

Forest Certification Programs in North and South America: Motivation, Process, and Impacts

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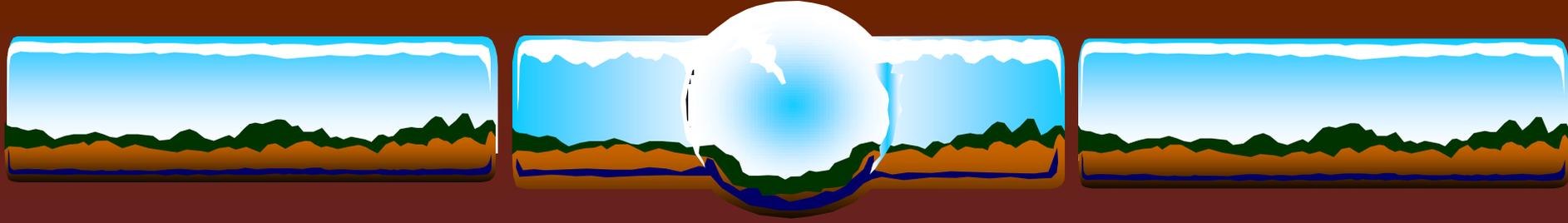
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Outline

- Forest certification
 - History and Theory
 - Extent
 - Motivation
 - Process
- Certification impact evaluation
 - World and U.S. Studies
 - NC – NC State, Duke, DFR
 - NCSU surveys of forest certification
- Discussion



Theory and Motivations



Roots of Forest Certification

- 1992 UNCED Rio Earth Summit
 - Biodiversity, climate change conventions
 - But failure to achieve forest convention
 - Threat to national sovereignty / authority
 - Developed vs. developing nations split
- Two eventual responses
 - Multinational sustainable forest management
 - Criteria & Indicator processes ~ 1995
 - Measure and monitor SFM
 - Forest Certification – 1993
 - Non-state, market based, private sector/ENGOS
 - Standards and prescriptions



Non-State Market Driven (NSMD) Approach

- ❑ Cooperation among
 - leading global environmental groups
 - social allies
 - few forest companies and retailers
 - World Bank
 - Large foundations
- ❑ Forest Stewardship Council (FSC) -1993
- ❑ Monitor companies for environmental and social practices, audit specific standards
- ❑ Move away from government control to NSMD
- ❑ Often termed “soft law”



Private Business Regulation /

Voluntary Environmental Programs (VEPs) -Theory

- Must have sufficient rules to achieve goals
 - Protect environment, correct social problems, improve economic issues
 - Promote sustainability to public (external)
 - Improve sustainability within company (internal)
- Rules and standards
 - Must be well developed and credible
 - But not too hard or expensive for organizations
 - Easy rules, more enrollment; vice versa
- Process and rules must improve practices, be credible, and affordable



Forest Certification Was First Global VEP

Other Now Include:

- ❑ Oceans
 - Marine Stewardship Council
 - Marine Aquarium Council
- ❑ Social
 - Social Accountability
 - Fair Labour Organization
- ❑ Coffee/Cocoa
 - Fair Trade Coffee
 - Rainforest Alliance
- ❑ Diamonds



Factors Driving Certification / VEPs

- ❑ Public concerns about deforestation and illegal logging, social issues
- ❑ Pressure by environmental activist campaigns
- ❑ Increased corporate strategy to support corporate social responsibility (CSR)
- ❑ Expanded business norms and values to consider more stakeholders/communities/objectives
- ❑ Public relations and substance
- ❑ Emerging markets, market share, and prices
- ❑ Forester education and learning



Forest Certification as an Anathema

- ❑ Social and economic problems
 - Caulfield et al.: Good, Sad, and Ugly
 - Tree Farm, SFI, and FSC
- ❑ Financial losses
 - Laband, Larson, Vardaman; Glenn Beck
 - high costs, no price benefits
- ❑ Political correctness, socialism, or worse
- ❑ Little impact of critics, and some recanted
- ❑ But doubts and costs do persist



Forest Certification as Forest Management Driver

- ❑ Certification and SFM keys
 - positive response to environmental critics
 - demonstrate good forest management
 - demonstrate SFM compliance in Latin America
 - discussion and corporate social responsibility
- ❑ Complex objectives and principles
- ❑ Tree Farm / SFI - PEFC mutual recognition
- ❑ FSC small forests program
- ❑ All U.S. systems revised standards in 2009/10
- ❑ Positive for forestry image and practice



Environmental Campaigns

- 2003 – 2006
 - Home Depot, Lowes, Other retailers
 - Attacks on old growth harvest, proposed certification
 - Forest Ethics: Victoria's Secret, Limited Brands
- 2007-present
 - Staples, Office Max
 - International loans, large banks
- Forest Ethics, Dogwood Alliance
 - Attacks on SFI
 - Met with measured responses



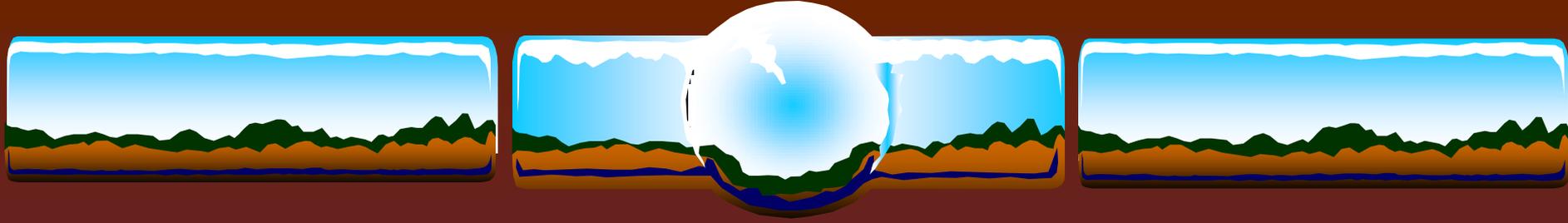
Certification Wars - Examples

Anti-SFI

<http://dontbuysfi.com/>

Anti - FSC

[http://forestryanddevelopment.com/
site/2011/02/10/forest-certification-
and-risk-management-fsc-
certification-poses-risk-to-business/](http://forestryanddevelopment.com/site/2011/02/10/forest-certification-and-risk-management-fsc-certification-poses-risk-to-business/)



Extent and Systems



FSC vs. SFI/PEFC

- ❑ FSC was founded in 1993 by environmental and social nongovernment organizations and focused initially on environmental and social values, with an added economic viability component.
- ❑ The Sustainable Forestry Initiative was formed by the American Forest and Paper Association in 1995, building initially on an environmental management system platform focused on production of forest products, and later adding economic, environmental, and social components to that base
- ❑ FSC has broadened to include economic chamber and plantations; SFI has become independent with more environmental and social components



World Forest Certification Systems and Area, 2009 (million ha)

□ Forest Stewardship Council (FSC)	116
□ Programme Endorsement For Cert (PEFC)	223
➤ Sustainable Forestry Initiative (SFI)	71
➤ Canadian Standards Association (CSA)	74
➤ Europe	57
➤ Certificación Forestal (CertFor)	2
➤ Certificação Florestal (CerFlor)	1
➤ Australian Forestry Standard	8
➤ American Tree Farm System (ATFS)	10
□ Malaysian Timber Cert Council (MTCC)	5
Total	344

~8% of 3.9 billion ha of world forests; Note: ISO 14001 areas not included

Sources: PEFC, FSC, MTCC web sites



Certified Forests in the Americas, 2009 (000 ha)

Country	Forest Area	FSC	SFI	ATFS, CSA, Cerflor, CertFor	Cert as % of Total
Canada	310 134	27 536	48 019	75 696	48.1
USA	303 089	11 617	22 1759	10 008	14.6
Costa Rica	2 391	68	-	-	2.8
Guatemala	3 938	436	-	-	11.1
Brazil	477 698	5 464	-	1 181	1.4
Uruguay	1 506	1 060	-	-	70.3
Bolivia	58 740	1 730	-	-	2.9
Argentina	33 021	215	-	-	0.7
Chile	16 121	413	-	1 911	14.4
All Americas	3 856 488	50 848	70 778	86 796	5.4



Forest Certification - SFI Objectives in Brief

Land Management Objectives

- 1) Forest Management Planning
- 2) Forest Productivity
- 3) Protection & Management of Water
- 4) Biological Diversity, Exceptional Conservation Value
- 5) Visual Quality & Recreational Benefits
- 6) Special Sites
- 7) Efficient Use of Forest Resources



Forest Certification - SFI Objectives in Brief

Fiber Sourcing Objectives

- 8) Landowner Outreach
- 9) Use of Forest Management and Harvesting Professionals
- 10) Best Management Practices
- 11) Biological Diversity, Biological Hotspots, Tropical Wilderness Areas
- 12) Controversial Sources and Illegal Logging
- 13) Controversial Sources and Sources w/o Effective Social Laws



Forest Certification - SFI Objectives in Brief

Land Management and Fiber Sourcing Objectives

- 14) Legal and Regulatory Compliance
- 15) Forestry Research, Science, and Technology
- 16) Training and Education
- 17) Community Involvement
- 18) Public Land Management Responsibilities
- 19) Communications and Public Reporting
- 20) Management Review and Continual Improvement



Forest Certification - FSC Principles

- 1) Compliance with laws & FSC principles
- 2) Tenure and use rights & responsibilities
- 3) Indigenous people's rights
- 4) Community relations & worker's rights
- 5) Benefits from the forest (multiple)
- 6) Environmental impact (biodiversity)
- 7) Management plan
- 8) Monitoring and assessment
- 9) Maintain high conservation value forests
- 10) Plantations



Forest Certification - ATFS Standards

- 1) Commitment to practice sustainable forestry
- 2) Compliance with laws
- 3) Reforestation and afforestation
- 4) Air, water, and soil protection
- 5) Fish, wildlife and biodiversity
- 6) Forest aesthetics
- 7) Protect special sites
- 8) Forest products harvests and other activities



Certificación Forestal (CERTFOR)

Chile – 9 Principles

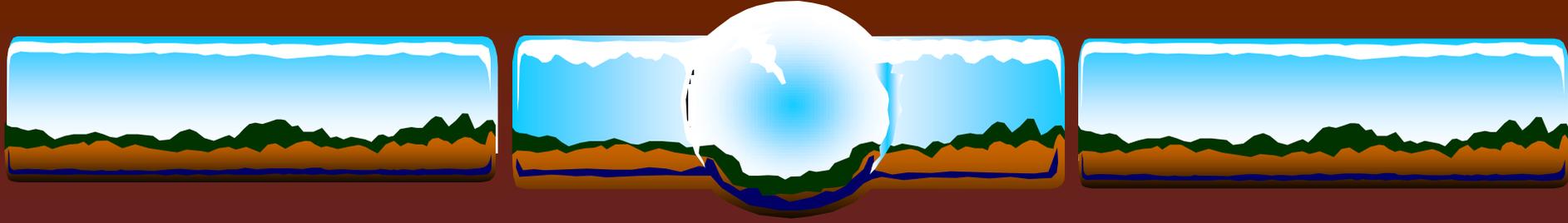
- 1) Sustainable forest management planning
- 2) Native ecosystem values & biodiversity protection
- 3) Productivity & protection from damaging agents
- 4) Water quality protection
- 5) Respect for and assistance to communities
- 6) Respect for indigenous agreements and rights
- 7) Respects for workers rights, health, and fair pay
- 8) Respect for laws, regulations, and treaties of Chile
- 9) Evaluation and improvement of the principles



Certificação Florestal (CERFLOR)

Brazil – 5 Principles

- 1) Compliance with the law
- 2) Rationality in management and forest resources striving for sustainability
- 3) Care for biological diversity
- 4) Care for air, water, and soil resources
- 5) Socio-economic and environmental development



Southern Center for Sustainable Forests Dual Certification

NC State University

Duke University

NC DENR Division of Forest Resources

FSC & SFI



Southern Center for Sustainable Forests Joint Certification Study (North Carolina)

- FSC and SFI Certification, 2001 - 2006
- Three institutions
 - North Carolina State University (NCSU)
 - Duke University
 - NC Division of Forest Resources (NC DFR)
- Various areas
 - NCSU 4 500 ac
 - Duke 8 000 ac
 - NC DFR 27 000 ac
- Certify, monitor, keep records
- Undergraduate teaching, research, extension



Current Status, April 2011

□ NCSU

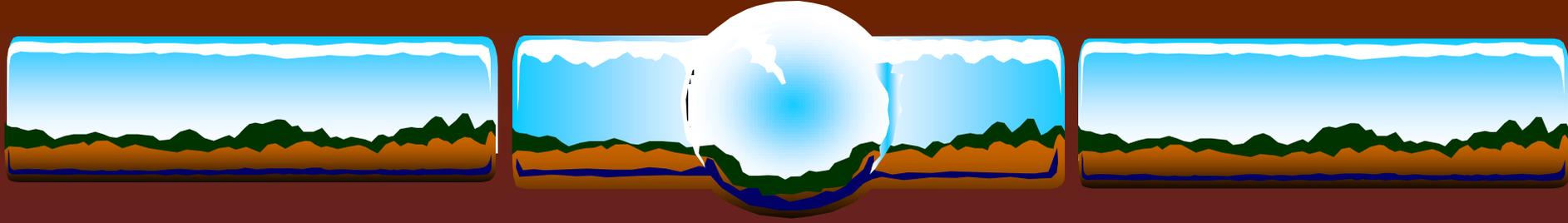
- Dropped FSC in 2010
- Recertified SFI
- Successful audit in February

□ Duke

- Dropped SFI in 2009
- Too much inventory and harvest scheduling reqs

□ NC DFR

- Dropped both in ~ 2006
- Too expensive, too much work, no price benefits



Certification Impacts



Certification Impact Questions

- 1) Does certification matter – does forest management / other practices change?
- 2) Are certification systems different?
- 3) How much does it cost?



Three Ways to Assess Certification Impacts

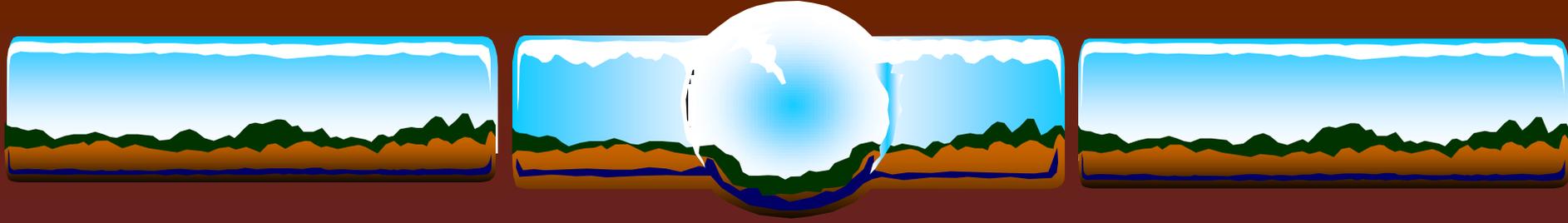
- Field based inventories and comparisons
 - With and without certification
 - Difficult and expensive
- Statistical summaries of audit reports
 - Easiest with FSC – CARs and full report
 - Difficult with SFI - summary only
- Surveys of landowner/managers
 - Reflects experience of managers
 - Impacts and opinions



Wisconsin Survey of FSC Benefits/Satisfaction

Three Roles for Certification (Conclusions)

- ❑ Market-based incentives (overrated)
 - Price premiums
 - Market share
- ❑ Signal of high forestry standards to external stakeholders (rated well)
- ❑ Improve forest practices through learning (underrated)
 - Technology transfer to owners
 - Encourages more management review and adapting new practices
- ❑ Survey of 91 FSC certified forest owners in U.S.



Certification Impact Surveys

SFI – USA and Canada – 2007

FSC – USA – 2007

ATFS – 2008

FSC – Argentina - 2006

CertFor and FSC – Chile – 2007



NCSU Certification Impact Study

- ❑ Survey of certification impacts in the Americas
- ❑ Extensive survey of
 - Personnel changes and job descriptions
 - Changes in forest management, social and legal aspects, economics and program administration
 - Summary of non-conformances or conditions
 - Benefits and problems with certification
 - Satisfaction and recommendations
- ❑ Questionnaire reviewed by SFI, AF&PA, FSC, ATFS, USDA FS, University sectors
- ❑ Used for all sectors
- ❑ Implemented sequentially across Americas



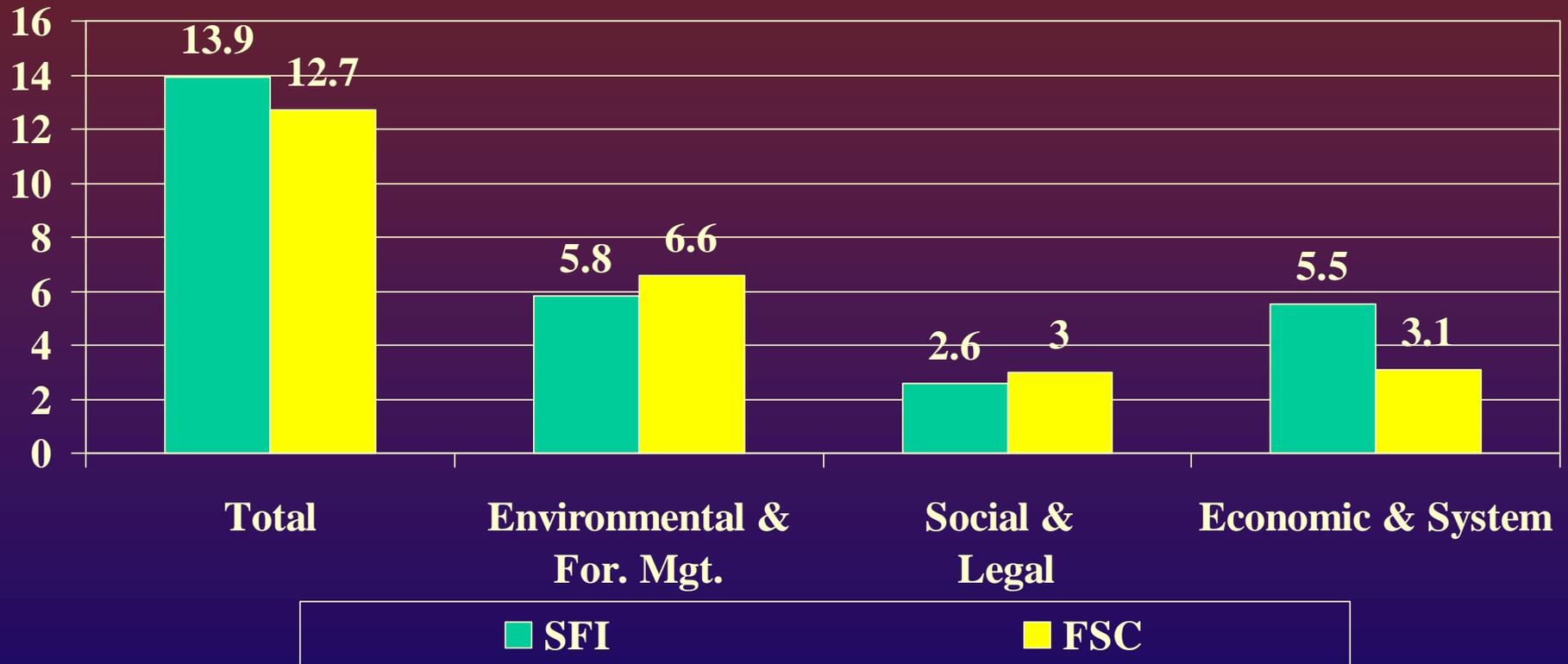
Survey Response Rates and Summary Statistics

	SFI Forest Management	SFI Wood Procurement	FSC For. Mgt. / Group Mgr.
Responses – Number (%)*	41 / 66(62%)	14 / 26 (54%)	56 / 98 (57%)
Firms Adding Employees for Certification - Number (%) {~1-2 added}	11 (28%)	4 (27%)	13 (25%)
Firms Reassigning Employees for Certification - Number (%) {1-8 reassigned}	28 (70%)	10 (67%)	18 (35%)
Share of Employee Efforts Devoted to Certification (%)	9.8%	8.1	9.5%
Average Hours Required for Certification Remedy / CARs (Number)	164	0	956

*ATFS: 471 of 1240 returned; Argentina FSC: 7 of 13; Chile: 3 of 18



Average Number Management Changes per Firm with Forest Certification by Type and System



Argentina & Chile = Average of 27 changes for FSC and CERTFOR, 2006, 2007



American Tree Farm Certification Impacts

Broad Activity	Major Types of Changes in Actions: Number of Yes Responses	Average No. per Landowner
Forest Management & Planning	Management plans (133), reforestation (72); site protection (63), implementation monitoring (58), forest inventories (55); growth & yield (44)	1.20
Forest Practices	BMPs (78), prevent exotic invasives (56), protect T&E species (38), clearcut size (32), old growth (31), biological diversity (28)	0.76
Social and Legal	Protection from illegal trespass, consulting with neighbors, legal planning & record keeping (5)	0.04
Economic & System	Continuous improvement (85), utilization practices (60), minimizing wood waste (54), forest research (35), extension (34), reporting (30)	0.77

Surveys: 1240 valid forms sent; 471 returned; ~38%



Forest Management : Notable Changes w/ Certification

Practices with “Yes” Reply, Changes Made	SFI (n=41)	FSC (n=56)
Implementation monitoring	25	30
BMP use and monitoring*	23	19
Forest inventory programs*	7	24
Growth and yield calculations*	7	19
Meeting green-up standards*	20	10
Determining clearcut size	14	11
Sustained yield / adjacency constraints	15	20
Biological diversity planning	16	17
Old growth / special site reserves*	10	31
Geographic information systems*	13	20
Forest management plan*	10	43
Chemical, soil protection, or plantation guidelines	9, 4, 4	19, 10, 5
Eliminate GMOs	0	3

* statistically different between systems at <.10

13 of 22 practices listed above; FSC for U.S. only; SFI for U.S. and Canada combined; SFI for landowners only



Social and Legal: Notable Changes with Certification

Practices with “Yes” Reply, Changes Made	SFI (n=41)	FSC (n=56)
Program reporting*	27	16
Legal planning and record keeping	11	16
Public / stakeholder meetings*	8	20
Public release of management plan*	6	22
Protecting indigenous rights*	7	15
Offer program workshops*	6	7
Comply with international treaties	1	5
Consulting with communities*	6	21
Comply with environmental laws	3	2
Establishing tenure rights	0	1
Ensuring labor rights and practices	0	4

* Statistically different between systems at $<.10$

10 of 13 practices listed above; FSC for U.S. only; SFI for U.S. and Canada combined; SFI for landowning firms c



Economic & System: Notable Changes with Certification

Practices with “Yes” Reply, Changes Made	SFI (n=41)	FSC (n=56)
SIC / FSC promotion duties*	32	17
Logger/supplier training*	31	9
Continuous improvement*	22	13
Management review system*	26	17
Internal program monitoring/auditing*	28	26
Customer inquiries/procurement*	18	11
Chain of custody implementation*	15	36
Natural heritage / reserves planning	15	24
Wood procurement plans / practices*	14	4
Forest research / demonstration*	13	5
Community grants and support	4	4
Utilization planning and practices	3	2

•Statistically different between systems at $<.10$

FSC for U.S. only; SFI for U.S. and Canada combined; SFI for landowning firms only



ATFS Survey Results

- ❑ Fewer changes than SFI and FSC; equal satisfaction
- ❑ Average of 2.77 changes per landowner
- ❑ Forest management: plans, reforestation, site protection, monitoring, inventories, G & Y
- ❑ Forest Practices: BMPs, invasives control, T&E species, clearcut, old growth, biological diversity
- ❑ Social legal: No major changes
- ❑ Economic & system: continuous improvement, utilization, research and extension, reporting
- ❑ Better B:C ratios, about same in achieving objectives and maintaining cert as SFI and FSC



Argentina and Chile

Major Changes with Certification

Practices with “Yes” Reply, Changes Made	Argentina FSC (n=6)	Chile – FSC & CertFor (n=3)
Forest management plan	6	2
Legal planning and record keeping	6	2
Logger / supplier training	6	3
Chemical safety, use, storage	5	3
Prevention of exotic invasives	5	2
Consulting with communities	5	3
Social impact analyses	5	2
Outreach and extension	5	3
Public relations / education	5	3
Internal program monitoring / auditing	5	2
Natural heritage planning reserves	5	3

Highly Ranked Benefits of Forest Certification	SFI Score	FSC Score
value of public relations	4.07	3.71
retain / gain market access /market sales tool*	3.98	3.31
strategic position of organization	3.91	3.54
right thing to do/corporate social responsibility	3.78	3.80
satisfy senior management decision	3.70	3.23
self-discovery of problems / nonconformance*	3.61	2.92
better organizational/professional image	3.57	3.55
foster continuous improvement	3.56	3.17
better management systems & performance	3.46	3.31
better records	3.43	3.06
better internal communications and discussions*	3.37	2.91
better planning and implementation	3.37	3.26
better public, landowner, supplier communications*	3.35	2.81
better forest management and practices	3.26	3.19
better worker training and safety*	3.22	2.70
prevent direct action campaigns/citizen challenges*	3.17	2.38

* Statistically different between systems at <.10

More Ranked Benefits of Forest Certification	SFI Score	FSC Score
upper management knowledge or practices*	3.26	2.57
better worker training and safety*	3.22	2.70
obtain useful dialogue with external auditors	3.19	2.77
credibility with regulatory agencies*	3.13	2.56
better use of science in management	3.00	2.91
improve management efficiencies	2.98	2.75
less regulation*	2.96	2.37
improve profitability	2.91	2.81
better timber and product prices	2.81	2.72
employee empowerment	2.80	2.47
better morale among employees	2.65	2.70
attract investors and increase stock prices*	2.39	1.63
pilot study or project	2.13	2.15

* Statistically different between systems at $<.10$

Highly Ranked Disadvantages of Certification	SFI Score	FSC Score
time and preparation costs	4.11	3.82
audit costs	3.87	3.93
added costs for forest management	3.43	3.14
too much record keeping, too little action	3.09	3.18
decreased returns on investments	2.91	2.58
capitulation to green groups / lobby*	2.85	1.91
negative changes in forest management	2.46	2.45
limits professional discretion and flexibility	2.46	2.41
too much planning / paralysis by analysis	2.46	2.11
adversarial auditing process	2.44	2.22
poor morale among workers*	2.43	2.00
more discussion than management*	2.31	1.95
too much public interaction*	2.30	1.84
too much openness*	2.26	1.51
public disclosure of audit results*	2.24	1.71
too much science / consultations*	2.11	1.72

* Statistically different between systems at $<.10$



Certification Costs, 2007

Statistic / N (unit)	SFI	FSC
Median		
Area / 36 (ha)	133,727	22,258
Cost / 17 (\$/ha)	0.37	0.91
Mean		
Area / 45 (ha)	992,675	251,392
Cost / 14 (\$/ha)	4.92	3.24

Note: No statistically significant differences by system; only by land size class

Cubbage et al 2008; FSC for U.S. only; SFI for U.S. and Canada combined



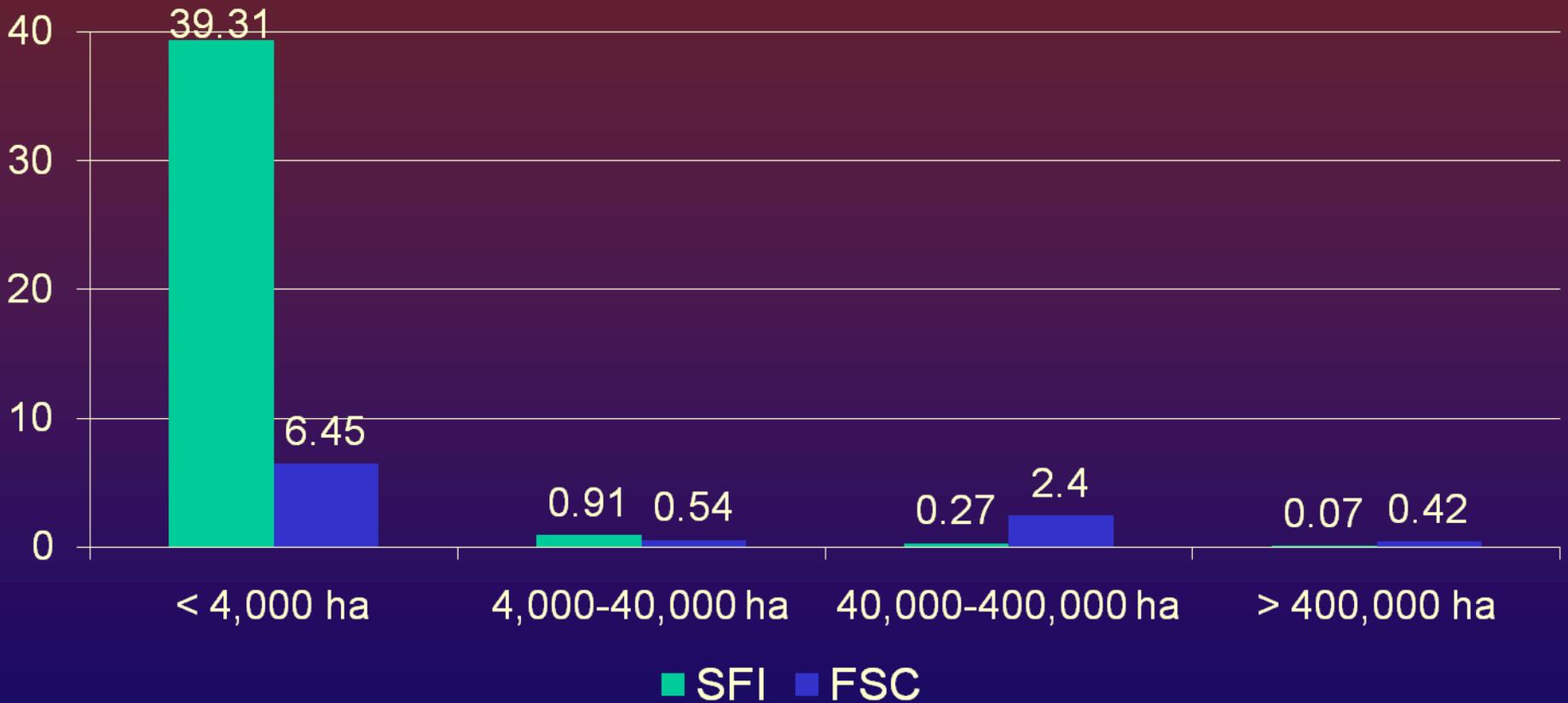
Summary of Benefits and Disadvantages

Statistic	SFI	FSC
Benefits (n=29)		
Mean	3.26	2.91
No. > 3.0	21	11
% > 3.0	72%	38%
Disadvantages (n=16)		
Mean	2.73	2.41
No. > 3.0	4	4
% > 3.0	25%	25%

1=not important; 2=somewhat important; 3=neutral;
4=important; 5=very important



Median Costs for Certification by Ownership Size (\$/ha/yr)





Median Certification Costs by Cost Component, 2007 (\$/ha/yr)

Component	SFI (n)	FSC (n)
Total Cert. Expenses	0.37 (18)	0.91 (14)
Internal Prep. Fees	0.11 (11)	0.48 (7)
External Audit Fees	0.19 (15)	0.36 (16)
Ongoing Prep. Costs	0.15 (9)	0.46 (12)
Community Ed.	0.01 (4)	0.04 (4)
Mgt. Changes	0.02 (2)	0.06 (4)
SIC / FSC Comms.	0.02 (10)	.02 (1)

Cubbage et al 2008; FSC for U.S. only; SFI for U.S. and Canada combined



Opinions of Certification Costs vs. Benefits

	SFI (no.)	FSC (no.)
Benefits greatly exceed costs	7	8
Benefits exceed costs	10	10
Benefits = costs	10	7
Costs exceed benefits	8	12
Costs greatly exceed benefits	2	8

Mean score by system: SFI = 3.3; FSC = 3.0; ATFS = 3.8
5= benefits greatly exceed costs; 1 = vice versa



Expected & Realized Benefits of Forest Certification

System / Factor	Expected Benefit		Actual Benefit	
	SFI	FSC	SFI	FSC
Strategic / CSR	3.9	3.6	3.5	3.4
External Signaling	4.2	3.9	3.7	3.8
Market Share / Prices	3.2	3.7	2.0	1.9
Internal Mgt, Records	3.3	3.0	3.7	3.3

Ranking: 1=not important; 2=somewhat important; 3-neutral; 4=important; 5=very important



Has Certification Achieved Objectives?

	SFI (no.)	FSC (no.)
Definitely yes	12	17
Probably yes	23	17
Uncertain	5	4
Probably not	2	6
Definitely not	0	7

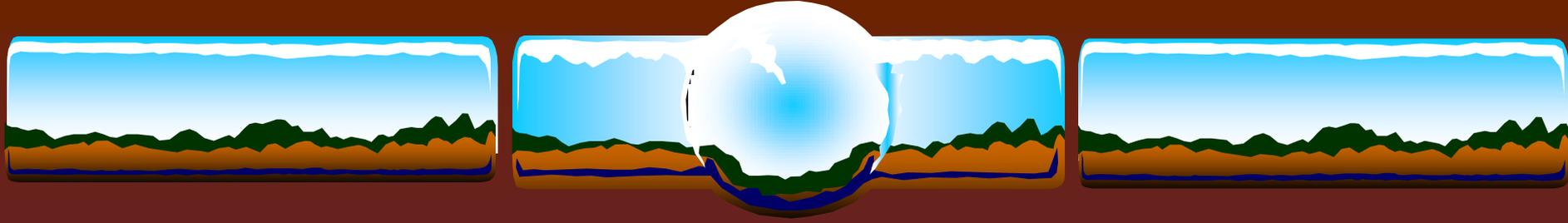
Mean score by system: SFI = 4.1; FSC = 3.6; ATFS = 3.8
5= definitely yes; 1 = vice versa



Will Organization Maintain Certification?

	SFI (no.)	FSC (no.)
Definitely yes	18	14
Probably yes	20	22
Uncertain	3	12
Probably not	1	3
Definitely not	0	1

Mean score by system: SFI = 4.3; FSC = 3.9; ATFS = 4.1
5= benefits greatly exceed costs; 1 = vice versa



Discussion and Conclusions



Certification Impact Questions

Does certification matter – does forest management / other practices change?

Yes

Are certification systems different?

Statistically – sometimes

Practically – smaller numerically

But different emphasis

How much does it cost?

It depends

Cheap for large areas; not for small ones



Conclusions - Many Management Changes: Forest Certification Improves Practices

- Average of about 13-14 changes in all management practices per organization, both systems
 - SFI – changes before certification or to maintain cert
 - FSC – prior changes & continuing action requirements
- SFI Procurement
 - Same proportions as SFI Forest Management owners
 - Fewer total changes, fewer forest mgt changes
- FSC Forest Management vs. Group managers
 - Similar proportions
- More changes in South America ~27



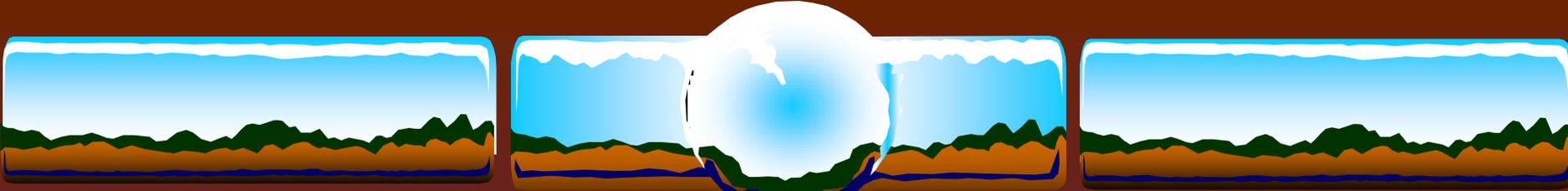
Comparative Management Changes

- SFI – more changes in:
 - Management: green up standards, BMP use & monitoring, determining clearcut size
 - Social: few
 - Economic/system: SIC participation, logger training, management review
- FSC – more changes in:
 - Management: sustained yield, special sites & reserves, forest management plans, chemicals, soil protection, and eliminating GMOs
 - Social: stakeholder meetings, release of management plan, consulting with communities
 - Economic/system: legal planning and record keeping



Argentina and Chile

- Similar findings to North America
 - More changes – average of 27 vs. 13-14
 - Evenly distributed among environmental, social, and economic components
 - Larger firms made slightly more changes
- Most would maintain forest certification – 90%
- Believed that benefits exceeded costs
- Were more enthusiastic about certification

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World Forestry Class – FOR 414, NC State University
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Argentina and Chile

- ❑ Forestry sector leaders in practices
- ❑ Few new employees
- ❑ Small changes in job description or appointment
- ❑ Lots of preparation, consultant studies
- ❑ But more a change in the way of thinking and doing business than the work performed once adopted
- ❑ Significant number of conditions each year, 2-6; 9 total
- ❑ Has improved worker conditions, continuous improvement, the environment
- ❑ Still needs price benefits, stronger market structure to improve prices, more recognition for certified products in domestic markets



Benefits and Disadvantages

- ❑ Perceived benefits ranked more highly than disadvantages
- ❑ Somewhat less favorable perceptions for FSC
- ❑ Less perceived disadvantages by FSC as well
- ❑ Most owners in both systems will re-certify

- ❑ Respondents are environmental program managers
- ❑ Foresters/staff may be less enthusiastic



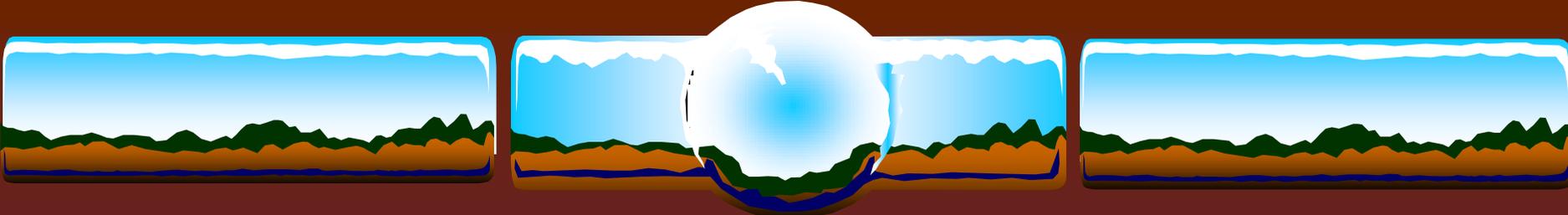
Benefits and Costs

- Much higher costs for small owners; less for large
 - Median much less than \$1 / ac / yr, but wide range
 - >\$6.00 / ha for less than 4000 ha tracts
 - No significant differences in costs between systems when ownership size accounted for
- Are these expensive?
 - Or a new cost of doing business?
 - Timber, biomass, carbon
 - Incentive programs
- Tree Farm and FSC Group Certification reduce costs



Conclusions: Impacts

- ❑ Certification has changed forest, social, and economic practices
 - More economic for SFI
 - More environmental and social for FSC
 - Forest management, practices, and economic for ATFS, but not social/legal
- ❑ Similar results to prior Latin America surveys
 - Where total changes were about 2 times CARs
- ❑ Most organizations feel certification has achieved their objective
- ❑ And will maintain certification in the future
- ❑ Enhancing sustainable forest management



Forest Certification Programs in North and South America: Motivation, Process, and Impacts

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