

# WERU Conference

**The Welsh Economy Research Unit's 15<sup>th</sup> Annual Conference 'Sport, Society and Environment: Tracing the Links' was held at Cardiff Business School on 24<sup>th</sup> May 2007. Sport can contribute to individual wellbeing and social inclusion, but sport infrastructure and sport tourism also impacts on our physical environment, has economic value and can leave a valuable lasting legacy. A selection of papers presented at the conference, considering these and other related themes, are summarised below.**

## Sport: Globalisation's New Frontier

*Rhys David, Institute of Welsh Affairs*

Remember British spectator sports a generation ago? In professional football 92 English (and Welsh) clubs started their games simultaneously at 3pm on a Saturday afternoon in four divisions, and there was the real possibility of climbing (occasionally done in three seasons) from the lowest to the highest tier.

In rugby, amateur sides had bespoke fixture lists to suit their status and abilities, with nothing more to compete for than the Daily Telegraph's pennant for winning more Anglo-Welsh matches than any of their rivals. In cricket, 17 county sides solemnly played each other from May onwards. Sponsorship was kept firmly at arms' length except that the owner of the local Ford main dealer or building supplies group was probably chairman of the soccer side, and could use it to entertain his clients and, in good seasons, boost his local prestige.

Fast forward to the 2000s. International cricket is played virtually year round in a bewildering array of formats – five day, limited overs, 20/20 – and more cups than the Potteries, the best county cricketers contracted to the Test team and rarely appearing for their county sides. All but a handful of the now separate 20 side Premier League are owned by American, Russian, Thai and other international businessmen. The once-every-ten-years three month tours by the big three southern hemisphere rugby nations have been replaced by almost annual visits by all three for a series of autumn challenges against the UK home nations.

In parallel, sport has moved from the back to the front pages of newspapers, and even to the financial pages. Big matches in all three main sports are now treated to copious analysis. The start of big competitions will usually be preceded by weeks of build-up, followed by supplements, wall charts and win-a-ticket-and-hospitality competitions. Outside the sports pages the politics of sport, the antics of its players, sport's health impact, and its ability to support environmental or social policies are all extensively covered, as, too, are sport stock market launches, take-overs, directors' dealings, bankruptcies and refinancings.

Some managers and coaches now earn vast salaries that put them in the top 1% of wage-earners, and have contracts that will comfortably cushion the impact of job losses. Players earn sums per match that would make captains of industry blush and are often willing to risk holding out for months for substantial improvements when contracts are being re-negotiated.

Why has sport and in particular Big Sport become so important that it now almost forms a new part – the quinary sector – of the economy, a world of its own embracing not just players and coaches, but teams of agents, specialist lawyers, public relations advisers, medical advisers, personal trainers, physiotherapists, psychologists, minders, trophy girlfriends and wives, and possibly even personal shoppers?

The answer lies, of course, in the way the world itself has changed over the past 25 years and in particular the grip that globalisation has secured over virtually all aspects of the international economy. The process of consolidation across the 20<sup>th</sup> century which saw domestic competition in each of the advanced industrial societies, from bread to cars, concentrated in the hands of usually three and rarely more than four big corporations, is being repeated even more rapidly across global products.

Vehicle manufacture is now in the hands of around 10 big groups worldwide (though the emergence of China and India may mean it will not always be the same ten or even that number), the same is true in food where a handful of big companies such as Europe's Nestle and Unilever operate on a global scale, and even in niche product areas such as sports goods where the likes of Nike and Adidas have secured dominant positions across a range of sports.

These big corporations need a route to reach consumers and sport offers a highly suitable and effective one. The work done over a hundred years or more by the Olympic, football, rugby and cricket authorities in nurturing their sides, their supporters and their competitions has, the corporate world

realised, created huge brands, such as Manchester United or Real Madrid. Their partner has been the media industry and in particular the globalised television companies, such as Sky, in need of filling hours of airtime with internationally recognisable products.

The biggest brands in sport have, therefore, been recognised as perfect partners for companies with products to sell to the consumer, but, just as significantly, as strong revenue earners in their own right. Manchester United, the growth of which in post-war years was initiated by the shrewd business nous of Manchester meat pie magnate, Louis Edwards, and his son Martin, had a turnover in 2006 of £165m built upon not just its playing revenues and replica shirt sales but a host of other businesses as well, ranging from shops to its own television channel for fans. Its reach – just like Coca-Cola – extends to every corner of the earth and includes an estimated 30m Chinese fans.

In soccer, just as in shipping (P&O), airports (BAA), aggregates (Hanson), chemicals (ICI), banking (Abbey), supermarket retailing (Asda), telecommunications (02 and Orange) utilities (virtually all), and a host of other sectors, overseas companies have been quick to recognise the value of British brands, acquiring the leading English clubs but expressing no real interest in the rest.

American investors have been particularly active, partly for the cash flow the big clubs generate from their weekly audiences of 50,000-60,000 spectators, (many of whom generously pay upfront through season ticket sales). However, as important is the reach of UK teams playing an international sport like football, when compared with US sport. Superbowl or World Series attracts enormous interest but it is largely confined to the US. Football in the US – Major League Soccer – remains relatively weak in pulling power compared with baseball, basketball and American Football, and US teams do not have the opportunity to play in high quality cross border competitions as do their counterparts in the European leagues. Nor can the American national side be guaranteed to

qualify regularly for the highly important Football World Cup. Europe's sports have global reach, and are simple to understand and easier to spread than America's domestic games.

It is worth noting, too, the identity of interest - amounting almost to symbiosis - between the newspapers, particularly in Britain, that cover our new quinquenary sector in such minute detail and the big corporates that now effectively control Big Sport.

Newspapers, too, have globalised, with much of Britain's national newspaper industry and large chunks of its regional press are now under foreign and mainly US control. As part of a drive to increase return on capital, regional media companies especially have cut back heavily on staffing, including editorial staffing, affecting the quality and quantity of local reporting and eliminating separate editions for distinct geographical areas. They have also moved to centralise newspaper production in fewer print sites, shifting papers by motorway to their supposed points of origin.

The gaps are being filled by material that can be written up centrally and, if necessary, tweaked at local level. Sport, together with the entertainment industry of which it is now effectively a part, lifestyle advice, fashion, and the now omnipresent "quasi-research" emanating from universities and lobbying groups, fits well into this agenda. For this approach to work for sport, however, coverage has to focus on the small number of top teams in which a large proportion of the population can be expected to have a passing interest and on the comings and goings of the celebrities that grace games, such as David Beckham, Wayne Rooney, Andrew Flintoff, Shane Warne, or, in the case of Wales, Gavin Henson. If there is a WAG who can form part of the picture such as Victoria Beckham, Colleen McLoughlin or Charlotte Church, so much the better.

Societal change is of course difficult to perceive while it is happening, and it is only in the last few years that politicians, economists, historians, sociologists and others have begun to look at sport's changed role within society and the impact on local communities, businesses - and sports sides. The immediate reaction has been to ask what benefits can be obtained by clinging on to the coat-tails of sport, though in the nature of things the moguls who run sport and have experience of dealing at a global level can rarely be bested by local councillors or even serious national politicians and their advisers.

Sport has been regarded, as in the case of the London Olympics and previously the Commonwealth Games in Manchester, as a means to help regenerate rundown areas. In practice, this usually means that the holding of such events is used by the local and national authorities to set a deadline for the clearance, mainly using public finance, of worn-out areas and the provision of a range of infrastructure that might otherwise not have been built or have been subject to continuing delays. Such a process is evident in Newport where the Ryder Cup 2010 has been the catalyst for a range of improvements to an outmoded town centre and a dated and inadequate roads system.

The private sector, it is hoped, will respond to these stimuli by bringing forward its own plans for new retail, office, housing, hotels and leisure (and, now rarely, industrial) facilities. This can then be accompanied by the development by local authorities of a visitor strategy to encourage people to visit or return to the area in future years.

Cardiff would appear to have been relatively successful in achieving these gains, climbing up the list of most visited British cities since the 1999 Rugby World Cup. In Cardiff's case significant public/private expenditure on new landmarks - the Wales Millennium Centre, the Senedd, and the Millennium Stadium, has reinforced the free television coverage and press mentions the city has secured through hosting events such as the Rugby World Cup in 1999 and there must be some doubts whether Newport without this ongoing publicity will be able to secure similar benefits from the Ryder Cup. Cardiff, too, will in future be more reliant on rugby to secure worldwide attention, following the return of the FA Cup and other big UK sporting events to the rebuilt Wembley.

Great store is also set by sport's ability, particularly in the aftermath of major events, to stimulate greater levels of participation by the population at large, creating long-term health benefits such as reduced obesity and reductions in cardio-vascular disease. While not everyone might want to take up rugby after watching the physical battles of the recent World Cup, golf in Wales is very much a live test case. The Welsh bid to host the event has included a lengthy programme designed to increase the number of individuals and in particular women playing the game, including on newly developed courses.

The internationalisation, as well as the globalisation, of sport has also created

employment opportunities around the world in the manufacture of sports and sports-related products. Cricket bats have long been a speciality of the Indian sub-Continent but now many of the other products sportsmen use, as well as consumer and business electronic equipment used to relay sport to the world, are produced in developing countries.

Sport can play a positive role in international development in other ways. Young people, too, in less developed countries can take pride in the achievements of their countries in international competitions such as the Football World Cup or the Olympics, and, through outstanding sportsmen such as Michael Essien, and Didier Drogba in soccer or Haile Gebrselassie in athletics, they are being presented with role models of success.

A caveat does need to be entered, however. Globalisation has in general strengthened the already strong, so that in recent World Football Cups a very large proportion of the players from all countries represented earned their living in Europe's big five footballing leagues in England, Spain, Italy, Germany and France. Even South America which has provided in Brazil and Argentina (and Uruguay) multiple winners of the Cup now draws players for its international teams from Europe, and its clubs are not in the market for the best of Europe's players.

The message that goes out to the youth of Africa and Asia, therefore, could once again be that it is necessary to move to an advanced economy to secure life's richest rewards. Even Ireland, one of the first nations to play international football, is unable to field players from its own football league for its international team, and while Wales manages to field one or two Welsh-based players in most matches, they play in the English league and not the Welsh. A similar pattern is now emerging in rugby where many of the players on view in the recent World Cup from the minor playing countries, such as Georgia, were already plying their trade in England, Wales or France, and others will have been hoping to impress future employers. Indeed, if they had not had players in the two main European leagues, these smaller teams would not have been so competitive.

Other issues arising from the globalisation of sport must, of course, include its environmental impact. Sports stadia cannot be put up without creating a lasting and ongoing environmental footprint, and the internationalisation of competition between teams is generating large movements of people

travelling to matches in overseas countries. Finals often occur in third countries so that local interest is limited but fans travel huge distances. In theory, because venues are fixed well in advance of results, a European Cup Final in football could involve fans from Scotland and Sweden travelling to Istanbul to see their teams play.

Are there lessons for Wales from the globalisation of sport? As a nation of only 3 million people, Wales has, despite the gloom often expressed over its sporting performances, always punched above its weight, and produced outstanding boxers, athletes, golfers, cricketers, and footballers as well as rugby players.

It will undoubtedly be more difficult to maintain this position, however disappointing this might be for the writers of letters to newspapers, simply because population growth in many other countries is much faster than in Wales and many more countries are participating across a wide range of sports, including rugby.

If, however, as one hopes, we are to go on achieving more than our fair share of success and if we are to make sure we have a hand on the tiller of globalisation where it meets sport (rather than being swept along by it), we will need a smart approach. We need intelligent sportsmen who can cope with the complexities of playing at the highest levels, and we need smart administrators and politicians who understand the forces at work, are savvy when it comes to dealing with sport's business barons, (including those in the media), and who are capable of analysing opportunities and extracting the best deals for Wales.

In the new confident Wales ten years on from devolution, surely worth a try?

### **Ryder Cup 2010 – its not just about the golf!**

*Rob Holt, Chief Executive, Ryder Cup Wales 2010 Ltd*

Governments across the world are now actively encouraging major events to their towns and cities with a variety of reasons given to justify the investment of time, staff and financial resources, required to secure events.

There are well documented arguments that major events can help raise the profile of an area and bring short and long term economic benefits. However, less attention has been given to how major events "fit" with wider public policy initiatives.

A policy to secure events could, in itself, be seen as a public policy initiative. If that is the case, then Wales and the Welsh Assembly Government (WAG) could be seen to have been highly successful, taking sport only, in hosting the Rugby World Cup, FA Cup and other finals, the Wales Rally GB and now looking forward to the 2009 Ashes and the 2010 Ryder Cup. Wales has established itself as an event destination and as such, looking beyond 2010, can anticipate playing its part in the 2012 Olympics and, hopefully, use its well founded reputation to secure further events in the future.

Securing events could be seen as a public policy initiative but few would argue that any single sporting or other event should be considered a public policy solution in its own right. However, events can be tools to support wider public policy initiatives, with the extent to which this happens dependent on a number of factors including:

- Who owns the event, and how willing they and their partners are to engage.
- The extent to which public policy links are built in at an early stage e.g. bid criteria.
- The availability of investment from public and private sector partners.
- The political environment and inclination of governments to link events to public policy initiatives.
- The complexity of getting the event itself right which, above everything else, must remain the priority.

To many, the Ryder Cup in 2010 is just a golf game between Europe and the USA. To others, it is a fantastic opportunity to raise Wales's profile as a business and leisure destination, and still more see it as providing an economic boost to Wales before, during and after the event in 2010. All are correct but a number of wider policy agenda are also being pursued.

WAG has a clear sports policy agenda, "Climbing Higher", which aspires to increase participation in sport and which links into the wider health agenda. The PGA European Tour, who own the rights to the Ryder Cup when it is held in Europe, built criteria into the bid specification with a view to increasing golf participation. WAG took this and ran with it. Golf Development Wales (GDW) has been established to increase the numbers and standards of people playing golf in Wales, and has been successful.

Beginners courses in schools, free lessons for women, engagement with clubs to link into schemes have all played their part. The £2m "Legacy Fund" specified by the European Tour in the bid criteria, funded by WAG, and

managed by Ryder Cup Wales (the company established to deliver WAG's bid commitments and administered by the Sports Council for Wales) is being used to increase the number of public golf facilities across Wales, many in our most deprived communities.

The link between increasing sports participation and the WAG "Climbing Higher" agenda is clear but the connections with the WAG "Health Challenge Wales" initiative and the wider Health agenda are further strengthened with the appointment of Tenovus, Wales' leading Cancer charity, as the official charity of Ryder Cup Wales. In 2007 alone Tenovus has raised nearly £40,000 towards research and patient care.

Ryder Cup 2010, with the support of each of its partners, is also reviewing how it might work with education providers to support ongoing activity. Developing an Education Programme linked to the Olympics and Commonwealth games is a well trodden path but it has never been done for the Ryder Cup before. Therefore, a number of higher education opportunities are being considered, including catering course students gaining work experience in 2010, possible changes to the national curriculum, and projects which use golf to improve numeracy. The City of Newport is committed to fitting its local policy agenda with WAG, to ensure all of Wales benefits.

Education initiatives also impinge upon the wider social inclusion agenda. Setting aside the employment opportunities associated with 2010 and the community spirit which will be fostered in Newport, south east Wales and beyond in the expectation of a successful event, volunteering is an important social initiative. With 1,000 volunteers required at the match itself and more at the many golf events Wales is committed to in the run-up to 2010, the Ryder Cup is highly relevant to the wider volunteering agenda. Discussions have already been held with Prince's Trust to consider how their "social inclusion" programmes can be incorporated into the 2010 requirements.

Clearly, just as there is scope for events to support public policy initiatives, organisers must be alert to potential challenges. WAG's sustainable development obligation has been fully communicated to all partners. Drawing on the knowledge inherent within Wales and the lessons learnt from previous Ryder Cups, there is a shared commitment to make 2010 the "greenest Ryder Cup ever" and to build in green policies from the outset of the planning process.

There are many wider policy agendas that Ryder Cup 2010 is hoping to meet, such as ensuring a sense of place on site during the event by working with Visit Wales and Welsh Language Board or maximising the number of Welsh companies supplying high quality product to the event such as food and drink, merchandise, tentage and scaffolding.

Ryder Cup 2010 cannot in itself set policy agenda but, as with other events, it can, and will, support existing public policy initiatives. To do so requires the engagement of the event rights holder, WAG and all other partners, public and private, and to date that support has been unstinting.

### Comparing the economic and environmental impacts of major sport events: The RBS Six Nations and FA Cup Final at Cardiff's Millennium Stadium

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#### Introduction

Policy-makers are increasingly concerned with the environmental as well as the economic impacts of major sport events. This research demonstrates how two separate though related methodologies can be used to provide conclusions on the economic and environmental impacts related to event visitation, and also enable comparisons between events.

#### Case Events: Setting the Scene

The two case events considered were the 2006 RBS Six Nations match between Wales and Scotland and the 2003/04 FA Cup Final (Manchester FC versus Millwall FC).

The Six Nations is Europe's premier Rugby Union tournament and is the oldest championship in the world, dating back to 1882. The FA Cup Final is one of the most prestigious competitions for football clubs in the UK and the final is arguably one of the greatest single matches in world club football. Cardiff has hosted the FA Cup Final event at the Millennium Stadium since 2001 while Wembley Stadium in London was being rebuilt.

For both events:

- The geographical boundary of the study was the host city of Cardiff.
- The study population was all event visitors (i.e. ticket holders and non

ticket holders) (FA Cup Final 73,000 visitors; RBS Six Nations 85,499 visitors).

- The period for which visitors economic and environmental impact would be calculated was based on visitors' duration of stay (FA Cup Final - 1 day; RBS 6 Nations - 3 days).

#### Methodologies: Ecological Footprint Analysis (EFA) and Environmental Input-Output Analysis (ENVI0)

##### What is an Ecological Footprint?

The starting point for the Ecological Footprint (EF) concept is that there is a limited amount of bioproductive land on the planet to provide for all human resource demands. Sustainable development requires that we live within the carrying capacity of the earth, allowing our economies to develop whilst still ensuring that human needs are met.

The EF is measured using a standardised area unit equivalent to a world average productive hectare or 'global hectare' (gha) and is usually expressed in global hectares per person (gha/capita). The EF is derived for a defined population usually for one year by estimating the area of bioproductive land and sea required to support their resource consumption using prevailing technology - for example, the demands of that population in terms of their food, travel and energy use. This demand on nature can be compared with the available Earth's biocapacity, which translates into an average 1.8 gha/capita in 2001 (WWF, 2004). However, humanity is currently using 2.2 gha/capita which indicates a situation of 'overshoot' where nature's capital is being spent faster than it is being regenerated (WWF, 2004). Overshoot may permanently reduce the Earth's ecological capacity, which is a key concern for sustainability.

As the EF relates to the consumption activities of a defined population, it has had a number of applications including organisations, services and products, different levels of government, proposed major developments and tourism. Here we have applied the EF to additional visitor consumption that occurs during two major sport events that have been held at Cardiff's Millennium Stadium.

The EF approach is useful for a number of reasons:

- The EF method provides valuable insights into natural resource use and an estimate of the land area required to support that level of consumption.
- As the EF aggregates the impacts of different consumption activities into

a single measure, it also offers policy-makers the potential to identify clearly and compare the environmental impacts of different visitor activities such as transport, waste and energy use.

- The EF provides the potential for policy makers to prioritise their actions in a more informed and integrated manner.
- The EF is a good awareness-raising tool as it personalises sustainability by assessing the impact of consumption from a consumer perspective. The EF can be a useful tool to communicate with people and help them to appreciate the link between their local (consumption) activities and global environmental impacts.

For each event primary data relating to visitors' consumption was collected for the following categories:

- Visitor travel to the event.
- Visitor food and drink consumption.
- Infrastructure of the event venue.
- Visitor type of accommodation and duration of stay (Rugby event only).
- Waste.

##### What is Environmental Input-Output Analysis?

Input-Output analysis has a long pedigree as a method for examining the economic consequences of tourism activity and sports events. The Input-Output Table, upon which the analysis is based provides a financial picture of an economy for a specific period, usually one year. The Table shows all the interconnections between different parts of the economy, by detailing estimates of sales and purchases between defined industries, as well as spending by households and governments. The latest iteration of Welsh Input-Output tables relates to the year 2003. For details of the Welsh Input-Output Project and general methodology see Bryan *et al.*, 2004.

The Welsh Input-Output tables have had wide application in the analysis of economic impacts (direct and indirect or multiplier impacts) associated with particular industries, activities or events (see [www.weru.org.uk](http://www.weru.org.uk) for project details). However one of the relatively recent extensions to the tables has been the incorporation of an environmental module within the framework. This module captures some of the connections between the economy and the environment. Research by AEA Technology for the Environment Agency and its partners has provided Welsh data covering air emissions (by category), electricity consumption and production, energy production, waste arisings, and water consumption for defined industries of the Welsh economy

(see REWARD, 2003). In this paper, for illustrative purposes, data for greenhouse gas emissions in Wales is used. The regionally derived information on emissions can then be used in conjunction with the Input-Output framework to estimate the direct and indirect volume of the given pollutant generated by changes in final demands. The framework then allows one industry's production to be linked with another industry's pollution creation. In this paper we therefore link additional tourism spending from the two events to economic effects and then to environmental externalities from local industries.

The geographical area of study in this paper is Cardiff, hence the analysis required use of a Cardiff Input-Output table. This table had been derived as part of a previous project through a combination of survey and non-survey methods (i.e. a hybrid method). In summary, specific survey data was available for selected sectors of the economy, whilst the remaining parts of the table were derived by a mechanical reduction of the Welsh transactions table using the normal RAS procedure (see Miller and Blair, 1985).

There are a number of limitations to the use of Input-Output for impact analysis. Key amongst these is the assumption of fixed technical coefficients, and a passive supply side (Miller and Blair, 1985). Furthermore, Cardiff specific pollution coefficients were not available, hence the region-wide coefficients were applied to the sub-regional Input-Output table. This is far from ideal, and assumes that Cardiff industries pollute in the same average way as industries in the region (for a more detailed analysis of uses and limitations of the approach see Collins et al, 2007).

In summary, for policy makers ENVIO provides:

- The means to investigate selected environmental trade-offs of event visitation.
- Policy simulations which could potentially be used as 'inputs' to predict wider outcomes on other sustainable indicators or tools, and

to practically support planning and *ex ante* evaluation processes.

In order to make ENVIO estimates, information on visitor expenditures was collected as part of the visitor survey. Visitors were asked about their actual or anticipated spend on various items. This information was then scaled-up to represent the full population of visitors.

**Ecological Footprint Results - Interpreting the Numbers**

The total EF for the FA Cup Final was 3051 gha and 3578 gha for the RBS (see Table 1). On a per visitor basis the EF for the average football and rugby visitor was 0.0417 gha/visitor and 0.0419 gha/visitor respectively.

The additional EF generated by visitors was 2663 gha for the FA Cup Final and 2659 for the RBS. This additional impact is calculated by estimated visitor resource consumption at their home location for the same time period at each event, and subtracting this from their total consumption at the event for each of the footprint component areas.

**How significant is the impact of consumption at both events?**

If the EF of an average visitor at each event is compared with their EF at their home location for the same time period, the total impact of the Football event is almost eight times greater. For the Rugby event the impact is almost 4 times greater.

The most significant ecological impact generated by the Football event was visitor travel patterns. Visitor travel to the event created an EF of 1670 gha, which was 14 times greater than that for an average UK resident for the same period of time (i.e. 1 day). The most significant impact generated by the Rugby event was visitors' food and drink consumption. Visitors' consumption of food and drink at the event created an EF of 2177 gha, 2.5 times greater than that for an average UK resident for the same time period (i.e. 3 days).

**Visitor Travel**

On a per event basis, a football supporter was found to have a larger

travel EF than that for a rugby supporter. The reason for this was that although a rugby supporter was more likely to travel by car (59.3% compared to 46.8%) and less by rail (17.6% compared to 33.7%), a football supporter travelled more than twice the distance (591 km) to attend the event compared to a rugby supporter (284 km).

**Food and Drink consumption**

Per event basis, a rugby supporter was found to have a larger EF than that for a football supporter. The main reason for this was that rugby visitors stay longer in Cardiff and therefore have more opportunities to eat out. However, if we consider consumption on match day only, a rugby supporter was found to have a smaller EF as football supporters consumed more food, especially meat and meat products which are highly processed and in turn generates a larger ecological impact.

**Infrastructure (Millennium Stadium)**

The 75,000-seat Millennium Stadium was found to contribute a very small amount to the overall EF of both events. Although constructed of some 40,000 tonnes of concrete and 20,000 tonnes of steel, the stadium has a relatively small footprint of 0.41 global hectares per event. This is because of its predicted lifespan of 50 years and the high level of users, an estimated 50 million over that period.

**Energy (Visitor Accommodation only)**

The ecological impact of energy use at visitor accommodation in Cardiff was only calculated for the Rugby event as equivalent data was not available for the football event. At the rugby event supporters stayed a total 49,000 nights in visitor accommodation in Cardiff, ranging from five star hotels to more traditional bed and breakfasts. The energy required for heating, lighting and cooking at those establishments resulted in an EF of 284 global hectares.

**Visitor Waste**

The EF for waste is not included in the total EF for each event but instead is

**Table 1: Summary of Ecological Footprint Results: FA Cup Final and RBS Six Nations**

Event	Visitor Total Ecological Footprint (gha/event)	Visitor Additional Ecological Footprint (gha/event)	Visitor Ecological Footprint at Home (gha/event)
FA Cup Final (Duration = 1 day)	3051 0.0417 gha/visitor	2663 0.0364 gha/visitor	388 0.0053 gha/visitor
Rugby (Duration = 3 days)	3578 0.0419 hga/visitor	2659 0.0311 gha/visitor	919 0.0107 gha/visitor

**Table 2: Ecological Footprint Results by Category**

Category	FA Cup Final (gha/event)	Rugby (gha/event)
Visitor Travel	1670	1117
Food & Drink	1413	2177
Stadium Infrastructure	0.104	0.104
Energy (visitor accommodation)	-	284
<b>TOTAL</b>	<b>3051</b>	<b>3578</b>
Waste (satellite account)	146	158

**Table 3: Total (Direct) Spending by ticket and non-ticket holders (000s), current prices.**

	FA Cup, 2004	Rugby, 2006
Food and Drink	1,669	4,927
Transport to Cardiff	Not included	2,108
Local Transport	33	178
Event related merchandise	606	540
Other shopping	263	739
Leisure	22	37
Ticket	Not included	3,627
Accommodation	300	2,410
Other	0	53
Total Spending	2,894	14,619
<i>Of which:</i>		
Total Retained in Cardiff Economy	1,523	11,185

**Table 4: Economic Impact – summary\***

	FA Cup	Rugby
Direct Output £000s	1,523	11,185
Final Output £000s	2,227	16,440
Final Employment impact (person years – FTEs)	60	375

\* results provisional, work is on-going to make results consistent.

**Table 5: Impact - Greenhouse gases (tonnes carbon equiv.)\***

	FA Cup	Rugby
Direct by industry	123	1082
Total by industry	373	1700

\* results provisional, work is on-going to make results consistent, and to include domestic sector impacts.

treated as a satellite account to avoid double counting. The FA Cup Final generated 59 tonnes of waste (0.81kg/supporter), compared to 66.5 tonnes (0.78kg/supporter) for the rugby event. This resulted in a total waste EF of 145.5 gha and 158.4gha respectively. On a per event basis a football supporter has a large waste EF compared to that for a rugby supporter. The reason for this is twofold. First, a football supporter consumed more food from fast food

outlets and this resulted in more food packaging and food waste. The second reason is that 1% of waste generated at the rugby event was recycled compared to almost zero at the football event.

#### The ENVIO Results

Table 3 provides estimates of the total (direct) spending by visitors to the two events. These figures are not directly comparable, as there are differences in coverage and timescales. For example,

information was not collected for spending on transport to Cardiff and on game tickets for the FA Cup survey. These categories were not included as all of this spending, and hence economic impact, would be outside of Cardiff. In addition, as already noted, the duration of impact for the FA Cup was taken to be one day in 2004, whilst the rugby six nations was 3 days in 2006. However, noting these caveats, the table shows that total FA Cup visitor spending was almost £3m, of which just over half was estimated to be retained within the Cardiff economy. This compares with total spending for rugby six nations visitors of £14.6m, of which over £11m remained within Cardiff. One reason for the higher Rugby spend is the inclusion of ticket costs. These costs were classified as 'local' as ticket revenue for home games is retained by the Welsh Rugby Union.

Using the derived ENVIO framework for Cardiff, these direct impacts on different parts of the economy were incorporated into the model in order to derive the indirect or multiplier impact of visitor spending on the Cardiff economy, these results are shown in table 4. The top line of table 4 shows the direct output impact (also the final row of table 3) the next row shows the final impact of visitor spending after the inclusion of multiplier impacts (the indirect or multiplier impact is the final output effects minus the direct output). Therefore, for the FA Cup final, the final impact of visitor spending on the Cardiff economy was an estimated £2.2m, compared with almost £16.4 for the Rugby six nations game. In order to gain some insight into the possible impacts on employment, the total employment impacts can be estimated. The final (after multiplier effects) impact of the FA Cup final was an estimated 60 full-time equivalent jobs (ftes, person years), compared with 375 ftes for the rugby. In practice, whilst the extra output generated as a result of spending is equivalent to these jobs estimates (i.e. using average output to employment ratios) much of this extra employment would have been met through extended working hours of existing employees.

Finally, table 5 shows the environmental impact of the extra output generated by Cardiff industries as a result of visitor spending. For illustrative purposes, this table shows the impact in terms of greenhouse gas emissions (tonnes of carbon equivalent). In addition this table is limited to estimating the extra emissions associated with the industrial output generated (i.e. it excludes the domestic sector emissions). The extra output generated (shown in table 4) was then associated with the creation of 373 tonnes of carbon equivalent in the case

of the FA Cup final, compared with 1,700 tonnes for the rugby event. It should be noted that this impact is limited to the greenhouse gasses generated by Cardiff-based industries, other impacts will be generated as a result of visitor spending outside of Cardiff (see Collins *et al* 2007 for further explanation of impacts).

**Final Verdict**

Supporters’ attendance is an important aspect of many major sport events as it creates a competitive atmosphere and encourages teams to perform at their best and hopefully win. However, this research does show that sport events do have significant environmental impacts which will take their toll on the planet and deplete resources unless supporters, stadium owners, events organisers and sponsors take significant steps and develop innovative approaches towards making their game more sustainable.

There is then value in deriving local and global environmental impacts from events as part of the contemporary analytical toolkit. The use of the tools in these cases represent relatively small scale applications but the approaches have equal validity for mega sport events. This analysis forms part of a developing research programme exploring measurement and mitigation of environmental impacts across different types of events - analysis is currently on-going of the Tour de France 2007 (UK stages). One outcome of this research will be to develop a typology of events based upon different types and intensity of a range of environmental consequences.

**References**

Bryan, J., Jones, C., Munday, M. and Roberts, A. (2004) *Welsh Input-Output Tables for 2000*. Cardiff University, Cardiff.

Collins, A., Flynn, A., Munday, M. and Roberts, A. (2007) Assessing the Environmental Consequences of Major Sporting Events: The 2003-04 FA Cup Final, *Urban Studies*, 44.3.

Miller, R. and Blair, P. (1985) *Input-Output Analysis: Foundations and*

*Extensions*. New Jersey: Prentice Hall.

REWARD (2003) *Key Industrial Environmental Pressures – Air Emissions and Energy Use*. See [www.reward-uk.org](http://www.reward-uk.org).

WWF (2004) *Living Planet Report 2004*, World-Wide Fund for Nature International, Global Footprint Network, UNEP World Conservation Monitoring Centre. WWF, Gland, Switzerland.

**The Economic Impact of Regular Season Sporting Competitions: The Glasgow Old Firm Football Spectators as Sports Tourists<sup>1</sup>**

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**Introduction**

There is a growing interest in the economic impact of tourism associated with small-scale sport events (Gibson *et al.*, 2002). These differ from mega-events in that they typically use existing infrastructure, need less public support, avoid tourism seasonality (by running a league over the autumn to spring months of a year, for example) and are more easily managed (Higham, 1999). The research reported here investigates a particular example: the extent and impact of the sports tourism generated by the Glasgow-based “Old Firm”<sup>2</sup> football clubs, Rangers and Celtic, and the economic impact of that sports tourism expenditure on the Glasgow and Scottish economies. Specifically we quantify the net local economic impact of the sports tourism related to all matches involving either of the two clubs played during the 2003-4 season. This is based upon expenditure data from a questionnaires study of season ticket holders from both teams. The subsequent knock-on effects to the Glasgow and Scottish economy are calculated using a specially constructed, geographically disaggregated, set of Scottish Input-Output Accounts<sup>3</sup>.

**Inter-regional flows of supporters and expenditures**

In the 2003-4 season, both clubs played nineteen home and away matches in the Scottish Premier League. In European competitions, Celtic played sixteen and Rangers eight games and both clubs participated in the two Scottish knockout cup tournaments. For home matches both teams had an average attendance of just under 50,000 with supporters with a Glasgow postcode accounting for just over a quarter of all season ticket holders: 66% came from the rest of Scotland and 8% from outwith Scotland. The total attendance at all matches involving the Old Firm clubs during 2003-4 was 3.5 million, with 2.75 million in Glasgow. The large number of games each club plays in Glasgow, together with the substantial support that exists outwith Glasgow (both in the rest of Scotland and outwith Scotland), produces a considerable number of in-bound tourist trips to Glasgow.

Table 6 shows the direct expenditures of the Old Firm sports tourists. These data are broken down by the region of residence, and by the region where the expenditures were made. Sports tourism spending associated with attending matches involving one or both of the Old Firm teams was large – over £130 million in total – with almost 80% of these expenditures made in Scotland and around 50% in Glasgow.

To get some kind of metric on the level and nature of total sports tourism expenditure, Blake (2005) estimates that the total visitor spending linked to the 2012 London Olympic Games at £309 million for domestic visitor and £447 million for foreign visitors. That is to say, in terms of sports tourism, having the Old Firm has a direct expenditure impact for Glasgow similar to that of hosting the Olympic Games every 12 years.

**Economic impacts of sports tourism and displaced expenditures**

In order to measure the full demand-side impact of the sports tourism associated with attending Old Firm matches, we incorporate the direct, indirect and induced effects. The indirect

**Table 6: Gross sports tourism expenditures, disaggregated by spectator region of residence and region of expenditure, £000s.**

Region of Residence	Region of expenditure			Total
	Glasgow	Rest of Scotland	Rest of the world	
Glasgow	16,149.3	1,278.2	2,789.6	20,217.1
Rest of Scotland	32,447.8	30,065.6	6,661.5	69,175.0
Rest of the world	17,453.8	7,703.3	18,422.8	43,579.9
<b>Total</b>	66,051.0	39,047.1	27,873.9	132,972.0

effects measure the impact on sectors producing intermediate goods, for example public utilities, business services, raw materials etc. Sectors producing these intermediate goods themselves make local intermediate purchases and so on. Similarly, workers employed in sectors directly and indirectly related to the tourism sectors make consumption expenditures, which also support local economic activity. These are induced effects. These indirect and induced effects spread the impact of Old Firm sports tourism not only to other sectors but also across other regions, through the purchase of the exports of these regions.

Where expenditure occurs in Scotland by non-Scottish residents, there is a clear demand stimulus to the local economy. However, where Scottish residents are the sports-tourists, we need to account for the impact of the displaced household expenditure that otherwise would have been made locally. From a Scottish perspective, these sports tourists are engaged in expenditure switching.

Table 7 shows the combined direct, indirect and induced impact of Old Firm

related sports tourism for the 2003/4 season. Both the GDP and employment impacts are given, and these are disaggregated by region and sector. The net impacts are also broken down into their two separate gross components: the positive impact of the sports tourism spending and the negative impact of the displaced household consumption. For Scotland as a whole, the expansion produced by the sports tourism expenditure is much greater than the negative effects generated by the displaced expenditure. However, the negative displacement impacts are strongly skewed towards the rest of Scotland. This is because at Old Firm matches supporters of both the Old Firm and the opposing team are typically overwhelmingly residents from the rest of Scotland.

Focussing on the net changes, Old Firm sports tourism generated GDP valued at £45.35 million and 2,580 full time equivalent (FTE) jobs in Scotland. This net impact is almost wholly focussed on Glasgow, with the effect on activity in the rest of Scotland close to zero. In Glasgow, all sectors receive a net expansion. In the rest of Scotland those sectors more closely related to sports

tourism, such as food and drink, wholesale and retail, hotels and catering and transport, all experience an increase in activity. However, other service sectors are negatively affected and the overall impact is neutral.

Again it is useful to compare the size of these tourism effects with those generated by other, more large-scale, events. A study of the impacts of the Edinburgh Festival<sup>4</sup> for the year 2004, using the same basic approach as our own, identifies the net Scottish GDP and employment effects as £28.80 million and 2,123 FTEs respectively (The City of Edinburgh Council *et al*, 2005, p. 30). The Old Firm and Edinburgh Festival studies' methodologies differ in detail, so that only a general comparison of the results is appropriate. However, clearly the tourism impacts of the Old Firm clubs are of the same order of magnitude as those for "... the world's biggest arts Festival" (The City of Edinburgh Council *et al*, 2005, p.1)<sup>5</sup>.

#### Conclusions

The tourism industry is seen as an important driver of economic growth and development for the Glasgow economy (Glasgow City Council *et al*,

**Table 7: Sectoral GDP and employment impacts of sports tourism expenditures and displaced expenditures on Glasgow, the rest of Scotland and Scotland, £millions and FTE jobs**

	GDP			Employment		
	Sports tourism expenditure	Displaced expenditure	Net impact	Sports tourism expenditure	Displaced expenditure	Net impact
<b>Glasgow</b>						
Primary and manufacturing	0.63	-0.19	0.44	15	-5	11
Utilities and construction	1.30	-0.65	0.65	32	-16	16
Food and drink	2.20	-0.14	2.07	59	-4	55
Wholesale and retail	17.84	-2.19	15.65	796	-98	699
Hotels and restaurants	20.11	-0.77	19.34	1543	-59	1484
Transport	4.13	-0.27	3.86	83	-5	78
Private business services	6.61	-3.36	3.25	132	-67	65
Public services	1.75	-1.31	0.44	64	-48	16
<b>Total Glasgow</b>	<b>54.57</b>	<b>-8.89</b>	<b>45.68</b>	<b>2725</b>	<b>-302</b>	<b>2423</b>
<b>Rest of Scotland</b>						
Primary and manufacturing	2.31	-1.75	0.56	61	-46	15
Utilities and construction	0.90	-1.83	-0.93	34	-68	-35
Food and drink	0.96	-0.69	0.27	33	-24	9
Wholesale and retail	13.01	-10.28	2.72	761	-601	159
Hotels and restaurants	5.13	-2.17	2.96	523	-221	302
Transport	7.13	-1.60	5.53	197	-44	153
Private business services	7.06	-14.48	-7.42	224	-460	-236
Public services	2.12	-6.14	-4.02	111	-321	-241
<b>Total Rest of Scotland</b>	<b>38.61</b>	<b>-38.94</b>	<b>-0.33</b>	<b>1944</b>	<b>-1787</b>	<b>157</b>
<b>Total Scotland</b>	<b>93.18</b>	<b>-47.83</b>	<b>45.35</b>	<b>4669</b>	<b>-2089</b>	<b>2580</b>

Note: Some of the totals may not sum due to rounding.

2007). In the research reported here, rather than focussing on mega events, we have examined the impact of the tourism expenditure associated with regular season sporting competitions. We have detailed the effect of the week-to-week attendances at matches played by Scotland's two largest football clubs, Glasgow Celtic and Rangers, over a full season.

The main findings are that the expenditures are large and the net economic activity supported by this form of sports tourism is, in this particular case, extensive. As a broad indication, the activity generated in Scotland is comparable to that produced by the Edinburgh Festival (The City of Edinburgh Council *et al.*, 2005) and, for Glasgow, the level of sports tourist expenditure is similar to what would be expected from hosting the Olympic Games every 12 years. Clearly the attraction of teams involved in regular season sporting competitions where support is large and drawn from a wide geographical area confers substantial sports tourism benefits for the host location.

#### Endnotes

- 1 This is a summary of a paper presented at the Welsh Economy Research Unit Conference on "Sport, Society and Environment: Tracing the Links" and forthcoming in *Journal of Sport and Tourism*, November, 2007 (Allan *et al.*, 2007). The research in this paper was undertaken in Summer 2004 with funding from the Glasgow City Marketing Bureau, Glasgow City Council and the Old Firm clubs.

- 2 The term "Old Firm" dates back to April 1904. "Supporters of both clubs were highly suspicious of the number of draws when these clubs met in cup ties which resulted in replays which were lucrative for the clubs but costly for the fans. On the day of the final – April the 16<sup>th</sup> - the 'Scottish Referee' published a cartoon depicting a man with a sandwich board upon which was written the legend 'Patronise the Old Firm – Rangers Celtic FC'" (Ross, 2005, p.27). The expression "Old Firm" is now used to describe, collectively, Rangers FC and Celtic FC.
- 3 Details of the spectator survey and the Input-Output disaggregation and modelling are discussed at greater length in the forthcoming article in *Journal of Sport and Tourism*.
- 4 These comprise the Edinburgh International Film Festival, The Edinburgh Festival Fringe, the Edinburgh International Book Festival, the Edinburgh International Festival and the Edinburgh Festival cavalcade.
- 5 The Edinburgh Festival gives no impact to displaced expenditure but includes expenditures by the festival organisers, performers and journalists. It also uses a different tourism multiplier value.

#### References

Allan, G.J., Dunlop, S. and J.K. Swales (2007), *The Economic Impact of Regular Season Sporting Competitions: the Glasgow Old Firm Football Spectators as Sports Tourists*, forthcoming in *Journal of Sport and Tourism*.

Blake, A. (2005). *The Economic Impact of the London 2012 Olympics*. Report for Department for Culture Media and Sport, online at [http://www.nottingham.ac.uk/ttri/pdf/2005\\_5.pdf](http://www.nottingham.ac.uk/ttri/pdf/2005_5.pdf).

City of Edinburgh Council, Scottish Enterprise Edinburgh and Lothian, EventScotland, VisitScotland (2005). *Edinburgh's Year Round Festivals 2004-2005 Economic Impact Study*. Report by SQW Ltd and TNS Travel and Tourism for City of Edinburgh Council, Scottish Enterprise Edinburgh and Lothian, EventScotland, VisitScotland, September 2005.

Gibson, H.J., Willming, C. & Holdnak, A. (2002). Small-scale Sport Event Tourism: College Sports as a Tourist Attraction. In Gammon, S. & Kurtzman, J. (eds.), *Sport Tourism: Principles and Practice*, Leisure Studies Association, Eastbourne.

Glasgow City Council, VisitScotland, Scottish Enterprise Glasgow and Glasgow Chamber of Commerce (2007). *Glasgow's Tourism Strategy*. Public consultation document, available online at <http://www.seeglasgow.com/glasgow-the-brand/tourismstrategy>.

Higham, J.E.S. (1999). Sport Tourism as an Avenue of Tourism Development: an Analysis of the Positive and Negative Aspects of Sport Tourism. *Current Issues in Tourism*, 2 (1), 82-90.

Ross, D. (2005). *The Roar of the Crowd*. Glendaruel: Argyll publishing.