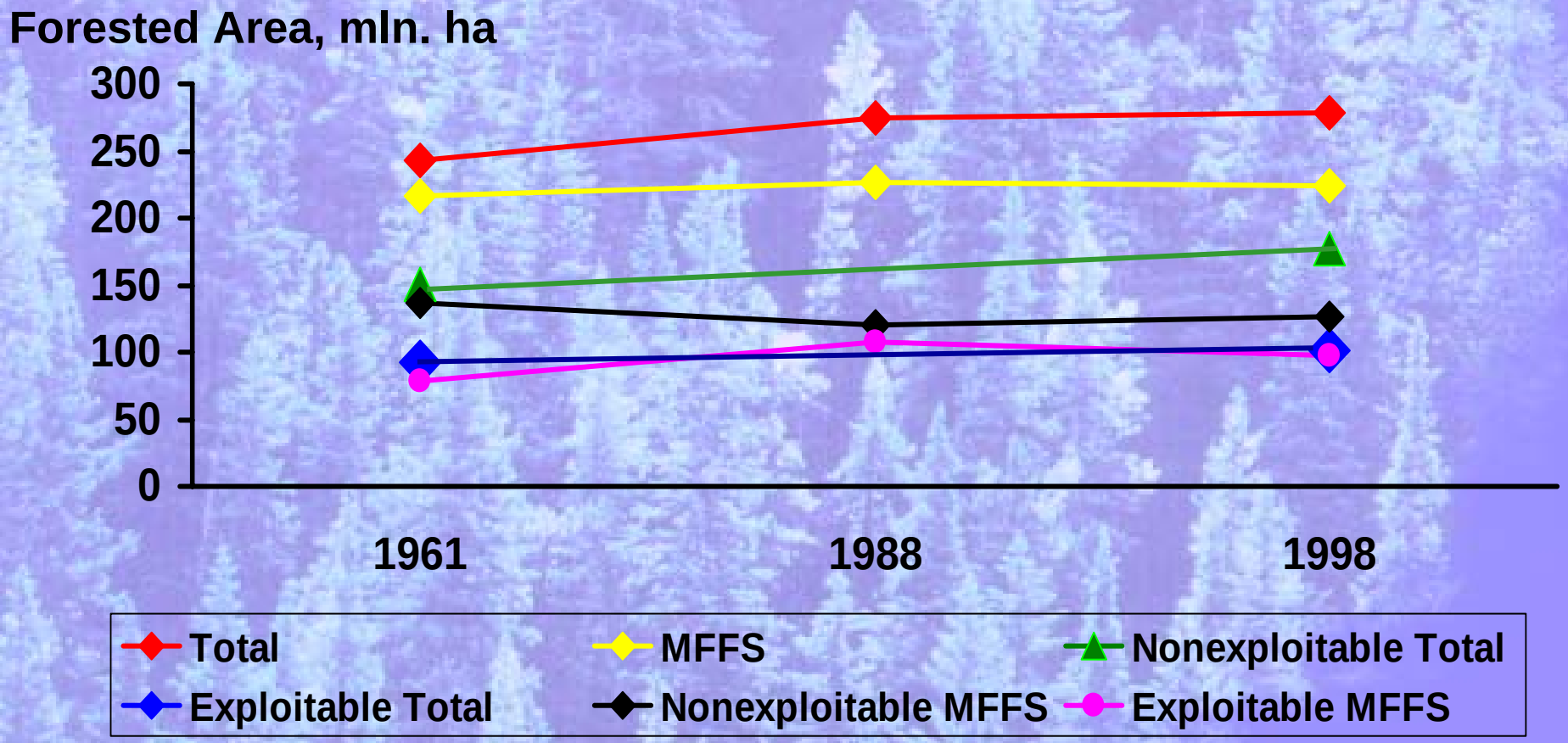
Development of Forest Resources of Far East Russia



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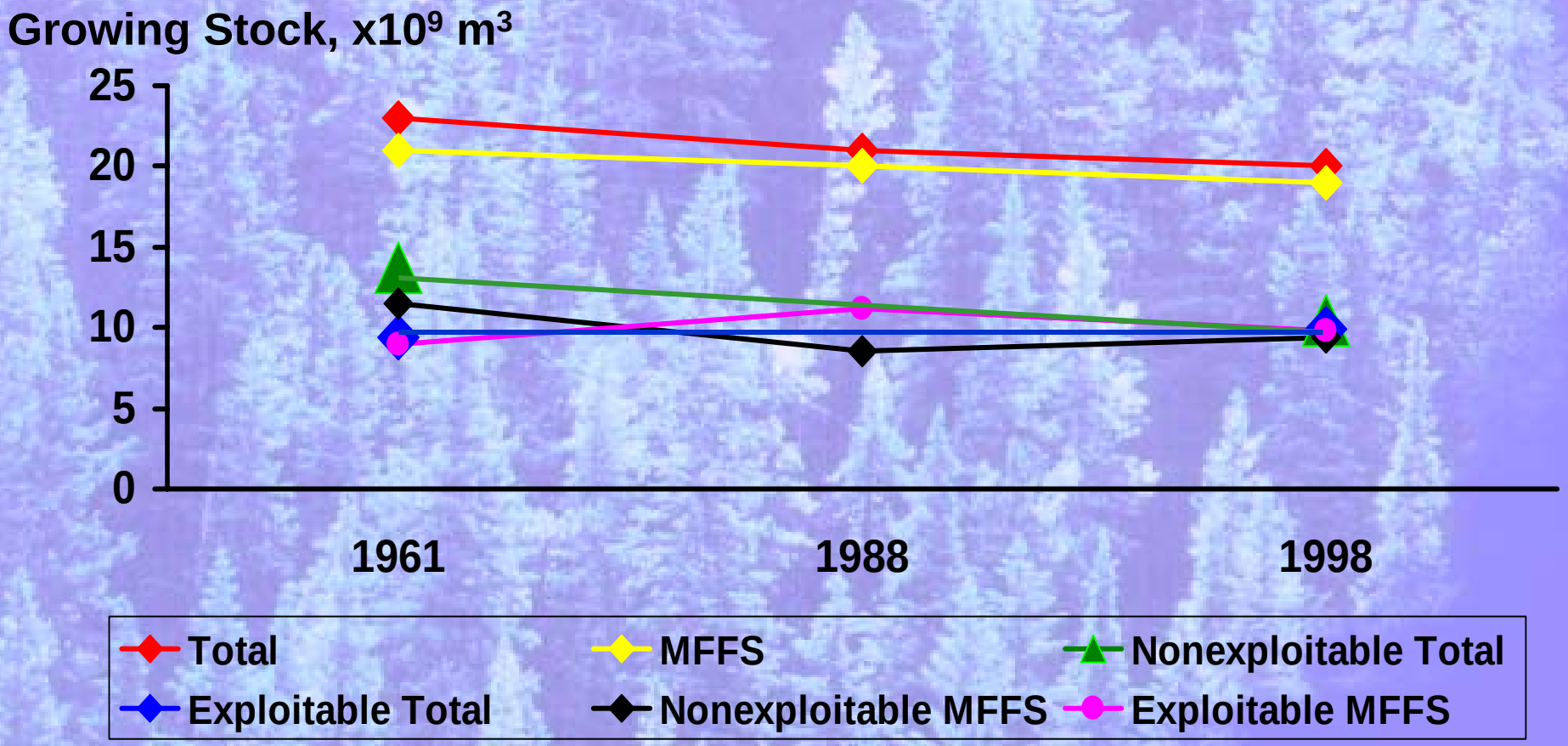
Development of Forest Resources of Far East Russia



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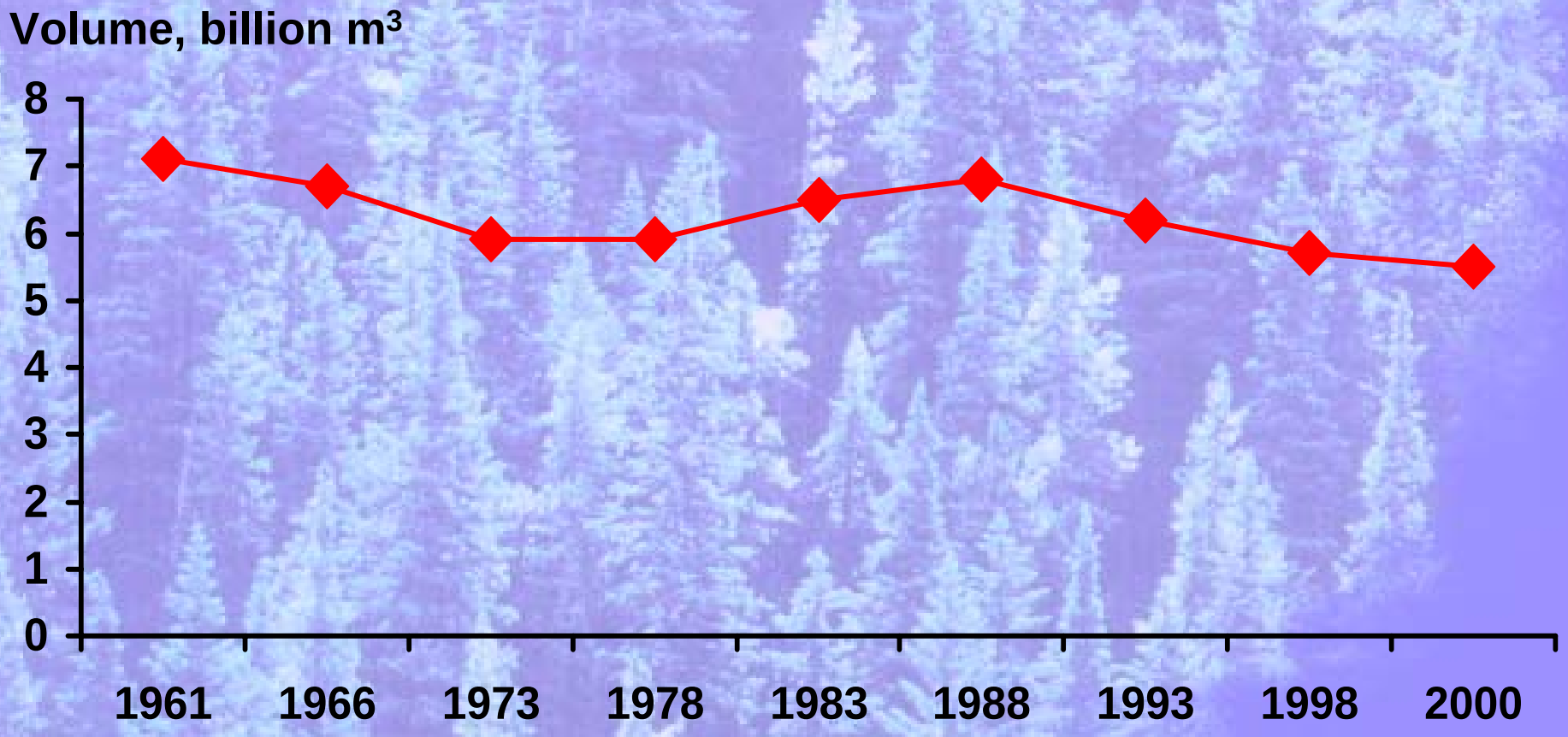
Growing Stock of Mature and Overmature Forests of MFFS on Exploitable Forests in Far East Russia



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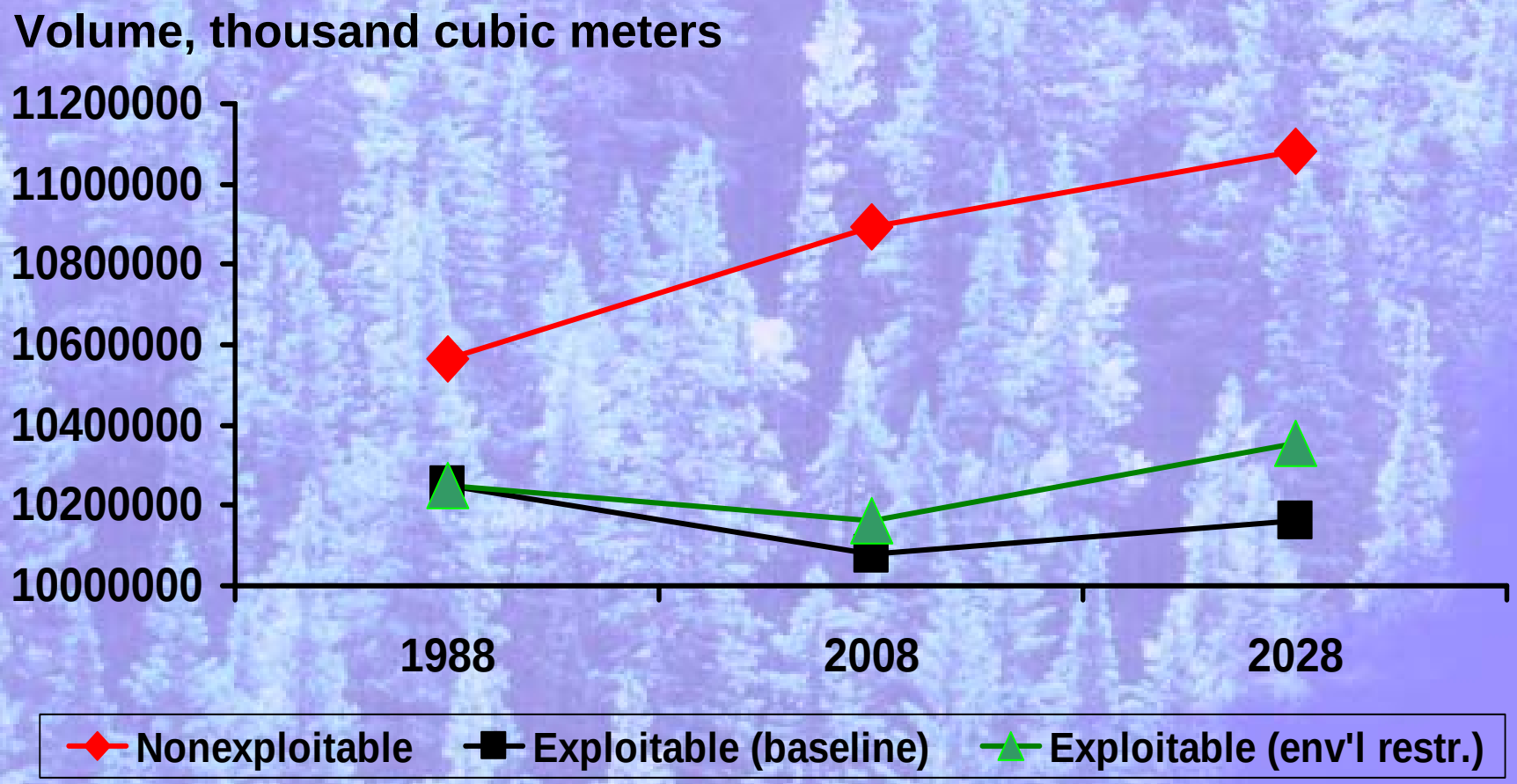
Development of Growing Stocks in Far East Russia



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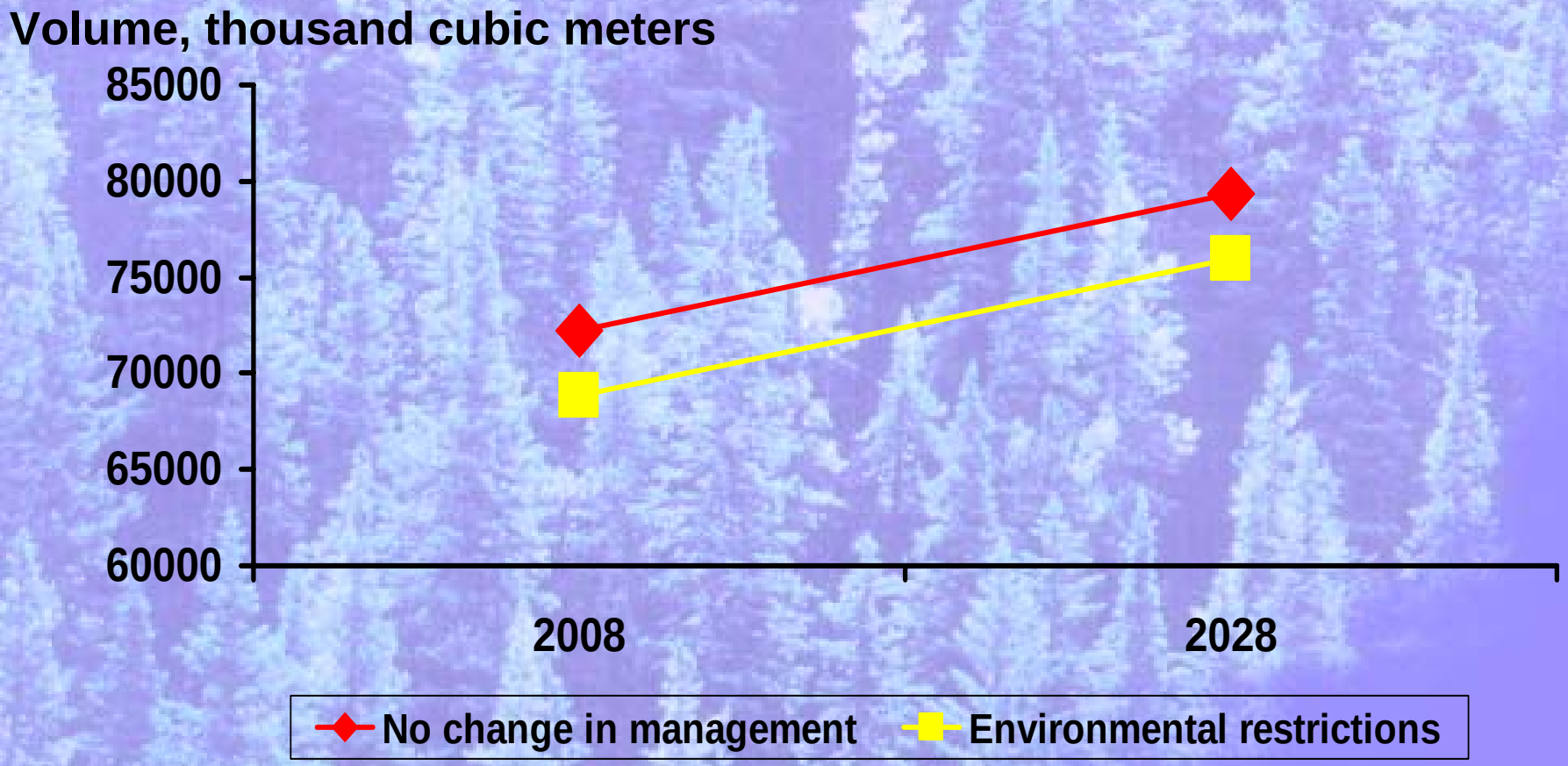
Annual Biologically Sustainable Volume Available for Harvest on Exploitable Forests in Far East Russia



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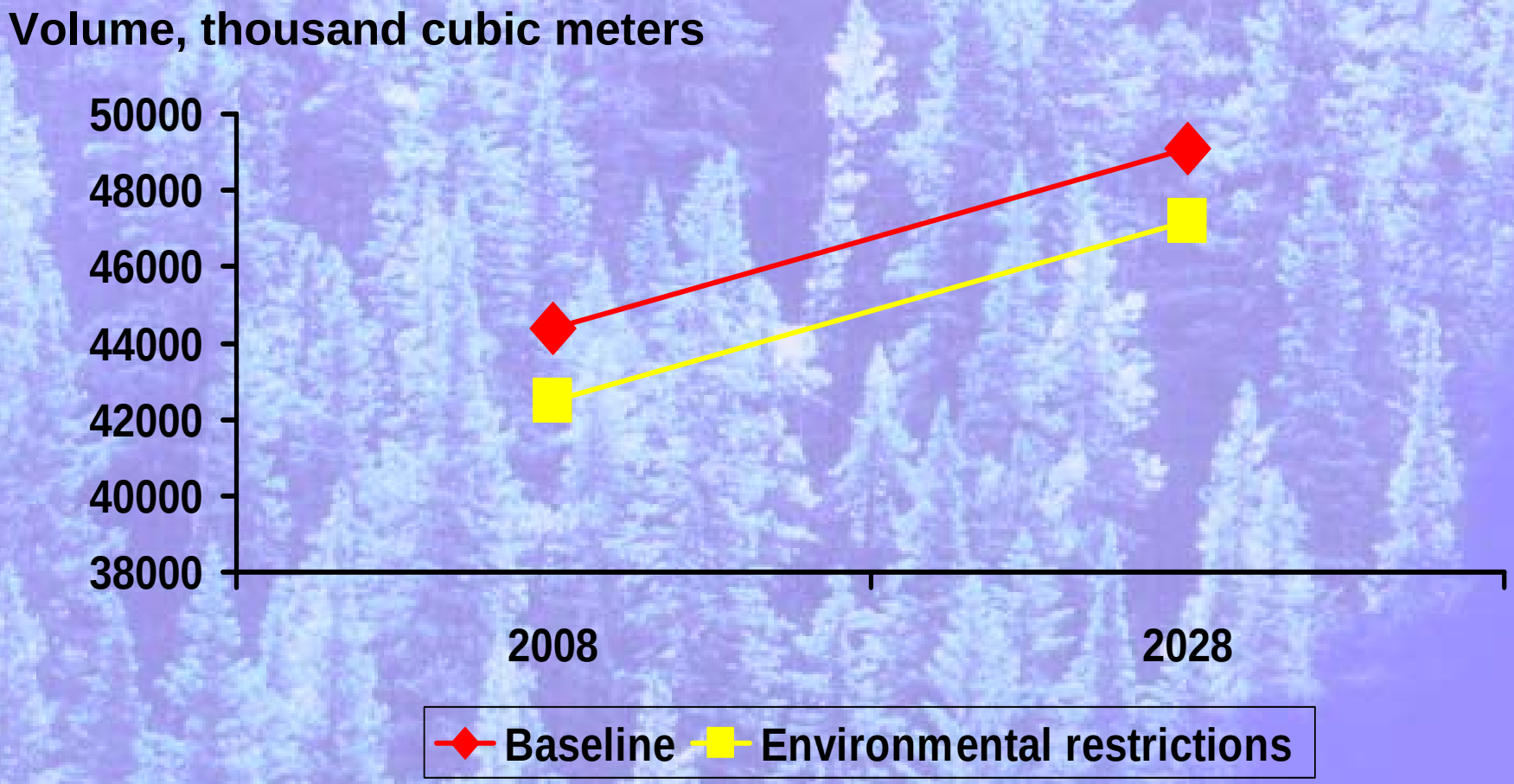
Removals in Far East Russia



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Removal Potential of Industrial Wood, Environmental Restrictions

(million m^3/year)

	2008	2028
Total	43.5	47.2
Larch	24	26
Spruce	8	9
Current AAC	62.5	

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Rough Estimate on Economic Accessibility of Delivered Harvest of Industrial Wood in Far East Russia (million m^3)

No Change in Management

2008	*2028*
17.3	18.2

Increased Restrictions and Increased Regeneration

17.0	18.4

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Percentage Distribution of Economically Delivered Harvest Potentials of Industrial Wood and Distribution of Current Official Harvest Over Administrative Units of Far East Russia

	Removal Potential	Current Harvest (Average for 1990s)
Amur Oblast	24.0	17.9
Kamchatka Oblast	2.2	2.3
Khabarovsk Kray	18.6	41.8
Magadan Oblast	negligible	negligible
Primorski Kray	22.7	15.9
Sakhalin Oblast	10.3	11.9
Republic of Sakha	22.2	10.2
	100%	100%

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Distribution of Economically Delivered Harvest Potential of Industrial Wood over Species and Rough Average Harvesting Profile During the 1990s (percentage)

	Pine	Spruce	Fir	Larch	Cedar	Birch	Aspen	Other dec.
Amur Oblast								
Delivered	3.2	3.5	0.2	76.2	-	14.7	1.9	0.3
Profile	-	30.0	10	50.0	-	10.0	-	-
Kamchatka Oblast								
Delivered	-	21.1	-	26.6	-	18.7	1.5	32.0
Profile	-	20.0	-	60.0	-	20.0	-	-
Khabarovsk Kray								
Delivered	-	46.1	2.2	38.7	2.2	6.4	2.4	2.0
Profile	-	60.0	10.0	30.0	-	2.0	2.0	6.0
Magadan Oblast								
Delivered	-	-	-	95.6	-	-	-	4.4
Profile	-	-	-	95	-	-	-	5
Primorski Kray								
Delivered	-	46.1	3.9	14.3	20.5	10.0	3.3	11.9
Profile	-	40.7	21.5	2.2	1.2	20.8	-	10.7
Sakhalin Oblast								
Delivered	-	49.5	18.0	29.2	-	0.8	-	2.5
Profile	-	60.0	10.0	30.0	-	2.0	2.0	6.0
Republic of Sakha								
Delivered	22.3	-	-	72.4	-	5.3	-	-
Profile	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.

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OVERHARVEST / UNDERHARVEST

OVERHARVEST

Spruce

Fir

UNDERHARVEST

Larch

Aspen

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- We are not really facing a forest resource problem in Far East Russia,
- Even in a worst case scenario there is currently a balance between the sustainable delivered harvest potential and the current harvest levels at an aggregated level,
- Areas and growing stocks on nonexploitable forests are larger than on exploitable forests,
- The management regimes used in the IIASA scenario is rather conservative and with a more intense forest management the sustainable delivered harvest potential can be substantially increased in the future but

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- **The problems in Far East Russia are the classical ones**
- **The administration and the industry have only used the most valuable species and areas with low access costs instead of trying to develop a much more evenly distributed utilization of the resource and to develop the markets for underutilized species (like larch) and**
- **This results in serious overharvesting of certain species and areas, which are far beyond any sustainability.**

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ILLEGAL HARVEST

Nobody knows how large it is

- **Logging without license**
- **Forged logging**
- **Logging in/of protected areas/species**
- **Incorrectly classified species**
- **Under-grading of timber**

Salvage Logging

Unemployment in the Forest Sector ➡ New logging companies

Lack of Respect for Legislation — How to change?

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Forest Management and Forest Inventory

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So What is the Problem?

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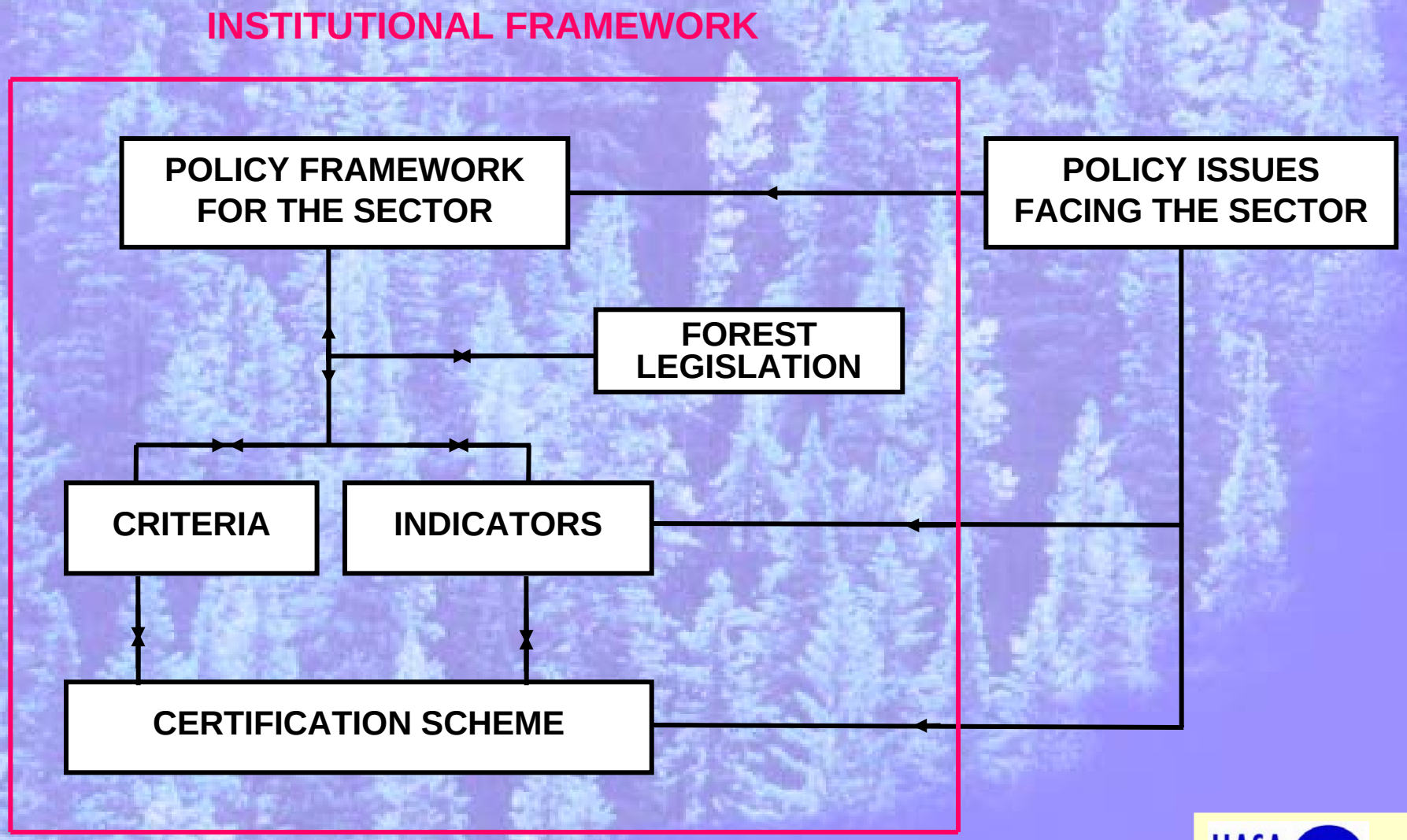
Framework of the Sustainability Concept



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Overall Societal Goals

Overall Forest Policies

Detailed Goals for Sustainable Forestry

Regional Detailed Goals

These are missing

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FOREST LEGISLATION

Missing links to a policy framework and the real problems of the sector

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CRITERIA AND INDICATORS

Just a paper product

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CERTIFICATION

- Mandatory certification system
- Forest owner, forest manager and certifier in one and the same body
- Has little relevance to the international debate on sustainable forest management

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INSTITUTIONAL FRAMEWORK

- "Rules of the game"
- The legal, administrative and customary arrangements for repeated human interactions …formal and informal rules
- "Institutional deadlock"
- Informal constraints embodied in customs, traditions, and codes of conduct constrain the development possibilities towards sustainability

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Examples on Institutional Problems of the Russian Forest Sector #1

Constitutional Level:

Contradictions and inconsistencies in legislation

Unspecified, unclear property rights

Draconian tax code

Political instability

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Examples on Institutional Problems of the Russian Forest Sector #2

Collective-Choice Level:

Artificially low timber prices

High interest rates (penalize forest enterprises that lack working capital to support their activities during periods between production)

Increase in instances of barter

Prevalence of corruption and criminalization

Evolution toward a virtual economy

Lack of investment in secondary wood industries

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Examples on Institutional Problems of the Russian Forest Sector #3

Operational Level:

Increase in illegal harvesting

Increased evidence of degradation and devastation of the forest

High transaction costs

Lack of funding for forest management operations

Forest enterprises run at a loss

Timber shortages

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"despite the legislated disempowerment of the local state, the old institutions have largely persisted in their prior authority and continue to control the relationships of access and exploitation at the point of interaction with forest users. What has emerged in practice, are multiple locations of authority manifested in multiple processes of authorization, overlapping jurisdiction, a flexibility and negotiability of terms at every level of decision making, and a labyrinth of relative power relationships that govern the process of participation. The consequent tensions among institutions has fostered an environment of political-economic instability in the forest sector."

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Malfunctions in the Forest Sector

- Discrepancy between nominal and factual rights and powers and distribution respectively between various management levels
- Ongoing struggle on redistribution of rights and powers
- Corruption of the management machinery
- Demolition of field inventories and control systems
- Insufficient legislation and no compliance with laws

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CONCLUSION

Without radical changes of the institutional framework discussions on sustainability and wood supply are rather irrelevant issues in the political debate

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Adaptive Mechanism for Updating Frameworks

- This mechanism is not in place
- International development

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Forest Resources of China

159 million ha of Forested Land
(according to FAO (1998b) having a sustainable harvest potential of about 310 million m^3 yr^{-1} in 2010)

112 million ha Natural Forests

75 million ha Timber Forests

47 million Plantations

24 million ha Timber Forest Plantations

5 million ha of Good Sites and Well Maintained Plantations

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Wood Balance for China (million m^3) #1

	1996	1998	1999	2000	2010
Total Depletion					
(official statistics)	**302**				
(Jaakko Pöyry, 2001)				**370**	
(FAO, 1998a)				**409**[a]	**449**
Sustainable Supply from Forested Land					
(FAO, 1998b)					**310**
Harvested Wood Reaching Markets					
(ECE/FAO, 2001)	**175**				
(Jaakko Pöyry, 2001)	**184**				
(FAO, 1997)				**140**[a]	**140**
(FAO, 1998a)				**165**[a]	**182**
Sustainable Harvest in Timber Forests[b]					
(Jaakko Pöyry, 2001)				**100**	**100**
(FAO, 1997)				**99**	**99**
(WRI, 1999)		**107**			**193**

[a] Forecasted numbers.
[b] Excluding roundwood for rural construction, mining, mushroom cultivation, fuelwood, and four-sides wood.

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Wood Balance for China (million m^3) #2

	1996	1998	1999	2000	2010
Production of Timber in Timber Forests[b]					
(official statistics)	67	**60**	**49**		
(Sun, 2000)		**60**	**53**		
(Jaakko Pöyry, 2001)		**83**	**82**		
Demand on Timber from Timber Forests[b]					
(Jaakko Pöyry, 2001)		**87.7**	**92.3**		**130**
Import of Logs					
(Jaakko Pöyry, 2001)		**4.7** (Russia 1.6)	**10.3** (Russia 4.3)	**13.5** (Russia 5.9)	**30** (Russia ?)
(WRI, 1999)					**35**
(FAO, 1997)					**19**
Total Import (in roundwood equivalents)					
(Jaakko Pöyry, 2001)				**60**	**107**
(Zhang *et al*., 1997)					**120–160**

[a] Forecasted numbers.
[b] Excluding roundwood for rural construction, mining, mushroom cultivation, fuelwood, and four-sides wood.

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Overall Balance for China (million m^3)

Yearly depletion	370–400
Sustainable harvest in Forested land	310
Harvest wood reaching market	175–185
Harvest in timber forests	80
Sustainable harvest in timber forests	100
Demand on timber forests in 2010	130
Import of logs in 2010	30
Import of RWE in 2010	110

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Wood Balance for Japan (million m^3) #1

	1990	1994	1997	1998	1999	2000	2010
Industrial Roundwood Consumption							
(FAO, 1997)		**71**					**73–79**
(FAO, 1998c)						**104[a]**	**115**
(WRI, 1999)							**76**
(Staples, 2000)	**110**					**95**	**85**
Sustainable Supply of Roundwood							
(FAO, 1998b)							**26–30**
(WRI, 1999)			**44**				**41**
(Japanese Government)						**60**	**60**
Industrial Roundwood Production							
(FAO, 1997)							**25**
(FAO, 1998a)		**26**				**27.5[a]**	**44**
(FAO, 1998c)						**29.0[a]**	**31.0**
(Staples, 2000)	**28**					**20**	

[a] Forecasts.

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Wood Balance for Japan (million m^3) #2

	1990	1994	1997	1998	1999	2000	2010
Imported Roundwood Equivalents							
(FAO, 1997)		**46**					**38–45**
(FAO, 1998c)							**84**
(WRI, 1999)			**36**				**40**
(Staples, 2000)	**82**					**74**	
Import of Logs							
(ITTO, 2000)			**20.5**	**15.2**	**16.5**		
(Staples, 2000)	**27.5**		**15.0**		**15.2**		
Import of Logs from Russia							
(FAO, 1998c)							**5.3**
(Friends of the Earth–Japan, 2000)				**4.8**	**5.8**		

[a] Forecasts.

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Overall Wood Balance for Japan (million m^3)

	2000	2010
Roundwood consumption	95–100	75–85
Biologically sustainable supply	60	60
Possible sustainable supply	25–40	25–40
Industrial roundwood production	25	20
Import of RWE	55–75	45–65
Import of logs	15–16	10–15

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Wood Balance for South Korea (million m^3)

	1994	1995	1997	1998	1999	2000	2010
Industrial Roundwood Consumption (FAO, 1997) (FAO, 1998c)	12.5					12	12–16 14
Sustainable Supply (FAO, 1998b)							1
Industrial Roundwood Production (FAO, 1997) (FAO, 1998c)	2.0					1.8 1.9	1.6 1.8
Import of Industrial Roundwood (FAO, 1997) (FAO, 1998c)	10.5					10	10–13.5 12.5
Log Imports (dominated by hardwood) (ITTO, 2000) (Lee, 2000)			8.3		6.6 6.6	7.4	10
Russian Log Exports (Friends of the Earth–Japan, 2000)				0.7	0.9		

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Other Countries

	2010	
North Korea	0.7 ?	Russia ?
Central Asia		4
Kazakhstan		3

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Potential Demand on Eastern Russian Wood

- Potential demand in 2010 is in the magnitude of 30–35 million m^3
- This can be turned into a positive development for East Russia/Far East or a disaster depending on whether Russia will be able to solve its institutional and policy problems

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