



Years of PREMIUM ENVIRONMENTAL MANAGEMENT



*High Level Conference on EMAS
European Central Bank
Frankfurt am Main
13 November 2015*





The policy case for EMAS

Why public bodies should
promote voluntary environmental
measures in companies



Key research-questions

- If a public body promotes EMAS, is it effectively pursuing environmental improvement?
 - EMAS and environmental performance
 - The real effectiveness of EMAS
 - EMAS and legal compliance
- What are the different roles for a public body?
 - Public bodies exerting « pressures » on companies
 - Public bodies and regulatory relief
 - The pivotal role of public bodies in supporting companies



What 467 EMAS registered organisations perceive: a recent survey



- **Nearly all surveyed and interviewed organisations reported performance improvement**, although that improvement was often confined to a few core indicators.
- Our results are in line with previous research.
- Research indicates that EMS in general and EMAS in particular can lead to performance improvements, with most showing a somewhat more positive trend for EMAS than for ISO 14001.
- Results did not show duration as a core decisive variable/factor for the variation in performance. One explanation is that **the quality of EMS implementation (i.e.: the “internalisation”) is more important.**



Environmental Performance improvements according to the interviewees:

	Deteriorated a lot	Deteriorated somewhat	No change	Improved somewhat	Improved significantly
Energy efficiency	0.23%	2.72%	11.79%	41.50%	43.76%
Efficiency in the use of materials	0.47%	0.94%	22.82%	48.47%	27.29%
Water consumption	0.46%	3.45%	24.14%	42.30%	29.66%
Waste production	0.46%	2.29%	20.59%	44.85%	31.81%
Biodiversity	1.35%	1.35%	64.96%	20.49%	11.86%
Quality/quantity of wastewater effluents	0.77%	1.29%	48.45%	28.61%	20.88%
Quality/quantity of air emissions	0.49%	1.73%	37.04%	38.02%	22.72%
Noise emissions	0.25%	2.02%	54.55%	29.55%	13.64%
Protection of soil and groundwater	0.77%	0.77%	49.23%	30.51%	18.72%
Odours	0.83%	1.67%	67.22%	19.72%	10.56%
Prevention of risks and accidents	0.48%	0.72%	22.54%	45.56%	30.70%



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What is proven by the EMAS Statements:

The environmental statement analysis presented the most extensive investigation to date into EMAS's influence on multiple aspects of organisations' environmental performance.

- Data was collected from the most recent environmental statements of **122 EMAS registered organisations**.
- **Six energy-intensive sectors** were analysed: e.g. waste collection, various manufacturing sectors
- Focus: performance over a **time period of two years** (n-2; e.g. 2012-2014).



Environmental statement analysis: the results

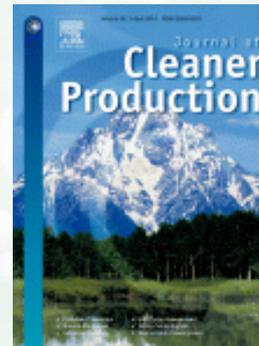
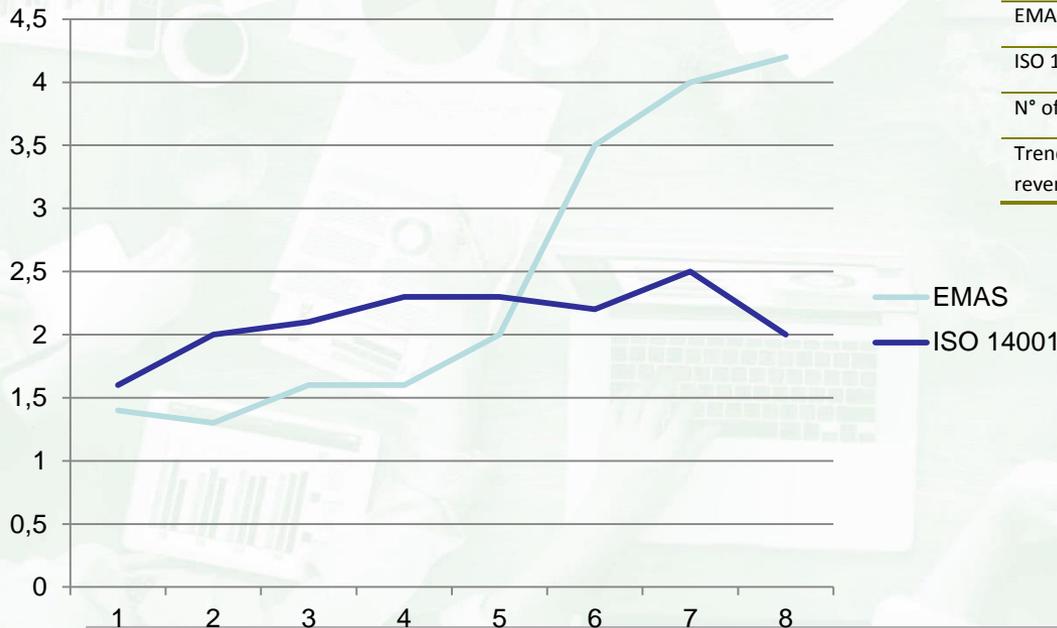


Environmental area	Improvement?
Energy use	↑
Air emissions	↑
CO ₂	↑
Water consumption	→
Waste	↓
Material efficiency	↓

Source: EMAS Evaluation Study, 2015, adelphi and Sant'Anna School, submitted to DG Env.

A comparative study on EMAS and ISO 14001 «effectiveness» (considering CO2 emissions)

Variable	Mean	Std.Dev.	Minimum	Maximum	NumCases
CO ₂ emissions 2007-2010	3.89	1.29	1	7	194
EMAS Adoption (2007)	0.24	0.43	0	1	229
ISO 14001 Adoption (2007)	0.43	0.49	0	1	229
EMAS maturity	1.12	2.36	0	13	229
ISO 14001 maturity	2.38	3.34	0	17	229
N° of employees (log)	6.77	2.45	0	11.22	175
Trend of operation revenues (2007-2010)	2.78	29.30	-0.77	397.30	187



Testa F., Rizzi F, Daddi, T., Gusmerotti NM., Iraldo, F., Frey, M., 2014. **EMAS and ISO 14001: the differences in effectively improving environmental performance.** *Journal of Cleaner Production* 68 165-173

What factors lead to performance improvements?

How would you rate the following factors in terms of their importance for achieving environmental improvement?	Value	Standard deviation
Technical progress	3.98	0.82
Environmental management system used to fulfil EMAS requirements	3.89	0.80
Environmental regulation/public policy intervention	3.85	0.90
Environmental reporting	3.78	0.90
Cost (savings) of production inputs	3.65	1.00

1-5 Likert scale, "1 = option is not effective at all" to "5 = option is very effective"

Source: EMAS Evaluation Study, 2015, adelphi¹⁰ and Sant'Anna School, submitted to DG Env.

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Who says performance is the only (or main) improvement?

EMAS benefits for registered organisations	Value
Improved legislative compliance	3.83
Reduced risk of incurring environmental sanctions through improved compliance	3.54
Better identification of overall corporate responsibilities (e.g. clear identification of roles and responsibilities for managing environmental requirements)	3.51
Fewer environmental accidents	3.29
Cost savings through reuse, recycling, or decrease in resource or energy use	3.25
Improved relations with public stakeholders and the local community	3.15
Increased employees involvement and satisfaction	3.09
Consistent environmental management practices (incl. legal compliance check; reporting) worldwide through EMAS Global	3.07
Added value from having a uniform environmental management standard that is recognized across the EU (i.e. more visible than national or local standards, meets environmental requirements across EU)	3.01
Meeting environmental reporting obligations (based on national/EU legislation) through EMAS	2.96
Increased customer satisfaction	2.91
Improved relations with private stakeholders (suppliers, competitors, trade associations, markets, etc.)	2.82
Increased marketing opportunities	2.77
Improvement of the quality of products/services offered on the market	2.73
Improved competitive advantage on the domestic market	2.62
Obtaining administrative simplifications and regulatory relief (e.g. longer duration of permits, less frequent environmental inspections by authorities)	2.58

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What can public bodies do? First: exerting their influence.

	Model 1 Internalization of requirements on planning		Model 2 Internalization of requirements on training and employee involvement		Model 3 Internalization of requirements on operational activities	
	Coefficient	Standard Error	Coefficient	Standard Error	Coefficient	Standard Error
Influence of public authorities	0.043	0.088	-0.024	0.082	0.208**	0.092
Influence of customers	-0.231**	0.099	-0.005	0.080	-0.293***	0.104
Influence of suppliers	0.090	0.130	0.224**	0.108	0.189**	0.128
Influence of shareholders	0.037	0.078	0.159**	0.081	0.180***	0.082
Influence of banks	0.194**	0.103	0.168**	0.109	0.118**	0.104
Influence of industrial associations	-0.052*	0.108	-0.110*	0.105	-0.078*	0.105
Influence of community groups	0.083	0.101	-0.039	0.099	-0.046	0.104



Testa F., Boiral O., Iraldo F., **Internalisation of environmental practices and institutional complexity: can stakeholders pressures encourage greenwashing?** R&R, *Journal of Business Ethics*, Springer.



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Second: introducing and applying regulatory relief

	Size			Geographical distribution			
	Small	Medium	Large	Southern Europe	Western/Central Europe	Eastern Europe	Northern Europe
EMAS Population	53%	28%	19%	54%	42%	2%	2%
Sample	50%	27%	23%	68%	24%	4%	4%



Testa F., Heras I., Daddi T., Boiral O., Iraldo F., **Public Regulatory Relief and the Adoption of Environmental Management Systems: the European Survey BRAVE**, *Journal of Environmental Planning and Management*, R&R, Taylor and Francis.

Number of respondents	244
Size (number of employees)	
Micro 1-10	11%
Small <50	36%
Medium >50 and <250	27%
Large >250	23%
Not answered	2%
Sector of activity	
Manufacturing	48%
Agro-food	7%
Environmental and energy services	24%
Other services	21%
Not answered	1%

Are relief measures and incentives effective? (% of «users»)

		Yes	No	Mean
Country	Germany	40%	60%	0.400
	Italy	50%	50%	0.503
	Austria	54%	46%	0.545
	Spain	30%	70%	0.296
	Follower countries	16%	84%	0.161
Size	Micro 1-10	41%	59%	0.413
	Small <50	40%	60%	0.402
	Medium >50 and <250	42%	58%	0.424
	Large >250	38%	62%	0.385
Sector	Manufacturing	42%	58%	0.422
	Agro-food	18%	82%	0.176
	Environmental and energy services	52%	48%	0.525
	Other services	28%	72%	0.280
	Total	40%	60%	0.400

Are relief measures and incentives effective? (% of «users»)

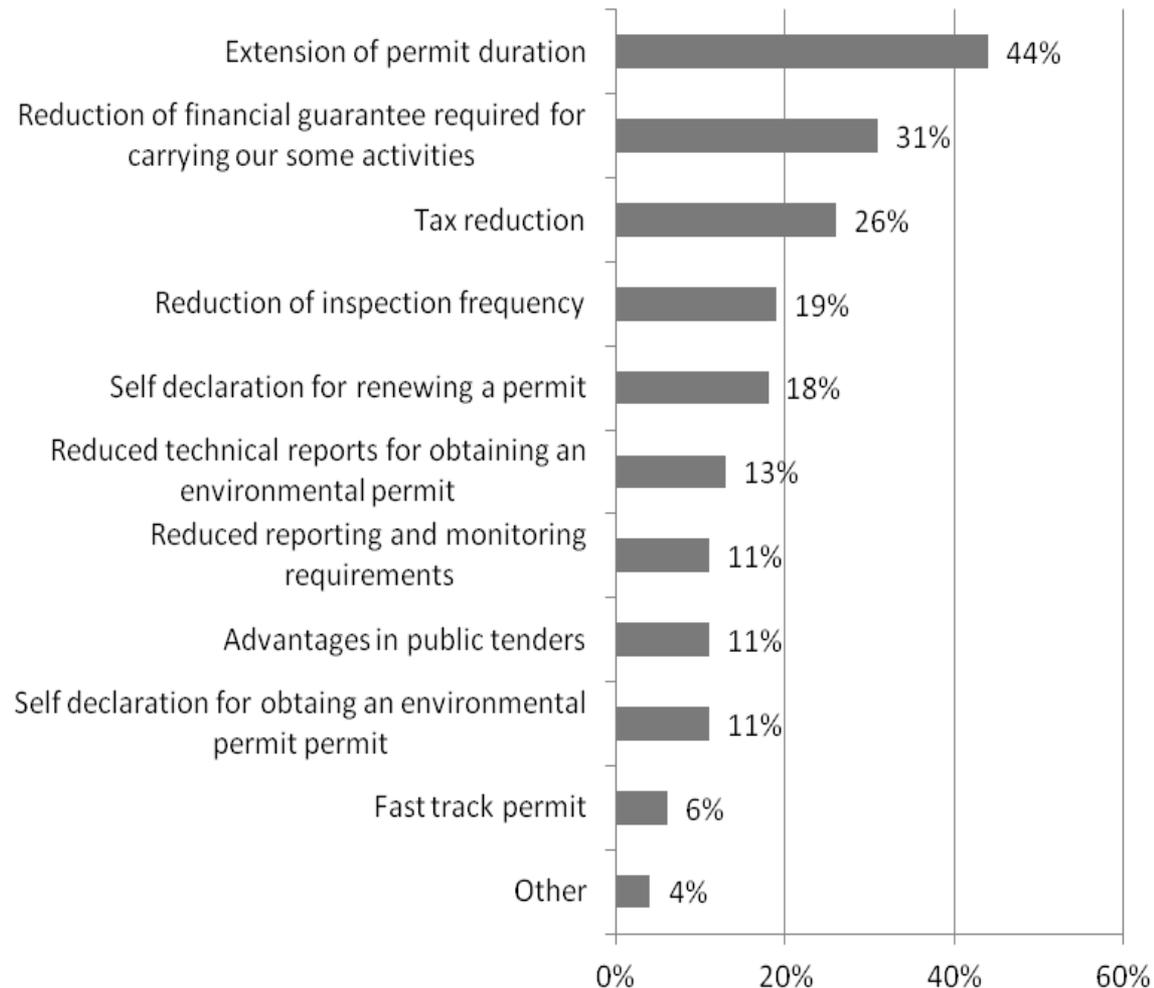
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European
Commission



Which are the most «used» measures?





Public bodies promoting a public scheme...



<i>Simplification measure</i>	<i>Reference</i>	<i>Scope</i>	
Longer duration of authorization of companies within the IPPC	Art. 29 Decree 152/06	x	EMAS
		x	ISO 14001
Longer duration of authorization for treatment plants for end-of-life vehicles	Art. 6 Decree 2009/2003	x	EMAS
			ISO 14001
Longer lasting authorization for landfills that are not within IPPC	Art. 10 Decree 36/2003	x	EMAS
			ISO 14001
Faster issuing time for authorization	Emilia Romagna Regional law n.21 of 2004	x	EMAS
			ISO 14001
Renewal of authorization for waste management plants via self-certification	Art. 209 Decree 152/06	x	EMAS
		x	ISO 14001
Use of EMS documents for obtaining authorization	Art. 29 Decree 152/06	x	EMAS
		x	ISO 14001
Ecodesign of energy using products	Art. 11 Decree 201/2007	x	EMAS
			ISO 14001

REMOVING AND SIMPLIFYING ADMINISTRATIVE COSTS AND BURDENS FOR EMAS AND ISO 14001 CERTIFIED ORGANIZATIONS: EVIDENCES FROM ITALY

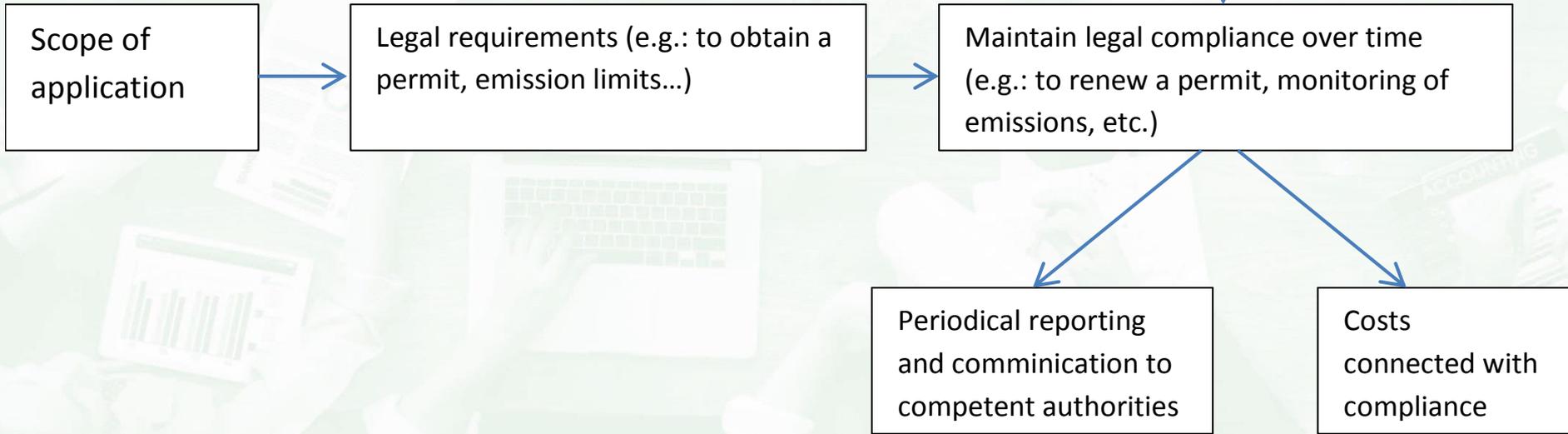
Tiberio Daddi^{1*}, Francesco Testa¹, Fabio Iraldo^{1,2}, Marco Frey¹

¹Sant'Anna School of Advanced Studies - Institute of Management, 33 Piazza Martiri della Libertà, 56127 Pisa, Italy
²IEFE - Institute for Environmental and Energy Policy and Economics, Bocconi University, 1 via Guglielmo Roentgen, 20136 Milan, Italy



Few practical examples:

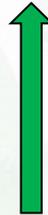
**THRESHOLDS ON SIZE
INCREASED TO APPLY
EIA IN LOMBARDY (L.R.
14/2014)**



Few practical examples:



REDUCTION OF IRAP (FISCAL MEASURE) FOR EMAS COMPANIES IN TUSCANY L.R. 79/2013



Scope of application

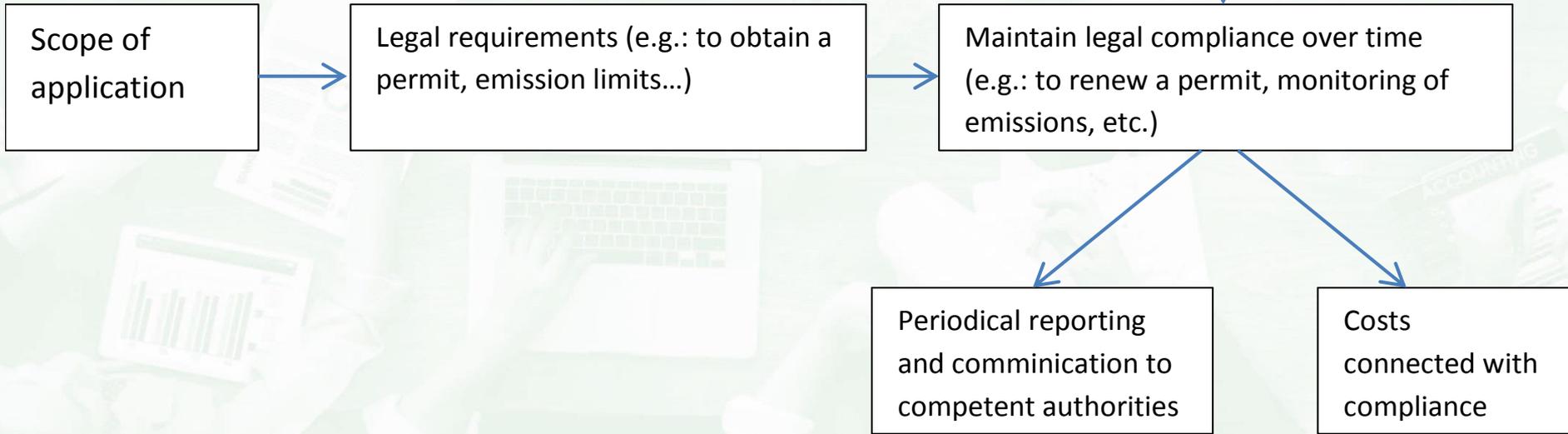
Legal requirements (e.g.: to obtain a permit, emission limits...)

Maintain legal compliance over time (e.g.: to renew a permit, monitoring of emissions, etc.)

Periodical reporting and communication to competent authorities

Costs connected with compliance

Inspections and controls



Few practical examples:



Years of
PREMIUM
ENVIRONMENTAL
MANAGEMENT

LONGER DURATION OF
PERMITS AND
AUTHORISATIONS IN
TUSCANY L.R. (PdL
356/2014)

Inspections and
controls

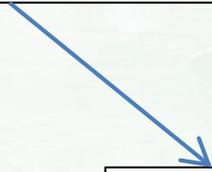
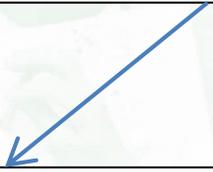
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Periodical reporting
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Few practical examples:



EMAS COMPANIES SUBJECT TO CONTROLS AND INSPECTION WITH A LOWER FREQUENCY IN LOMBARDY L.R. 19/2014

Inspections and controls

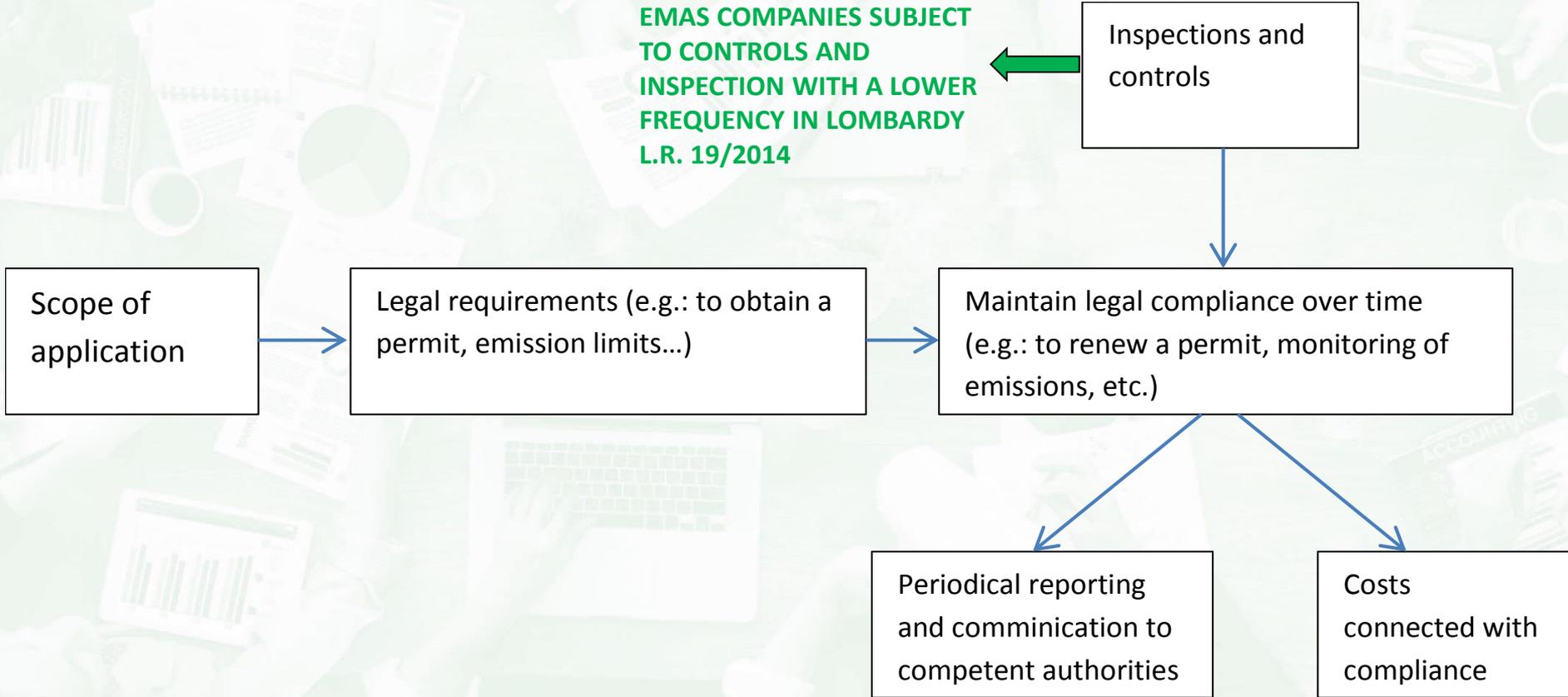
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Few practical examples:



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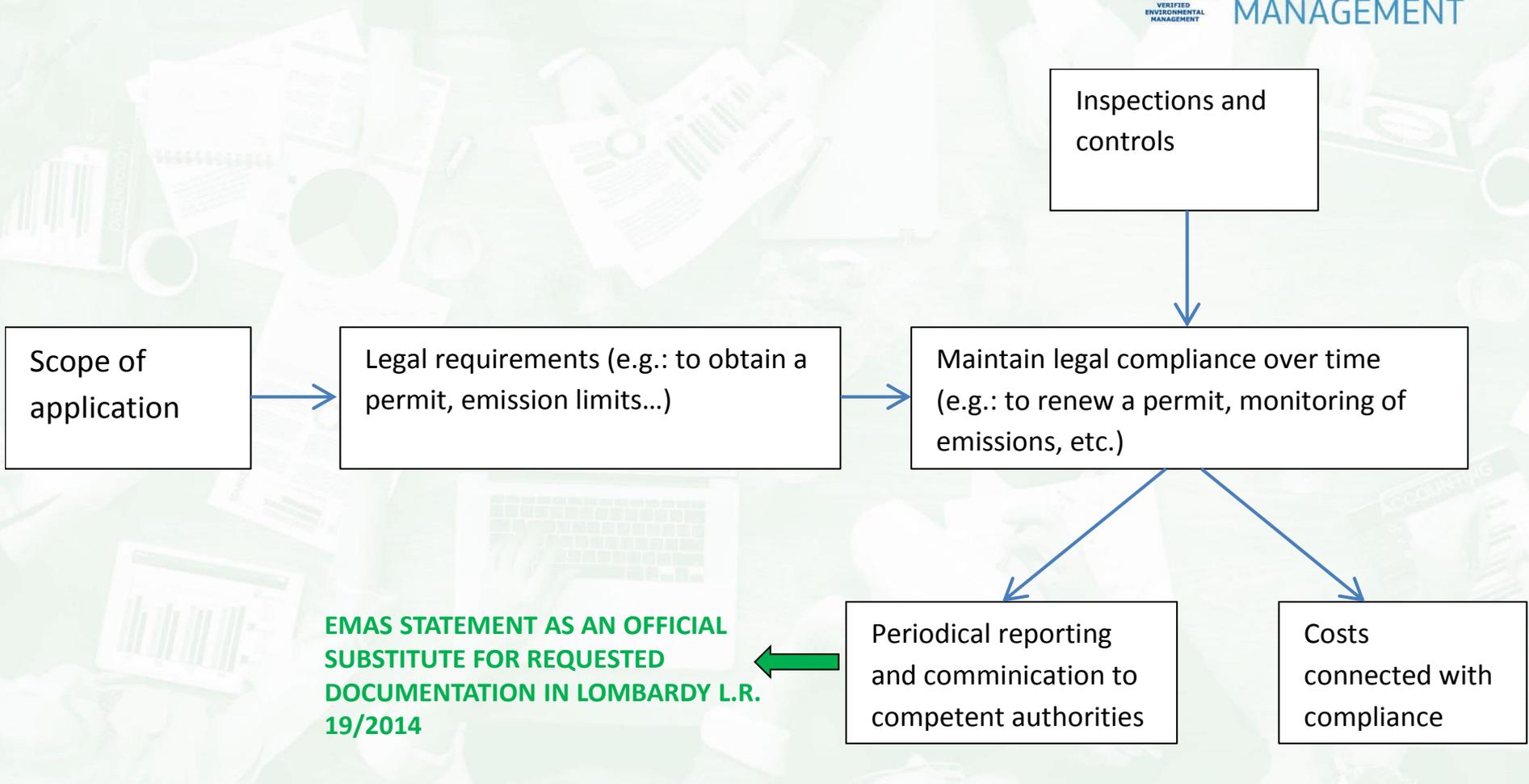
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EMAS STATEMENT AS AN OFFICIAL SUBSTITUTE FOR REQUESTED DOCUMENTATION IN LOMBARDY L.R. 19/2014



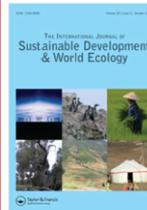
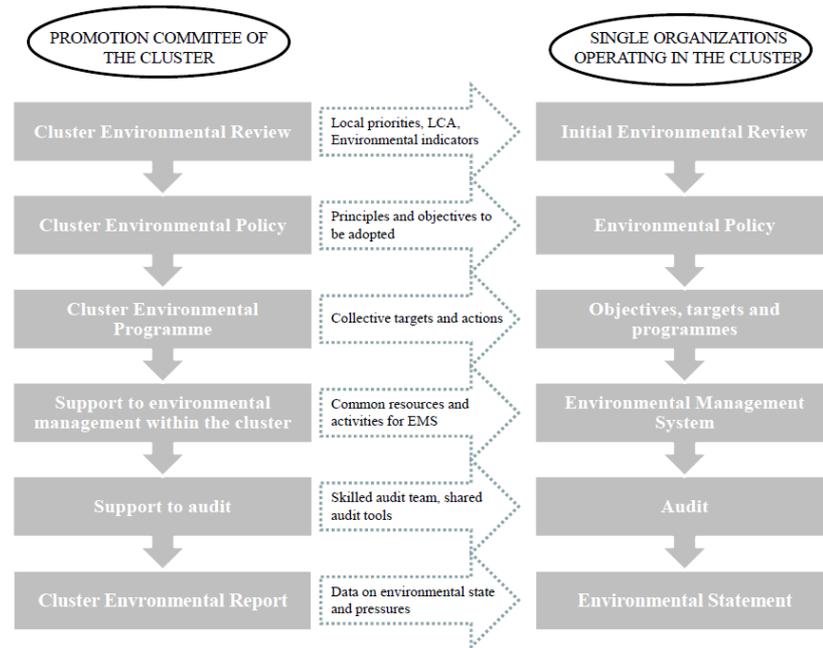


Third: institutional «in-field» support: does it work?



Lucca cluster performance (2003-2010)				
Environmental aspect	Performance indicator	Packaging paper		%
		2003	2010	
Electricity consumption	kwh/t	486.6	383.3	-21.2
Air emissions	kg NO _x /t	0.74	0.16	-78.4
Waste water	kg BOD/t	0.39	0.09	-76.9
	kg COD/t	2.83	0.74	-73.9

CEPI (2004-2010)				
Environmental aspect	Performance indicator	2004	2010	%
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Air emissions	kg NO _x /t	0.81	0.85	4,9
Waste water	kg BOD/t	1,2	0.89	-25,8
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Tiberio Daddi^{a*} & Fabio Iraldo.

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International Journal of Sustainable Development & World Ecology

DOI: 10.1080/13504509.2015.1106988

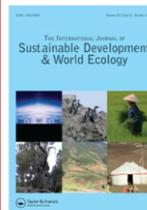
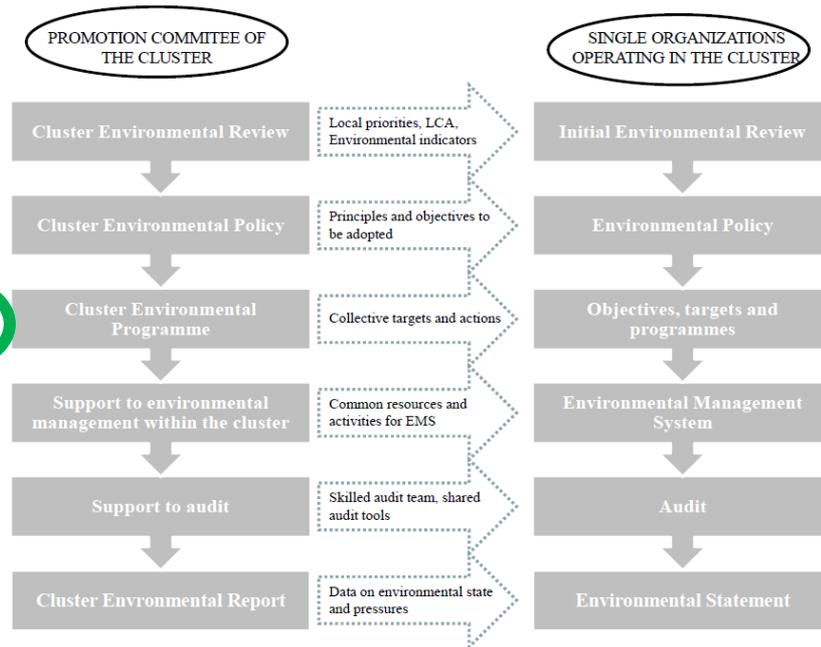


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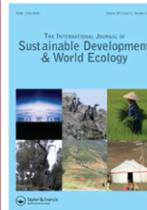
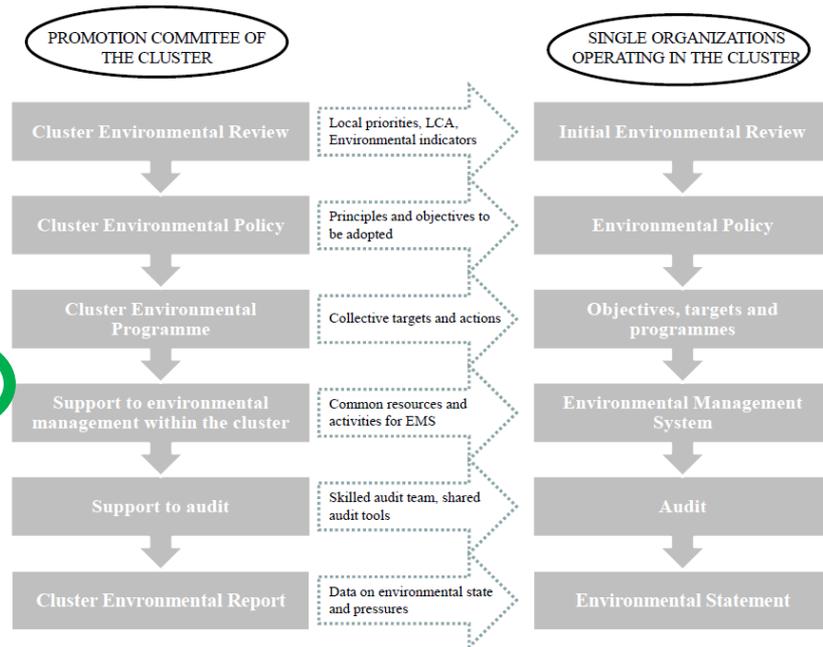
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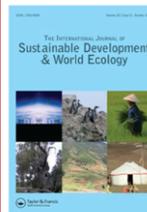
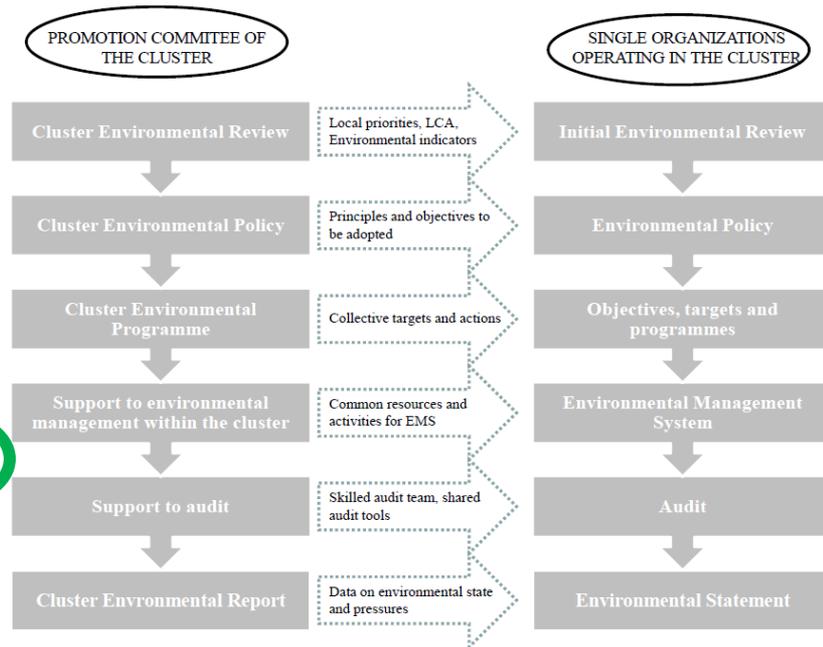
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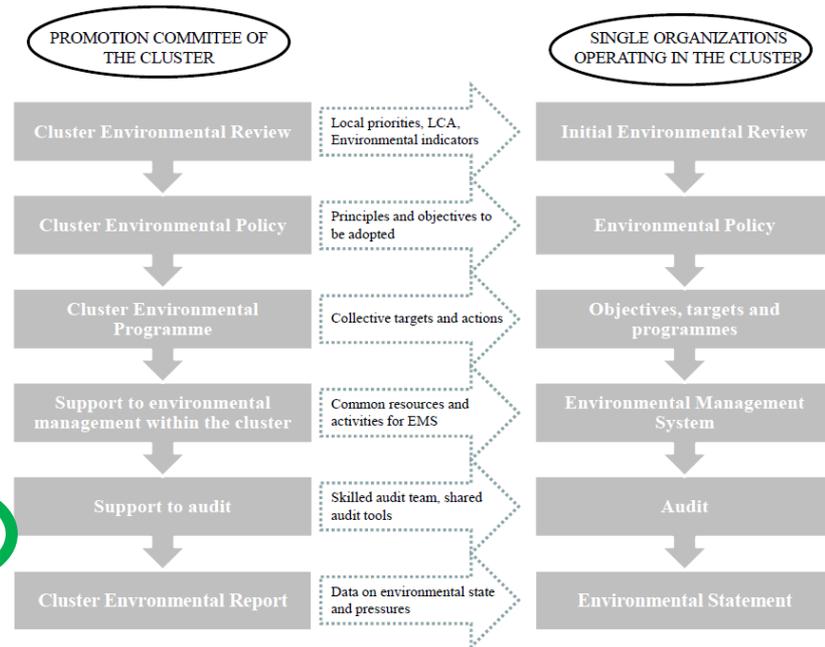


Third: institutional «in-field» support: does it work?



Lucca cluster performance (2003-2010)				
Environmental aspect	Performance indicator	Packaging paper		%
		2003	2010	
Electricity consumption	kwh/t	486.6	383.3	-21.2
Air emissions	kg NO _x /t	0.74	0.16	-78.4
Waste water	kg BOD/t	0.39	0.09	-76.9
	kg COD/t	2.83	0.74	-73.9

CEPI (2004-2010)				
Environmental aspect	Performance indicator	2004	2010	%
		Electricity consumption	kwh/t	
Air emissions	kg NO _x /t	0.81	0.85	4,9
Waste water	kg BOD/t	1,2	0.89	-27,5
	kg COD/t	6.8	6.26	-7,9



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The effectiveness of cluster approach to improve environmental corporate performance in an industrial district of SMEs: a case study.

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Thank you!

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