Beauty, friends, power, money: navigating the impacts of community woodlands

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Community forestry in the UK has developed rapidly over the last 25 years, and the wide range of drivers has resulted in a great variety of relationships between communities and woodlands, and over 650 community woodlands. Given strong current policy interest, the study aims to assess existing evidence for the impact of these initiatives. The variety of models, evaluation purposes, and impacts requires a new approach to organising the evidence, including a new typology of community woodlands. The review identified more than 70 studies, covering 681 evaluation cases. Of these, 41% are 'urban regeneration' programmes, 32% are locally led 'community place' projects, and 22% are locally owned 'community resources'. Only 3% are 'economic partnerships' where the primary objective is enterprise; and 1% are 'lifestyle alternatives'. The majority of evaluations are conducted by the public sector. Evaluations tend to focus on the positive and the quantitative and relate predominantly to outputs (e.g. trees planted, meetings attended). Only 21% of cases identify outcomes (e.g. neighbourhoods enhanced, wellbeing enhanced), and there is little evidence of community empowerment or meaningful engagement in decisionmaking. Attention has shifted from biophysical to social and participation indicators in recent years, but evidence of change over time is lacking. The policy relevance of the evidence base will be greatly enhanced if cases distinguish between types of community woodland, consistently include comparable indicators, and link context, process, outputs and outcomes.

KEY WORDS: evidence-based policy, evaluation, community forestry, impact assessment, social forestry, United Kingdom

Introduction

The distinctive case of community woodlands in the UK

The emergence of community forestry is a widespread global phenomenon (Charnley and Poe 2007). The situation in the UK however has received little attention, and is characterised by diverse and rapid development, in a great variety of social and policy contexts. Over the last 25 years, changing social priorities and commitment from the forestry profession and policy in England, Scotland and Wales have created the circumstances for a wide range of approaches and examples grouped under the term 'community forestry' (Lawrence *et al.* 2009; Lawrence and Molteno 2012). From the first community woodland in the 1980s, there are now at least 650 community woodland groups in the UK, of which more than 300 are in England, 200 in Scotland and 150 in Wales (Pollard and Tidey 2009; Stewart and Edwards 2013; Wavehill Consulting 2010). This paper focuses on the particular challenges of understanding the impact of such proliferation of community woods, forests and groups.

Policy and evidence

Community woodlands are seen as a way to deliver a wide spectrum of social, economic and environmental benefits, including outcomes as varied as improved community cohesion, improved cardiovascular or mental health, and increased woodland biodiversity. Consequently, they are encouraged by the forest strategies and policies of all three countries (DEFRA 2013; Scottish Government 2006; Welsh Assembly Government 2009). For example, in Scotland the vision for forestry includes the aim that 'Engagement with communities, and their ownership and management of woodlands, [will be] widespread' (Scottish Government 2006). The current forest policy statement for England includes the commitment to 'Work with partners from across the sector to promote community involvement in the management of their

local woodlands' (DEFRA 2013). The Woodland for Wales strategy includes the aim that 'More communities are involved in the decision making and management of woodlands so that woodlands deliver greater benefits at a community level' (Welsh Assembly Government 2009).

These strategic aspirations are developed within the 'policy modernisation' agenda which emphasises the importance of evidence for enhancing policy effectiveness (Bullock *et al*. 2001; H M Treasury 2011). For example, in preparing new policy in England, evidence reviews were commissioned, including an assessment of processes and impacts of community forestry (Independent Panel on Forestry 2012; Lawrence and Molteno 2012). The Wales strategy plans to 'Use the experience gained from projects throughout Wales to develop practices which overcome the challenges facing both community groups and woodland owners' and 'Encourage greater networking and "lesson learning" between community groups' (Welsh Assembly Government 2009). In Scotland periodic review against national indicators tracks changes to the community forest sector, in terms of partnership working and change in numbers of community woodland groups (Stewart and Edwards 2013).

Community woodlands in the UK

Understanding the historical background to the development of community forestry in the UK provides a basis from which to characterise contemporary manifestations and understand more about how and why evaluations may have been applied. Forestry is a devolved policy matter and each country has its own community forestry policy objectives. In this paper we focus on Scotland, England and Wales, where most of the community woodland development has taken place.

In Scotland a tradition of community-based action and advocacy for community forest ownership and forest regeneration through campaigning groups such as Reforesting Scotland and the Community Woodland Association (CWA) has given rise to a strong community woodland sector. Of the 667 000 ha of publicly owned forest in Scotland, 55 000 are covered by informal or formal management agreements between Forestry Commission Scotland (FCS) and local communities (Edwards *et al*. 2009). A recent count of community woodland groups in Scotland found a 67% increase in the last five years, bringing the number to 204 (Stewart and Edwards 2013). In this context community forestry is understood as a means to build community cohesion and provide community economic and environmental benefits. In addition, in the more urban areas of Scotland, initiatives such as the Central Scotland Forest began restoring forest landscapes between Edinburgh and Glasgow in 1989. From 2004 the Woods In and Around Towns (WIAT) programme delivered by FCS has provided support (advice and grants) for community tree planting and recreational infrastructure on derelict and vacant land, and for active management of neglected woodlands, close to populations of more than 2000 people. WIAT included more than 200 projects covering more than 11 000 ha (Forestry Commission Scotland 2011). This mirrors the understanding of community forestry as urban regeneration, with health benefits in particular expected to be delivered to deprived communities as well as providing opportunities for building community cohesion and social capital. Finally, in the wake of the Land Reform (Scotland) Act (2003), the National Forest Land Scheme provides opportunities for communities to buy national forest land, leading to significant areas of conifer plantation owned by community groups and enterprises (Forestry Commission Scotland 2013).

In Wales, community woodlands have grown from a number of initiatives, particularly the Cydcoed programme (Owen *et al*. 2008). EU and other funding was given to 163 community groups in economically deprived areas to engage in woodland projects with social benefits and community development outcomes leveraged through woodland-based activities. This has been subject to formal evaluation and organisational learning (Owen *et al*. 2008). Llais y Goedwig, a grassroots body representing Welsh community woodland groups, formed in 2009 to provide a collective identity for community woodlands as well as build influence within Welsh forest policy and governance systems. It has fostered the collection of experience and evidence as tools for group learning, strengthening community woodland practice, as well as for advocacy within policy (Llais y Goedwig 2011).

Experiences in England provide the first published use of the term 'community forest' in the UK (Bishop 1991). The Community Forests evolved from the original government supported programme of 13 peri-urban areas into eight Community Forest Partnerships, constituted as charities and social enterprises, and seven newly emerging Forest Trusts. Working in partnership with private, public and communal land owners, the focus of the Community Forests is landscape scale woodland and green infrastructure development in urban and peri-urban areas (Nail 2008). With strong public sector involvement, there has always been pressure to track outputs against public spending. Beyond this are the more than 300 'community woodlands' in rural, peri-urban and sometimes urban locations. These involve community woodland groups with varied tenures, including ownership, leasing arrangements (mostly from Local Authorities), and agreed volunteer action plans (Pollard and Tidey 2009; Tidey and Pollard 2010). These community-delivered projects generally experience less pressure to evaluate.

Unlike most countries where community forests result from either traditional or government-imposed

models, drivers for this change include a combination of local demand and innovation, and policy change. The result is a uniquely diverse variety of arrangements around resource management, tenure, group organisation, and finances (Lawrence and Ambrose-Oji 2013).

Terminology

Practitioners and participants have various ways of referring to community forests, community woodlands and community woodland groups. Much of what has been called urban forestry in England is also called community forestry (Johnston 2001). For some, woodlands are smaller than forests; for others, forests tend to be conifer plantations, while woodlands are broadleaves. Understanding of community involvement also varies: some see community woodlands as areas of trees with free public access close to a significant population centre (Agbenyega *et al.* 2009), while for others, the 'community' label refers to consultation, involvement in activities such as tree planting or in management decisionmaking (Westerhuis 1998; Wilmot and Harris 2009). In this paper we use the terms as used by other authors, to allow for the inclusion of this wide range of definitions.

Evidence for community forestry impacts

The international literature on impacts of community forestry divides broadly into two approaches: quantitative, and aiming to generalise across large numbers of case studies; and qualitative, often limited to one or a few case studies, with a focus on contextualising and explanation of results (Lawrence 2007). The quantitative approach is typified by Pagdee *et al.* (2006), who reviewed 31 papers and identified 43 independent variables (attributes of the community, resource and external context) which affected outcomes. Others are more sceptical about the value of the evidence. A recent systematic review of community forest management projects found very little evidence that fit their rigorous criteria, to demonstrate either environmental or social benefits (Bowler *et al.* 2012). Some are able to generalise because their cases follow strict criteria for inclusion and come from a defined context, or share the same basic model of community forestry (e.g. Gautam and Shivakoti 2005). Other approaches represent a more qualitative and individual approach.

Conclusions are often a mixture of reflections on impact and on methodology. One review concludes that real empowerment of communities has been only partial, and where it has taken place, the benefits are more often ecological than socioeconomic (Charnley and Poe 2007). Another calls for a more rigorous approach to community forestry evaluation and impact assessment, by combining the single case-oriented approaches and larger-N studies, thereby maintaining sensitivity to context but allowing generalisation (Agrawal and Chhatre 2006). They analysed data from 95 cases in the Indian Himalaya, and had the advantage of designing the data collection method. An alternative approach applies a *post hoc* analysis to programme outcomes, again aiming to link benefits to the conditions or context (Danks 2009).

Making sense of the evidence

As researchers in a government forest research institute, the present authors and colleagues have been closely involved with evaluating individual community forestry projects, and with providing evidence for policy (Ambrose-Oji 2009; Ambrose-Oji *et al.* 2011 2013; Edwards *et al.* 2009; Lawrence 2009; Lawrence and Ambrose-Oji 2011 2013; Lawrence *et al.* 2009 2011; Lawrence and Molteno 2012; Morris and Doick 2011; Morris and Urry 2006; Stewart 2011; Stewart and Edwards 2013). Various policy-driven reports have highlighted the need to navigate the variety of arrangements, and provide clearer links between context, model and impact.

The primary objective of this paper is therefore to find and weigh up evidence of the impact of community woodlands to assess the contribution to policy objectives. In doing so, we have identified and assembled a large body of evidence, from evaluations and case studies, conducted for a wide range of purpose and covering a wide range of 'community woodlands'. To make sense of this large and initially unstructured body of information we have developed an analytical approach which makes sense of the complexity and variety of the following: community woodlands, impacts, evidence types and evaluation methods. Hence the paper has a dual objective: to assess the impacts of community woodlands and consider the implications for policy aspirations; and to do so by developing an approach to organise and make sense of the evidence.

Framework and methods

This study used Rapid Evidence Assessment, developed to support policy in making best use of a mixture of evidence sources (Government Social Research 2010). We combined a knowledge network of key contacts, with a literature search of academic and grey literature, using academic online databases (Scopus, Ingenta, Science Direct, EBSCO, Scirus) and internet search engines (Google, Altavista). We applied eligibility criteria to ensure quality and relevance of the studies included in the review. Of an initial set of 94 studies, 78 studies demonstrated clarity of method, leading to reliable and valid results.

These were collated, coded and analysed in Excel using the dimensions in the framework described below.

Types of community woodland and groups

As noted above, the speed and various drivers for community woodland development in the UK have created a unique diversity, which presents a need for navigation. Authors have approached this in various ways. One group highlights a 'twofold model' of urban regeneration led by local and national government on the one hand, and rural community ownership and enterprise on the other (Lawrence *et al*. 2009). The Community Woodlands Association (2010b) used an analysis of the institutional form, land tenure, and degree of engagement and community representation to propose four types of woodland groups: 'community reference groups', 'community working groups', 'community partnership groups' and 'community management groups'. Tidey and Pollard (2010) identified four types of community woodland group in England, with key differences varying by skill level and group capacity, autonomy in financial control and the level of decisionmaking over woodland management planning and implementation. These factors in turn were shown to affect the scope and degree of benefits derived from community forestry.

Taking into account the policies, experiences and analyses reviewed above, what seems to be needed is a typology of community woodlands combining features of the groups involved with the institutional and historical context, woodland management objectives, and delivery mechanisms. To develop this, we drew on parallel work stimulated by this evidence review. Recognising that the evidence suffered from inconsistent description of community groups, governance arrangements and woodland management, we developed a framework to describe case studies systematically (Lawrence and Ambrose-Oji 2013). Using the descriptors in that framework, and an iterative approach to the evidence identified for the current study, we proposed a typology of five models of community forestry in the UK. We tested this by comparing each other's classification of cases against this typology, and by clarifying the descriptors until it was robust for our purposes in this paper (Table 1).

Types of impact

We assessed the type of impacts evaluated in each of these studies, by scoring each case according to whether biophysical (e.g. number of trees planted), social (e.g. walks taken, or feeling of wellbeing), economic/financial (e.g. numbers employed), and participation indicators were used. These four categories were chosen for two reasons: they are commonly recognised in the literature, and an initial inspection of the data showed these to be the main areas of evaluation included in the cases we analysed.

Participation indicators presented a particular challenge. A vast literature reflects on the multiple ways in which this term has been interpreted and applied, and forestry guidance in the UK condenses this into three types: consultative, collaborative and empowering (Ambrose-Oji *et al*. 2011). In practice, the only widely used relevant indicator measures the numbers of people participating in events.

Types of evaluation and indicators

Concepts and language for evaluation of participatory natural resource management have developed rapidly, resulting in myriad and overlapping terms which can constrain comparative analysis (Conley and Moote 2003; Keene and Pullin 2011). We use the following categories to distinguish between evaluation of:

- *outputs*: the products, services or benefits delivered by community forestry as a direct result of interventions and activities;
- *outcomes*: what has happened, the impacts and effects, brought about by the delivery of outputs or on the people taking part in delivery;
- *process*: the contextual and behaviour-based factors that might affect both output and outcome as part of the dynamic process of implementing and developing community forestry.

Results: types of evidence

This process revealed a substantial body of evidence (Tables S1a–c), comprising:

- Scotland: 39 studies, including 245 cases;
- England: 32 studies, including 186 cases;
- Wales: 7 studies, including 250 cases.

The number of cases is a measure of the number of woodland sites or community woodland groups, multiplied by the number of studies. Because some sites feature in several studies, there are more cases than sites. The greatest number are Urban Regeneration projects (276 cases), followed by Community Place (221 cases) and Community Resource (153 cases) (Table S2). Lifestyle Alternatives and Economic Partnerships are much less common, or have received much less research attention.

Output indicators are used by 85% of all cases (Table S2). Urban Regeneration cases use outcome indicators (45% of cases) more than other types. This reflects longer experience and growing interest in and evidence for downstream impacts. Process indicators are used in only 13% of cases, but in nearly half of the Economic Partnerships, possibly reflecting greater challenges of partnership working.

Table 1 A typology of community forests and woodlands for England, Scotland and Wales

Type	Common characteristics (following Lawrence and Ambrose-Oji 2013)	Examples	References
Urban regeneration	Large-scale government-funded programmes facilitated/ delivered by government organisations and larger charities. Usually public ownership. Community groups based around shared interests as well as locality, often informally constituted. Decisionmaking concerning woodland objectives and management through consultation and collaboration with agencies. Local environmental improvement, recreational and wellbeing objectives. Community group tenure mostly informal, some have formal management agreement with landowner	Community Forests (England) Woods in and Around Towns programme (Scotland)	Bateman *et al.* (1996), Forestry Commission Scotland (2013), Morris and Urry (2006)
Community resource	Brought into private ownership by community woodland group. Groups defined by locality, formally constituted in order to own woodland. May operate as an enterprise. Decisionmaking about woodland through group meetings following the rules dictated by the legal form of the group. Group objectives wide ranging, including conservation, education, social benefits, support for local economy	Wooplaw (Scotland) Pepperwood (England) Blean Bran (Wales)	Lawrence *et al.* (2009), Owen *et al.* (2008)
Economic partnership	Owned by public agencies or large civil society organisations. Community groups defined by locality and proximity to woodlands. Usually in more remote rural areas. Decisions made jointly with landowner and other partnership stakeholders. Co-management an important feature. Community groups formally constituted with formal management agreement with woodland owner. Group objectives primarily to realise economic development (local employment and production, sales of woodland products and services)	Longwood (with Forestry Commission Wales) Wyre (with Forestry Commission England) Laggan Forest Trust (with Forest Enterprise Scotland)	e.g. Campbell and Bryan (2006), Lawrence (2009), Stewart (2011)
Community place	In public ownership (often local authorities) or owned by larger charities (e.g. Woodland Trust). May include woodland gifted for community use through e.g. planning conditions. Community groups based around shared interests as well as locality, often informally constituted. Limited involvement in management decisions, in consultation with woodland owner. Community group engagement often through volunteering for woodland owner. Community group objectives strongly oriented towards conservation and public access to local greenspace	Besselsleigh (England) Friends of Colliers Wood (England) Parc Nant-Y-Waun (Wales)	Green Light Trust (2011), Tidey and Pollard (2010), Wavehill Consulting (2010)
Lifestyle alternatives	Usually owned by the community group, occasionally by philanthropists. Community group formed through mutual interest in shared objectives exploring sustainable lifestyles by living or working together. Usually formally constituted. Decisions about woodland management agreed by group, around productive objectives which support woodland income and products	Steward Community Woodland (England) Growing Heart Cooperative (Wales)	Hughes (2012), Wilmot and Harris (2009)

The largest number of studies has been carried out by the public sector (43), and in turn these studies tend to include more cases, resulting in a total of 474 cases evaluated by the public sector, followed by 193 in the NGO sector (Table S3). This reflects a difference in purpose and method, with the eight academic studies (14 cases) tending to focus on contextualised, qualitative case studies.

Turning to impact types, indicators of biophysical and participation impacts were applied widely across all community woodland types (Table S4). However indicators of social impacts are applied less frequently across all types, and of economic/financial impacts less frequently in both Urban Regeneration and Community Resources types (56% and 63% respectively). Instead it is the Economic Partnership and Community Place types which apply economic/ financial indicators more frequently (87% and 90% respectively). The Community Place types measured, for example, additional visitors and volunteer hours.

There are differences in impact types assessed by different sectors (Table S5). All sectors focus strongly

on biophysical indicators. Economic indicators are more frequently applied by the public sector, than by NGOs or academics (82%, 44% and 21% respectively). Both the public and NGO sectors use participation indicators frequently (94 and 99% respectively) compared with only 29% of academic cases. Only the NGO sector applies social indicators frequently (98% of cases) compared with public and academic sectors (less than 60%).

Looking at change over time (Table S6), we find a steady application of biophysical indicators (applied to between 80% and 98% through all periods), accompanied by more recent inclusion of social indicators (from 18% of cases before 2000 to 91% of cases during 2011–2013) and participation indicators (from 29% of cases before 2000 to 100% of cases during 2011–2013). Economic indicators have also become more common, although there is a recent decline in their use.

Of the 681 cases, very few were carried out in a participatory way. Case studies prepared by community woodland groups in Wales and Scotland provide rich information about community groups' experiences, written by community members (Callander 2000; Llais y Goedwig 2011; Matheson 2000; Tylden-Wright 2000). In all other cases, the structure and/or indicators were created externally. In most cases, data are collected through closed question surveys with criteria and indicators which are predetermined and linked with local- and national-level reporting needs. A few such studies call for more community participation in defining indicators and evaluating impact (e.g. Social Regeneration Consultants 2005).

Longitudinal data which chart change to benefits through time are limited to the programme evaluations (largely of outputs) undertaken by the larger urban forestry initiatives. A widespread limitation is lack of baseline data and counterfactual case. Only a very few studies attempt to address this, as discussed in the next section.

Results: types of impacts

Biophysical impacts

Biophysical evaluation data have focused on quantitative indicators of output, for example trees planted and area of woodland created. All sectors and all community woodland types applied such indicators to about 90% of cases. National tree planting statistics show that annual rates of tree planting fluctuated around 5000 ha per year in England, in the 1990s and early 2000s (Read *et al*. 2009). Of this, about 20–25% of new planting can be attributed to the Community Forests. By March 2006, the 12 original partnerships and five similar initiatives (four in England and the Central Scotland Forest) had

achieved a total of 27 000 ha of new planting, which increased woodland cover from 6% to 9% of the total area (Lawrence *et al*. 2009). Since then the numbers have declined, in part because woodland creation is not necessarily the primary goal, and in part because other indicators have taken precedence.

Woodland quality is a popular indicator among the large urban regeneration programmes and to some extent has replaced the previous focus on trees planted; better woodland quality through improved management increases community access and the benefits that flow from that. In Wales, the Cydcoed programme did not achieve its target for new woodland creation, but greatly exceeded its target for bringing woodland into sustainable management (Owen *et al*. 2008). In England the Community Forests have not all met original planting targets owing to decreasing land supply, but have been successful in improving woodland quality. For example, the Red Rose Forest had by 2009 brought 2343 ha of woodland into management compared with a target of 1213 ha (Red Rose Forest 2010).

An indirect measure of environmental quality is community perception of environmental and woodland quality. In Scotland, evaluations of the WIAT programme and the Central Scotland Forest Trust enable comparisons between sites (with and without intervention) and over time. The evidence shows significant positive increases soon after programme intervention (Central Scotland Forest Trust 2008a 2008b 2011a 2011b 2011c; Ward Thompson and Roe 2010; Ward Thompson *et al*. 2013).

Social impacts

Most of the evidence captured by social indicators focuses on outcomes, particularly health and wellbeing benefits resulting from biophysical outputs. Measures include changes to self-reported health scores (e.g. O'Brien and Morris 2009) or, more rarely, direct observations such as numbers of people exercising in woodlands, and the frequency and duration of visits (e.g. Greenspace Scotland 2009; Landuse Consultants 2005; TNS Research International 2010).

The shift of attention from physical achievements to community use and involvement is reflected in a number of studies of social benefits. Like many other studies, these use quantitative measures as an expression of users' perceptions of social benefits. In two English case studies and several Welsh case studies (Morris and Doick 2011; Owen *et al*. 2008), a majority of respondents agreed that their community woodland helps them to relax, helped to bring the community together and made it a nicer place to live. In Scotland, frequency of visits to local woodlands increased by 15–20% under the WIAT programme, and particularly by people located in deprived areas

and with poorer health status (Ambrose-Oji *et al.* 2013; Ward Thompson and Roe 2010; Ward Thompson *et al.* 2013).

The evidence includes some repeat studies which show change in perceptual scores and a few show declines in such scores over time, following initial and substantive increases brought about by community forestry interventions (O'Brien and Morris 2009; Owen *et al.* 2008; Ward Thompson and Roe 2010). This pattern may reflect changing expectations rather than declining value of the intervention, and more explanatory qualitative work is needed to understand this.

Economic and financial impacts

Quantitative assessment of economic outputs includes assessment of community woodland group income, the full time equivalent (FTE) employment opportunities supported, and the hours of volunteer work donated. Estimates vary widely, but Wavehill Consulting (2010) estimates around 200 FTEs employed across all parts of the community forestry sector in Wales. In England, the Mersey Forest records a cumulative total to 2009 of about 160 FTEs for their urban regeneration programme. In Scotland, Campbell and Bryan (2006) estimate 20–40 FTEs in partnerships between the Forestry Commission and community woodland groups, while four years later Community Woodlands Association (2010a) report between 80 and 120 FTEs; and an urban regeneration programme reports 3738 days of contractor employment created in 2010/11 (Central Scotland Forest Trust 2011a).

Average incomes for community woodland groups in Wales were about £580 per annum in 2010 (Wavehill Consulting 2010). In Scotland total annual income received by community woodland groups (2006/7) is estimated at £4.5 million, of which £600 000 is attributed to sales of forest products and services. This equates to an average of about £4300 per community woodland group (Edwards *et al.* 2009), but varies widely across very different community woodland types. Comparable figures are not available for England.

The evidence indicates a trend towards development of community managed enterprises and companies based on income and revenue generated by their woodland (Stewart 2011) while a recent estimate suggests that about one-third of community groups who own or lease their woodland are involved in some form of trading (J. Hollingdale, personal communication). In Wales, 17% of community woodlands raise income from the sale of woodland products and services (Wavehill Consulting 2010). England lacks data at the national level; woodland production has a very low priority amongst community groups (Pollard and Tidey 2009), but

Stewart (2011) provides six case studies of woodland-based social enterprise in England.

A number of programme evaluations of the larger urban regeneration models provide economic valuation of programme and project benefits. These put monetary values on outcomes. For the Central Scotland Forest a ratio of £3 return on every £1 invested in 1995 had risen to £7.63 social return on investment when assessing the Green Link project in 2009 (Greenspace Scotland 2009). For the Mersey Forest £7 million investment was shown to generate £71 million in monetised benefits (Regeneris Consulting 2009).

Disbenefits are rarely reported. Work in the National Forest shows how in some areas, the 'gentrification' of woodlands, and improvements to the quality of peri-urban and urban greenspace can have negative impacts on social cohesion by increasing the cost of housing (Kitchen *et al.* 2006; Morris and Urry 2006).

Participation

The international literature on community forestry has a strong focus on empowerment and the construction of social capital as an outcome of strengthened community involvement (Ali *et al.* 2007; Reed *et al.* 2006). There is a similar emphasis on participation in the British evidence, but it focuses on less empowered forms of participation.

Quantitative measures of output which record participation in the form of number of people attending events organised in community woodlands, and number of group members, are common, but use a range of measures which preclude straightforward comparison. For example, in Scotland, Edwards *et al.* (2009) estimated up to 13 500 members of community woodland groups, while in England the Mersey Forest recorded a cumulative total of 32 000 community events up to 2008 (Mersey Forest 2008). In some cases these figures are disaggregated. Participants in community woodland governance are most likely to be middle aged or early retired white British males, from managerial and professional socio-economic groups; however, participants in events come from a very broad range of backgrounds and locations (see, for example, Brown 2002; Campbell and Bryan 2006; Chenevix-Trench and Philip 2001; Community Woodlands Association 2010b).

More qualitative work indicates a degree of community empowerment and cohesion brought about by involvement in woodland projects. For example:

> Oh yes, they have to listen to us now, we have a voice and we have the manpower too actually, volunteers with proper skills and the right certificates, so we can do the management as well, so yes we get involved in decision making (community woodland group leader).
> Unpublished transcript from Tidey and Pollard (2010)

In Scotland, qualitative studies concluded that capacity building, and empowerment, were not explicit goals of the communities themselves (Lawrence 2009). Although participants did build up their skills, particularly in relation to project management and fundraising, many felt that rural communities already benefited from strong governance.

The lack of longitudinal data means that sustainability of participation over time is not widely demonstrated, and is challenged by some academic studies (Kitchen *et al.* 2006). There is also a lack of evidence about the learning outcomes of evaluation, which might lead to stronger participation. For example, although some evaluation studies were used as an opportunity to ask respondents what interventions or improvements they wanted to see in their local woodlands, there is no record of whether any of these ideas were integrated into community forestry operations (e.g. Abbotshaugh Community Woodland Group 2007; Central Scotland Forest Trust 2009; Small Town and Rural Development Group 2011a 2011b).

Discussion

Value of the framework

Our challenge was to make sense of diverse evidence, collected for diverse purposes, about a range of situations that can be described as community woodlands. The woodlands number over 650, and we identified 78 studies covering 681 cases. When implementing policy, decisiomakers want to be able to predict the effects of a project or incentive, and to know where it is appropriate to generalise from one situation to another; but they also need to understand the effects of context.

To address this we developed a framework that categorised evaluations of community forestry, by type of community woodland, type of evaluation (outputs, outcomes and processes), and type of impacts. The approach has enabled us to assess a large number of cases in a transparent and comparable way, leading to reliable descriptive statements.

A particular outcome of this approach is the development of a typology of community woodlands. This is novel in combining both spatial features with drivers for, and purpose of, community woodlands and groups. It provides an organising framework from which to assess the diversity of activities inherent within community forestry. In many countries such an approach would not be necessary because community forests derive from government programmes which predetermine the models; however, the plurality of routes to the current variety of models in the UK requires *post hoc* classification.

Community woodlands and groups change, and may evolve from one type to another, for example by purchasing the land or developing enterprise. While the evidence currently lacks a focus on change, application of the typology would help to identify this by focusing on change of characteristics of the community woodland groups.

Impacts and policy relevance

Clearly community forestry achieves a lot, and the evidence leaves no doubt that the efforts of the larger peri-urban community forests have had the kind of impacts that current policy likes to see. Most of these initiatives however were started before such goals formed part of policy – and it is the policy which learns from the initiatives rather than the reverse (Lawrence *et al.* 2009). For example the experiences of the Mersey Forest and Red Rose Forest have clearly impressed and influenced recent developments in England's forest policy (Independent Panel on Forestry 2012).

But without a way of distinguishing between the great variety of models and experiences, there is a risk of confusing the effects of different kinds of effort. Current counts of community woodland groups in Scotland give equal weight to groups that own and manage 700 ha of commercial conifer plantation, and those that take care of 1 ha of urban nature reserve. Both are valuable, but in different ways.

Forest policy goals focus on empowerment There are power issues in all community forestry projects (Charnley and Poe 2007; Glasmeier and Farrigan 2005; Nightingale 2005; Reed and McIlveen 2006). In the UK, the evidence for empowered engagement is not there. While 100% of recent cases include participation indicators, these reflect numbers of participants turning up for events. Few studies measure more challenging indicators of participation, such as group dynamics and involvement in decisionmaking, with most relevant evidence coming from narrative case studies by NGOs (Community Woodlands Association 2012; Hughes 2012; Llais y Goedwig 2011).

Fewer than 1% of the 681 cases question the community group's role in decisionmaking, or assess the impact of ownership. Those that do, still call into question how effectively this shift in shared power is taking place. When it is collected, the evidence may be uncomfortable, and more complex than current policy suggests.

One other area in which policy interest is developing rapidly is that of 'social enterprise'. Our review shows a particular evidence gap here – as represented by the small number of cases in the Economic Partnership type. This is another area which suffers from a plethora of definitions and models (Stewart 2011). In fact more social enterprise is taking place as part of community-owned models (Community resource) than Economic partnerships. It may be that, as community woodland groups grow in

confidence and expertise, the development of enterprises comes as a natural progression in cases where groups have an income-generating ethos to their model.

Trends and future evidence

These reflections highlight the value of existing evidence, and the need for further evidence which draws on a wide range of sources, distinguishes between different types (based on both social and environmental factors), and enables consistent comparisons between cases, so that realistic conclusions can be drawn about the effect of context and project design. Our results note the prevalence of output evaluations, and of a focus on biophysical indicators particular trees planted and improved woodland quality. We attribute the shift from biophysical to include participation, social, and economic indicators, to two developments: an increasing awareness that the social dimensions are important and need to be measured is documented in some of the evidence (e.g. Central Scotland Forest Trust 2011c); and as the projects mature, biophysical outputs such as tree planting begin to translate into social outcomes such as perceived wellbeing.

These findings mirror global patterns. Broadly, community forestry projects move from evaluating simple objectively measurable outputs, to more complex social and ecological outcomes (Lawrence 2007), but there are still widespread calls for more attention to outcomes (Bottrill *et al*. 2011), and to social and locally defined indicators (Slee 2007). The links between outputs and outcomes are not straightforward in natural resource management projects, and may be evaluated differently by different stakeholders (Howe and Milner-Gulland 2012).

As noted in the introduction, the international literature includes meta-evaluations, or systematic reviews, of community forestry, which struggle to find meaningful results. In the British context there is a policy need to link findings to context, and rather than standardise, to make good use of the many forms of evidence available, that would be excluded by systematic studies. The scope for learning across contexts will be greatly enhanced if datasets can compare like with like, by making clear which type of community forestry is being evaluated. A standard set of indicators which include biophysical, social, economic and participation could provide cumulative data at the national level (Slee 2007). A stronger understanding of causal connections, process and change requires a subset of more detailed, qualitative studies, which accommodate reflexivity on the part of community members (Glasmeier and Farrigan 2005).

Conclusions

There is a lot of evidence about community forestry, particularly about outputs. The 681 cases all show some degree of positive result: trees planted, meetings attended, neighbourhoods enhanced. Some also show increased exercise, sense of place and/or involvement in decisionmaking, and some show economic and financial impact (value or jobs created). Some of these impacts are well documented and significant, particularly for the larger programmes such as Cydcoed, the Community Forests, Central Scotland Forest and WIAT. Much of this evidence is not formally published, but it adds up to a strong picture of community forestry as a 'good thing', enhancing natural and social environments, and providing opportunities for engagement.

It is an evidence base which tends to focus on the positive, and the quantitative. It undoubtedly justifies the effort and expenditure that has gone into these initiatives. However, if policy (and society) wants more community involvement, ownership, enterprise and decisionmaking, the evidence base will need to link context, process, outputs and outcomes. It will need to discern between different models of community woodlands and groups, ask questions about who is involved, and who benefits, and monitor how all of this changes over time. In this way, the substantial evidence for the immediate benefits of community forestry, will be augmented by understanding pathways to outcomes, and ways in which policy can most effectively support that.

Acknowledgements

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Supporting information

Additional supporting information may be found in the online version of this article at the publisher's web-site:

Table S1a Sources of evidence documenting impacts of community forestry in Wales

Table S1b Sources of evidence documenting impacts of community forestry in Scotland

Table S1c Sources of evidence documenting impacts of community forestry in England

Table S2 Number of cases of community forestry types by evaluation type

Table S3 Number of cases of community forestry types by sector

Table S4 Number of cases applying impact indicator types, disaggregated by community forestry type

Table S5 Number of cases applying impact indicator types, disaggregated by sector

Table S6 Number of cases applying impact indicator types, disaggregated by time period