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CYCLE TOURISM FOR SUSTAINABLE RURAL DEVELOPMENT: UNDERSTANDING AND INTERPRETING LESSONS FROM EUROPE

A report of a Winston Churchill Travelling Fellowship 2013



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Figure 1 - Travelling Fellowship route map

EXECUTIVE SUMMARY

The aim of this Winston Churchill Memorial Trust travelling fellowship was to investigate if cycle tourism can support sustainable rural development in the UK by learning from lessons in Europe. The author travelled by bicycle on a 3,000 mile self-supported journey to learn from key stakeholders involved with cycle tourism development in the Netherlands, Denmark, Sweden, Germany and Switzerland. Interviews with these stakeholders, the author's experiences, and translated reports, research and datasets have formed the basis of this report.

The travelling fellowship revealed that cycle tourism is more developed in the Netherlands, Denmark, Germany and Switzerland and delivers significant economic value to local communities. The main reasons for this appear to be that cycle tourists tend to be relatively high spending visitors and often spend longer in the locality of a cycle route resulting in less supply chain leakage. In Sweden, cycle tourism has the potential to support the rural economy, but significant challenges remain and strong leadership will be required to realise any possible benefits.

There are several initiatives which have engaged populations with cycle tourism across these nations. Strong leadership has delivered a nationally coordinated cycle tourism experience to the end user. Well-connected and integrated networks and nationally recognisable cycle tourism brands give cyclists the confidence that the cycling experience will be exciting, authentic and fulfilling. Tourism businesses have been engaged and supported through accreditation schemes which deliver genuine value to the tourist and business alike. Cycle carriage on public transport still varies by operator and makes combining sustainable transport challenging.

It is recommended that the following may aid the development of cycle tourism in the UK:

1. Improve leadership by establishing a forum to coordinate cycle tourism activity at a national level.
2. Develop a strong cycle tourism brand for use across all cycle tourism activities, both nationally and regionally.
3. Establish an evaluation process and problem reporting system for recreation cycling and cycle tourism routes.
4. Define a grading system for recreational cycling and cycle tourism routes.
5. Develop a national cyclist friendly business scheme.
6. Develop new recreational cycling networks based on Fietsknooppunten model.
7. Consolidate local and regional cycling information into one one-stop shop portal.
8. Strengthen regulation regarding cycle carriage on public transport.

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INTRODUCTION

In August 2012, I was appointed as Cycle Tourism Development Officer at Nurture Lakeland, a non-governmental organisation who promote sustainable tourism activity in the Lake District National Park and Cumbria. The role was funded for 10 months through the Rural Development Programme for England (RDPE) project with the primary objective of developing cycle tourism activities in the Eden district of Cumbria.

Cycle tourism is often defined in the literature as “recreational visits, either overnight or day visits away from the home, which involve leisure cycling as a fundamental or significant part of the visit” (1). Cycle tourism encompasses many forms of leisure cycling activity. This can be as part of a cycling holiday, where the holiday is entirely motivated by a desire to cycle, either from a base or on an extended tour. Alternatively, it could be holiday cycling where cycling may not be the main activity but the holiday may not entirely revolve around cycling and other activities form part of the holiday too. Day excursions by bicycle can also be considered cycle tourism (1).

As part of the RDPE project, a cycle tourism feasibility study was commissioned which provided recommendations on how to develop the cycle tourism product with our project area. The study, while thorough, drew on evidence from other similar projects in the UK. This project was a great opportunity to help develop a cycle tourism product that would really engage with the tourist and deliver sustainable economic benefit in a rural economy. Cycling had never been more popular in the UK following the massive cycling success at the London Olympics and Bradley Wiggins victory in the 2012 Tour de France.

Inspired to do some further research I discovered there was an opportunity to learn from my European counterparts which led me to apply for a Winston Churchill Memorial Trust travelling fellowship. I wanted to talk to organisations involved in cycle tourism in five leading cycling nations: the Netherlands, Denmark, Sweden, Germany and Switzerland, to learn what they had been doing to develop and promote cycle tourism, and understand if there was a genuine economic and environmental argument to support the funding of new cycle tourism projects in the UK.

In addition, to keep my own travel emissions as low as possible, and to experience first-hand how cycle tourism was implemented on the ground, I intended to travel as a cycle tourist. My journey would take me from Rotterdam via Copenhagen to Stockholm, and then following a short flight to Frankfurt, south through Germany to Switzerland before heading back to Rotterdam via Brussels (See Figure 1).

AIMS AND OBJECTIVES

The aim of this Winston Churchill Memorial Trust fellowship was to establish if and how cycle tourism can support sustainable rural development.

The key objectives are:

- 1) Investigate the mechanisms that have engaged populations to participate in cycle tourism in the Netherlands, Denmark, Sweden, Germany and Switzerland.
- 2) Observe the extent to which cycle carriage varies on public transport in the 5 countries.
- 3) Identify and facilitate potential links between UK and European cycle tourism stakeholders to allow the sharing of best practice.
- 4) Contribute to estimating the 'environmental gain' by implementing observed mechanisms in the UK.
- 5) Support my personal development by developing knowledge of cycle tourism and sustainable rural development.

It is hoped that this fellowship will increase the understanding of the opportunities that cycle tourism presents and provide recommendations for key stakeholders in the cycling and tourism industries to take forward.

METHODOLOGY

This main proposition of the fellowship is that cycle tourism may have the potential to contribute to sustainable rural development in the UK and that there may be opportunities to progress cycle tourism by learning from our neighbours in Europe.

To achieve the objectives of the fellowship, this report draws on information obtained during a 7 week, self-supported, 3000 mile bicycle journey from Rotterdam in the Netherlands, via Stockholm in Switzerland, Frankfurt in Germany, Olten in Switzerland and Brussels in Belgium and many places in between. During the ride, semi-structured interviews were conducted with key stakeholders in European cycle tourism development. The report also draws on anecdotal evidence, discussions with other cyclists and the author's experiences during the journey. Peer-reviewed publications and grey literature (reports, research and datasets which were provided during the interviews) have been translated into English and evaluated. The report assesses best practice and attempts to make an economic argument for developing cycle tourism using this data on a country by country basis. A descriptive analysis of cycle carriage on public transport and the potential environmental benefit of cycle tourism are provided in the final two sections of the report.

It should be acknowledged that this report does not represent a comprehensive review of all cycle tourism literature as this would be far beyond the scope of the travelling fellowship.

THE NETHERLANDS

CYCLING COUNTRY

The Netherlands, well deservedly, has a reputation as the top cycling country in the world. Deliberate political decisions in the 1970's to turn away from car-centric policies to safer mobility have created more liveable cities with continuous networks of cycle paths that are clearly signposted, well maintained and well lit.

It is not surprising that bicycle ownership is high. 84% of the Dutch population own a bicycle and, in 2011, 40% of all bicycles purchased were touring bikes, road bikes or mountain bikes suitable for recreation activities rather than typical Dutch town bikes (2). This translates to high uptake in recreation cycling and cycle tourism. Research suggests that 52% of the Dutch population cycle for recreation with an average distance of 20.4km (3). There were 3.9 million domestic holidays (35% of all holidays between April and September) which involved recreational cycling and over 1 million cycling holidays where more than half the days were spent cycling (3).

During my visit, I cycled along the excellent LF 10 and LF1 long distance routes which closely followed the North Sea Coast to Groningen where I met with Anneloes Groenevolt, the chairman of the Groningen branch of Dutch Cyclists' Union (Fietserbond). Fietserbond have been campaigning for better cycling conditions since 1975 and now represent the interests of 35,000 cycling members. The focus of their work is primarily for every day, utility cycling for transport and 1,500 active volunteers work across 150 local groups towards well maintained, smooth and direct cycling routes, more and improved parking spaces for bikes, action against bicycle theft and improved safety in traffic for cyclists. The role of Fietserbond in directly developing and promoting cycle tourism is limited, but many of their activities are relevant to cycle tourism. For instance, reporting problems with cycle paths and signage can be done through the Fietserbond website and hotline. The local Fietserbond groups were actively involved in the consultation process for the development of the regional Fietsknooppunten networks (see Section: An Alternative Cycle Network) and they continue to lobby the rail operators through the Rover association of public transport operators. These initiatives clearly impact on the quality of the cycle tourism product on offer in the Netherlands, reinforcing the important role that cycling interest groups and member organisations have to play in the potential success of cycle tourism.

Before the end of my trip, I returned to the Netherlands and travelled to Amersfoort to meet with Eric Nijland, the Director of Stichting Landelijk Fietsplatform. Formed in 1987, Fietsplatform are an umbrella organisation that coordinate the recreational cycling and cycle tourism activities of national and regional authorities, the Dutch tourist union, Fietserbond, the cyclists union for cycle-touring clubs and the national organisation for the cycling industry in the Netherlands. They are also project leaders for the national cycling network and coordination centre for regional networks, and have developed the Fietsers Welkom scheme for tourism and hospitality businesses (www.allefietserswelkom.nl) and the Netherlands Cycling Country website (www.nederlandfietsland.nl). The Fietsers Welkom is based on similar criteria to the German Bett and Bike scheme (See Section Cyclist-Friendly

Businesses) but expanded to include catering establishments. To date there are 1200 tourism businesses engaged with the scheme and the Fietsers Welkom logo has become widely recognisable to touring and recreational cyclists.

AN ALTERNATIVE CYCLE NETWORK

Long distance cycle networks are now established in many European countries and in the Netherlands, like elsewhere, the long distance cycle network (called LF network) has traditionally been targeted at the touring cyclist, travelling with panniers over several days. In 2006 researched showed that just 6% of the Dutch population take extended tours (4). Shorter rides between 2 and 8 hours are more common. Thus, Fietsplatform have been working with regional authorities to develop alternative regional cycle networks for this recreational cycling market. Now, 70% of the Dutch population take rides between 2 - 8 hours each year (4).

The concept of the innovative Fietsknooppunten network (node networks) is simple. Each node or junction within a regional network has a unique two digit number. Nodes are connected by quiet lanes, roads or cycle path and signposted in both directions with small white signs (defined to a national standard) denoting the node number. At each node, a small map board displays the nearest nodes and provides the cyclist with opportunity to develop their own route between points of interest (Figure 2). Trips can be planned beforehand using online tools or on the go, allowing cyclists to find attractive and safe routes that match their ability. The only navigation skills required are the ability to follow the numbered signs.



Figure 2 - Example of a Fietsknooppunten map board

From the end user point of view, the fietsknooppunten network provides clear and complete range of recreation routes and connections. But these networks can be expensive to implement. Preparation is time consuming but vitally important to success. The networks must be researched on the ground and plotted spatially in GIS database for network management. The large number of signs required to signpost nodes in two directions must be maintained and any changes will incur additional costs. Synchronising the network with existing signage can be more efficient for management and maintenance and existing themed tours can be developed or have been converted into node networks (4). Typical networks have 350 nodes and are 1500km in length with an estimated cost of 500-600 euros per km plus maintenance costs of 75 euros per kilometre per year (4), assuming no additional cycle path is required.

Fietsplatform have developed detailed guidance on best practice of how these network should be developed including estimated of costs for implementation, specification for signage, GIS data formats and opportunities to promote and market the networks once completed - useful for funding applications to support the network development, and to ensure the regional networks are developed in the same way. Node networks are now established across all regions in the Netherlands and have had a demonstrable effect on engaging the Dutch people with recreation cycling and cycle tourism. In the Limburg region, research among cyclists suggests that the economic impact from the development of the regional network has been 13 million euros per year (4). This innovative system would easily be transferrable to the UK and could help to support the development of rural economics.

THE VALUE OF CYCLE TOURISM

Cycle tourism is a significant component to the Dutch tourist economy. In 2008, there were approximately 1.3 million cycling holidays in the Netherlands. 750,000 of these were by Dutch nationals, the remainder were inbound tourists mainly from neighbouring Germany and Belgium (3).

It is estimated that average spending was 133 euros per person per day on food, drink, accommodation and other services. This is particularly high compared to other European countries and with an average trip length of 7.8 days, the economic value of long distance cycle tourism contributes 350 million euros per year in direct spending (2). This high spend could be attribute the typical Dutch cycle tourist demographic and socio-economic group. The average Dutch cycle tourist is between 45 and 65 years old, with above average educational experience and the higher a person's income the more likely a person is to undertake cycle tourism activities (2).

The 3.9 million domestic holidays which involve recreational cycling also generate considerable economic activity, particularly in the consumption of food and drink (3). On day trips greater than 2 hours, it is estimated that direct spending delivered 215 million euros to the Dutch economy, an average spend of 6.18 euros per person per day (3). In total cycle tourism contribute 565 million euros to the Dutch economy each year, not including indirect or induced spending (3).

While it could easily be argued that this cycle tourism spend is a result of a spending shift from elsewhere, the nature of cycle tourism means that the spending is likely to shift from urban population centres to hospitality and leisure businesses in rural areas. This creates additional conditions for economic activity, providing jobs and opportunities that would not otherwise exist, and contributes to sustainable rural development in the Netherlands (5).

CHALLENGES

It is widely recognised that the development of cycle route infrastructure, for cycle tourism purposes, is largely complete. There is now a huge network covering some 30,000km by the regional node networks described earlier with and 4,500km of long distance cycle routes (2). Despite, this apparent cycling utopia, significant challenges remain.

It has been demonstrated that investing in route network encourages regional economic growth and delivers over 500 million euros per year in the form of drink, food and overnight accommodation (6). However, failure to invest in ongoing route maintenance is a genuine problem. Maintenance is not prioritised and it is feared that poor route quality will lead to reputation damage of the entire cycle network and dissatisfied users will drop out, or go elsewhere (7).

Focus needs to shift to network monitoring and promotion and marketing of cycle tourism products and services. The use of GPS navigation or smart phone technology to enhance and support recreational cycling is an area where developments will be prioritised to ensure the trend of increasing cycle tourism activity continues (7). This may also help engage a younger cycle tourist. Developing infrastructure and facilities to support the increasing demand for electric bikes in the aging population will help to maintain the number of recreation bike trips per capita. Awareness of healthier lifestyles, and demand for unique and authentic experiences which provide relaxation, escapism, peace and quiet and physical challenge in any given amount, are also on the rise so promoting cycle tourism as an activity which supports these aspirations is a strong marketing tool. Finally, meteorological and economic conditions are likely to have an impact on the future of cycle tourism in the Netherlands. Extreme weather conditions during summer months may make cycle tourism less attractive, but the continuing slow economic growth in the Eurozone may actually benefit Dutch cycle tourism because people are more likely to take a staycation (7).

QUALITY MONITORING

In 2012, to address the issue of ongoing route monitoring, Fietsplatform conducted the first national cycle route quality monitoring survey across the whole of the Netherlands. Many regions claimed to be the number one cycling destination in their promotional and marketing campaigns, prior to this assessment which provides a robust analysis based on route conditions and user experiences.

Much like the German route assessment criteria developed by the ADFC, this quality certification gives star rating, out of 5 stars, to each region based on the quality of the recreational cycling routes. It is anticipated that this quality rating will help to ensure cycle tourism infrastructure is improved and maintained to an appropriate standard.

The quality assessment is comprised of two components: research against a series of ‘cycle quality indicators’ and consumer research.

The cycle route quality indicators include assessments of the quality of the landscape, route accessibility, route quality, facilities along the route, route management and sign maintenance. These indicators are weighted according to importance for recreational cyclists (as defined in the CVO and CVTO)

Table 1 - Weighting of Quality Monitoring Indicators

Indicator	Weighting
Landscape	2.5
Accessibility	2
Route Quality	2
Facilities along the routes	1
Route management	2
Sign maintenance	2

A full version of the assessment framework can be found in the Appendix: Table 6 - Fietsplatform Cycle Tourism Regional Framework Assessment Criteria.

For some quality indicators, for instance, landscape, it may be difficult for the regional authorities to improve the results of the assessment. However, as the quality of the cycling environment is affected by the amount of open green space and urban areas that cycle routes pass through, Fietsplatform consider this is an important measure. Other indicators are dependent of the availability, interpretability and accuracy of data available.

Consumer research assesses the experiences of recreational cyclists in each region using existing survey data from the ContinuVakantieOnderzoek (CVO) and the ContinuVrijeTijdsOnderzoek (CVTO). The CVO is a large scale consumer research project into the holiday behaviour of Dutch people using a sample size is 7,500. It has been standard practice to ask whether cycling formed part of holiday activities. For 2012, Fietsplatform ensured that additional questions were added to the CVO (Table 2)

Table 2 - CVO Cycle Tourism research questions

How important are the following aspects of a cycling holiday or bike ride? (1 = unimportant, 10 = very important)
<ul style="list-style-type: none"> a. Attractiveness of the environment (quiet, calm, nature areas, view, diversity) b. Quality of the trails and roads c. Quality of signage routes d. Quality of the cycle route development e. Traffic on the routes f. Number of sights / attractions g. Number of catering establishments
How do you assess these aspects of the recreational cycling trip you did? (1 = Poor, 10 = excellent)
<ul style="list-style-type: none"> a. Quality of roads and paths b. Quality of route signage c. Quality of the cycle route development d. Traffic on the routes e. Number of sights and attractions f. Number of catering establishments
What is your overall opinion of cycling in the region? (1 = Poor, 10 = excellent)

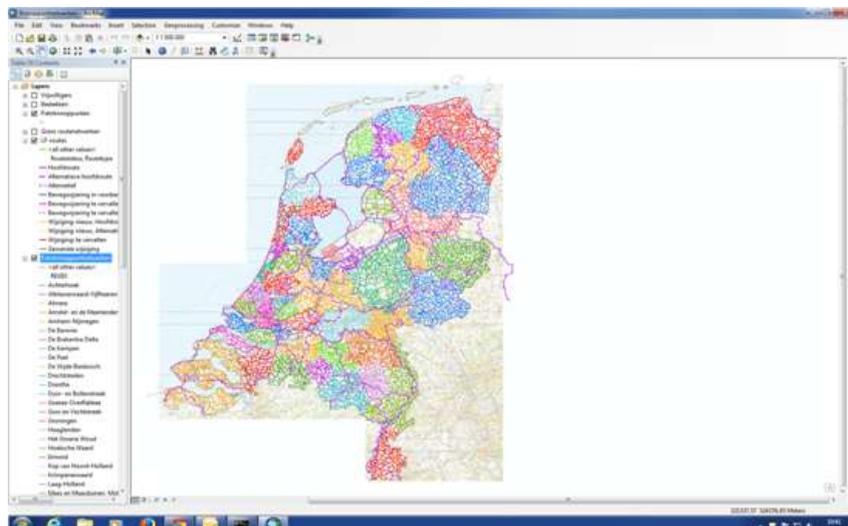
The CVTO is a national assessment of the leisure market using 52 weekly measurements with a sample size of 18,000. The same group of questions were added to the CVTO. The results from both these surveys are synthesised and average values used to provide a consumer score to feed into the overall quality assessment criteria (8). In 2013, one region



Figure 3 - Bordje Weg - Mobile App for reporting cycle route problems

was awarded 5-star rating. There were 13 4-star regions, and 9 3-star regions.

To support the quality monitoring programme, Fietsplatform have developed an online reporting system for reporting lost or damaged bike route signs. A website widget which can plug into any regional authority or tourism organisations website allows cyclist to input signage problems, while a mobile app version means that users can report faults on the go. The website and app use route and sign location data from the GIS database. Fietsplatform and Fietserbond maintenance volunteers can access a more detailed problem reporting system online (Figure 3). Reported issues are collated centrally by Fietsplatform and details sent on to the appropriate regional authority to be resolved in accordance with their service level agreement. The success rate of this SLA also feeds back into the quality monitoring



programme.

The GIS database is the definitive spatial resource for recreational cycling and is updated twice yearly from regional and national partners. This central resource allows any impacts on the recreation cycling network to be quickly and easily identified. For instance, unmanned or signalled level crossings have been closed in recent years and the GIS can represent how these changes effect the cycle network and identify signs which need updating. Data feeds can be provided for publications, maps and other online services ensuring consistency and accuracy of any tourism materials. This accuracy is reassuring for the end user.

GERMANY

In Bremen, I met Wolfgang Richter, Tourism Officer at the Allgemeiner Deutsch Fahrrad Club (ADFC). The ADFC is a membership organisation, established in Bremen in 1979, to represent the interests of everyday and recreational cyclists. The organisation has 140,000 members who each pay an annual membership fee of approximately 50 euros per person (9). This membership income part-finances the ADFC's work and supports the national executive and 80 regional teams. In addition, there are 450 regional ADFC groups supported by 5,000 active volunteers. The ADFC lobby for improved cycling conditions at all political levels from community to the EU and are involved in national and regional transport planning, transport policy and cycle tourism development. To further their political effectiveness the ADFC headquarters is moving from Bremen to Berlin.

The development and promotion of cycle tourism in Germany varies across federal states and regions but it is now widely recognised fundamental part of Germany's tourist offer (9). Nationally, 10% of all tourism revenues are now generated by cycle tourism (9). Munsterland in North Rhine–Westphalia has become synonymous for cycle tourism with over 4,500 kilometres of cycle paths. 30% of all overnight stays in tourism accommodation are cyclists (9). The importance of cycle tourism to the German economy was emphasised in September when, after severe flooding in June, the German Chancellor Angela Merkel asserted that the cycling conditions were now 'extremely good' and urged people to get out on their bikes (10).

ROUTE EVALUATION PROCESS

As well as effectively lobbying for improved cycle facilities and infrastructure, the ADFC have taken an innovative approach to promoting cycle tourism. There are 230 long distance cycle routes in Germany which have been developed by federal and region tourism organisations with support from the ADFC. The ADFC defines long distance routes as "regional, signposted cycle routes, which have primarily serving the tourist bicycle traffic and certain minimum standards" (11).

The ADFC have rolled out the concept of "Premium routes" to all regions and established formal criteria for route evaluation. This gives the end user, the cycle tourist, an expectation about what they will encounter on these routes. It also provides an excellent marketing and promotion tool for tourism organisations as a five star accreditation is likely to offer a more pleasant cycling experience and attract more cycle tourists, than a 2 star route. The accreditation process helps focus future route improvements too. The process for accreditation is described in Figure 5.

The ADFC divide each route into 50km sections and assess it on a kilometre by kilometre basis using the criteria outlined in the Appendix: Table 7 - ADFC Premium Route assessment criteria. This kilometre exact documentation of the infrastructure is verified with GPS data and photos and provides a clear indication of the quality of the infrastructure, corresponding star category and recommendations for improvements. From a regional tourism or route operator perspective, this certification has proved to be a very effective tool for ensuring quality management of the cycle routes and the evaluation by an independent third party

has been shown to strengthen collaboration between local stakeholders. This evaluation process also provides an income for ADFC with regional tourism organisations paying €690 per 50km stage, a further €2400 for use of the ADFC Premium route logo and accreditation for three years (reassessment is required) and €660 for marketing support (12).

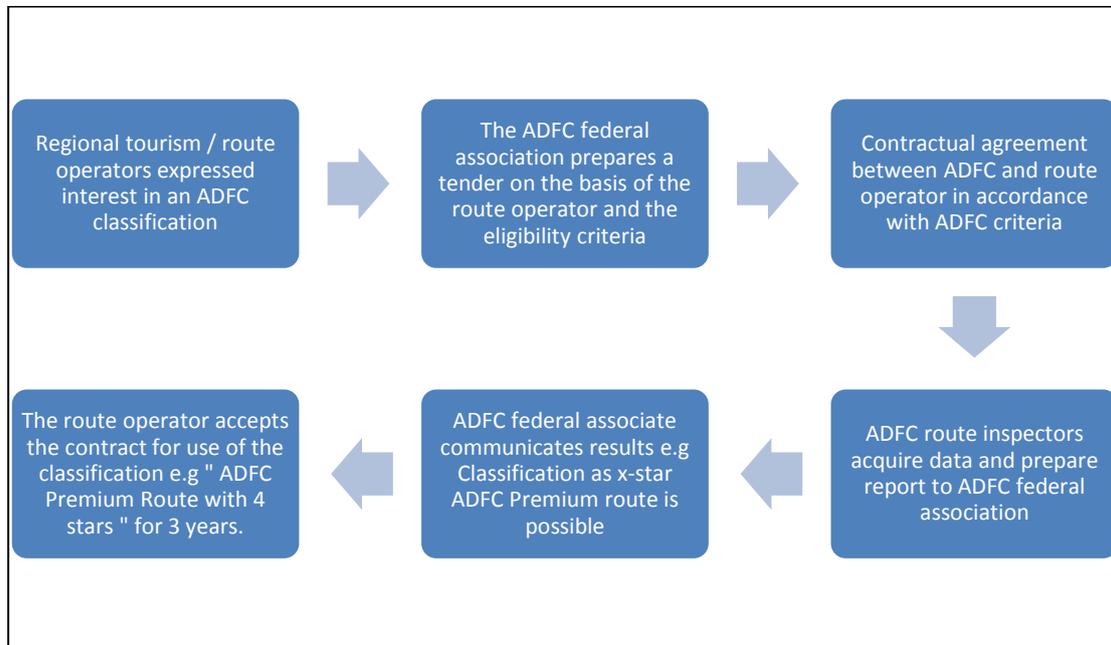


Figure 5 - ADFC Premium Route accreditation process

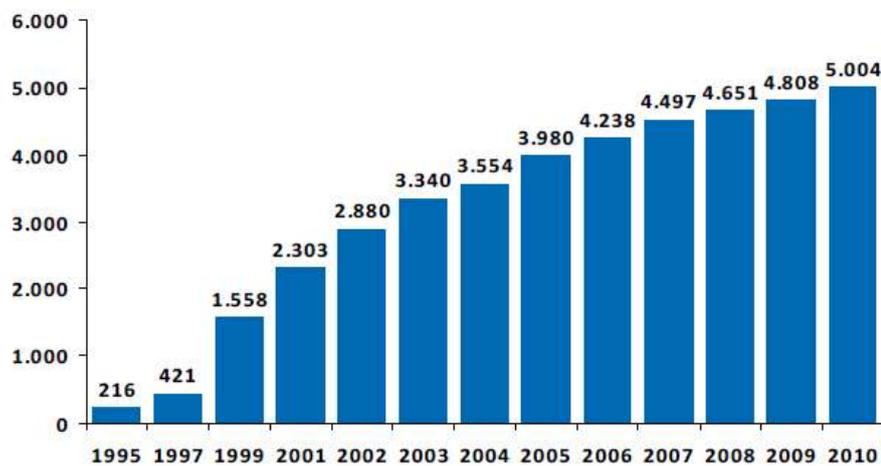
Not all long distance routes have been assessed using the “Premium routes” framework as this accreditation requires considerable buy in from regional tourism / route operator. To date, 47 routes have been accredited (three 5 star routes, 30 x 4 star routes and 12 x three star routes). These routes are published on the ADFC Premium Routes mobile app which is available on both iPhone and Android platforms for €2.69 providing an additional platform for cyclists to access route information. The app includes an interactive map with GPS functionality; detailed description (difficulty, surface and traffic congestion); elevation profiles; Bett und Bike guest accommodation details; location of rail stations along the route; points of interest and attractions, information which is derived from the route assessment process (12).

CYCLIST-FRIENDLY BUSINESSES

Bett und Bike is the ADFC’s cyclist-friendly scheme for accommodation businesses that has seen steady growth in membership since its introduction in 1995 (see Figure 6 - Bed and Bike Partners). There are now over 5,000 accommodation businesses engaged with the scheme and it is the most successful scheme of its kind in Europe. The scheme prescribes minimum criteria that a cyclist can expect when staying at a Bett und Bike establishment (See Appendix: Table 8). Additional separate criteria for campsites (See Appendix: Table 9) and Bett und Bike Sport for mountain bikers or road cyclists exist (See Appendix: Table 10) (13).

The success of this scheme could be attributed to support ADFC provide to businesses. In return for an annual membership fee, variable depending on number of beds, Bett und Bike partners receive a comprehensive promotional and marketing support package. This includes listing in a publish directory, internet database, ADFC touring portal and mobile app; inclusion on printed maps and guides; highlighted in regional tourism accommodation directories; included in downloadable GPS tracks; a promotional sign and certificate, use of the Bett und Bike logo and professional advice (9).

Bed & Bike partners in Germany



(Source: Bed & Bike Germany)



Figure 6 - Bed and Bike Partners

AN ECONOMIC CASE FOR INVESTMENT

In 2011, a study conducted by the Tourism Marketing Brandenburg with support from the ADFC assessed the economic benefits of cycle tourism (14). At the time this study was considered unique in Germany, because cycle traffic data is traditionally collected during cycle route development phase and there had been limited studies of this duration, detail or scale.

Since the reunification of Germany in 1990, the Brandenburg Federal State has undertaken ambitious natural protection policies including developing the region as a destination for cyclists. There are now 7,000km of cycle paths that link key nature attractions, and cycle tourism is considered a viable tool for sustainable development in an rural area that has otherwise struggled economically (14).

63 automatic long-term cycle counters and 37 short term counters were deployed across the Brandenburg cycle network for a 12 month period. These counted 2.6 million cycling journeys covering an estimated 28.3 million bicycle kilometres. In total, 48,500 cyclists were surveyed, capturing their spending habits, motivations, duration of trip and distances covered (14). Results showed there is a strong seasonal dependence in bicycle use, with little traffic in December, January and February. In transition months of March and November there was significant cycle traffic but the main cycling season runs from April to October with a strong correlation between daily mean temperature and number of cyclists.

The distribution of cyclists across the network indicated that there was a significant cycle tourism and recreation cycling element to all cycle traffic in Brandenburg. During the working week, 36.6% of cycle traffic was for bike tourism trips, either people on a long distance tour or on a day trip as part of their holiday. Day tours from home made up 23.5% of cycle path usage. At weekends, the number of day tours from home was higher, 42.9%, with 31.5% for bike tourism trips (14).

Other activities formed key part of bicycle tours. For instance, the opportunity to visit historical places, churches, museums and attractions were a key motivation for undertaking a cycle tour. This emphasises the importance of themed bike tours, rather than those just for the sake of cycling (14).

In terms of the economic argument for cycle tourism, this report provides strong justification for the use of public funds to develop touristic cycle paths. Using an amortisation period of 25 years, three scenarios were presented where 25%, 40% and 60% of new cycle path are developed, maintained and marketed. It suggests that with an average 'cycle tourist' spend of €65.50 (€29 per day on meals and other activities, €36.50 on accommodation), and the revenue / cost ratio will be between 7.9 and 4. The total value added through the resulting indirect and induced spending could be up to 15 million euros per annum (14).

ELECTRIC BIKES

There has been a significant increase in electric bike sales in Germany in recent years. In 2011, 310,000 electric bikes were sold, rising to 380,000 in 2012. During the same period normal-bikes sales were down 5%. The ADFC sees electric bikes as fundamental to the future of cycle tourism as it opens a whole new market of people who wouldn't have considered cycling while on holiday or cycling for a holiday. Working with regional tourism organisations, Bett und Bike operators and private suppliers, e.g. Movelo (www.movelo.com), to embed electric bike infrastructure, e.g. hire and charge points, into popular cycle tourism regions will help support the future development of cycle tourism (9).

OTHER SUCCESSES

The coordinating role of the ADFC has helped to developing a consistent cycle tourism product across the federal states and there is a clear national brand which cyclists identify with. For instance, they have worked with publishing partners BVA to produce cycle specific maps which cover the entire country at a sensible 1:150,000 scale. Regional and national cycle routes are clearly marked on these maps as are Bett and Bike businesses. Cycling

guides and online resources are now available in 4 languages, making cycle tourism resources more accessible to foreign visitors.

The development of ground breaking, goal orientated signage including detailed guidance on specification and implementation, in North Rhine and Westphalia, has helped to promote a consistent system across all federal states (15). However, not all federal states are using these cycle signage systems at present, but they are recognised as being a 'national standard' (9). The arrow and table signs are formed as a hollow aluminium box section which allows a guide rail to be inserted on the lower edge. Themed route icons can then be inserted onto the guide rails allowing local, regional and national routes to be signposted without having to install additional signage and allowing flexibility if a recreational route has to be changed (Figure 7)



Figure 7 - Example of signage with themed routes

DENMARK

In Copenhagen, I met Jesper Pørksen from the Danish Cyclist Federation to discuss the role they have in the development of cycle tourism in Denmark. The Danish Cyclist Federation have been promoting and campaigning for better conditions and greater peace of mind and experiences for cyclists since 1905. They are member based, with around 18,000 members, though membership fees only fund a small proportion of the work they do (16).

There has been a long history of cycle tourism in Denmark. The Danish Bicycle Network evolved organically between the 1960's and 1980's as regional routes were developed, with the main focus being on everyday traffic and improved road safety. When established in 1993, the Danish National Bicycle Route Network aimed to give cyclists the same opportunities for a nationwide and comprehensive route network as existed for motorists and linked regional and local routes to form the national network. This national network now comprises 4300 km of signposted routes. An estimated 8000km of regional and local routes are signposted, though there is no complete overview of this network and only half of the network is digitally mapped (17).

The national routes are varying in character, with some individual routes of very high standards but substantial parts of the route network are characterised by lack of maintenance including missing and inadequate signing, and there has been a general lack of maintenance since the routes were created in 1993. The lack of incentive for municipalities to invest in maintenance programs is cited as an ongoing problem (18)

Despite this, cycle tourism is a popular activity with one in four tourists cycling while they are on holiday in Denmark (19). The majority of these cycling tourists are from Germany (40%) and the Netherlands (35%) where there is a strong cultural attachment to cycling and it is already a popular holiday choice. Just 21% of cycle tourists are Danish. It is, therefore, not surprising then that the majority of the cycle tourism activity takes place in regions closest to these largest markets (Southern Denmark and Midtjylland) (19). Future cycle

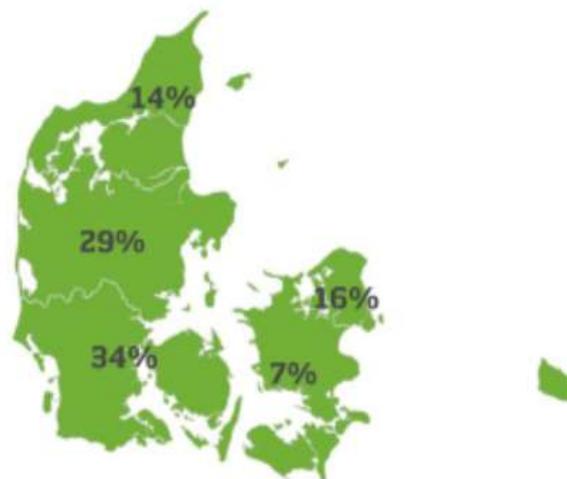


Figure 8 - Percentage overnight stays from cycle tourism

tourism projects will aim to further tap into these international markets (18).

POWERED BY CYCLING

The DCF receives just 10% of income from membership, so the majority of their work is project funded, either national or European. For the DCF, having the resources to access these funding streams has been crucial in their role in developing cycle tourism in Denmark. The latest two year collaborative cycle tourism initiative, known as Panorama – Powered by Cycling, is funded by the European Regional Development Fund and partners at Visit Denmark, Nature Agency and other tourism bodies. The total budget for the project is 3.4 million euros and the concept is simple: to develop the rural Danish coastal areas for cycle tourism and increase the contribution of cycle tourism to total tourism revenue to German levels. If achieved, this project will deliver economic growth of approximately 26.6 million euros per year (20).

The project is based upon two iconic routes which form part of the Eurovelo Network - the Vestkyststruten, also known as the North Sea Route, and the Danish part of the Berlin to Copenhagen cycle route. At present, it is recognised that these long-distance routes will only ever attract a certain breed of cyclist (18).

During my visit to DCF, Jesper felt it was important to recognise that there is a general misconception about cycle tourists. Not all cyclists are pedalling 100 miles per day, so any cycle tourism projects must fit the motivations of other kinds of cyclists. Other services also need to be provided to attract non-independent cyclists. This is supported by a study conducted by the Denmark Tourist Board which identified that 75% of people who cycle while on holiday do short trips, not over a single day. Only 25% of people who cycle in Denmark do longer, overnight trips. With this in mind, the Panorama project aims to establish 17 loops along these pillar routes as well as improving infrastructure (including signposting and route surface), developing bike friendly accommodation, e-bike charging stations and focusing on coordinated and consistent marketing messages (20).

The main target market for this project has been identified as German cycle tourists and to ensure that both the pillar routes and the local loops meet German standards, ADFC route assessors have been commissioned to evaluate both the North Sea and Danish section of the Berlin – Copenhagen route using the standards as described in the Appendix: Table 8 (19) . The DCF is now working with municipalities to prioritise the improvements and it is hoped that ADFC Premium Routes model will provide the incentive for ongoing maintenance. A new national cyclist-friendly business programme based on the successful ADFC model is also being launched (Appendix: Table 8). They hope to engage with 400 businesses during the project timescales.

By creating day cycle loops along the long distance cycle routes, the DCF hope that this will project will build on the German model and cater all cyclists – not just those on a long distance cycle tour. As Jesper put it: “We don't just want to copy the Germans, we want to beat them...” (18).

THE VALUE OF CYCLE TOURISM

A report commissioned by Visit Denmark estimated that a typical Danish cycle tourist spends 392 Danish Krone (DKK) (52 euros) per day on food, accommodation and other services. Foreign visitors spend slightly more – approximately 455 DKK per day (61 euro) (17). These figures are slightly lower than the average tourist, who spends 482 DKK (64.62 euros). But cycle tourists stay for three days longer than the average tourist (10.4 days), meaning that they contribute comparatively more to the tourism economy (17). Based on this extended stay, cycle tourism delivers 12.8 million overnight stays in Denmark each year. It is now estimated that cycle tourism contributes approximately 5.5 billion DKK (740 million euros) to total tourism revenues of 82.4 billion DKK per year (11.4 billion euros). This is 6.5% of total tourist income but is based on tourists who stay in commercial accommodation, and excludes any possible revenues from bicycle tourists who stay overnight e.g. with friends and family or in their own or rented cottages, so this could be an underestimate (17).

SWEDEN

During my time in Sweden, I met with two representatives from Cykelframjändet, a volunteer based organisation whose mission is to make Sweden a bicycle nation (21). The organisation has been campaigning for improved cycling facilities, for both recreational and utility cycling since the 1960's. Cykelframjändet are a member based organisation with around 5,000 members. They have just two employees whose roles are funded by the membership fees: a full time administrator who manages the membership process and the president whose role is part time. All other roles are entirely voluntary. The organisation receives a small annual grant of 50,000 SEK (5500 euro) from Trafficverket (Transport Authority) for sign maintenance on the Cykelspåret route (22).

In Malmo, Christian Fasth, the head of the local branch explained that funding is a reoccurring problem which limits their contribution to the development of cycle tourism in Sweden. The volunteers simply do not have the time or resources to tap into EU, national or regional funding opportunities and with a static and aging membership base that is unlikely to change in the future. In his view, Cykelframjändet needs to be a much stronger player in political development of both utility and leisure cycling but how to move forward is currently unclear (21).

In Stockholm, I met Eva Lind Bath from the Stor Stockholm Cykelframjändet group who organises the Cykel Turist Veckan. This cycle tourism week showcases recreation and leisure cycling in different regions of Sweden each year. The event typically attracts approximately 400 cyclists for a weeklong series of cycling activities including guided tours of recreational cycling routes for all abilities. Unfortunately, my trip did not coincide with this week so I was unable to observe the activities and talk to participants. This concept would be transferrable to the UK and could provide an opportunity to share good practice of local cycle tourism groups as well as encouraging the exploration of new cycle tourism regions.

The opportunities that cycling presents for sustainable transport and public health are perhaps more clearly recognised politically, than the opportunities for regional growth and as a result receive much more attention. This is supported in national cycling policies and the focus of interest groups such as Cykelframjändet (23). In recent years, Cykelframjändet have organised regular study visits for politicians and transport planners to Denmark and the Netherlands to highlight best practice in cycling infrastructure (24). While the focus of these study visits is primarily on cycling for transport, facilitating these visits has been a successful way to highlight the social and economic benefits that all types of cycling can bring, including cycle tourism and should be applauded.

THE VALUE OF CYCLE TOURISM

There is limited research and evidence on the value of cycle tourism and uncertainty about the contribution cycle tourism could make to sustainable rural development in Sweden (21)(22). The scale of the country, sparse population and distance between services were cited as major barriers to successful development and despite the popularity of cycling for everyday transport, compared to other European countries, Sweden is just starting to develop bicycle tourism (21)(22).

In Region Skåne, the area around Malmö, the “Oresund Bicycle Region” project aims to develop the region as a destination for cycle tourists and promotes leisure cycling to local residents (25)(26). The project is funded by the European Regional Development Fund and commissioned research which summarises the current state of bicycle tourism in Skåne and Sweden. A similar study in Region Öland also presents economic arguments for investing in cycle tourism (25)(27).

Both these studies identified bicycle tourists as high spending DINK’s (Double Income No Kids), WHOP’s (Wealthy Healthy Older People) and Active Families and suggested that cycle tourists already contribute to the regional economy. In Region Skåne, cycle tourists already make up 2-5% of the total and contribute 8% of total tourism revenue in the region (7.1 million euros) (25). In Öland, cycle tourism directly contributes 4% to tourism revenue (5.3 million euros) (27). Average daily spend was also largely consistent with elsewhere in Europe. In Region Skåne it was 520 SEK (57 euros) for overnight stays, and 110 SEK (12 euros) for day visitors (25). In Öland, average spend was slightly higher for overnight visits (62 euros) and 17 euros for day cycle tourists (27).

Encouraging cycle tourists to stay in the regions is a significant challenge. Both domestic and international cycle tourists in Sweden take shorter breaks here than elsewhere in Europe (25). The average stay was 3 ½ days in Skåne, while in Öland this was just 3 days. In Germany, Switzerland, Netherlands and Denmark, cycle tourists are likely to take breaks of between five and ten days (27). The lack of consistency of cycle signage and any coherent cycle tourism product is suggested as a major issue.

However, it is clear from this research that cycle tourism does represent an opportunity for economic development of rural areas in Sweden that may not be primary destinations. Cycle tourism and slow travel can strengthen interest in local gastronomy, local culture and history. But to do so the number of cycling visitors must increase, the length of the visitor stay must increase or the average daily spend must increase (25)(27). For instance, extending the length of stay in Skåne by just ½ day would grow revenues by 13 million SEK per year (£1.2m). If replicated across Sweden, this could make the total value of cycle tourism revenue worth up to 890 million SEK (per year (around 8% of total tourism revenues) (25)(27).

The following strategies have been proposed for growing the cycle tourism market in Sweden, many of which would be transferrable to the UK (21)(22)(25)(26) (27).

1. Develop more long distance trails with off-road and traffic free sections to attract more cycle tourists.
2. Introduce a national standard signage for local and region cycle routes.
3. Develop a Sweden cycle tourism brand with specific marketing on the internet, with cycle maps and guidebooks through local and national tourism bodies.
4. Introduce a national certification for bike friendly accommodations (Cykelframjändet have now started to address this through the bedandbike.se website)

Developing cycle tourism in Sweden represents a major challenge. A coordinated approach across multiple governmental, regional and local organisation is required, but Cykelframjändet, the main organisation with an interest in cycle tourism, do not appear to have the resources and capacity to coordinate this activity. Until this is possible, cycle tourism in activity in Sweden is likely to remain fragmented with duplication of activities and resources.

SWITZERLAND

In Olten, I called into Veloburo headquarters, the organisation delivering the aims and objectives of the Switzerland Mobility Foundation (SMF), to meet Lukas Stadtherr, one of the project managers. I wanted to find out more about how the Swiss national network for cycling tourism had been established as I had heard they had taken an innovative approach to the development.

JOINED UP THINKING

The SMF started life as Cycling in Switzerland Foundation in 1993. It was initiated by the Swiss Tourism Federation and a group of enthusiastic touring cyclists, with the idea of creating a national cycle touring network. The Foundation included representatives from traffic, sport and tourism and was supported by all 26 Swiss cantons. In 1998, nine national cycling routes with a total length of 3000km were established. However, discussions with the Swiss Hiking Federation in 1999 about developing hiking in Switzerland, eventually led to the establishment of the SMF with the objective of coordination and promotion of all non-motorised traffic (hiking, cycling, mountain biking, inline skating and canoeing), for leisure and tourism across Switzerland. The Foundation members and partners now include a wide range of governmental, non-governmental and interest groups plus all the Swiss cantons (See Table 3). Unlike the ADFC, Danish Cyclists Federation and Cykelframjandet, the Switzerland Mobility Foundation do not represent the interests of individual cycling members so they are not campaigning for improved conditions for cyclists or lobbying politicians. This independence has been crucial to the success of the Foundation. By coordinating advocacy groups, key federal and cantonal authorities it has been possible to develop a nationally collaborative approach to leisure and tourism networks for cycling, mountain biking and other non-motorised.

SWITCHING FROM PROJECT FUNDING

With no cycling members to draw membership fees from, the SMF has faced challenges financing their work. Initially short term or project funding made up the majority of the organisations income. However, a major success factor has been switching away from short-term project financing to relatively continuous ongoing finance (28). This has been achieved by demonstrating the success of a coordinated approach across all the Cantons through sales of print material, traffic counters, website traffic and by demonstrating the economic value of cycle tourism (see The value of cycle tourism section). The Cantons now each commit to three year funding cycles to support the core work of the SMF. The Federal state (cross departmental – see Table 3) and private businesses (through advertising) also provide other funding sources (28).

Table 3 - Switzerland Mobility Foundation: member and partners list

Members	Partners
Swiss Tourism Federation	Federal Office for Spatial Development
Switzerland Tourism	Federal Roads Authority
Swiss Hiking Federation	Federal Office for Energy
Swiss Canoe Federation	State Secretariat for Economic Affairs
Swiss Federal Railways	Federal Office of Public Health
Touring club Switzerland	Federal Office for Sport

Verkers-club der Schweiz	Federal Office for the Environment
ProVelo Schweiz	Federal Office of Culture
ViaStoria	Federal Office of Topography
Swiss Cycling	Association of Public Transport
Swiss Alpine Club	Principality of Liechtenstein
VeloSuisse	All Swiss cantons
Swiss Council for Accident Prevention	Postauto Schweiz
	Seilbahnen Schweiz
	Verband Schweizerischer Schifffahrts Unternehmungen
	GastroSuisse
	Hotellerie Suisse
	Swiss Youth Hostels

CREATING NETWORKS

It was recognised by the Switzerland Mobility Foundation at an early stage that there was often considerable overlap in the promotion and marketing, development of infrastructure, services and offers across the cantons, which not only wasted time and money but resulted

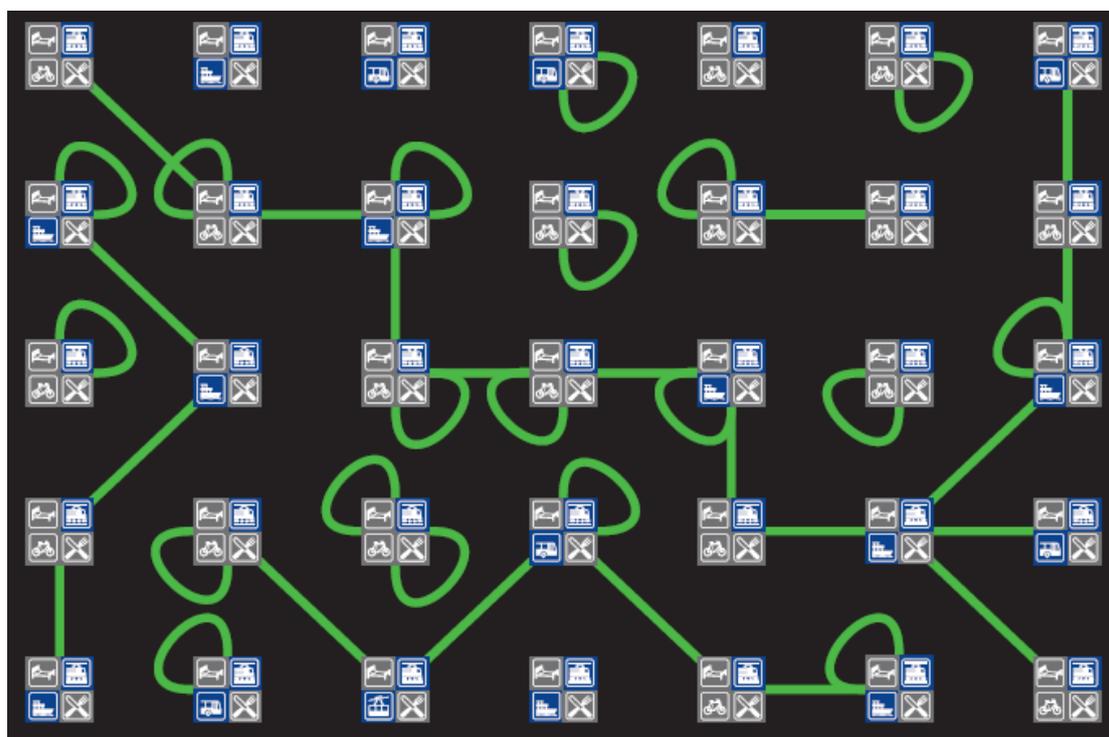


Figure 9 - Linking transport and services to form cycle network

in an inconsistent and variable experience for the end user. With this in mind, the route development process started, not with the best cycling routes, but by establishing the location of relevant services. Transport (rail, bus, boat and cable car), and services (accommodation, restaurants, cafes, cycle hire, cycle shops) were pulled together into a spatial structure (See Figure 9) (29).

Routes were then created on the idea of day trips linking the transport and service hubs together. Regional routes and national routes could then combine these day routes together to create longer and more challenging routes. This model was then successfully applied to

mountain biking, hiking, inline skating and canoeing (29). This data is held in a GIS database, which powers the Switzerland Mobility website (www.schweizmobil.ch) and mobile apps.

BRANDING THE NETWORK

Consistency and visibility are the central ethos to the successful marketing of leisure and tourism cycling routes in Switzerland. The national cycle network signage is clear and easy to interpret. National routes are numbered 1-9 with a name. The 54 regional routes are represented by two digit numbers from 21-97 and a name. 65 local routes are represented by three digits and each have a name. Map boards displaying routes are located at key intersections and transport / service hubs (see Figure 10) and the design and layout is defined as a Swiss National standard (Figure 11). These brand guidelines continue on printed



Figure 10 - Map board and sign showing Eurovelo, national and regional cycle tourism routes

guides, maps and online. This consistency with the physical infrastructure on the ground, gives the end user great confidence in the reliability of the routes and also increases visibility.

The difficulty for every route is defined using the same national criteria. This makes it easy for tourists to compare routes and fitness requirements (See Table 4).



Figure 11 - National Signage Standards for non-motorised traffic and complimentary Switzerland Mobility branding

Table 4 - Grades of difficulty for Non-Motorised Traffic

Grade	Easy	Medium	Difficult
Requirements	Also for beginners and children	Traffic experience required	Good traffic experience required
Road Quality	<ul style="list-style-type: none"> • Little used side road • Separate cycle paths • Roads with restrictions on motorised vehicles • Forest and field trails • Zones with reduced speed limits (20 and 30km/h) 	In additions: <ul style="list-style-type: none"> • Busy side roads • Main road with cycle lanes 	In addition: <ul style="list-style-type: none"> • Busy main roads without cycle lanes.
Dangerous sections	Virtually no dangerous sections	Some dangerous sections	Frequent dangerous sections
Equipment	Normal bicycle suitable for road traffic	Normal bicycle suitable for road traffic	Normal bicycle suitable for road traffic
Conditions	Easy	Medium	Difficult
Length	Up to ~50km	Up to ~70km	>70km
Height metres	Up to 300 hm	Up to 800hm	>800hm
Time required	Up to 4h	Up to 5h	>5h

THE VALUE OF CYCLE TOURISM

Data from the Swiss national sports survey would indicate that the development of the Switzerland Mobility national cycle network has been very successful. Cycling is a popular leisure activity in Switzerland with 42 per cent of the Swiss population aged 15 to 74 years cycling or mountain biking for fitness or leisure. Seven per cent of Swiss took a least a one week cycling holiday in Switzerland in 2008 (30). However, engagement with cycle tourism activities is very much dependent on educational status and household income. The higher the educational and income level, the more likely a Swiss person is to partake in cycle tourism. Furthermore, this socio-economic divide has intensified between 2000 and 2008. People with higher education and income today are more likely to cycle than eight years ago, while little has changed in people with lower education and income groups (15). This supports evidence elsewhere that the typical cyclist has above average disposable income, perhaps confirming the value in developing cycle tourism activities (31).

The Switzerland Mobility network is monitored using an automatic counting system allowing year round data to be captured. Interviews and surveys enable distinctions to be made between everyday trips and cycle tourism trips, and calculate the economic impact of cycle tourism. The counters, combined with survey data, revealed in 2012, there were 4.7 million day trips and 220,000 multiday trips on the Swiss National Cycling Routes, covering a total distance of 250 million kilometres. In 2012, there was a 2% decrease in total cycle tourism distance covered from previous years (down 5 million kilometres from 2011) (32). This was partly attributed to adverse summer weather conditions and an early onset of winter, but also the strong Swiss Franc which has contributed to the general decline of Swiss Tourism in recent years. The cycle tourism market has proved more robust than others because it is supported by the Swiss domestic market, and contributes 140 million CHF per year to the Swiss economy (113.5 million euros) (32). Around half of all cycle tourism spending is on food and drink (see Table 5), and 50% of overnight stays generated as part of multiday trips

are spent in hotels supporting the research that cycle tourists come from above average income groups (32).

Table 5 - Annual revenues in the national Cycling Network in 2012 in millions of CHF

	Day trips	Short trips	Holiday trips	All
Food and drink	45	9	18	72
Transport	14	3	9	26
Accommodation	-	10	25	35
Other	3	1	4	8
All	62	23	56	141

CYCLE CARRIAGE ON PUBLIC TRANSPORT

Observing cycle carriage on public transport across the five European countries was a key part of this fellowship. The experience, not surprisingly, suggests that cycle carriage on trains varies significantly from country to country, and is largely dependent on the type of journey, type of train and at the discretion of the rail operator. Cycle carriage on buses is also largely dependent on and at the discretion of the operating company.

In Switzerland, the integrated approach to non-motorised traffic networks would not have been possible without cycle carriage on trains, bus, boats and cable cars. Over 500 places are defined as stage destinations which can be reached by local train, postbus, boat or aerial cableway with a bike. This information is available to cycle tourists through the Switzerland Mobility interactive internet map which shows all these public transport stops and integrates the Swiss Federal Railways online timetable allowing quick and easy planning of a journey or day excursion (28).

In Sweden, SJ, the main long-distance rail operator, do not permit bicycle carriage on services and are unlikely to do so in the foreseeable future without specific national guidelines or regulation. This was been acknowledged as a major barrier to developing cycle tourism in Sweden (21). On local trains operated by Skanetrafiken between Copenhagen and Malmo and around the Skane region it is possible to take non-folding bikes. Bikes are charged at the equivalent of a child ticket. On other train operators, Tag I Berglagen, Oresundstagen and Kinnekullebana and other commuter trains operated by Vasttrafik (Gothenburg) and SL (Stockholm) bikes are generally permitted outside of peak hours. An additional ticket may be required depending on the operators (21).



Figure 12 - Cycle carriage on a regional bus in Denmark

In Denmark, bicycle carriage on public transport has been identified by the DCF as being crucial to the development of cycle tourism (16). However, much like many other European countries, there is significant variation dependent on location and train type. In and around Copenhagen bikes can be carried for free on commuter trains. For longer journeys the supply of bike spaces is limited and a bike ticket is required. On IC3/4 trains there is flexible space which can accommodate for 6 bikes, if not used for other purposes. The IR4 trains take 7 bikes per train, again in multi-use spaces. Similarly, the DCF lobby DSB, the independent corporation owned by the Danish Ministry for Transport for improved cycle carriage and present the economic argument for providing this service (16). For instance, in 2013, the DCF surveyed visiting German cyclists about bike carriage on the Danish rail network. Nearly 93% suggested that the ability to travel with their bikes determined their choice of destination (19). Cycle carriage is also feasible on many regional buses though usually limited to 2 bikes per bus (Figure 12).

Cycle carriage on trains in Germany is perfectly feasible with Deutsche Bahn, the national rail operator, providing cycle carriage on the majority of services. A variable fee is payable, though for a typical 3 hour journey this fee is quite reasonable (around 5 euros). Only some high speed intercity trains do not have cycle storage. On long distance rail routes, the numbers of bike carried on trains has remained more or less static since 2003, with approximately 260,000 bikes carried in 2009 (13). The ADFC continue to campaign and lobby Deutsche Bahn to ensure that the existing provision isn't eroded when new rolling stock comes online from 2015 and they will be campaigning for more flexible space on trains to accommodate more bicycles (9). However, with the main cycling season between April to October, installing additional capacity when it would remain underutilised for 6 months a year may not be financially viable (9).



Figure 13 - Exceptional cycle carriage on German rail network

In Germany, good passenger offers for rail and bike travel have had success (9). On overnight services, these special offers have doubled the number of bicycles carried from 19,000 in 2002 to 38,000 in 2009. In comparison, far more bikes are transported on regional routes (around 832,000 in 2009) (13). Simple measures, such as on platform information boards displaying schematic train plans and the location of the cycle storage make taking bikes on trains that bit easier (Figure 14) and could easily be replicated in the UK for very little cost.



Figure 14 - Schematic train plan showing location on cycle carriage was displayed on platforms

In the Netherlands, bicycles may be carried on trains, though conditions vary between operators from dedicated storage space to multi-use spaces. A special ticket is required (6 euros regardless of journey length). Bikes are generally not permitted at rush hour (06:30 – 09:00 and 16:30 – 18:00). This limitation does not apply on weekends, public holidays or during peak holiday season of July and August which is important in encouraging cycle tourism (7).



Figure 15 - Train and bike ticket in the Netherlands

From a cycle tourists viewpoint, the lack of standardisation and varying capacity make travel with a bicycle on public transport across Europe more difficult than it should be. The European Cyclists Federation (ECF) argue this is a result of weak EU regulation that has given railway companies opportunities too much leeway and created poor provision for people wishing to combine multiple transport modes (33). Changing this regulation will take time, but with the cycle tourism sector and with the demand for sustainable transport initiatives growing there is an opportunity for rail operating companies access this market by extending their offer.

ENVIRONMENTAL GAIN FROM CYCLE TOURISM

The increase in mass tourism activities in recent decades and prevalence of cheap and affordable flights to anywhere in the global means that tourism now contributes significantly to global carbon emissions (34). Research and anecdotal evidence from this fellowship, suggests that cycle tourists and people who cycle on holiday are more likely to make sustainable travel choices to their destination than those who do not (35). Therefore, there are opportunities through cycle tourism to encouraging people to change their travel mode to sustainable alternatives and contribute to the overall carbon footprint of tourism activities in a country. Even if visitors do not change their travel mode to a destination, additional opportunities for recreational cycling may encourage a switch from individual motorised transport to a bicycle. For instance, German cycle tourists produce 66% less holiday emission per trip than the average German tourist (35).

There is also evidence to suggest that demand for sustainable tourism is growing among the environmentally conscious and cycle tourism does have the ability provide an authentic and more sustainable holiday alternative which reconnects people with the environment and brings culture, heritage, local food and drink closer and more accessible (34).

As the potential for cycle tourism in the UK is unknown, the contribution the cycle tourism can make to environmental gain will largely be based on supposition and assumption. Firstly, the number of potential cycle tourists will have to be estimated, as will the average journey length. Secondly, it will have to be assumed that any cycle tourism activities replace a car journey of the same distance. Finally, the lifecycle carbon emissions from the bicycle journey (21g CO₂e / km) and the car journey (261g CO₂e / km) are estimated using the data provided by the European Cyclists Federation (36).

According to Visit England data, there are currently around 57 million domestic UK holidays each year with an average trip duration of 3.52 days (37). It is currently estimated that around 1-2% of people cycle on holiday in UK (34). In Switzerland 7% of people take an extended cycling holiday (of a week or longer) (38), while in the Munsterland region of Germany 30% of all tourists are cycle tourists (9). In Denmark 25% of all tourists cycle on holiday (19), while in the Netherlands 52% of people cycle for holiday or recreation (3). It would be unrealistic to expect to cycle tourism to increase to Danish and Dutch levels without significant investment in infrastructure and major cultural shift in attitudes to cycling for both transport and leisure. Achieving 10% cycle tourism activity for just one day of the average 3.52 day holidays might be feasible with significant marketing effort and some improvements to infrastructure. If it was assumed that the average journey length was 20km (around 12 miles), as it is the Netherlands, this would result 29,400 tonnes less CO₂ being emitted per year in the UK (3). This figure is significant (equivalent to taking 8700 cars for the road each year¹), but only represents a very modest contribution to challenging emissions targets. However, this rather simplistic calculation only takes into account holiday cycling and excludes any recreational cycling or cycling holiday activities which may also occur. The biggest opportunities for environmental gain are through travel behaviour change which occurs as a result of positive cycle tourism experiences or travel mode choice to

¹ Based on National Travel Survey 2010 average annual car mileage was estimated to be 8,430.

destinations which have not been included in this brief analysis. Integration with public transport will have to improve significantly before any environmental gains will be realised.

CONCLUSIONS AND RECOMMENDATIONS

Cycle tourism has since become a relatively hot topic in 2013, with a report commissioned by Sustrans Scotland suggesting that cycling is a much larger income stream that has been previously recognised. It estimates that cycle tourism provides between £106 and £228 million in direct expenditure to the Scottish economy and concludes that there are many opportunities to develop this sustainable tourism product (39) .

There is also clear evidence from this fellowship that cycle tourism has the potential to deliver sustainable rural development opportunities. Cycle tourists can, and will, contribute significantly to the local economies because they are likely to have higher than average incomes and spend longer in the vicinity of the cycle tourism routes than traditional tourists (3)(25)(27)(31)(14).

There has been efficient and successful implementation of cycle tourism projects in the Netherlands and Switzerland, where umbrella organisations have coordinated activities at a national level and brought together representatives from interest groups, governmental departments and business. The independence of these organisations may be a critical success factor. By being free from cycle advocacy campaigns, not operating for member basis, or represent the interests of the everyday cyclist, these organisations have remained largely non-political. At present, no such cycle tourism organisation exists in the UK. Utilising a similar model would require funding support from central and regional government to develop and coordinate a strategic work plan, but would provide the best opportunities for realising the economic benefits that cycle tourism can deliver. Opportunities do exist to various European funding streams and the European Cyclists Federation are well placed to advise local and regional government on how to access these resources (33).

The divergence of cycle tourism activity in the UK is already evident. For instance, several national bodies including Visit Britain and the Cyclists Touring Club operate cyclist-friendly business schemes. Many regional versions, such as 'the Cyclists Accepted' scheme operated by Cumbria Tourism, also exist. Schemes operated by Visit Britain or regional tourism bodies are often limited to businesses which have other accreditations with these organisations. This accreditation provides useful guidance to the tourism businesses on welcoming cyclists to their business but often excludes smaller, independent businesses. There is no one-stop shop for cyclist-friendly business information and the number of schemes appears fragmented and confusing to both the end user and business. Establishing a definitive national cyclist-friendly business scheme with guidelines similar to the Bett und Bike or Fietsers Welkom schemes would provide clearer channels for marketing and promotion. Furthermore, many regional tourist organisations in the UK advertise locally produced cycling leaflets or brochures based on existing road network that are only accessible on arrival at a destination. Consolidating this information in a national database and providing web and mobile services may also help more people access these resources.

The regional Fietsknooppunten networks in the Netherlands have proved to be a cost-effective way to stimulate recreational cycling in a rural environment. These networks make recreational cycling more accessible by removing barriers around route finding, map reading concerns and route safety, and the flexibility allow users to explore, experience and enjoy

cycling in whatever quantity they desire. Combining these networks with strong branding and marketing, creating interesting themed routes with electric bike charging points and cyclist-friendly businesses would help improve the user experience and turn cycling into an experience rather than just for the sake of cycling.

High levels of engagement with cycle tourism have been achieved in Germany where there is a strong social and cultural link between cycle usage and cycle tourism which does not exist in the UK at the moment. Continuing to develop cycling infrastructure and promote cycling for everyday transport will have a knock on impact on the cycle tourism and recreational cycling in rural areas. The clear grading of long distance cycle paths and regional cycle routes, both in terms of difficulty and quality, supported by the strong ADFC brand has also helped reassure people new to cycling that a particular route is suitable for their fitness and ability. This grading system has made people confident in the cycle tourism product on offer and guarantees a consistent and pleasurable experience. Furthermore, as the value of the cycle tourism to regional economies becomes more widely recognised, regional evaluation for 'best cycle tourism region' may help to stimulate competition between local authorities and encourage investment in cycling and cycle tourism infrastructure.

Cycle carriage on trains varies dramatically across Europe, in both provision and cost. This is a barrier which may prevent many people from matching sustainable travel with cycle tourism. In the UK, cycle carriage is equally variable, but it is largely free. There are certainly opportunities to improve the ease of cycle carriage without major changes to the rolling stock. For instance, provide ability to reserve bike when purchasing tickets online and providing real time data on bike space availability on chosen journeys. If a bicycle is reserved prior to travel, the space should be physically reserved on the train even on busy services. At the station or on the platform the location of cycle storage in each class of train would make the process of getting a bike on-board easier. In the longer term, the standardisation of service across train operating companies with the addition of more cycle storage or flexible space would help to encourage sustainable transport modes. The work of the European Cyclists Federation to strengthen EU regulation is important to achieve this improved service but could equally be achieved by through rail franchise agreements. As seen in Germany and Switzerland, cycle carriage does not have to be free and a good quality service can represent value for money.

Finally, there are many further opportunities to learn from existing good regional practice in UK and our European partners. The facilitation of field trips to regions and countries where cycle tourism is more established would be an excellent way to share knowledge and the contacts established through this fellowship could help enable this.

RECOMMENDATIONS

The research conducted as part of this Winston Churchill Memorial Trust Travelling Fellowship suggests that cycle tourism does have the potential to deliver environmentally and economically sustainable rural development. It is hoped that this research will support and complement existing literature on cycle tourism and provide a useful platform the development of cycle tourism nationally and regionally in the UK. It is recommended that the following actions would support development of cycle tourism:

1. Improve leadership by establishing a forum to coordinate cycle tourism activity at national level
2. Develop a strong cycle tourism brand for use across all cycle tourism activities, both nationally and regionally.
3. Establish an evaluation process and problem reporting system for recreation cycling and cycle tourism routes
4. Define a grading system for recreational cycling and cycle tourism routes
5. Develop a national cyclist friendly business scheme
6. Develop new recreational cycling networks based on Fietsknooppunten model
7. Consolidate local and regional cycling information into one one-stop shop portal
8. Strengthen regulation regarding cycle carriage on public transport.

BIBLIOGRAPHY

1. Sustrans. Cycle Tourism Information Pack TT21. 1999.
2. Stichting Landelijk Fietsplatform. Fietsrecreatiemonitor. 2013.
3. Stichting Landelijk Fietsplatform. Zicht op Nederland Fietsland. 2009.
4. Stichting Landelijk Fietsplatform. Regionale Fietsroutenetwerken: Keuze voor knooppuntennetwerken - aanbevelingen voor uitvoering - stappenplan. 2006.
5. Stichting Landelijk Fietsplatform. Recreatieve fietsroutenetwerken: Welke kant op? 2011.
6. Nijland E. Fietsplatform - Dutch Cycling Platform. 2013.
7. Nijland E. Cycle Tourism in the Netherlands. 2013.
8. Stichting Landelijk Fietsplatform. Kwaliteitsmonitor fietsregio's 2013. 2013.
9. Richter W. Cycle Tourism in Germany. 2013.
10. Allgemeiner Deutscher Fahrrad Club. Merkel calls for cycling holiday in flood areas [Internet]. 2013. Available from: www.adfc.de
11. Richter W. Certification of long distance cycle routes. Allgemeiner Deutscher Fahrrad Club; 2013.
12. Jennert R, Richter W, Schwalbe-Rosenow M. Classification of ADFC Premium Cycle Routes - The Story of a Qualification Process. Vienna; 2013.
13. Richter W. The ADFC Analysis for travelling by bike 2010: Nationwide analysis to cycle tourism market. International Tourism Bourse; 2010.
14. Dohmen R, Tiffe A, Dürhager U, Funke R, Kollbach K. Radverkehrsanalyse Brandenburg Kurzfassung. Tourismus-Marketing Brandenburg GmbH; 2011.
15. Ministerium für Wirtschaft, Energie, Bauen, Wohnen and Verkehr des Landes Nordrhein-Westfalen. Hinweise zur wegweisenden Beschilderung für den Radverkehr in Nordrhein-Westfalen. 2011.
16. Pørksen J. Cycle Tourism in Denmark. 2013.
17. Transportministeriet. Cykelturisme og rekreativ cykling: Arbejdsrapport 2 - Den nationale cykelstrategi 2013.
18. Pørksen J. Cycle Tourism in Denmark. 2013.
19. Skovbo Petersen L. Cykelturister i Danmark: Turistprofil. Visit Denmark; 2013.
20. Pørksen J. Powered by Cycling: Panorama. Dansk Cyklist Forbund; 2012.
21. Fasth C. Cycle Tourism in Sweden. 2013.

22. Bath EL. Cycle Tourism in Stockholm and Sweden. 2013.
23. Koucky M. Ökad cykling i kommuner och regioner. 2011.
24. Bath EL. Cykeln i transportpolitiken: Cykelframjandets studieresa for politiker och trafikplanerare. 2013.
25. Nilsson K. Cykelturism i Öresundsregionen - Nuläge och ekonomiskt värde En analys inom EU-projektet "Öresund som cykelregion". Region Skåne; 2011.
26. Eilstrup E. Cycle Tourism in Malmo, Sweden. 2013.
27. Ramboll. Cykelturism På Öland En Studie Av Det Ekonomiska Värdet Av Ölands Cykelturism. Ölands kommunförbund; 2010.
28. Stadtherr L. Cycle Tourism in Switzerland. 2013.
29. Stadtherr L. Switzerland Mobility. Olten, Switzerland; 2013.
30. Lamprecht M, Fischer A, Stamm H. Velofahren in der Schweiz. Lamprecht & Stamm Sozialforschung und Beratung; 2009.
31. Weston R, Davies N, Lumsdon L, Peeters P, Eijgelaar E, Piket P. The European Cycle Network - Eurovelo Study. European Parliament's Committee on Transport and Tourism; 2012.
32. Rikus S. Veloland Schweiz 2012: Jahreskennwerte und Methodik zur Auswertung der Velo-Zahlanlagen. Prog Trans; 2013.
33. Lancaster E. Cycle Tourism in Europe: the role of the European Cyclists Federation. 2013.
34. Lumsdon L. Transport and Tourism: Cycle Tourism – A Model for Sustainable Development. J Sustain Tour. 2000;8(5):361–77.
35. Eijgelaar E, Peeters P, Piket P. European Cycle Tourism: Tool For Sustainable Regional Rural Development. Centre for Sustainable Tourism and Transport, Breda University of Applied Sciences; 2010.
36. Blondel B, Mispelon C, Ferguson J. Cycle More Often to Cool the Down the Planet. European Cyclists Federation; 2011.
37. Visit England. Great Britain Summary Tables 2013: Great Britain Tourism Survey. 2012.
38. Utiger M, Rikus S. Veloland Schweiz 2012: Ergebnisse Velo-Zahlungen. Stiftung Veloland Schweiz; 2013.
39. Zovko I. The Value of Cycle Tourism. Transform Scotland; 2013.

APPENDIX A – INFORMATION TABLES

Table 6 - Fietsplatform Cycle Tourism Regional Framework Assessment Criteria

Indicator	Unit of Measurement
Landscape	
Presence agriculture, forest / nature, water	Agricultural land area (excluding horticulture), natural terrain, inland forest in km ² in percentage of total surface area
National Park and National Landscapes	Area National Park and National Landscapes in km ² , in percentage of total surface area
Sights	Average number of attractions and museums per km ²
Accessibility	
Number of cycling routes	Main roads with traffic and type
Degree of compartmentalisation	Total km of road / rail / canal / river / channel per km
Accessibility of cycle networks	All routes public and freely accessible
Route network quality	
Implementation of route signage networks	Node signs in / not in accordance with national standards.
Route network signage connections with adjacent regional networks	Network connections outside of the region checked? In field problems addressed?
Synchronisation of LF and node routes signage	Complete or incomplete signage synchronisation of LF routes and node network?
Thematic tours	Yes / No
Facilities along the routes	
Benches	Average number of benches / picnic places per 100km
ANWB Bike Service Desk	Average number of ANWEB Bike Service Points per 100km cycle network
Bike friendly businesses	Average number of Cyclist Welcome cafes, restaurants and other facilities
Bike friendly campsites and overnight accommodation	Average number of Cyclist Welcome overnight accommodation per 100km of cycle network
Additional facilities for cyclists	Are there rest areas and other regional 'cyclist friendly' initiatives for cyclists?
Route network management	
Recreational cycling policy	Is there are regional cycling policy specifically for recreational cycling
Updating route network	Designating person responsible for updating route data? Update will not take place?
Digitised sign locations	Digitisation of sign location in GIS complete / incomplete
Update sign locations	Designed responsibility for updating sign information
Budget for updating GIS database and route / sign locations	Yes / unsure / No budget for updating GIS data for years to come?
Liaison with different route network management managers	Provinces: Yes / No consultation between all the different route network administrator in the province. Regions: Yes / No consultation between all / some of the managers of the neighbouring regions.
Sign maintenance	
Implementing sign maintenance	Is / Is not responsible for any sign maintenance
LF and junction sign maintenance	Is the same organisation responsible for maintenance of LF and junction signs?
Percentage complaints solved	Percentage of claim reports resolved
Average resolution time of complaints	Average solution time for sign report including shortest and longest resolution time.

Table 7 - ADFC Premium Route assessment criteria

Criteria	Assessment
Ride ability	
At 20km/h with 20kg luggage, 28mm tyres but also with tandem, bicycle trailer, wheelchair tandem.	
Width (every km)	Greater than 2.5m
	2m < 2.5m
	1.5m < 2m
	Less than 1.5m
Bottlenecks	Each hazard caused by staggered railings < 1.50m and bollards < 0.80m width
	Each hazard caused by bollards 0.80 – 1.20m
	Each bollard hazard with warning notice
Steps	Each flight of steps with > 5 steps with / without a bicycle ramp
	Each flight of steps 2-5 steps
	Each single step / non-dropped kerb
Other hazards	Steep, curvy descents
	road junctions that are recognised with difficulty or too late
Surface	
Points per kilometre based on:	Smooth asphalt
	Comfortable to ride on
	Undulating, single holes
	Only just rideable (e.g cobbles, badly laid slabs, sand). If more than 3km noted separately.
	Pushing section > 300m – stage receives 0 points
Signposting	
Basic points for the signposting concept for the entire long-distance route	
Additional points for comprehensive – target oriented signs	
Points deducted for:	Type of signposting
	Wrong directions
	Missing sign location
	Barely legible writing
	Contradiction to traffic regulations
Route Guidance	
100 points but deductions for:	Noise pollution
	Odour pollution
	Dust pollution
	Detours
	Misses the point
	Altitude (unrideable hills, both up and down)
	Monotony
Motor vehicle load	
Classification according to motor vehicle load	
Crash barriers	
Unsecured crossing distinguished by urban and extra urban	
Touristic infrastructure	
Accommodation	Density of accommodation in different categories (campsite to 5 star hotel)
Gastronomy	Density of gastronomy
Bett and Bike	Additional points for many campsites and bicycle friendly “Bett and Bike” businesses
Additional infrastructure	Tourist Information
	Information Panels
	Parking facilities
	Bicycle shelter / bicycle service stations
	Playgrounds
	Refuge huts
	Picnic areas
Connection to public transport	
Frequency of trains with bicycle transport	
Frequency of other public transport with bicycle transport (e.g bicycle bus)	
Marketing	
High quality maps	
Cycling guide books on the long distance cycle route	
Importance of cycle tourism overall	
Internet presence including mobile apps	
Other criteria:	Rental bike options
	Package tour companies
	GPS tracks available
	Cycle route festival

Table 8 - Bett und Bike accommodation requirements for certification

Bicycle friendly accommodations offer the following services:	Additional service Bett+Bike accommodation: (at least two must be offered)
Guests are welcome to stay for only one night.	Information about arrival by public transportation
Bicycles are securely stored.	Shuttle service to and from for cycling guests
It is possible to dry wet clothing and gear.	Good-quality bicycles available for hire
The most important tools are available for simple bike repairs.	Bicycle day trips
In the case of more major breakdowns, the nearest repair shop is ready to help.	Luggage transfer from the last and/or to the next accommodation
Informational materials, such as regional bike trails and schedules for bus and train, are available so you can find out more about attractive excursions in the area.	Overnight reservation
In the morning, when you wake up, a hearty breakfast will be waiting for you.	Important replacement parts
	Information next accommodation
	Packed lunch
	Guestbook for cyclists

Table 9 - Bett und Bike certification requirements for campsites

Bicycle friendly campsite offer the following services:	Additional service at Bett + Bike campsite (at least two must be offered)
A separate tent site, not accessible by car or caravan, for bicyclists and other guests travelling by non-motorised vehicle.	Roofed storage place or secured room
A grass lawn to pitch the tent on which is as flat and even as possible. Gravel, pebbles, or heavily compacted soil is not acceptable for campers.	Table and seats at the tent site
A place with bicycle racks to store or park bicycles at the tent site or near it (within sight).	Opportunity for guests to cook
It is possible to dry wet clothing and gear.	Possibility to purchase necessary supplies
No additional fees for admitting bicycles to the camping site premises.	Routes to tent area sufficiently lit
Informational materials, such as regional cycling maps and schedules for bus, train and ferries are available.	Information about other bicycle-friendly camping sites in the region
The most important tools are available for simple bike repairs.	Rental tents and campers, log huts, bungalows, etc. available
In the case of more major breakdowns, the nearest repair shop is ready to help.	Good-quality bicycles available for hire
	Informational materials, such as regional bike trails and schedules for bus and train, are available so you can find out more about attractive excursions in the area.

Table 10 - "Bett und Bike Sport" certification requirements

Requirement	Minimum service
Safety	Guest can store expensive bikes in a secure room
Service	Guests are provided with current local weather reports, and access to high energy food and electrolyte drinks
	can borrow or purchase cycling maps
Maintenance	A room is available for drying wet clothing and gear overnight
	Washing machine or a laundering service can be used to wash clothing.
	Bicycles can be washed in a separate area setup for this purpose.
	If guests wish to undertake athletic activities after checking out on the day of departure, showering facilities will still be available throughout the afternoon.
Equipment	A room appropriate for carrying out repairs and adjustments on bicycles exists for guests
	Along with replacement inner tubes, repair kits, and basic tools, special tools for sports bikes are also present.
	Should a guest require a replacement part, contact with the nearest specialized shop will be made through the accommodation.