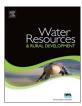
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The economic contribution of a recreational fishery in a remote rural economy



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ABSTRACT

Keywords: Rural development Trout fishery Angling Economy This paper evaluates the scale of local economic benefits arising from recreational angling tourism in a rural community. The analysis is carried out using survey data of recreational anglers in the remote, coastal village of Waterville in Co. Kerry, south-west Ireland. This region is a popular tourist angling destination as it offers diverse angling opportunities including freshwater angling for species such as salmon and sea-trout as well as sea angling for species like bass and pollack. The analysis estimates the impact of anglers' expenditure on incomes in the Waterville area. The estimated contribution of angling tourism to the local economy in the Waterville area was between € 41–58 per trip or € 8–11 per angler day. Angler trips, on average, contributed between 0.1–0.15% of mean household income to the local economy during 2015. Regression analysis of angler expenditures indicated that while slight, anglers exhibited higher expenditures in the local area if they were long time repeat visitors and opted for hotel/B&B type accommodation arrangements rather than a privately owned holiday home or camping/self-catering type accommodation arrangement. The expenditure of tourists solely engaged in freshwater game angling was higher than other anglers including those that engage in other local cultural and sporting activities.

1. Introduction

It is commonly assumed that the rural economy is inextricably linked to agriculture, especially in the context of employment and incomes (Hynes et al., 2009). In rural coastal areas fishing as enterprise is also woven into the socio-economic fabric of local communities (Reed et al., 2013). For instance, the European Union's (EU) rural development policy, known as the "second pillar" of the Common Agricultural Policy (CAP), places priority focus on the agriculture and forestry sectors, with negligible reference to other rural based economic activity (European Commission, 2010). Employment in agriculture and forestry account for less than 5% of EU employment and while these sectors may play more important roles in rural economies, neither are necessary precursors for sustainable rural development. For example, in recent research on smart rural development (Naldi et al., 2015) and the resilience of rural communities (Steiner and Atterton, 2015) neither agriculture nor forestry are discussed. The regional growth literature is increasingly of the conclusion that a one-size-fits-all policy for smart regional growth is not effective and that policies need to be both

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 $^{^{1} \} Source: \ Eurostat \ Labour \ Force \ Survey, \ http://appsso.eurostat.ec.europa.eu/nui/show.do?dataset=lfsa_egan 2 \& lang=enrostat.ec.europa.eu/nui/show.do?dataset=lfsa_egan 2 & lang=enrostat.ec.europa.eu/nui/show.do.eu/nui/show.ec.europa.eu/nui/show.ec.europa.eu/nui/show.ec.europa.eu/nui/show.ec.europa.eu/nui/show.ec.europa.eu/nui/show.ec.europa.eu/nui/show.ec.eu/nui/show.ec.europa.eu/nui/show.ec.europa.eu/nui/show.ec.eu/n$

place- and knowledge-based (Barca et al., 2012; Boschma, 2014; Camagni and Capello, 2013; Tödtling and Trippl, 2005), which is consistent with the EU Commissions's 'Barca Report' that policy mechanisms should act on local competences, established regional advantages, knowledge, and innovation (Barca, 2009). It is reasonable to assume that similar conclusions are applicable to small rural areas within a wider region.

Utilising local competences, knowledge and competitive advantage (which in rural areas are often associated with landscape and natural resources), communities have the means to aid their own rural development (Garrod et al., 2006). Increasingly, farmers and landowners are aware of complementary uses of their land through the provision of hiking access and walkways, with mutually beneficial outcomes to hikers and landowners (Buckley et al., 2009; Doherty et al., 2013; Hynes et al., 2007). Similarly forestry and upland landscapes provide socio-cultural benefits to local communities (Bernués et al., 2014; De Meo et al., 2015; Grilli et al., 2014), as do coastal areas (Barry et al., 2011; Czajkowski et al., 2015; Ghermandi and Nunes, 2013). There is an extensive literature on the economic benefit of recreational fisheries (e.g. Hutt et al. (2013); Lawrence (2005); Lew and Larson (2012); Melstrom et al. (2015); Raguragavan et al. (2013); Yamazaki et al. (2013)) but relatively few studies examine a fishery's contribution to the local economy. Studies assessing economic contribution (e.g. Almaden (2016); Barnes-Mauthe et al. (2013)) generally focus on commercial and artisanal rather than recreational fisheries. du Preez and Lee (2010) is a notable exception, which assesses the economic impact of a recreational trout fishery to the small village of Rhodes, Eastern Cape, South Africa. With a population of approximately 600, the fishery is a tourist angler destination and supports 39 direct jobs within the community. While the economic contribution of each locality-fishery pairing will be unique, such knowledge serves a number of useful purposes. First, it provides the local community with a valuation for the fishery resource. An understanding of the value of a resource is often critical to successfully negotiate for its protection or enhancement. For example, in recognition of the significant income generating potential, the Rhodes fishery study was used to argue for a zoning exemption to national legislation for the eradication of alien trout from South African waters. Second, it provides a metric and example for other communities to develop their own natural resources as a mechanism for rural development. It is not usually feasible to value all recreational amenities but through a benefits transfer methodology (either formal or informal) other rural communities can gauge the value of their own local fisheries. It is also worth noting that highlighting the economic benefits of a resource may help justify its development on monetary grounds but there may be many benefits arising for the community or society at large that are non-market. For example, recent policy documents have stressed the need to include recreational angling target species in Annex I or II of the Habitats Directive species list, or failing this, the designation of waters important to key species as National Heritage Areas (NHAs) (IFI, 2014), reflecting the importance of non-market ecosystem services, such as biodiversity and heritage value, that are associated with certain key species.

This paper aims to contribute to the literature by assessing the economic contribution of a recreational fishery in a remote rural economy. Weithman (1999) provides a review the socio-economic benefits associated with recreational fishing. Benefits include a private benefit to recreational anglers as well an economic contribution to commercial activities associated with the fishery (e.g. tackle shops, guides, accommodation providers). Many studies focusing on the private benefit estimate anglers' consumer surplus (e.g. du Preez and Hosking (2011); Pyo et al. (2008); Shrestha et al. (2002)), whereas the economic importance of recreational fishing is often assessed through anglers' expenditure (Toivonen et al., 2004), as well as its contribution to employment (Radford et al., 2009). It is unusual to find recreational fisheries, such as the Rhodes fishery, where both the contribution to the local economy, as well as, estimates of the anglers' private consumer surplus benefit are assessed (du Preez and Hosking, 2011; du Preez and Lee, 2010). Most other existing economic assessment studies of recreational fisheries, such as Pérez-Bote and Roso (2014) and Morales-Nin et al. (2015), or similar studies of commercial fisheries (e.g. Sigfusson et al. (2013); Surís-Regueiro et al. (2014)), examine the impacts at national, regional or city level, unlike the current analysis where the study area is geographically small, rural and with a population of approximately 1400 persons. The Rhodes fishery is also located in a small, rural community and similar to the analysis here uses an expenditure survey of tourist anglers to assess the contribution of the fishery to the local economy (du Preez and Lee, 2010).

2. Materials and methods

Waterville, Co. Kerry is a small village situated in a remote, coastal, and rural landscape in south-west Ireland (N51°50′ W10°10′). The nearest large town, Killarney, is more than of 60 km away and 75 min travel time. The population of Waterville and surrounding area is approximately 1400 persons across 535 households (CSO, 2011a). Approximately 58% of the population is in the 18–64 age category with the balance roughly equally split between children and people aged 65 plus. Just above one-third of the population are in gainful employment, of which 32% work in the agriculture, construction and manufacturing sectors; 21% in commerce, trade, and transport; 21% in professional services and public administration; and the balance of 26% in other activities. Waterville is situated on the 'Ring of Kerry', a well recognised scenic drive around the Iveragh Peninsula and the associated tourist traffic is important to the local economy. Angling is one of Waterville's tourist attractions and includes sea fish angling for bass, pollack, mullet, etc., as well as lake and river angling for salmon, sea trout and brown trout.

The primary data in our analysis comes from a survey of recreational anglers undertaken by Waterville Lakes and Rivers Trust, which is a charitable trust dedicated to the conservation and enhancement of the angling resource in the Waterville area. The survey was administered between late February and early June 2015. Respondents were recruited on-site at various locations across the fishery and requested to complete an on-line survey at a convenient time. The survey was also advertised on several angling websites, including the Waterville Lakes and Rivers Trust's own website. A number of survey biases potentially arise, including the issue of

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