13th International Association for Sport Information World Congress
11-13 March, 2009 - Canberra, Australia

The Global Sport Arms Race - Nine key common factors (termed pillars) that contribute to determining international sporting success with an emphasis on Pillar 9 - Information and Research.

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Australian Government
Australian Sports Commission

AUSTRALIAN INSTITUTE OF SPORT

13th IASI World Congress

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Building and sustaining sport information communities - through connectivity, collaboration and sharing

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13th IASI World Congress

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Building and sustaining sport information communities - through connectivity, collaboration and sharing

Dr. Veerle De Bosscher

Sports Policy and Management, Vrije Universiteit Brussel, Belgium

The global sporting arms race

The nine key success determinants in elite sport policies.

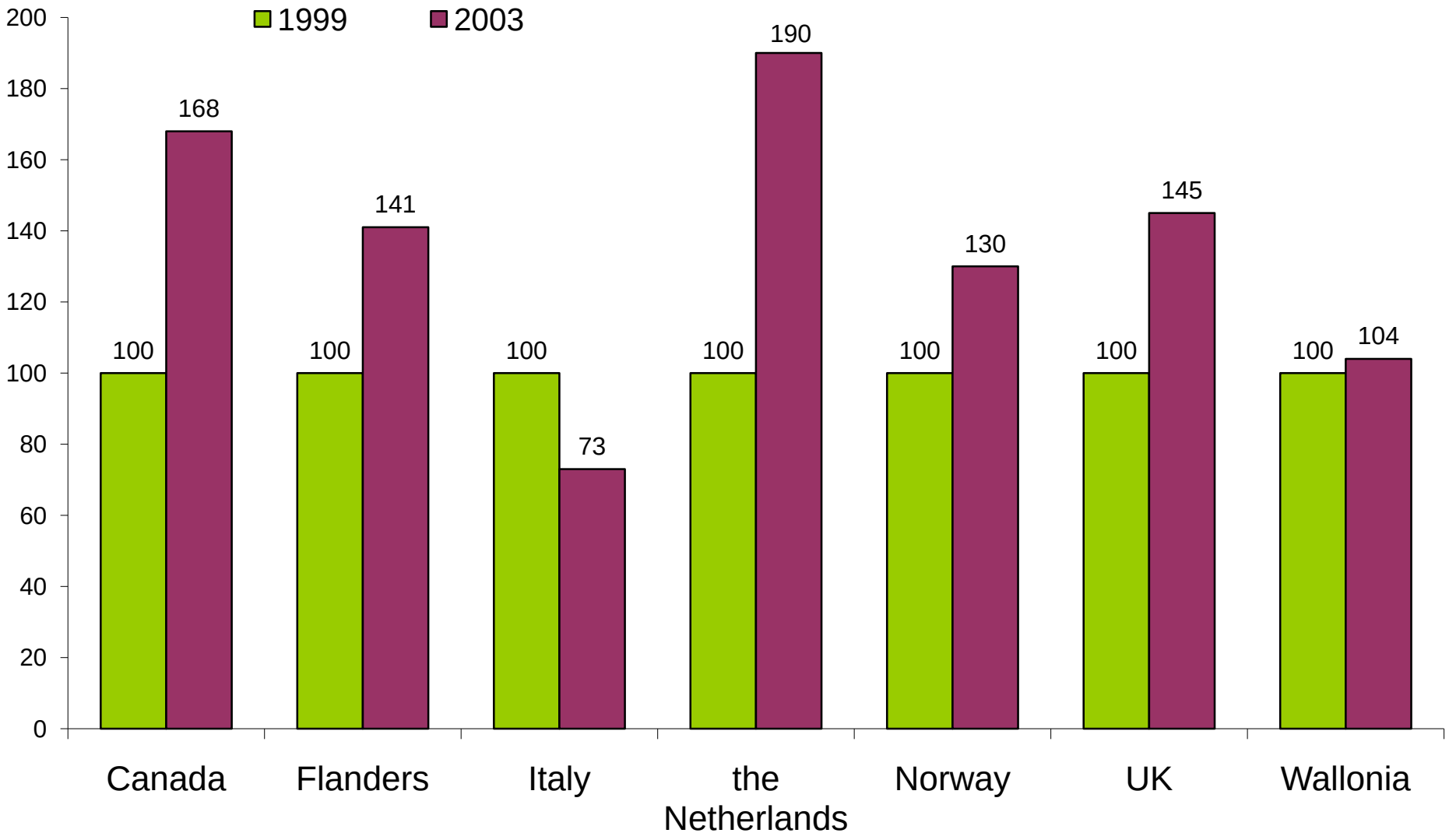
Case: pillar 9 - Information and Research

Canberra, 11-14/03/2009

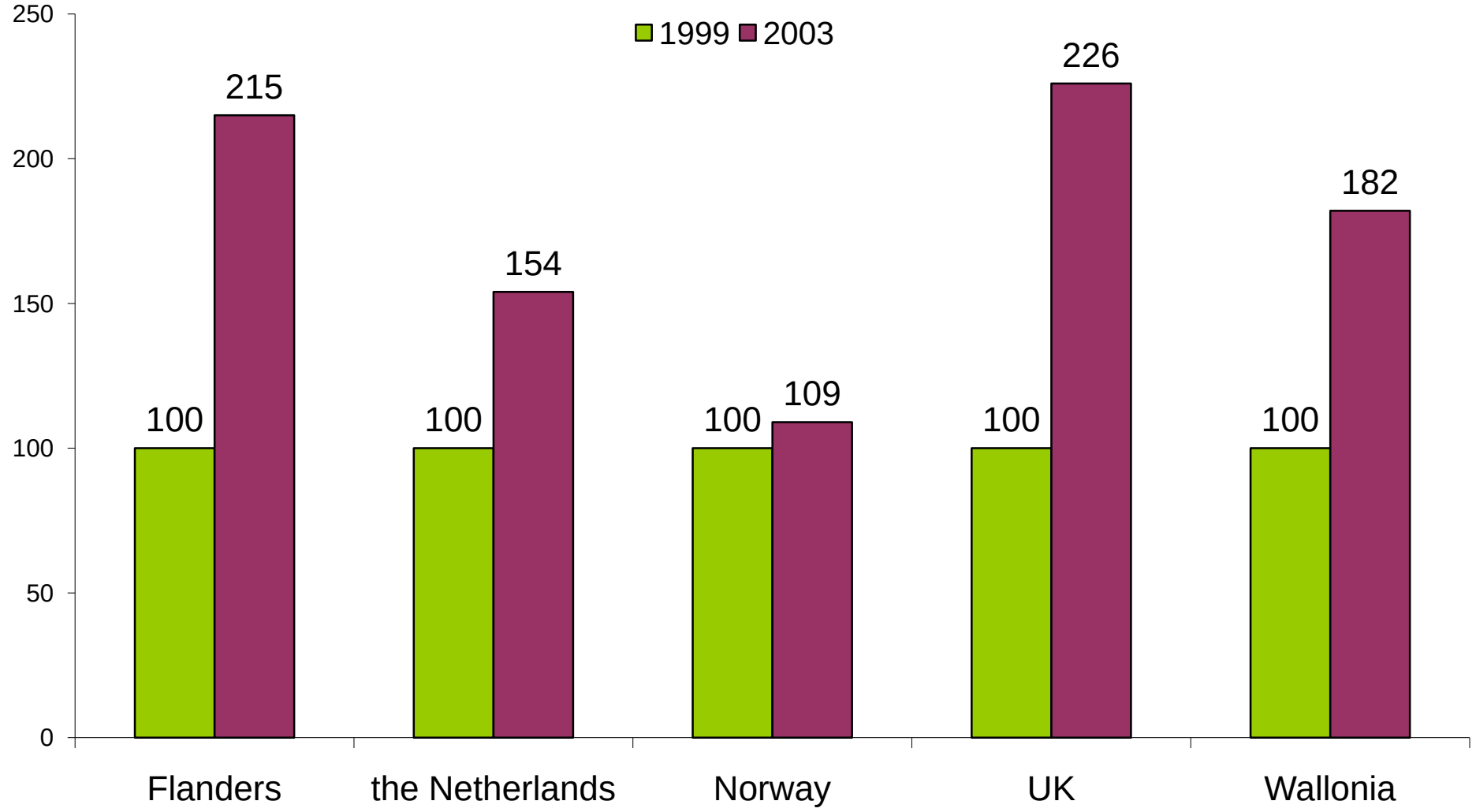
Veerle De Bosscher (BE)
Paul De Knop (BE) & Maarten van Bottenburg(NL)
Simon Shibli & Jerry Bingham (UK)

Vrije Universiteit Brussel

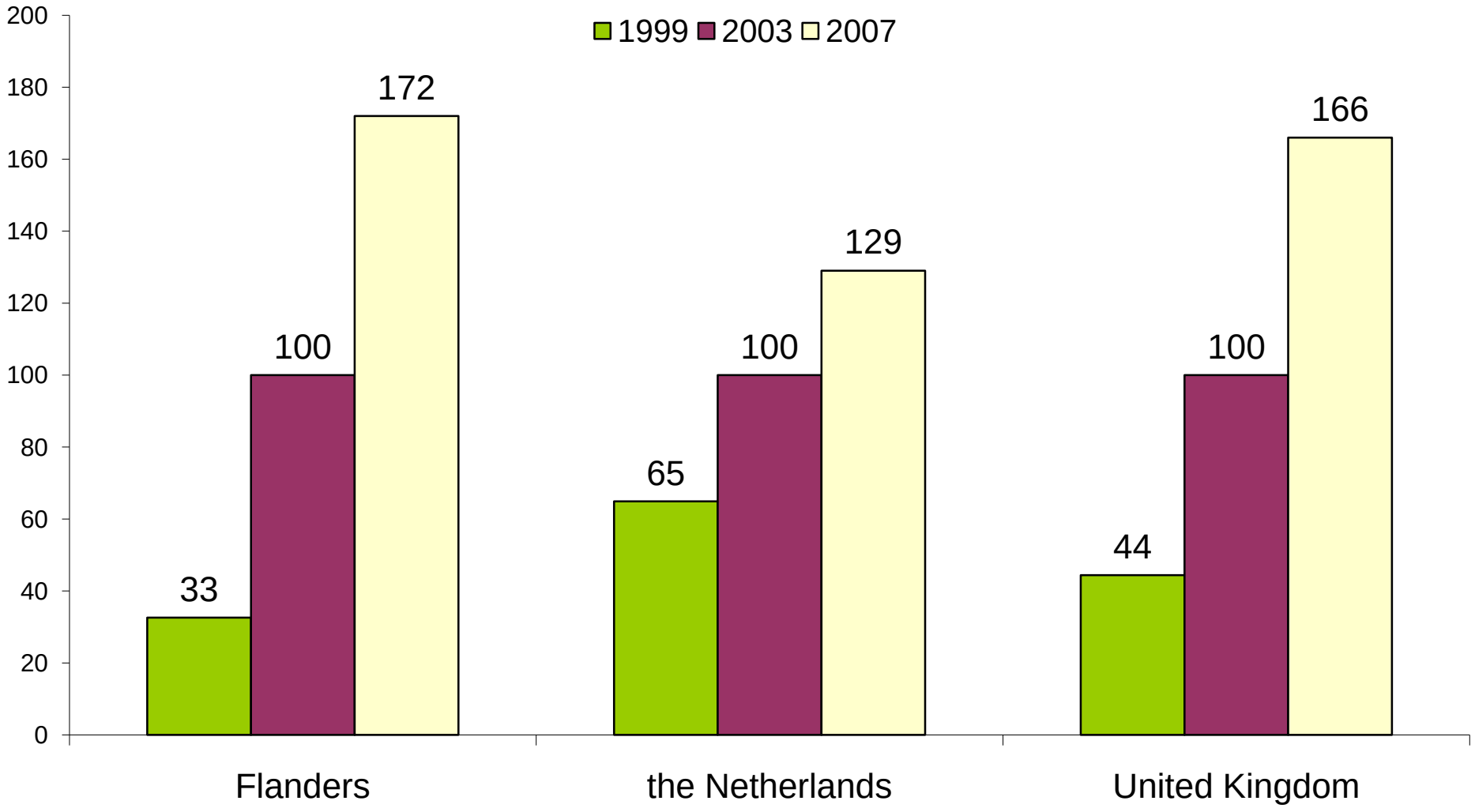
Change in national expenditure on sport 1999-2003



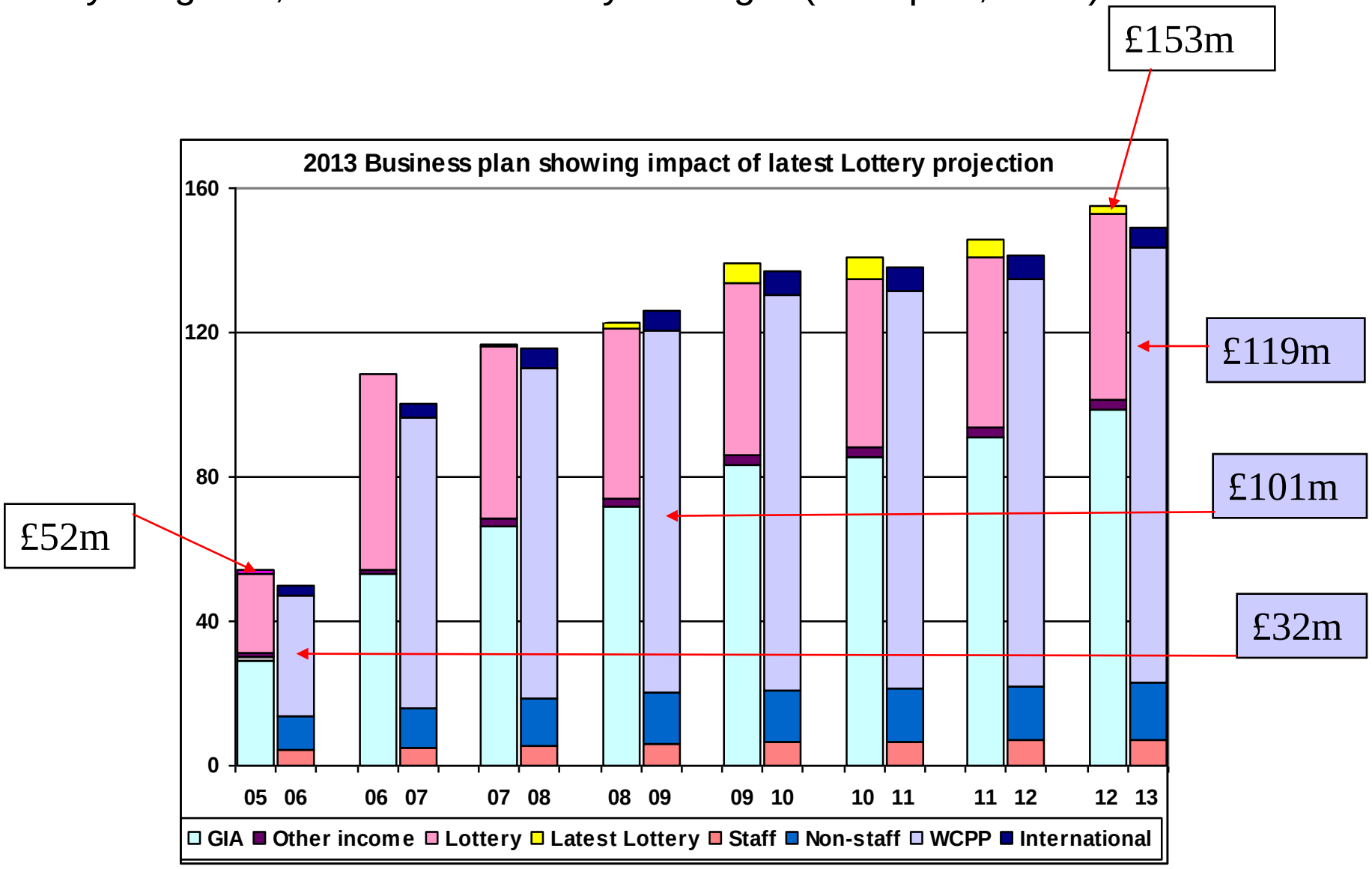
Change in national expenditure on elite sport 1999-2003



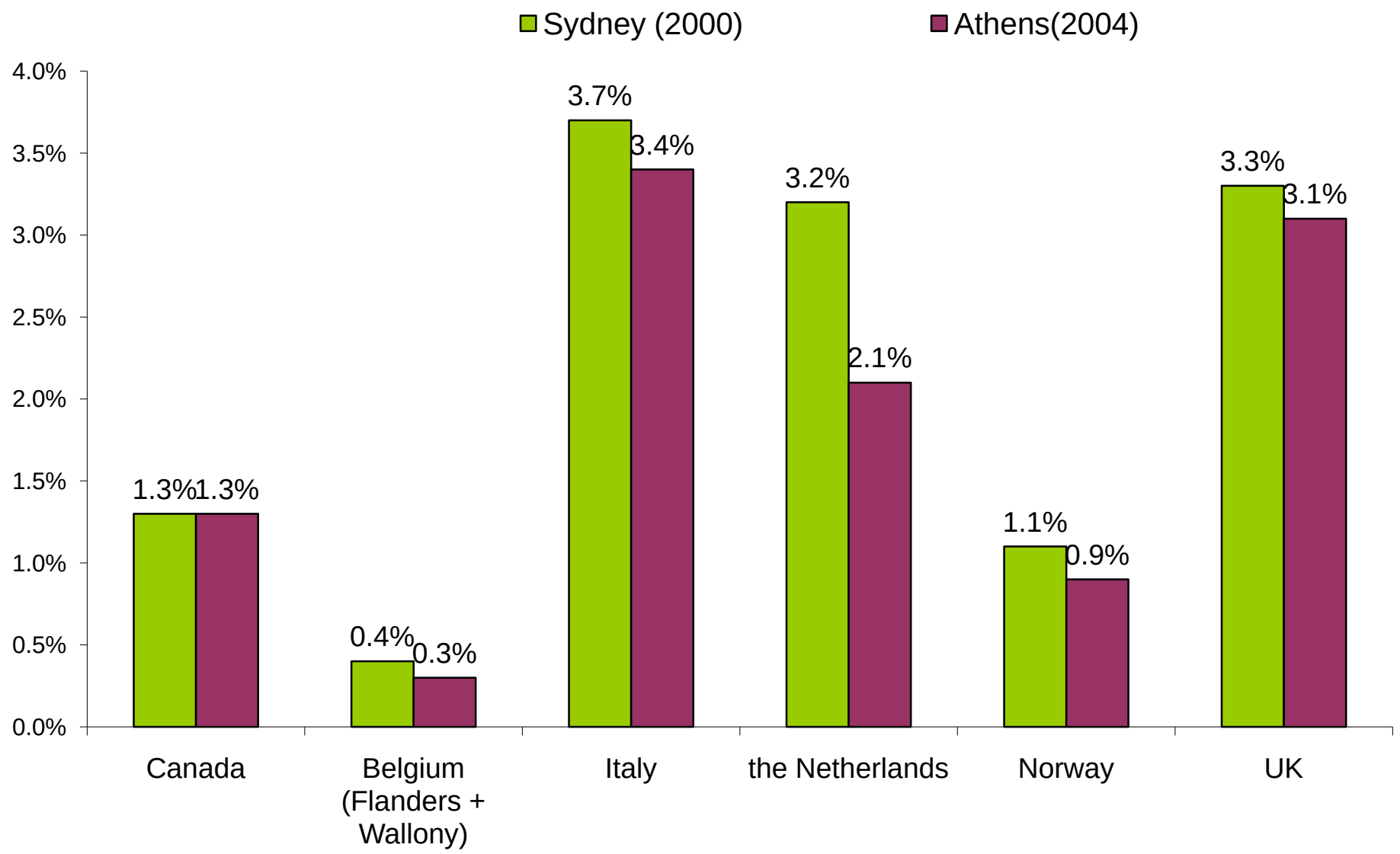
Change in national expenditure on elite sport 1999-2007



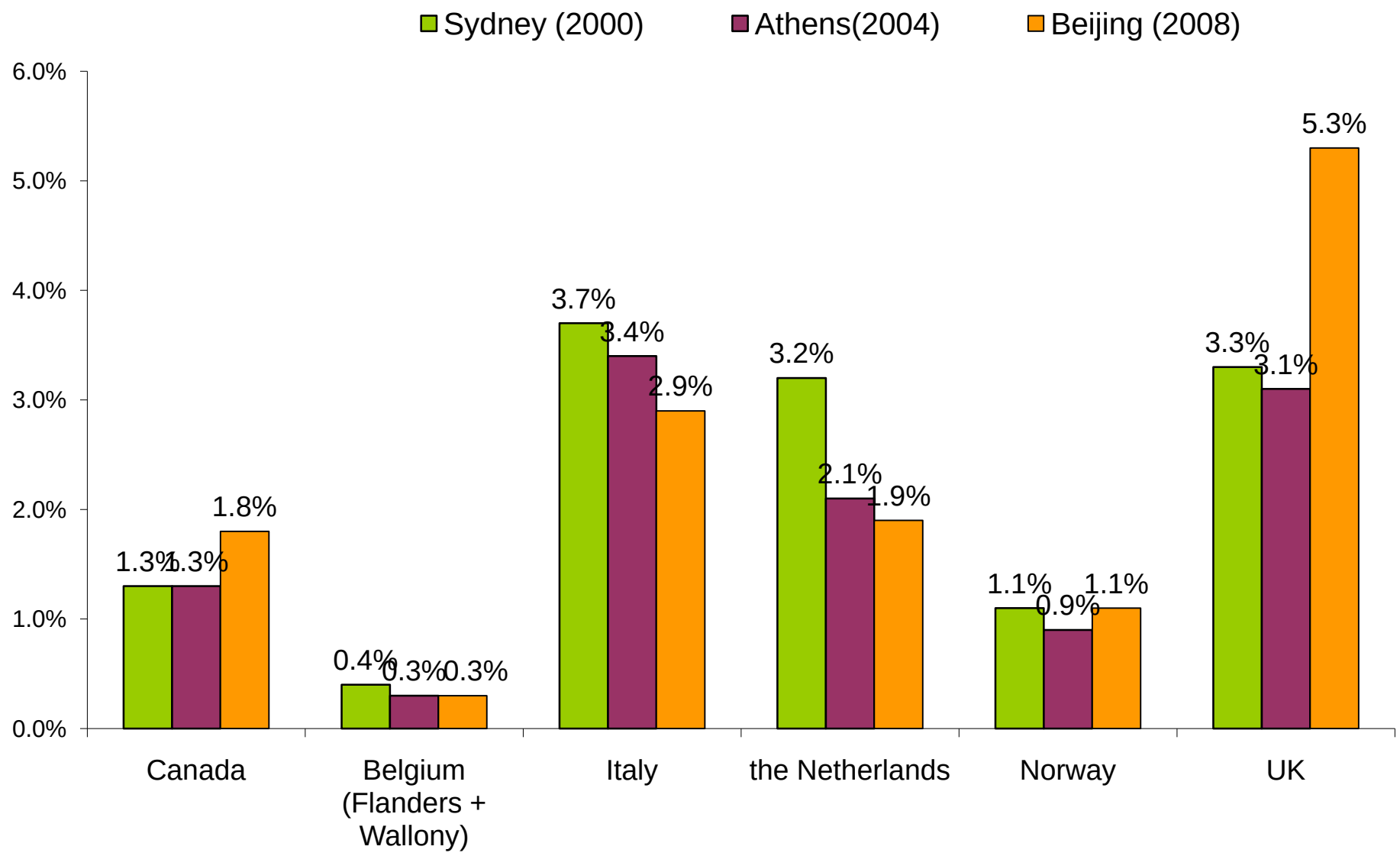
UK: 153 £ in 2012 (25% increase since 2008)(=171 million euros)
Jerry Bingham, Research & Policy Manager (UK Sport, 2008)



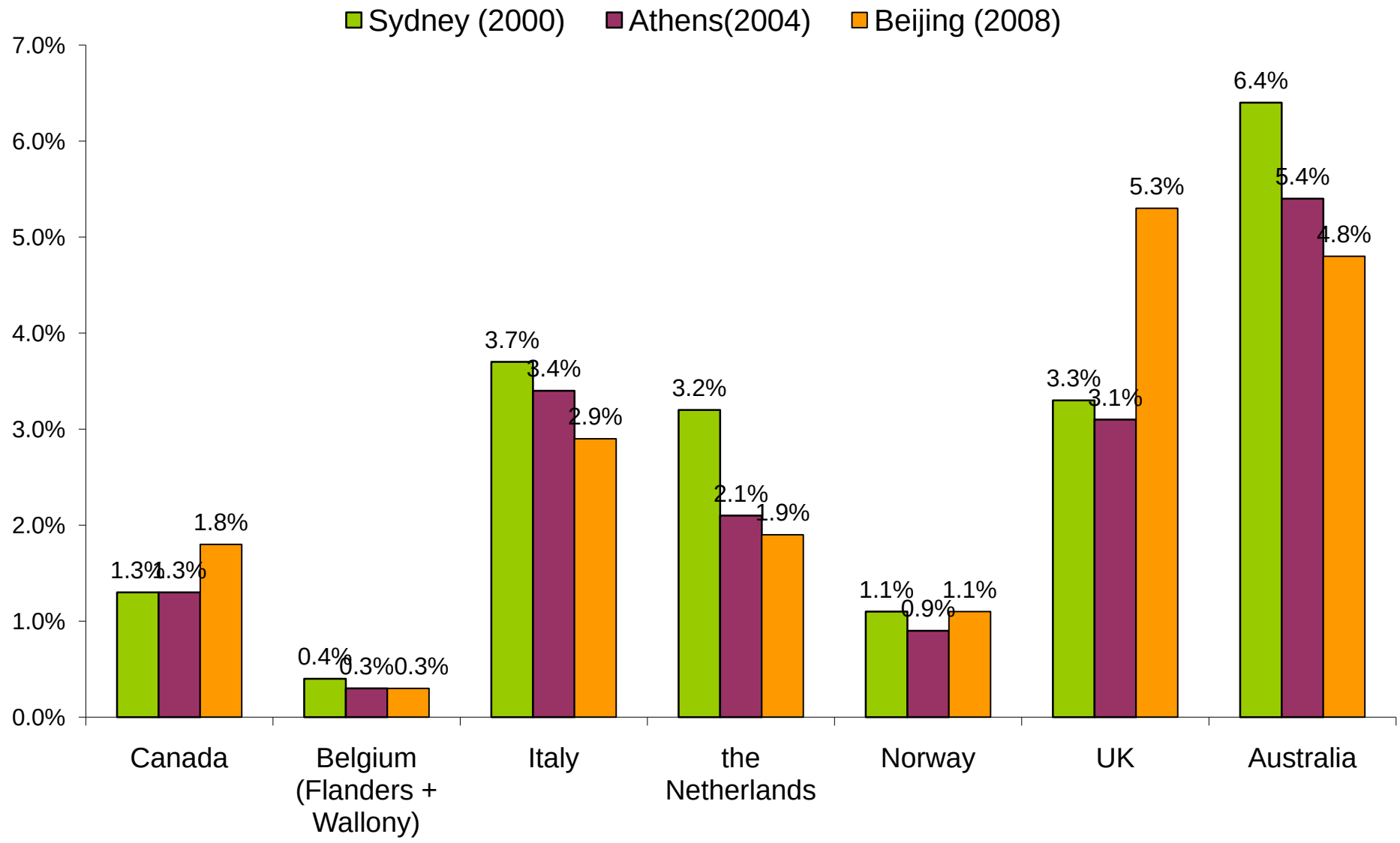
Change in market share 2000-2004 (Olympic Summer Games)



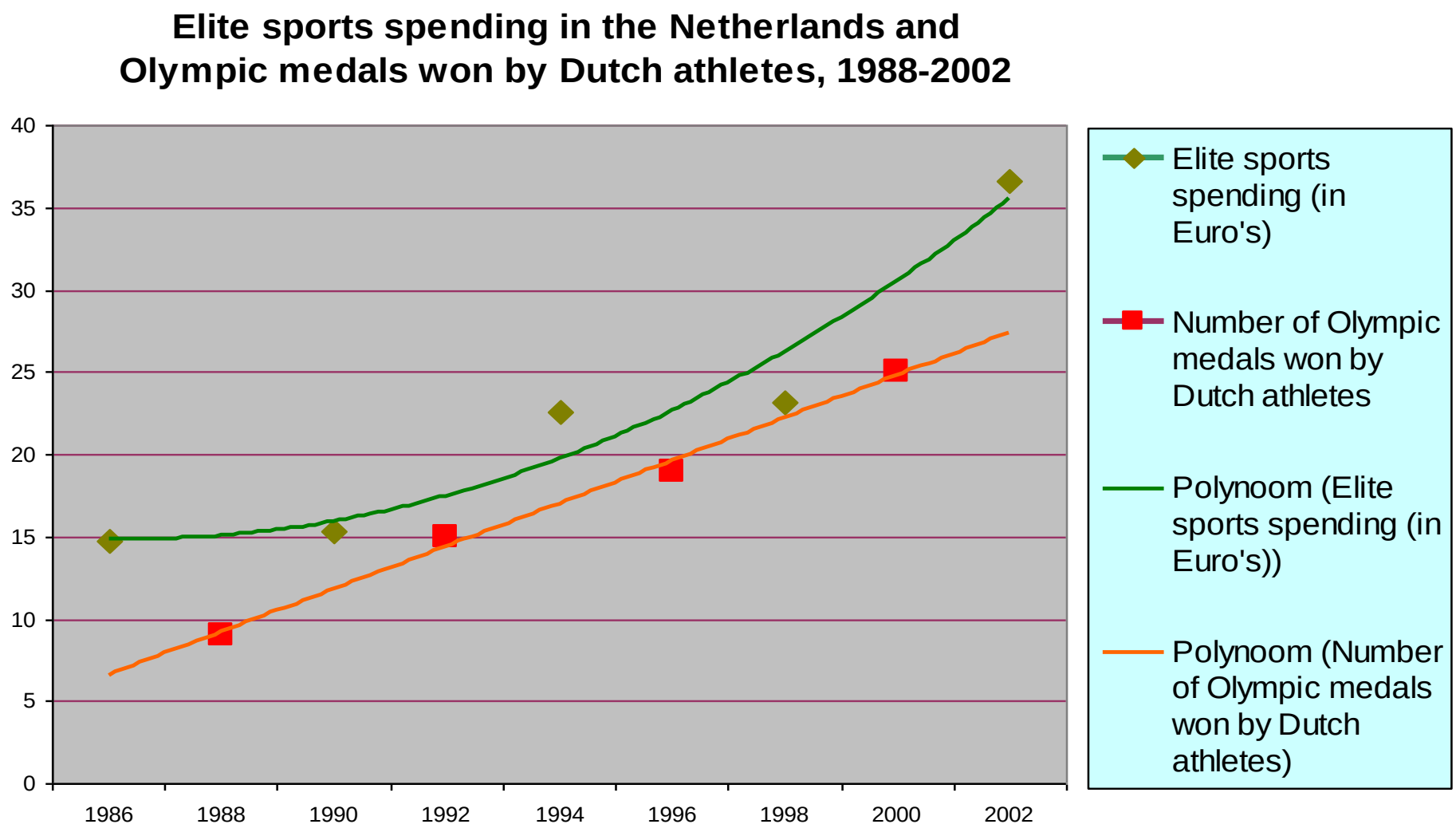
Change in market share 2000-2004 (Olympic Summer Games)



Change in market share 2000-2004 (Olympic Summer Games)

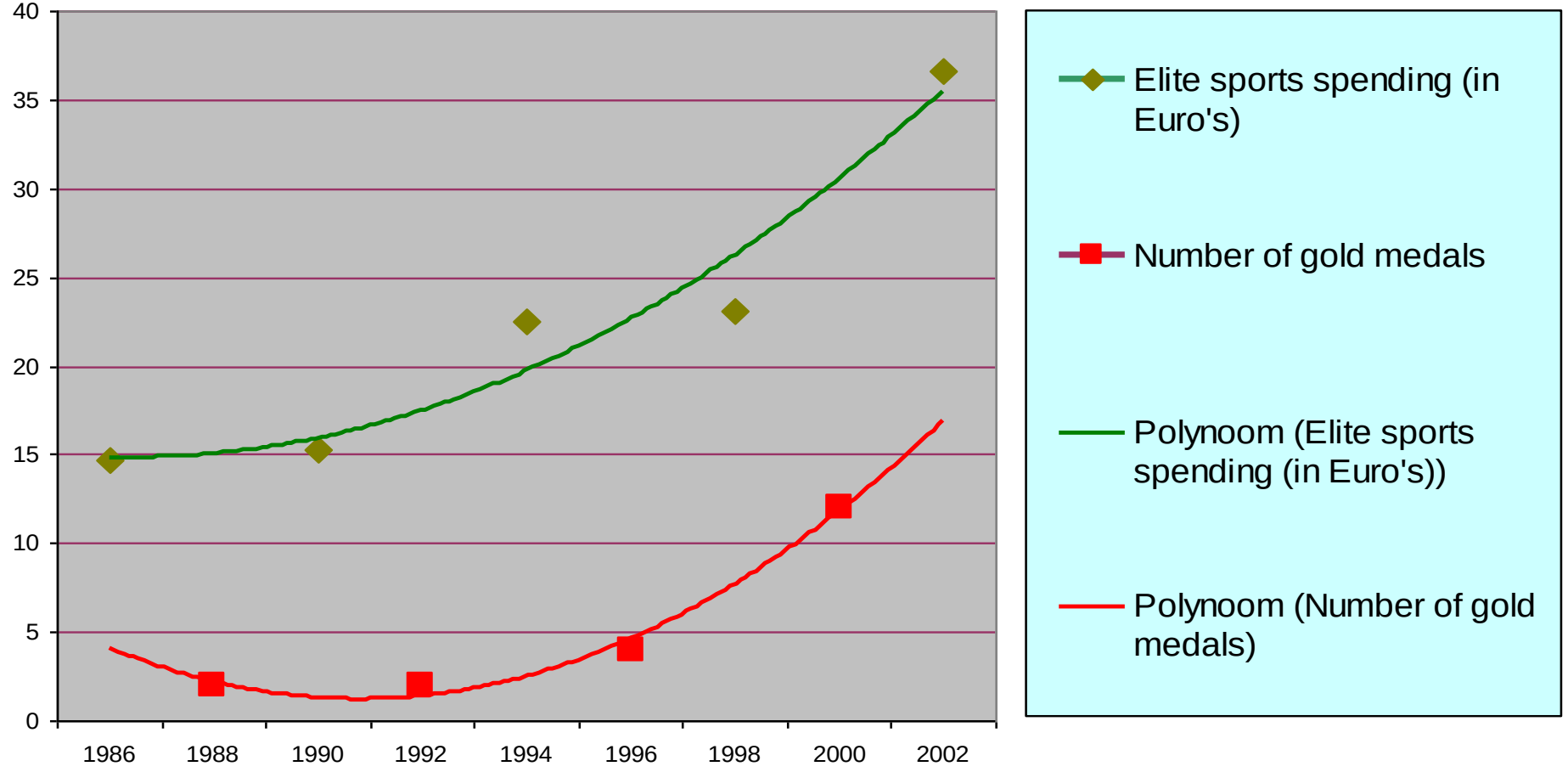


The Netherlands: 1986 – 2002 (van Bottenburg, 2009)

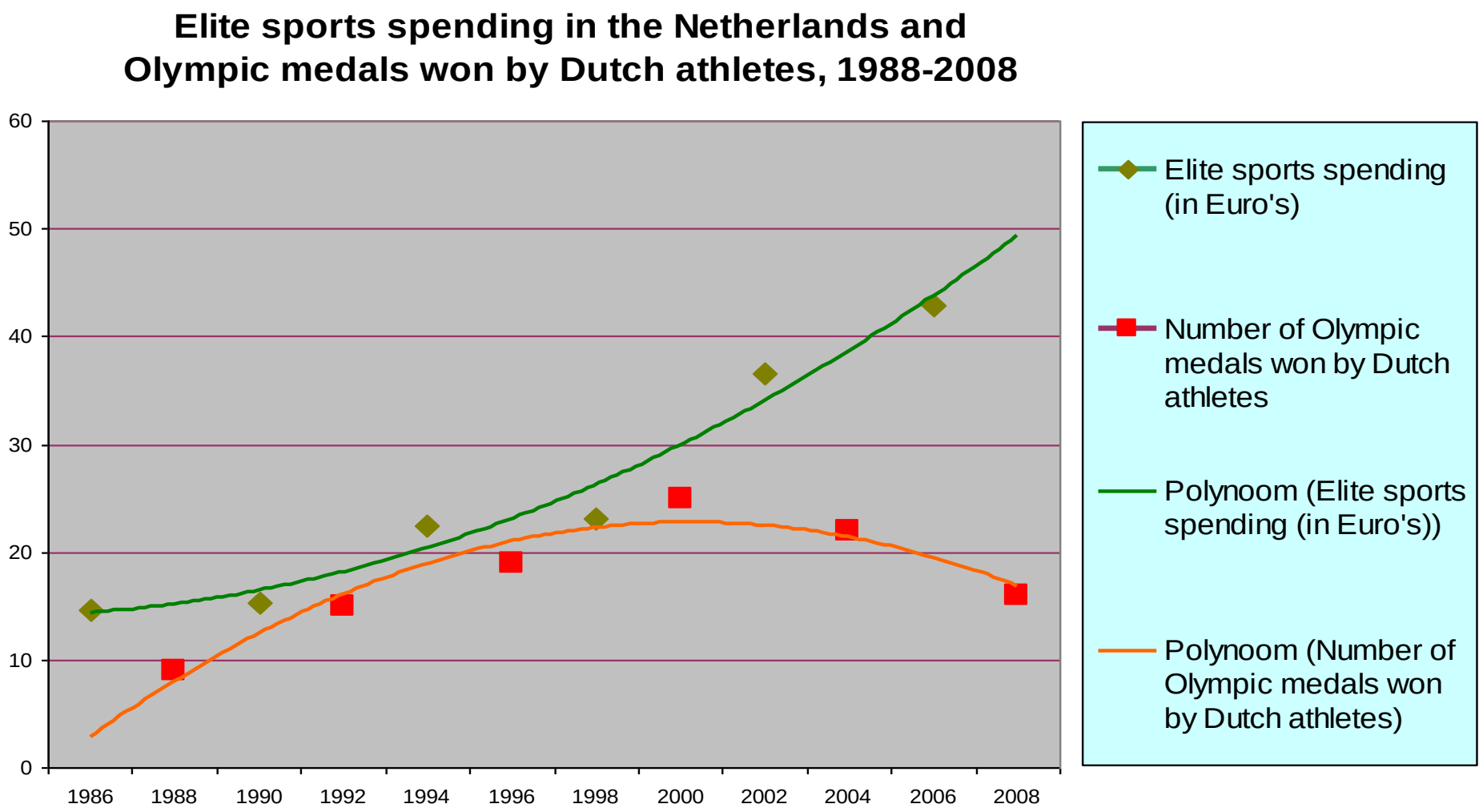


The Netherlands: 1986 – 2002 (van Bottenburg, 2009)

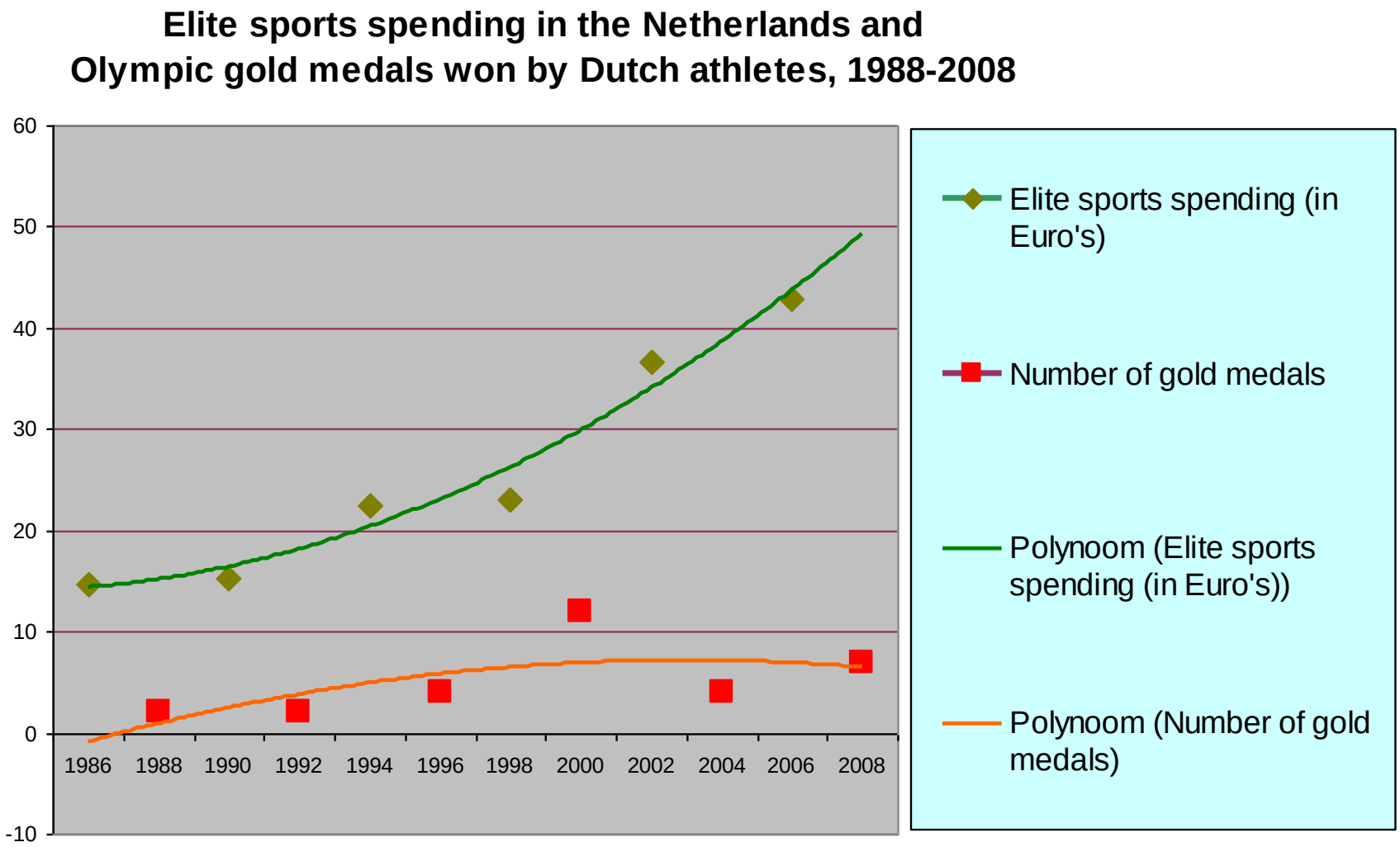
Elite sports spending in the Netherlands and Olympic gold medals won by Dutch athletes, 1988-2002



The Netherlands: 1988– 2008 (van Bottenburg, 2009)



The Netherlands: 1988– 2008 (van Bottenburg, 2009)



Elite sport is…

Citius
Altius
Fortius

Objectives

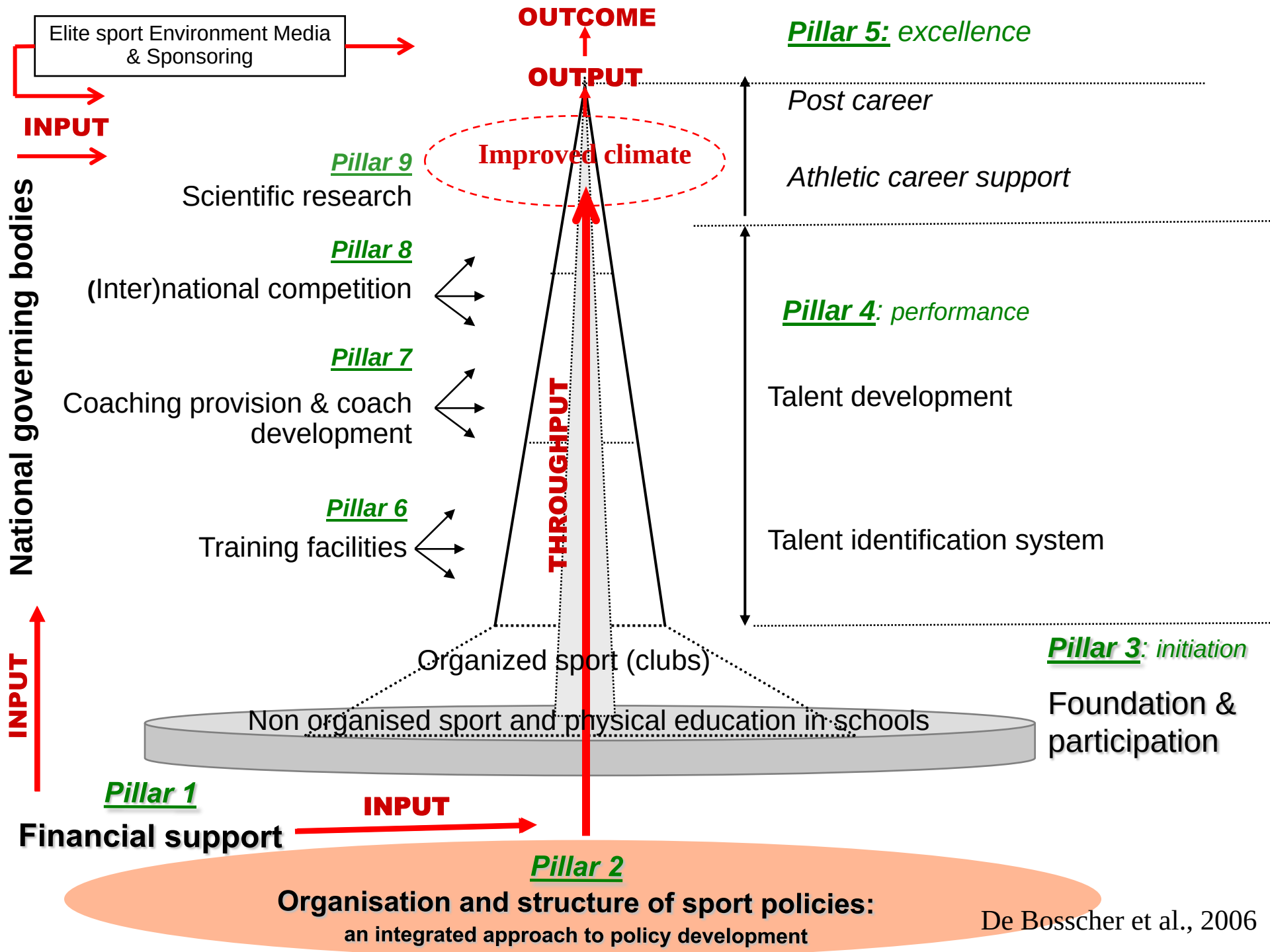
- Why do some nations succeed and others fail in high performance sport?
- Theoretical purpose: what are the most important sports policy factors leading to international sporting success
- Methodological purpose: how can we determine and measure the competitive position of nations?
- Is scientific research an important determinant to have a competitive advantage in future elite sport developments?

This presentation

1. Introduction: the global sporting arms race
2. Theoretical model of sports policy factors leading to international sporting success
3. What is success?
4. Policy evaluation in nine pillars in 6 nations
5. Pillar 9: scientific research
6. Conclusions
7. Future research

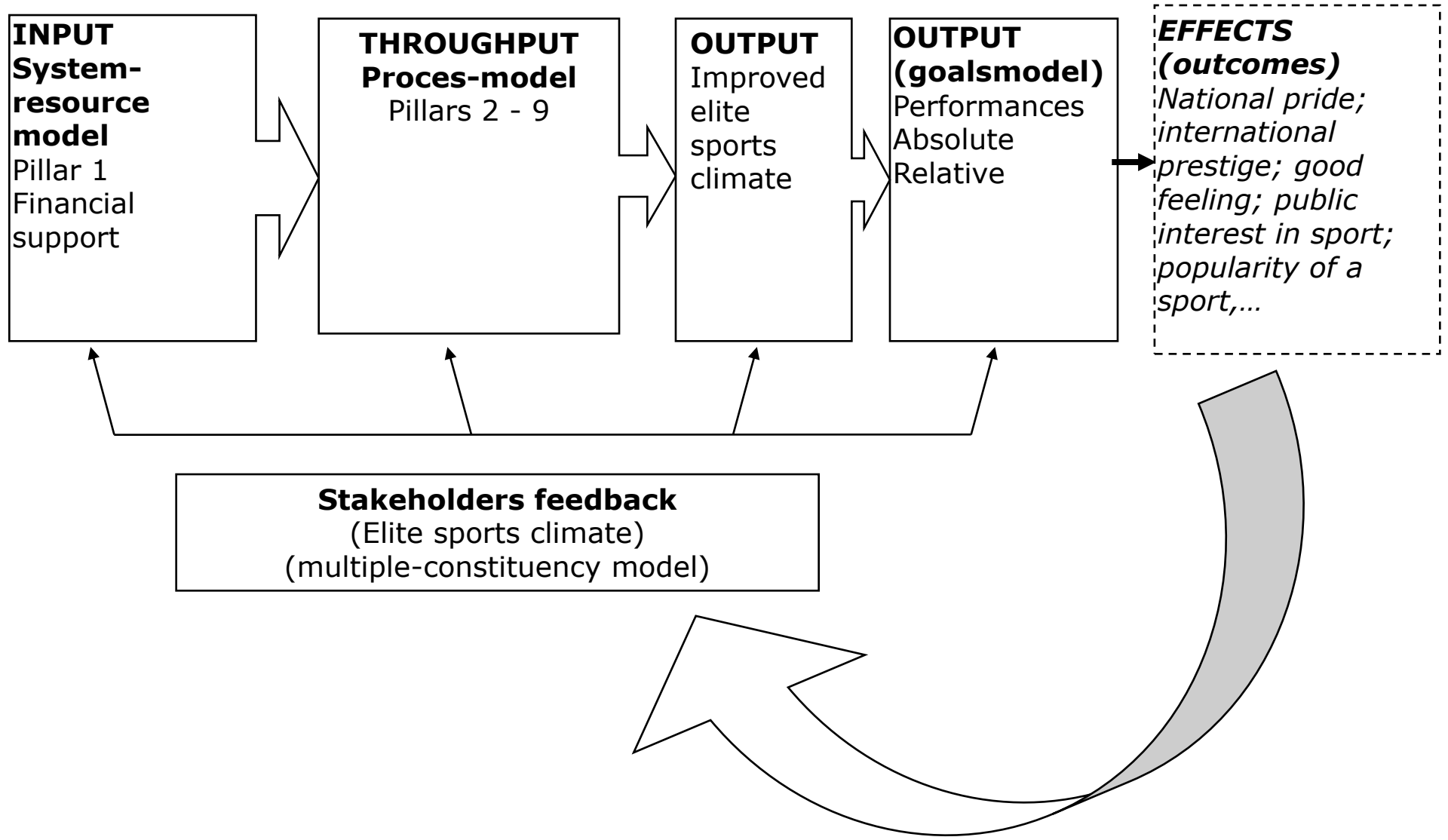
Theoretical model

De Bosscher, V., De Knop,P., van Bottenburg,M., Shibli, S. (2006). A conceptual framework for analysing Sports Policy Factors Leading to international sporting success. *European Sport Management Quarterly*, Vol. 6., 2, 185-215



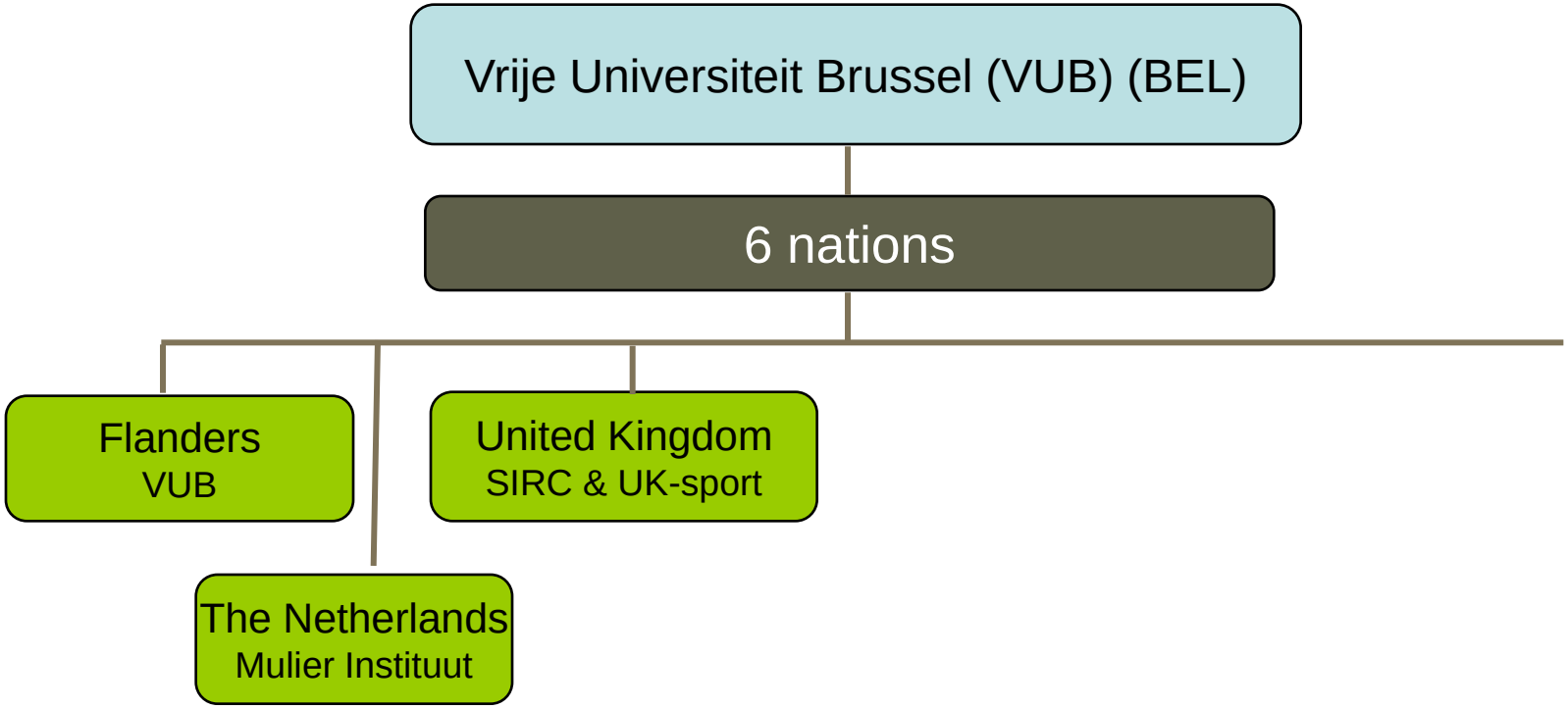
De Bosscher et al., 2006

Effectiveness of elite sport policies



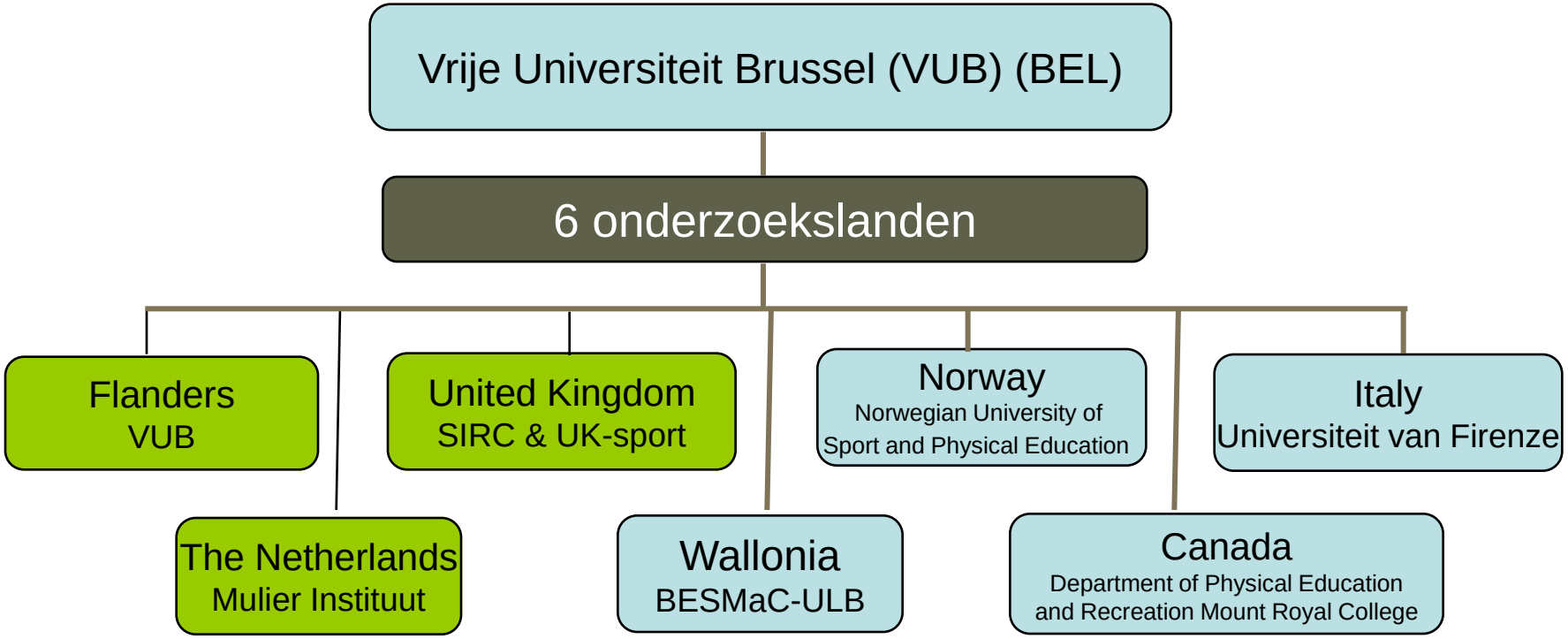
An international comparison of the nine pillars (SPLISS-model)

International comparison in six nations



Veerle De Bosscher & Paul De Knop (Flanders)
Maarten van Bottenburg (the Netherlands)
Jerry Bingham, Simon Shibli (United Kingdom)

International comparison in six nations



Alberto Madella[+] & Lorenzo Di Bello (Italy)

Berit Skirstad & Torkild Veraas, (Norway)

David Legg (Canada)

Luc van de Putte, Thierry Zinz (Wallonia)

SPLiSS

Sport **P**olicy factors **L**eading to **I**nternational **S**porting **S**uccess

Output
What is success?

Absolute success: market share

	Market share (%)			
Country	**OG Athens**	**OG Beijing**	**OG Turin**	**WSI 60sports**
Italy	3.4 (1st)	2.9% (2nd)		
Great Britain	3.1 (2nd)	5.3 % (1st)		
Netherlands	2.1 (3rd)	1.9 %(3rd)		
Canada	1.3 (4rd)	1.8 %(4th)		
Norway	0.9 (5th)	1.1 %(5th)		
Belgium (Flanders) (Wallonia)	0.3 (6th) (0.17) (0.13)	0.3 (6th) (0.2) (0.1)		
Australia	5.4	4.8		

Absolute success: market share

	Market share (%)			
Country	**OG Athens**	**OG Beijing**	**OG Turin**	
Italy	3.4 (1st)	2.9% (2nd)	4.2 (3rd)	
Great Britain	3.1 (2nd)	5.3 % (1st)	0.4 (5th)	
Netherlands	2.1 (3rd)	1.9 %(3rd)	3.4 (4rd)	
Canada	1.3 (4rd)	1.8 %(4th)	9.5 (1st)	
Norway	0.9 (5th)	1.1 %(5th)	6.2 (2th)	
Belgium (Flanders) (Wallonia)	0.3 (6th) (0.17) (0.13)	0.3 (6th) (0.2) (0.1)	0.0 (6th)	
Australia	5.4	4.8	0.79	

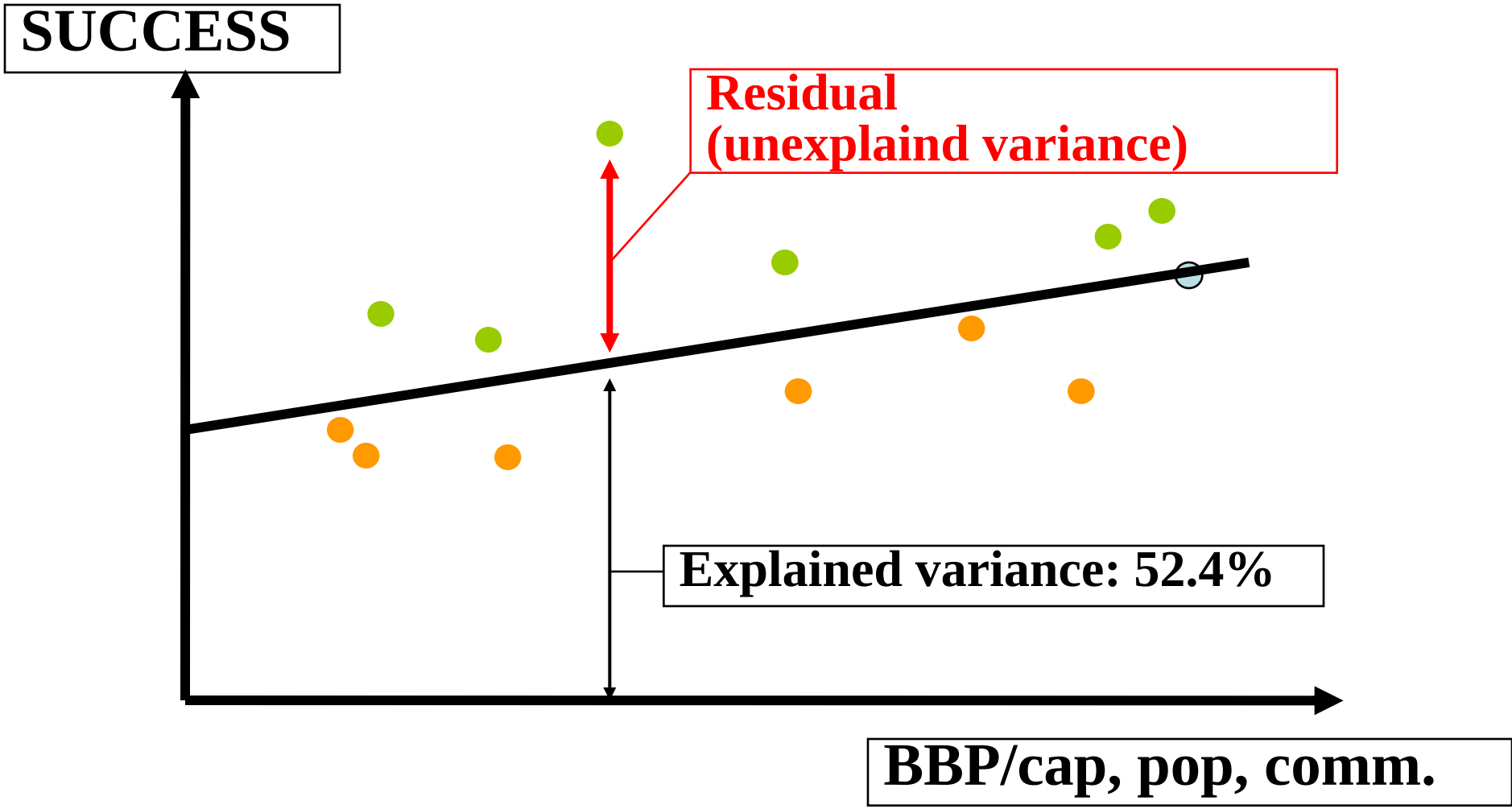
Absolute success: market share

	Market share (%)			
Country	**OG Athens**	**OG Beijing**	**OG Turin**	**WSI** 60sports
Italy	3.4 (1st)	2.9% (2nd)	4.2 (3rd)	3.2 (2nd)
Great Britain	3.1 (2nd)	5.3 % (1st)	0.4 (5th)	6.5 (1st)
Netherlands	2.1 (3rd)	1.9 %(3rd)	3.4 (4rd)	1.6 (5th)
Canada	1.3 (4rd)	1.8 %(4th)	9.5 (1st)	3.2 (2nd)
Norway	0.9 (5th)	1.1 %(5th)	6.2 (2th)	2.7 (4rd)
Belgium (Flanders) (Wallonia)	0.3 (6th) (0.17%) (0.13%)	0.3 (6th) (0.2%) (0.1%)	0.0 (6th)	0.4 (6th) - -
Australia	5.4	4.8	0.79	4.19

Relative success

- Population
- Wealth
- Communism

Determine over 50% of the international success


SUCCESS
Residual
(unexplaind variance)
Explained variance: 52.4%
BBP/cap, pop, comm.

Relative success

Linear regression(BBP/cap, pop, comm.)			
Country	**OS Athens**	**OS Salt Lake**	**WSI** (S + W)[1]
Italy	0.90 (2nd)	9.1 (3th)	0.74 (3th)
Great Britain	0.64 (3th)	-14.4 (5th)	0.07 (5th)
Netherlands	0.90 (1st)	-3.92 (4th)	0.71 (4th)
Canada	0.04 (5th)	9.9 (2nd)	0.97 (2nd)
Norway	0.48 (4th)	23.0 (1st)	1.38 (1st)
Belgium	-0.93 (6th)	Not ranked	-0.87 (6th)
Australia	1.73	-13.26	1.34

A little more technical…

Ranking	Country	Exp.	A – B (Residual) (more/less than predicted)	
		Medal points (gold=3, silver=2, bronze=1)		
11	Netherlands	2.47	23.22	Positive
13	Italy	2.18	34.16	Positive
19	UK	1.89	26.87	Positive
24	Norway	1.61	6.07	Positive
37	Canada	1.04	0.92	Positive
65	Belgium	-2.53	-7.65	Negative
2	Australia	5.61	81.36	Positive

Conclusion success

There is not ‘one way to measure success’

Policy evaluation in 9 pillars

Data Collection

1. Overall sports policy questionnaire

- Researcher's questionnaire

- Specific (84) policy questions on each of the nine pillars (over 30 pages per nation)

Data Collection

2. Elite sports climate survey

Athletes	Coaches	High performance directors
1090	253	69

- objective and subjective criteria

Developing a scoring system

W		CAN	FI	IT	NI	NOR	UK	WAL
	Simplicity of administration							
1	Public sector efficiency (European Central Bank, 2003)	3	2	1	2	4	4	2
	Coordination of elite sports policies and expenditures							
1	There is a ministry and/or minister of sport	2	5	2	4	2	4	5
2	There is an organisation at national level with specific responsibilities for elite sport (as a core task)	3	3	3	3	5	5	3
2	Coordination of expenditures and activities at national level (horizontal)	3	3	5	5	5	5	1
2	Coordination of expenditures and activities at regional level (vertical)	1	5	5	5	5	3	5
	Targeting of key sports and elite sports							
1	The number of recognised and funded NGBs for elite sport purposes	3	5	3	2	5	4	4
	Effective communication: an unbroken line up through all levels of elite sports policies							
2	Provision of information and services to national governing bodies to develop their management capability	4	3	2	5	4	5	1
1	Information received from governing bodies acc. to athletes	4	2	na	4	3	5	na
1	Information received from governing bodies acc. to coaches	na	3	3	4	na	na	na
1	Athletes commission in national governing bodies	4	1	na	2	2	na	na
	TOTAL points	43	50	42	57	59	54	35
	MAX	70	75	65	75	70	65	60
	number of times NA	1	0	1	0	1	1	2
	Total score for pillar 2	61,43	66,67	64,62	76,00	84,29	83,08	58,33

na: data not available; W: weight

blue text: results from elite sports climate survey; black text: results deriving from the overall sport policy questionnaire

Total score: “traffic light”

85-100%		**Policy area very well developed**
69-84%		**Good level of development**
53-68%		**Moderate level of development**
37-52%		**Limited development**
21-36%		**Little or no development**

A score for over 100 indicators on 9 pillars

Results

Results

++ + 0 - --

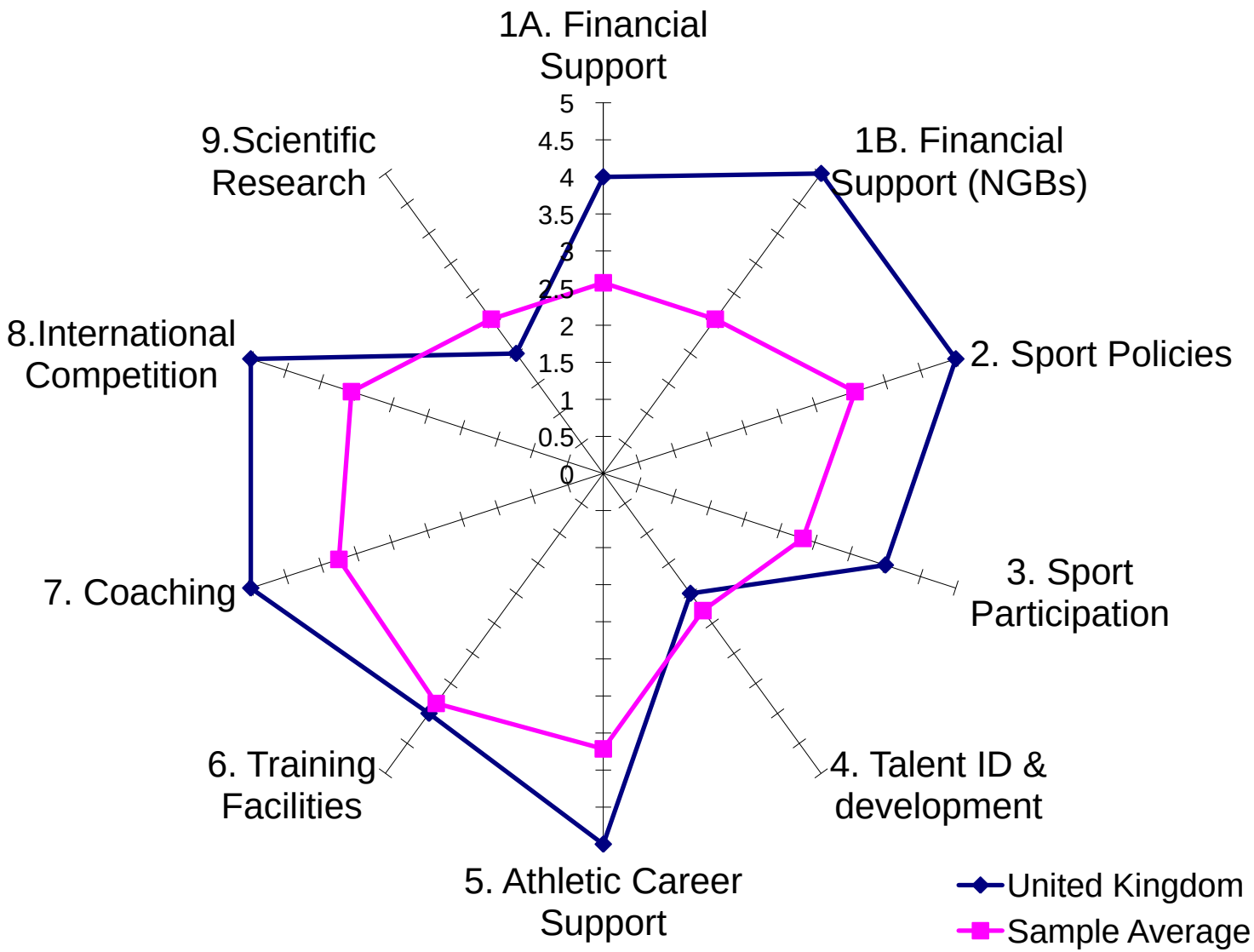
	Pillar	ITA	UK	NED	CAN	NOR	FLA	WAL
1	**Financial support: expenditures on sport and elite sport at national level**							
1B	**Financial support: national subsidisation towards NGBs**							
2	**Policy structures and policy development**							
3	**Sport participation**				NA			
4	**Talent identification and development**							
5	**Athletic career and post athletic career**							
6	**Training facilities**							NA
7	**Coaching provision and coach development**				NA	NA		
8	**International competition**							
9	**Scientific research**							

Results

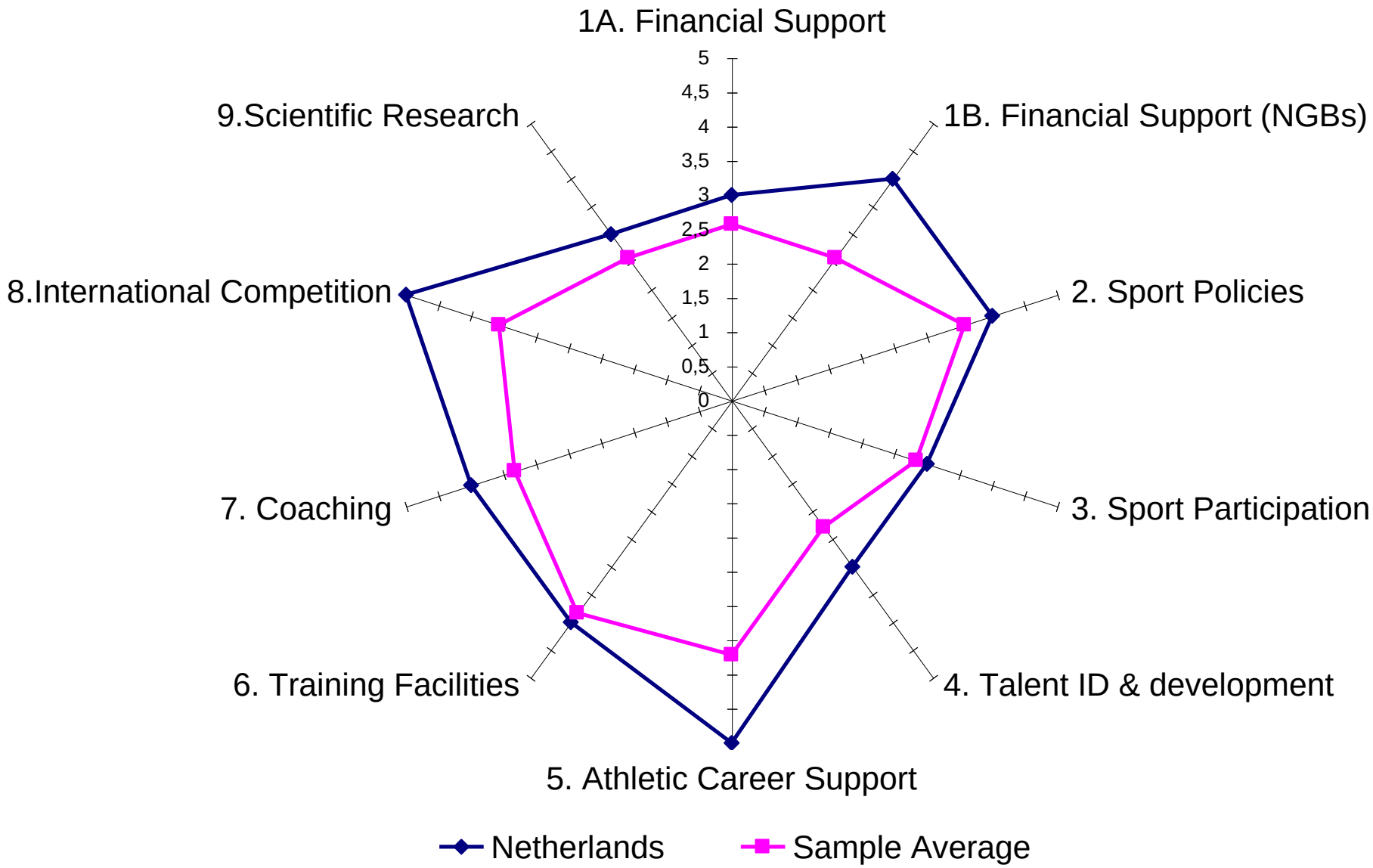
++ + 0 - --

Pillar	ITA	UK	NED	CAN	NOR	FLA	WAL

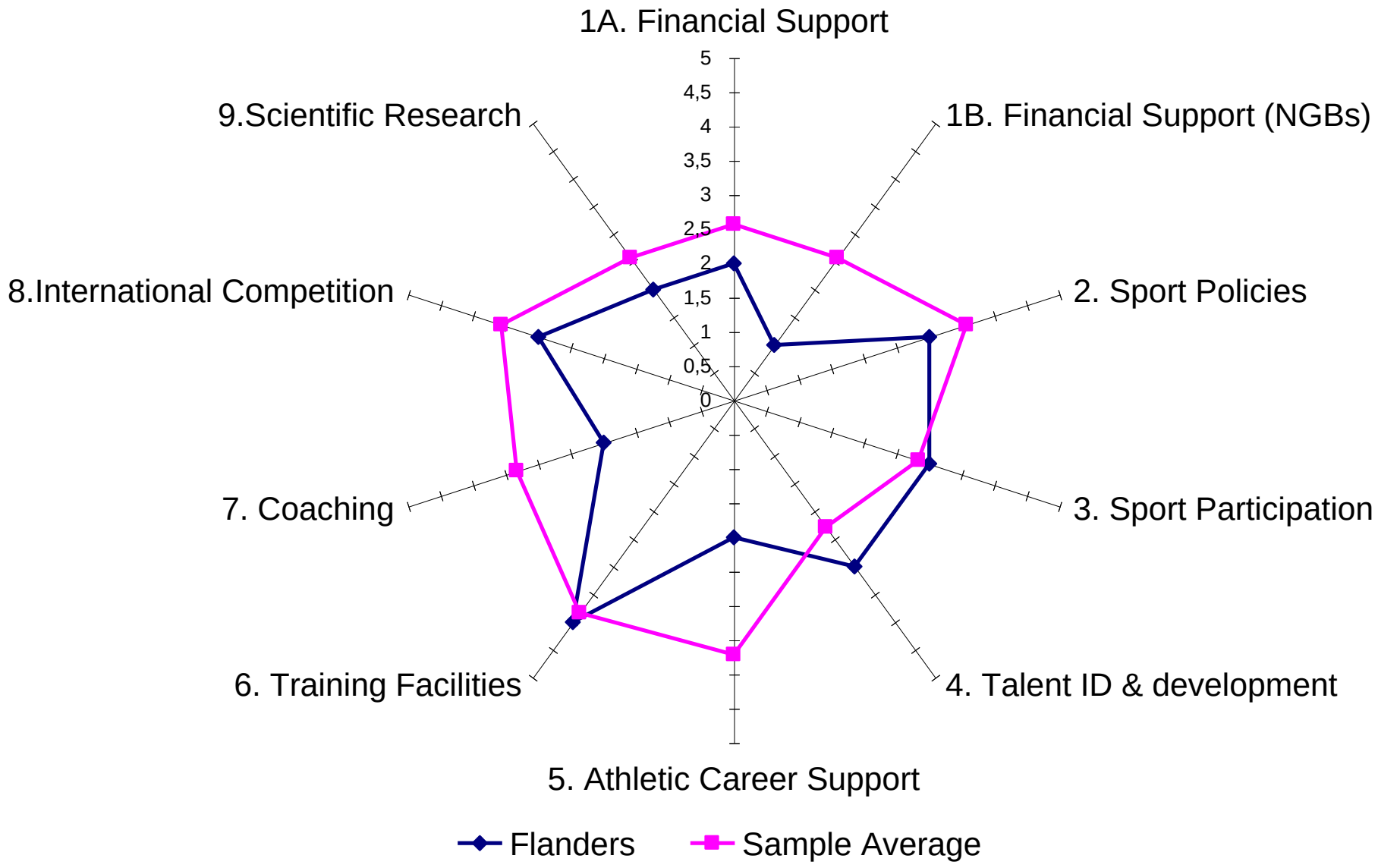
United Kingdom



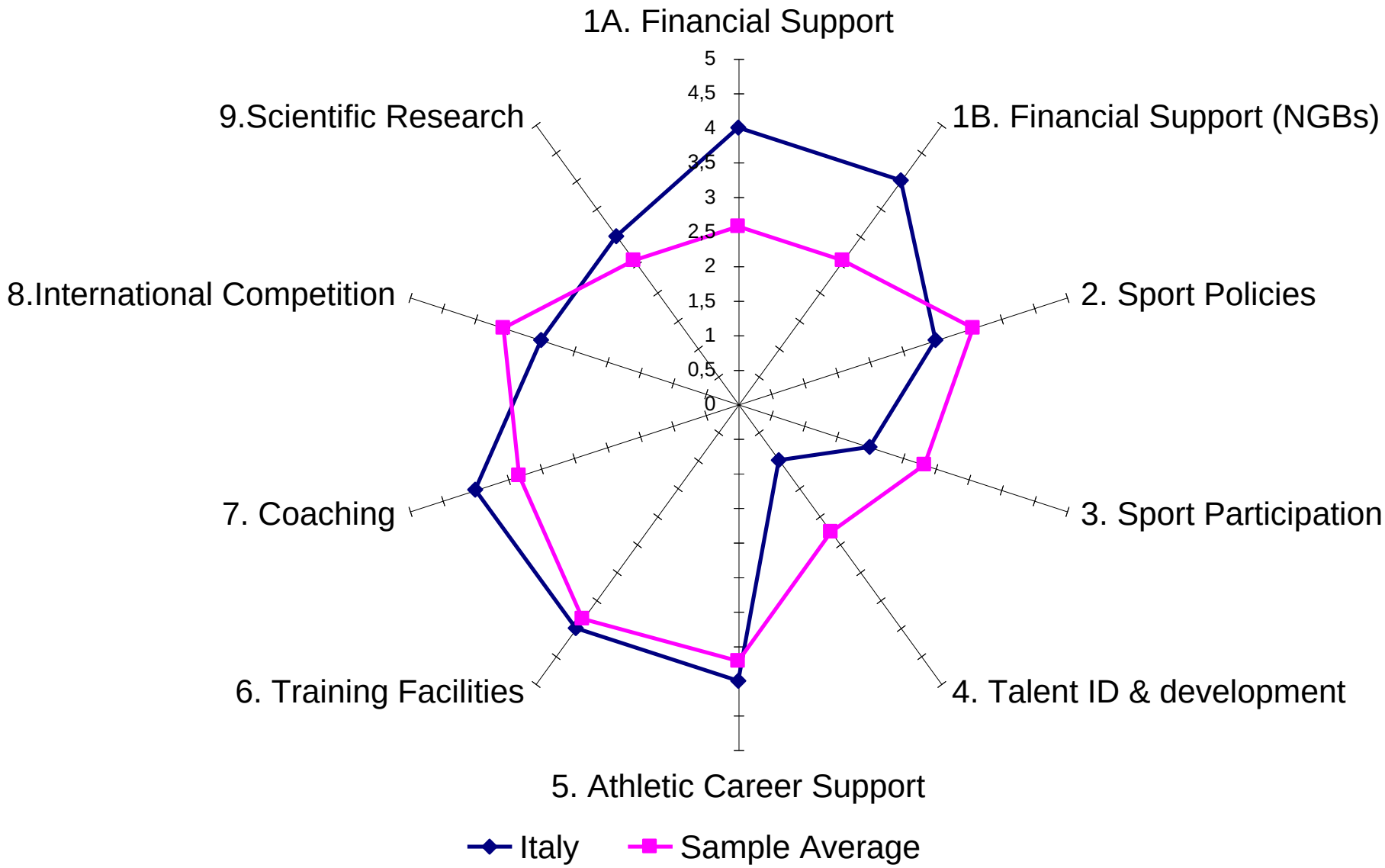
The Netherlands



Flanders


1A. Financial Support
1B. Financial Support (NGBs)
2. Sport Policies
3. Sport Participation
4. Talent ID & development
5. Athletic Career Support
6. Training Facilities
7. Coaching
8.International Competition
9.Scientific Research
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
Flanders
Sample Average

Italy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7. Coaching
8.International Competition
9.Scientific Research
5
4,5
4
3,5
3
2,5
2
1,5
1
0,5
0
Italy
Sample Average

How can nations develop a competitive advantage?

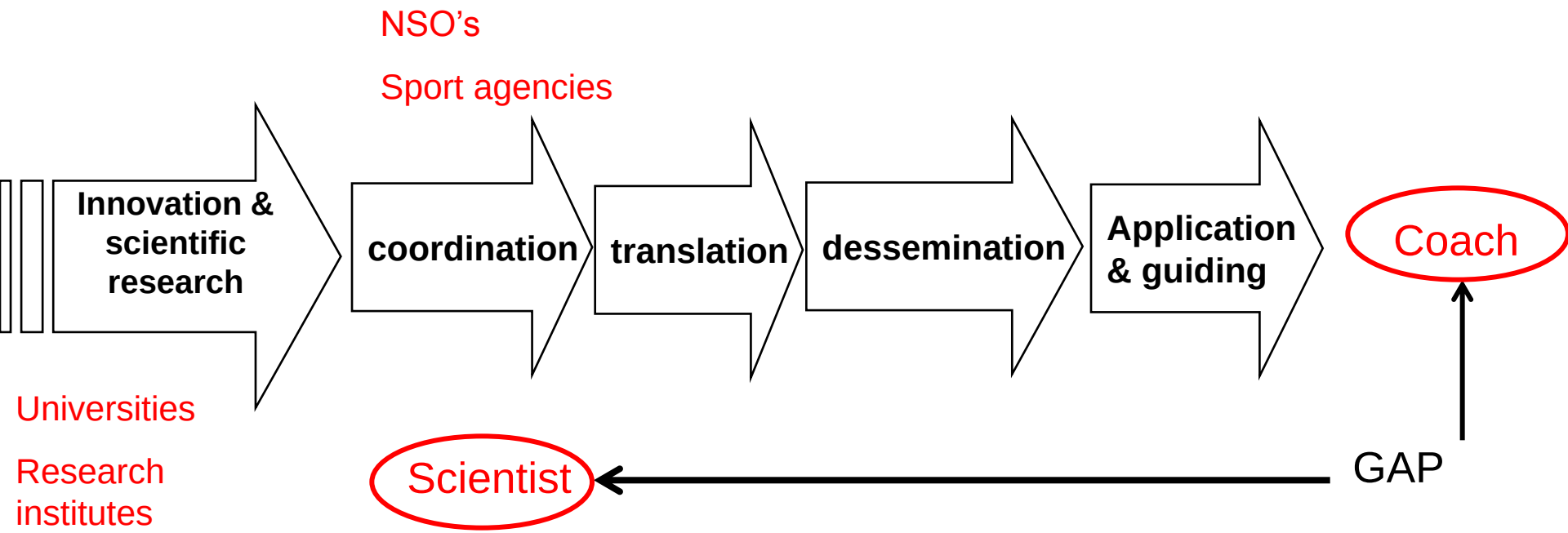
Pillar 9: scientific research support

Results

++ + 0 - --

	Pillar	ITA	UK	NED	CAN	NOR	FLA	WAL
1	**Financial support: expenditures on sport and elite sport at national level**							
1B	**Financial support: national subsidisation towards NGBs**							
2	**Policy structures and policy development**							
3	**Sport participation**				NA			
4	**Talent identification and development**							
5	**Athletic career and post athletic career**							
6	**Training facilities**							NA
7	**Coaching provision and coach development**				NA	NA		
8	**International competition**							
9	**Scientific research**							

Pillar 9: Scientific research



Pillar 9: Critical Success Factors

CSF1: A national research centre oversees the scientific schematic of elite sport and develops high quality research projects

CSF2: Scientific research is centrally co-ordinated and there is a network to communicate and disseminate scientific information to coaches/governing bodies;

CSF3: There is strong co-operation between universities and research centres concerning applied research and this is nationally co-ordinated

CSF4: There are specific subsidies for scientific research and innovation in elite sport

CSF5: Coaches receive scientific information from NSO's/NGB's and other sport agencies

Pillar 9: Critical Success Factors

	CAN	FLA	ITA	NED	NOR	UK	WAL
National research centre (for elite sport)	3	1	5	3	3	3	1
National coordination: network of scientific information (database) and communication towards coaches/governing bodies on scientific research	5	1	1	5	3	3	1
Co-operation with universities / research centres is co-ordinated at national level	1	3	3	1	3	1	na
Specific subsidies for scientific research on elite sport are provided	3	3	3	3	5	3	3
Coaches receive scientific information from the national governing body (according to coaches)	na	2	2	2	na	4	2
TOTAL points	12	10	14	14	14	10	5
Max	20	25	25	25	20	20	15
Number of times NA	1	0	0	0	1	0	1
Total score for pillar 9	60,00	40,00	56,00	56,00	70,00	50,00	33,33

Pillar 9

- Norway appears to have the most coherent approach to scientific research
- Italy is the only nation with a national research centre (as part of the national Olympic institute)
- General gap in all nations between cooperation with universities and applied research for elite sport

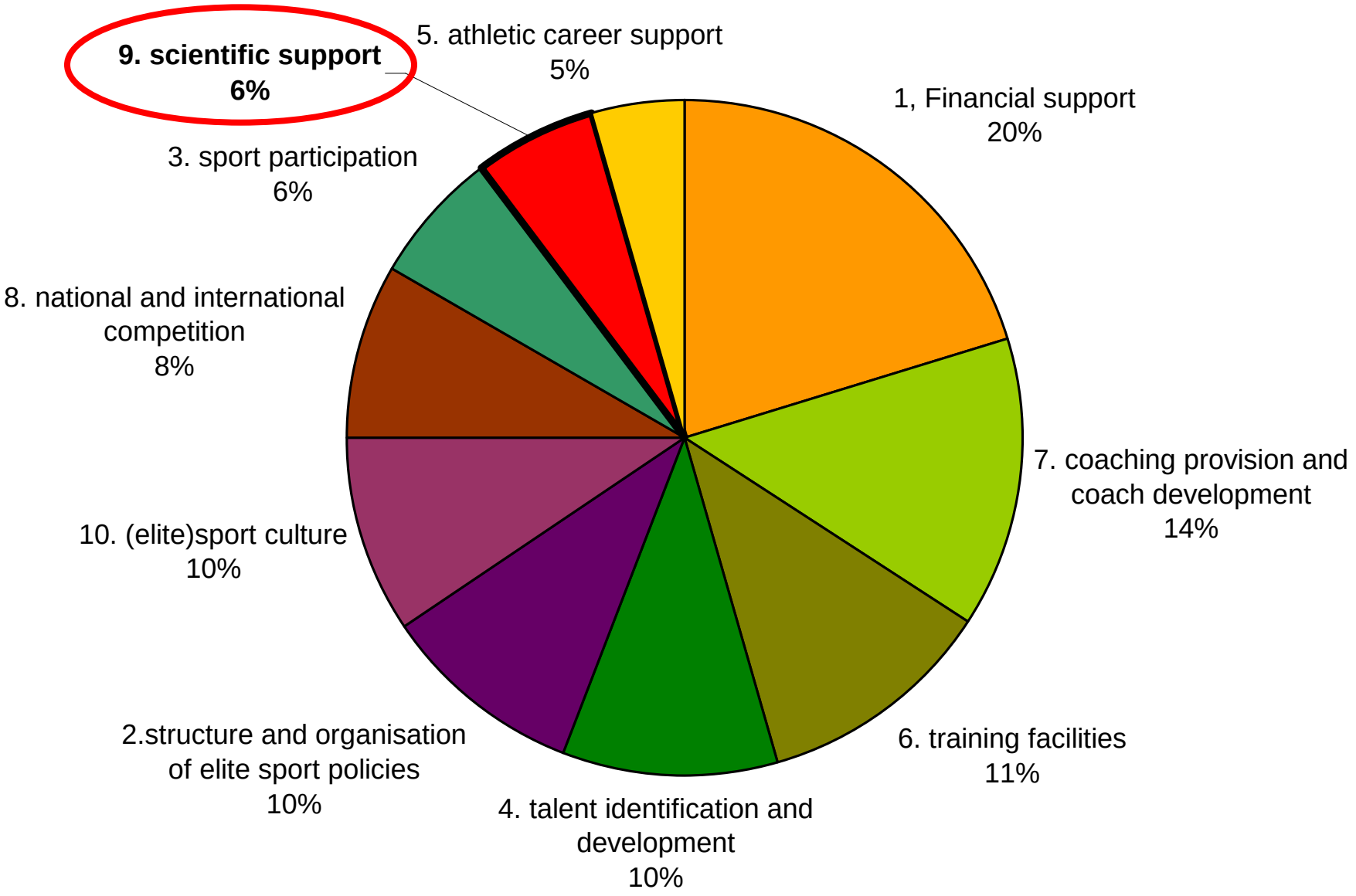
Pillar 9: Research questions

(1) Is scientific research important for the improvement of athletic performances?

(2) Do coaches make use of scientific knowledge to improve their training?

(1) Is it important?

Which factors have the highest influence on the international success of countries (Flanders 2008, according to athletes (n=167) and coaches (n=78)?



(1) Is it important?

The Netherlands: elite sport climate survey

(van Bottenburg, 2008)

	Starting age			Years practised		
	1998	*2002*	*2008*	*1998*	*2002*	*2008*
A-status	14,2	12,7	10,7	12,6	14,5	17,7

- The athletic career starts earlier
- The duration of the athletic career increases

→ The role of sport science support may increase even more…

(1) Is it important? (Williams, 2005)

Australia

- 73% of the coaches (N=219) strongly agree/agree that sports science/ sports medicine research influences what elite coaches do with the athletes they coach;
- 81.7% of the coaches (strongly) disagree that sport science research has had little relevance in preparing their athletes

(1) Is it important? (Williams, 2005)

Qualities valued in an elite coach

N= 221 coaches and 122 sport scientists

1. Having good rapport with athletes
2. **keeping up to date with the latest developments in coaching**
3. success of the athletes under the coach's supervision
4. having good rapport with support personnel (inc. scientists)
5. **using the latest methods/ technology**
6. many years of coaching experience
7. educational qualifications
8. being a former elite athlete themselves

(2) Do coaches make use of scientific research?

Australia (Williams, 2005): 80% of the coaches attend workshops; 79% of the coaches read sports specific magazines; 72% attends conferences to keep up with the latest developments

Flanders:

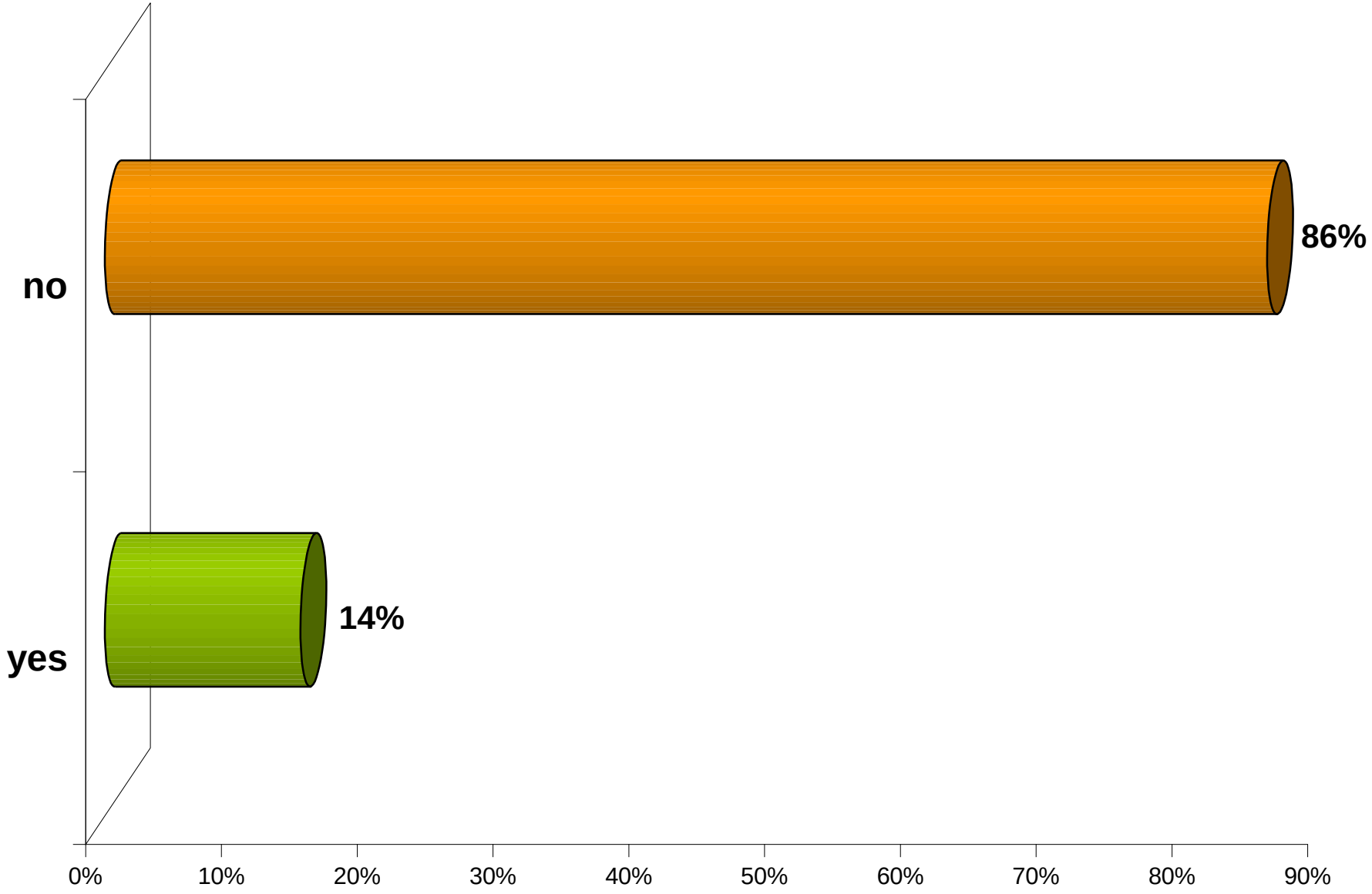
- 76% of the coaches attend at least 2-4 workshops a year
- 60% of the coaches makes use of scientific research/knowledge to improve the development of their athletes

(3) Dissemination of scientific research

Do you receive information on scientific research from your national governing body?

	FLA	ITA	NED	UK	WAL
yes	29,3%	34,4%	39,7%	87,0%	23,5%

Do you think that scientific research is sufficiently disseminated among elite coaches? (in Flanders, N=78)



conclusions

Conclusions

1) The price of success is raising

- Competition is increasing
- More nations are investing more in elite sport
- Standing still means going backwards
- Diminishing returns on investment
- Increased homogenisation of elite sport policies

Conclusions

2) Nations who have invested most in elite sport, also perform best.

- The best predictor of output is the absolute amount of funding allocated to elite sport
- However, a simple input-output model might be too rational and economic.
- Elite sporting success appears to be the outcome of a multivariate process involving many pillars

Conclusions

3) The best performing nations in summer Olympic sports (UK, Italy, Neth.), have the best scores on:
   - Pillar 1: funding in elite sport
   - Pillar 5: athletic and post athletic career
   - Pillar 6: training facilities
   - Pillar 7: coaches development

4) The worst performing nation (in both summer and winter sports) has the lowest scores on most pillars (Belgium: Flanders & Wallonia)

Conclusions

5) The two best and largest nations in our sample, Italy and the UK, achieved relatively poor ratings on pillar 4: talent identification and development systems.

In an increasingly competitive environment, this relaxed approach to talent identification and development will not be sustainable for a long time any more; making the prospects of small countries (still) poorer.

Conclusions: competitive advantage

6) Three pillars of international sporting success are still relatively underdeveloped in all sample nations and might thus give a competitive advantage:

- Pillar 4: Talent identification and development
- Pillar 7: Coaches provisions
- Pillar 9: Scientific research/sport science support

Conclusions: competitive advantage

For small countries

- Pillar 3: quality of (organized) sports participation
- Pillar 6: Training facilities

Future research

SPLISS: a network of research cooperation in high performance sport policies

1. *Policy purpose*: to benchmark nations against other competitors, -both at an overall and a sport specific level, for able-bodied and disability sports; to identify strengths and weaknesses of elite sport systems of different nations
2. *Research purpose*: to develop theories on the key success factors and methods to compare nations in elite sport and to measure the competitiveness of nations in elite sport (both at an overall and a sport specific level, for able-bodied and disability sports).

Future research

3. *Networking*: to develop a team of researchers and high performance experts who cooperate, have meetings and seminars on high performance sport policy research and common interests;
4. *Marketing*: to develop a world competitiveness ranking for elite sport policy, in order to articulate the value of elite sport of your own and other countries to the population and to evaluate your competitive position in elite sport policy in an international context.

Future research

Measuring competitiveness of elite sport systems and policies: comparing nations at the overall sports level	2011
Benchmarking nations in elite sport disciplines: athletics	2009 (sept)
Benchmarking nations in elite sport disciplines: other sports	2010
A world competitiveness elite sport policy ranking	2011
Measuring the outcomes of elite sport: what is it good for, what does it lead to?	2011-12

Why?

- Benchmarking: learn from other elite sport policies
- Evaluation of elite sport policies compared to other nations. Evaluation of strengths – weaknesses
- Measuring competitiveness of your country
- Learn about international developments in order to remain highly competitive

Future research

United Kingdom, Jerry Bingham, research director UKSport

In the UK, it has been difficult to answer the frequently-asked question: how does our sports system compare with that of other nations? However, as a result of the SPLISS project, we finally have some robust comparative information on this subject. Looking across the nine policy areas that comprise the SPLISS framework, the results for the UK are generally encouraging, providing us with a degree of assurance that we are doing the right things. The two policy areas in which we appear to have performed less well are those of talent development and the coordination of scientific research. In reality, we have already identified these as areas needing attention, and the new investment we are now making in them may be seen as a test of the reasonableness of the SPLISS analysis.

Thank you!

more information
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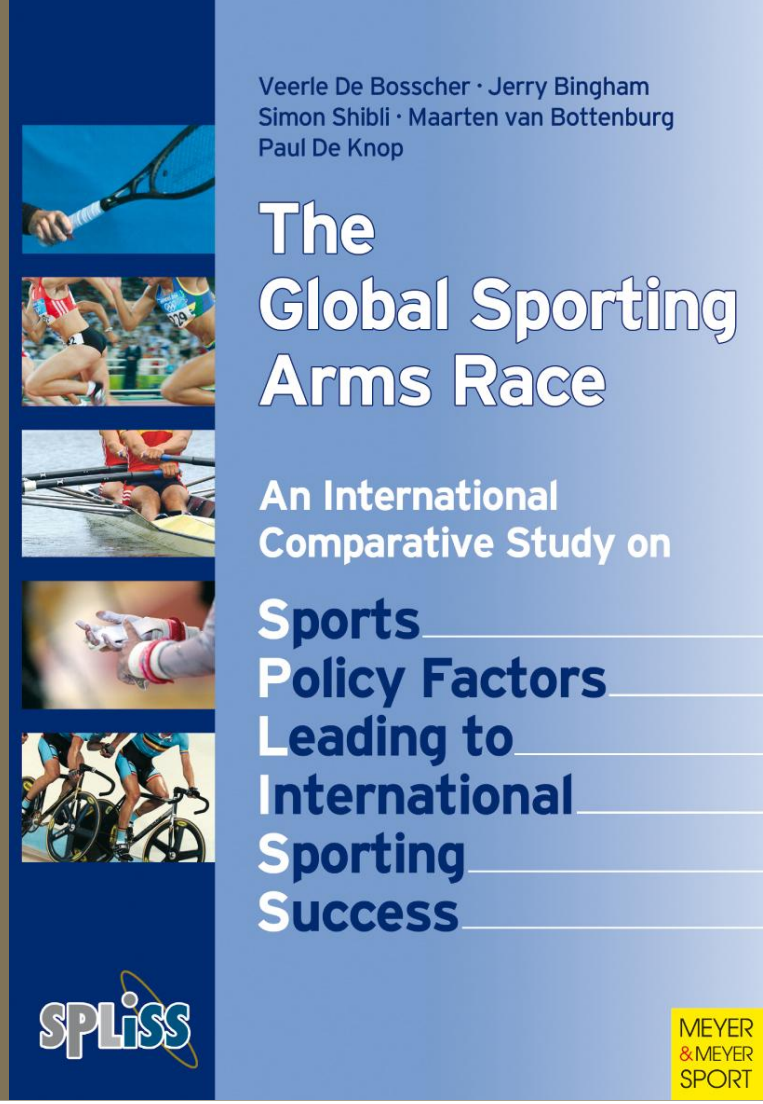

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Australian Government
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AUSTRALIAN INSTITUTE OF SPORT

13th IASI World Congress

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