Talent development: A comparative factor in international elite sports
Conclusions from the SPLISS study
General CONTEXT

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The Global Sporting Arms Race

An International Comparative Study on

Sports
Policy Factors
Leading to
International
Sporting Success
Change in national expenditure on elite sport 1999-2003

<table>
<thead>
<tr>
<th>Country</th>
<th>1999</th>
<th>2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flanders</td>
<td>100</td>
<td>215</td>
</tr>
<tr>
<td>the Netherlands</td>
<td>100</td>
<td>154</td>
</tr>
<tr>
<td>Norway</td>
<td>100</td>
<td>109</td>
</tr>
<tr>
<td>UK</td>
<td>100</td>
<td>226</td>
</tr>
<tr>
<td>Wallonia</td>
<td>100</td>
<td>182</td>
</tr>
</tbody>
</table>
Change in national expenditure on elite sport 1999-2007

Flanders
- 1999: 33
- 2003: 100
- 2007: 172

the Netherlands
- 1999: 65
- 2003: 100
- 2007: 129

United Kingdom
- 1999: 44
- 2003: 100
- 2007: 166
Change in market share 2000-2004 (Olympic Summer Games)

- Canada: 1.3% (2000) vs. 1.3% (2004)
- Belgium (Flanders + Wallony): 0.4% (2000) vs. 0.3% (2004)
- Italy: 3.7% (2000) vs. 3.4% (2004)
- The Netherlands: 3.2% (2000) vs. 2.1% (2004)
- Norway: 1.1% (2000) vs. 0.9% (2004)
- UK: 3.3% (2000) vs. 3.1% (2004)

Change in market share 2000-2008
(Olympic Summer Games)

Canada: 1.3%, 1.8%
Belgium (Flanders + Wallony): 0.3% (2000), 0.3% (2004)
Italy: 3.4% (2000), 3.7% (2004), 2.9% (2008)
the Netherlands: 3.2% (2000), 2.1% (2004), 1.9% (2008)
Norway: 1.1% (2000), 0.9% (2004), 1.1% (2008)
UK: 5.3%

Change in market share 2000-2008
SPLISS + others


Canada 1.3% 0.4% 0.3% 1.8%
Belgium (Flanders + Wallony) 3.4% 3.3% 1.4% 0.3%
Italy 2.9% 2.4% 3.7% 3.2%
the Netherlands 2.1% 1.9% 3.2% 1.9%
Norway 1.1% 0.9% 1.1% 0.9%
UK 5.3% 5.4% 6.4% 4.8%
Australia 0.9% 0.5% 0.5% 0.9%
Switzerland 0.5% 0.5% 0.4% 0.5%
Finland 0.7% 0.5% 0.4% 0.5%
Sweden 1.4% 0.5% 0.5% 0.7%
Denmark 0.7% 0.5% 0.5% 0.7%
Change in national expenditure on elite sport 1999-2011
Flanders & UK

Flanders
- 1999: 33 million euros
- 2003: 100 million euros
- 2007: 172 million euros
- 2011: 190 million euros

United Kingdom
- 1999: 159 million euros
- 2003: 100 million euros
- 2007: 152 million euros
- 2011: 167 million euros

22 million euros, government & lotteries
159 million euros, government & lotteries
Elite sport is...

Citius Altius Fortius
Sports Policy factors Leading to International Sporting Success
Objectives

- Why do some nations succeed and others fail in high performance sport?
- What are the most important sports policy factors leading to international sporting success?
- How can we determine the competitive position of nations?
- How can we evaluate effectiveness and efficiency of elite sport policies?
2008-International comparison in six nations

Vrije Universiteit Brussel (VUB) (BEL)

6 nations

Flanders VUB

The Netherlands Mulier Instituut

United Kingdom SIRC & UK-sport

Wallonia BESMaC-ULB

Norway Norwegian University of Sport and Physical Education

Canada Department of Physical Education and Recreation Mount Royal College

Italy Universiteit van Firenze
National governing bodies

Pillar 9
Scientific research & innovation

Pillar 8
(Inter)national competition

Pillar 7
Coaching provision & coach development

Pillar 6
Training facilities

Pillar 5: excellence

Post career

Pillar 4: performance

Talent development

Pillar 3: initiation

Foundation & participation

Pillar 2
Governance, Organisation and structure of sport policies: An integrated approach to policy development

De Bosscher et al., 2006

Improved climate

Organized sport (clubs)

Non organised sport and physical education in schools

Elite sport Environment Media & Sponsoring

INPUT

OUTPUT

THROUGHPUT
Effectiveness of elite sport policies

INPUT
System-resource model
Pillar 1
Financial support

THROUGHPUT
Proces-model
Pillars 2 - 9

OUTPUT
Improved elite sports climate

OUTPUT (goalsmodel)
Performances
Absolute
Relative

EFFECTS (outcomes)
National pride;
international prestige;
good feeling;
public interest in sport;
popularity of a sport,…

Stakeholders feedback
(Elite sports climate)
(multiple-constituency model)
Conclusion 1: Keys to effectiveness

Mainly four pillars were identified as important areas of an effective elite sport policy:

- Pillar 1: funding in elite sport
- Pillar 5: athletic and post athletic career
- Pillar 6: training facilities
- Pillar 7: coaches development

The best performing nations in summer Olympic sports (UK, Italy, Neth.), had the best scores on these pillars
### Results

<table>
<thead>
<tr>
<th>Pillar</th>
<th>ITA</th>
<th>UK</th>
<th>NED</th>
<th>CAN</th>
<th>NOR</th>
<th>FLA</th>
<th>WAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Financial support: expenditures on sport and elite sport at national level</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>0</td>
<td>-</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>1B Financial support: national subsidisation towards NGBs</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>0</td>
<td>0</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>2 Policy structures and policy development</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>3 Sport participation</td>
<td>+</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>4 Talent identification and development</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>5 Athletic career and post athletic career</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>++</td>
<td>+</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>6 Training facilities</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>7 Coaching provision and coach development</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>8 International competition</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
<tr>
<td>9 Scientific research</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
<td>++</td>
</tr>
</tbody>
</table>
Conclusion 2: Competitive advantage

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
### Pillar 1: Financial support: expenditures on sport and elite sport at national level

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 1B: Financial support: national subsidisation towards NGBs

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 2: Policy structures and policy development

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 3: Sport participation

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 4: Talent identification and development

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 5: Athletic career and post athletic career

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 6: Training facilities

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 7: Coaching provision and coach development

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 8: International competition

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL

### Pillar 9: Scientific research

- ITA
- UK
- NED
- CAN
- NOR
- FLA
- WAL
Conclusion 3: Talent development

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.*
Critical question

• how should the talent pyramid be developed?
DO WE ASK THE RIGHT QUESTIONS?
Some critical questions

1. Is a broad participation base required for achieving international sporting success?

Is it possible to strategically strive for success in relatively small sports in terms of the number of participants?
- Flanders - Athletics: participation and success

$r = 0.83$
• Flanders-Tennis: participation and success?

\[ r = 0.64 \]
• Flanders - Swimming: participation and success

\[ r = -0.60 \]
• Flanders - Cycling: participation and success

\[ r = -0.28 \]
2. How to develop an effective talent spotting system so that no potential athletes are missed?

- At what age should talents be identified and selected? What are the effects of non-selection?
Talent identification and -development

• No nation (of the sample) used a system-related scientific selection process (2004-2008) to identify potential elite athletes from outside a sport’s participant base, is not used in any of the sample nations.
UK Sport after 2008

- **Sporting Giants**
  Tall people between 16 and 25 years old: 58 athletes selected (from 4,800) for handball, rowing and volleyball

- **Girls4Gold**
  Competitive sportswomen between 17 and 25 years, selected for cycling and other targeted Olympic sports

- **Talent transfer**
  UKSport analysed 1,200 retired or nearly retired athletes to investigate their suitability to switch sports

- **Pitch2Podium**
  Young football and rugby players who have been unsuccessful in securing a professional contract are selected and provided with a second chance opportunity to succeed in a new Olympic sports.
Objective
• To orient young people to the sport that best suits their abilities
• (indirectly) to identify talents from outside a sports participants base

1. Low scores: orientation for healthy lifestyles
2. High scores: orientation for competition
3. Very High scores: orientation for elite sport

• pretest with 10,000 individuals (children, young talents and elite athletes)
• 3,500 between 6-12 years old
3. At what age should young talents be identified and selected?

- At what age should young talents start to specialise in one sport?
  - Flanders and the Netherlands: over 60% of the top athletes has practiced more than one sport

- Effects of early specialisation
Age where athletes first received special attention as young talent (data Flanders, N=140)

60% of the athletes received special attention only after the age of 16
41% of the athletes and 47% of the coaches considers this too late
Starting age
The Netherlands: elite sport climate survey
(van Bottenburg, 2008)

<table>
<thead>
<tr>
<th></th>
<th>Starting age</th>
<th>Years practised</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-status</td>
<td>14,2 12,7 10,7</td>
<td>12,6 14,5 17,7</td>
</tr>
</tbody>
</table>

- The athletic career starts earlier
- The duration of the athletic career increases
4. In what organisational context should talents be nurtured? Centralised (federation) or decentralised (clubs), or both?

- What should/can the role of clubs be in the talent development (TI) process and what should be the role of the federation?
- What kind of support services are needed for the combination of elite sport and study?
- Should young athletes train in their home environment or together in one place?
- What are the ideal training circumstances to develop young athletes at each age? (Training volume, training intensity, Competition volume, support services)
<table>
<thead>
<tr>
<th>Strengths</th>
<th>weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>• centralised: best athletes train together in 1 centre</td>
<td>• boarding school system - children away from home</td>
</tr>
<tr>
<td>• funding by sports sector as well as educational sector</td>
<td>• limited study orientations (consequently, many talents are missed)</td>
</tr>
<tr>
<td>• sportspecific coaching coordinated by federation, educational guidance through school</td>
<td>• conflicts with clubs (due to centralisation)</td>
</tr>
<tr>
<td>• all ages (12-18 years old), depending on requirements of sport</td>
<td>• relatively expensive</td>
</tr>
<tr>
<td>• living, studying and training at 1 place</td>
<td></td>
</tr>
<tr>
<td>• legal basis, nationally coordinated</td>
<td></td>
</tr>
</tbody>
</table>
NETHERLANDS: LOOT & CTO

**strengths**

(1) "LOOT-schools"
- 20 regional LOOT schools (topsport talent schools): close to home (sleeping)
- decentralised: many elite athletes involved
- all ages
- relatively cheap (limited national funding)
- legal basis, nationally coordinated

(2) CTO: centres for elite sport and education, since 2008
- living, studying and training at 1 place
- sport specific training coordinated by federation

**weaknesses**

LOOT
- best athletes don't train together in 1 centre
- sport-specific coaching through sports clubs - sufficient expertise?

CTO
- relatively recent system; best athletes are reached?
- in a selected number of sports
Norway

<table>
<thead>
<tr>
<th>Strengths</th>
<th>weaknesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>2 systems: centralised (15 topp-iddrettsgymnas) and decentralised</td>
<td>• topp-iddrettsgymnas are financed by athlete and are expensive</td>
</tr>
<tr>
<td>• financed by Ministry of Education and Research &amp; athletes recruited by federation</td>
<td>• starts relatively late (15 years)</td>
</tr>
<tr>
<td>• study results as a condition for the elite sports gymnasia</td>
<td></td>
</tr>
<tr>
<td>• long tradition: since 1968</td>
<td></td>
</tr>
</tbody>
</table>
Are elite sport schools effective?

Study Flanders: evaluation since 1998- 2010

<table>
<thead>
<tr>
<th>Sports...</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>that <strong>only</strong> performed through an elite sport school</td>
<td>triatlon (since 2005); gymnastics</td>
</tr>
<tr>
<td>with <strong>better</strong> performances in an elite sport school</td>
<td>badminton; table tennis</td>
</tr>
<tr>
<td>performing in <strong>both</strong> paths: with and without elite sport school</td>
<td>Athletics; swimming; judo; tennis</td>
</tr>
<tr>
<td>with better performances <strong>next to/without</strong> following a path through an elite sport school</td>
<td>Cycling</td>
</tr>
<tr>
<td><strong>No</strong> performances at all</td>
<td>Handball</td>
</tr>
</tbody>
</table>
Conclusion

• There is need for more robust evidence on the systems and processes of elite sport development
• … at a sport specific level

“There are several ways to skin a cat”
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.

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).
### Which nations?

Nations that have started with data collection in 2011

<table>
<thead>
<tr>
<th>European countries</th>
<th>Oceania</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finland</td>
<td>Australia</td>
</tr>
<tr>
<td>Spain</td>
<td>America</td>
</tr>
<tr>
<td>Northern Ireland</td>
<td>Brazil</td>
</tr>
<tr>
<td><strong>Denmark</strong></td>
<td>Canada</td>
</tr>
<tr>
<td>Belgium (FLA &amp; Wal)</td>
<td>Asian</td>
</tr>
<tr>
<td>Luxembourg</td>
<td>South Korea</td>
</tr>
<tr>
<td>France</td>
<td>Japan</td>
</tr>
<tr>
<td>The Netherlands</td>
<td>Singapore</td>
</tr>
<tr>
<td>Switzerland</td>
<td></td>
</tr>
<tr>
<td>Estonia</td>
<td></td>
</tr>
</tbody>
</table>

In the pipeline: Portugal
## Comparable countries

<table>
<thead>
<tr>
<th>Rank total</th>
<th>Total Beijing</th>
<th>Points (3,2,1)</th>
<th>pop2008 (x1 mj)</th>
<th>GDP/CAP 2007 ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>5</strong></td>
<td><strong>Australia</strong></td>
<td>46</td>
<td>89</td>
<td>20,6</td>
</tr>
<tr>
<td><strong>16</strong></td>
<td><strong>Netherlands</strong></td>
<td>16</td>
<td>35</td>
<td>16,6</td>
</tr>
<tr>
<td><strong>23</strong></td>
<td><strong>Norway</strong></td>
<td>10</td>
<td>21</td>
<td>4,6</td>
</tr>
<tr>
<td><strong>24</strong></td>
<td><strong>New-Zealand</strong></td>
<td>9</td>
<td>16</td>
<td>4,2</td>
</tr>
<tr>
<td><strong>28</strong></td>
<td><strong>Denmark</strong></td>
<td>7</td>
<td>13</td>
<td>5,5</td>
</tr>
<tr>
<td><strong>35</strong></td>
<td><strong>Switzerland</strong></td>
<td>6</td>
<td>10</td>
<td>7,6</td>
</tr>
<tr>
<td><strong>41</strong></td>
<td><strong>Sweden</strong></td>
<td>5</td>
<td>9</td>
<td>9,0</td>
</tr>
<tr>
<td><strong>47</strong></td>
<td><strong>Finland</strong></td>
<td>4</td>
<td>7</td>
<td>5,2</td>
</tr>
<tr>
<td><strong>48</strong></td>
<td><strong>Greece</strong></td>
<td>4</td>
<td>6</td>
<td>10,7</td>
</tr>
<tr>
<td><strong>54</strong></td>
<td><strong>Austria</strong></td>
<td>3</td>
<td>4</td>
<td>8,2</td>
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<tr>
<td><strong>59</strong></td>
<td><strong>Belgium</strong></td>
<td>2</td>
<td>5</td>
<td>10,4</td>
</tr>
<tr>
<td><strong>Portugal</strong></td>
<td></td>
<td>2</td>
<td>5</td>
<td>10,5</td>
</tr>
</tbody>
</table>
Veerle De Bosscher, Maarten van Bottenburg & Simon Shibli

Copenhagen, May 12th and 13th 2011

Thank you

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