The Use of Ethnobotanical Landscape to Revitalize Rural Communities: Learning from Todmorden, England, Past and Present

Sofia M. PENABAZ-WILEY*, Isami KINOSHITA*

Abstract: This study aims to analyze one method in current usage helping small suburban or rural communities to not only survive, but thrive, specifically through strategic landscape incorporation and use of ethnobotanical (ETB) plants native to or adopted by the area. We focus on the Incredible Edible (IE) movement in Todmorden, England as a successful case using ETB landscape, and reviewed positive changes over nine years. We also study how widely and when the IE method has spread. Methodology includes interviews, multimedia literature review, and trend analysis. Methodology and keywords used in the IE system are discussed, and are based upon a few basic ideas to create a sustainable community-landscape system. Our results show that people in the economically depressed rural zone of Todmorden desired change, but were hesitant to do so. Our study’s main findings are that independent global media can have a deep effect on grassroots movements, and that, compared with the lack of it, the use of ETB landscape when incorporated into community planning and activities can have deeply positive sociological and environmental effects, including heritage preservation and sustainability.

Key Words: ethnobotany, traditional knowledge, heritage, sustainability, planning

INTRODUCTION

Sustainable Communities are UN Sustainable Development Goal (SDG) No. 11. However, sustainable communities are not currently the norm even in developed countries (UN General Assembly, 2015). Due in part to a series of economic disasters within the past 30 years, small communities in particular suffer due to a lack of the integrated support systems of large urban areas, thus people leave their rural homes and migrate to urbanized areas, aiming for economic stability. Various methods are being employed to bring up the economies of rural and suburban communities (Briedenhann and Wickens, 2004: Van der Ploeg et al., 2000). Although most studies focus on developing countries, this study focuses on areas of depression and unsustainable communities in developed countries' urban and peri-urban agriculture (Mok et al., 2013: Nicolin, 2017), and how one community has prevailed in creating a new healthy socio-ecological system for the area. Socio-ecological systems are resilient and adaptive communities bound by a specific ecosystem, that are faced with complex changes and outside forces (Folke, 2006).

The Incredible Edible (IE) movement, an edible urban greening system, began in Todmorden, in Calderdale County of West Yorkshire, England and is attributed to improving the socioeconomic situation there over the past nine years (Thompson, 2012). During that time, the movement has spread to over 120 communities in the United Kingdom and 700 worldwide (Adams et al., 2013: Chabay et al., 2015). Although articles have been written about Todmorden’s IE, none of them have made a systematic comparison of past and present Todmorden, none have been found focusing on the incorporation and evolution of

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heritage there, and none were found to have studied the activity of media on the growth of the grassroots movement internationally. In this study, a wide variety of sources, including traditional references, aid in clarifying how these changes occurred.

This study has two aims. One is that it collects and analyzes the differences between a community not yet employing this sustainable development method in comparing aspects of the Todmorden ten years ago, with today’s IE Todmorden (IET). The other aim is to analyze the spread of the IE movement worldwide by collecting and analyzing the relationships of local and global events surrounding peaks of growth.

Todmorden is a town about 20-minutes from Manchester, England by train. 17 years ago the main source of income for most residents, a steel mill, went bankrupt, leaving most without a means of making a living. Todmorden was deeply affected when this main source of wealth suddenly disappeared, compounded with an increasingly bleak global economy. Once the source of livelihood was gone, the community found itself in economic shock. In 2007, the desperate situation had reached critical levels: people were leaving, businesses were failing, there was criminal activity commonly occurring in public places, and no one wanted to send their children to school there. The town conformed to SDG 11’s parts 11.3, 11.4, 11.5, 11.7, 11.a and 11.b (UN General Assembly, 2015). At this point, three female residents, Pam Warhurst, Estelle Brown and Mary Clear, gathered around a dinner table and contemplated the problems of their town and the problems of the world, and how they could solve both. They decided that one common issue was food, and that in order to help both their town and a sustainable future for all, creating a system of edible greenery, particularly ethnobotanical, integrated into the town system might work (Warhurst and Dobson, 2014). The basic idea is that edible and other useful plants for people and biodiversity are planted by volunteers in neglected, unused, or unjustifiable landscapes within the town. Anyone can harvest from them, the only request being kindness: thoughtfulness to others and the landscape. 60 people came to the first meeting, and IET was created. Now, just nine years later, Todmorden thrives with eager future residents, and thousands of tourists coming to see the IE system they have created (Warhurst and Dobson, 2014). There are several other movements occurring worldwide, including Slow Food, which supports local food traditions and counteracts fast food lifestyles, Transition Towns, which encourage self-sufficiency in economics, energy, and other areas, Farm-to-Table, which promotes the use of local farm-sourced food in local restaurants and schools, other specific local movements (Nicolin, 2017), and a growing general movement in consciousness towards urban agriculture in developed countries (Mok et al., 2013).

The community development method employed by IET involves the use of ethnobotany (ETB) in the landscape. According to various sources (Bennett, 2002; Ford, 1978; Harshburger, 1896; Schultes and Reis, 1995), ETB is the study of how humans interact with plants. It is a component of cultural heritage and a form of Traditional Knowledge (TK). TK is defined as the perspectives and knowledge that have developed over time for using local resources (Berkes et al., 2000) and ETB plants are such because of the the TK associated with them. Although in the past ETB was exclusively defined for native primitive peoples, it has expanded to encompass modern man and the overall plant-human relationship (Schultes and Reis, 1995; Soejarto et al., 2005), including the relationships associated with domesticated plants, such as heirloom varieties that have grown alongside culture and landrace plants that have evolved with cultures and in specific topographies for centuries (Newton et al., 2010; Veteläinen et al., 2009). Because communities in rural areas have evolved over time coupled with the land, there is a wealth of endemic TK associated with these plants that is currently being lost with these fading communities (Brulotte and Di Giovine, 2016; Safonte and Trapani, 2017; Signorini et al., 2009).
This study reveals what changes can help and hinder towns regarding sustainability, especially with regard to edible or medicinal ethnobotanical plants. We analyze what happened in Todmorden between 2007 and 2017, and compare the past to the present Todmorden to find similarities, differences and notable changes. We hypothesized that the method used in IE is possibly beneficial to similar communities worldwide, due to the similarities in size, and their perceived distance from urban areas.

1. METHODS

The method used to study IE was a focused ethnography, defined as a such by its short-term site visits, counterbalanced by collecting a large amount of data off-site including personal communications (Knoblauch, 2005) and digital data (Howard, 2002) as well as other sources, with the aim of triangulation (Jick, 1979) conducted over a two year period. These methods are delineated in Table 1. The qualitative research method was chosen due to the complex nature of the study focus, allowing an in-depth study rather than a limited review of previous literature or traditional study, which would have limited the research to a few sources of information. Data was input into Microsoft Excel and organized by date of occurrence in Microsoft Excel, then compared against, and analyzed with, other data sources for details using triangulation (Jick, 1979) for accuracy. During the course of data collection from different sources, it came to be known that the movement had been spreading. In order to reveal more about this occurrence, the data was organized by date.

Because there was a lack of clarity as to what exactly had happened in France and in other places worldwide, the IE Network's Tanya Wall, the national coordinator of the French IE Network, Jean-Michel Herbillon, the book Incredible! How to Grow a Revolution (Warhurst and Dobson, 2014), the IE website, and news from those years was further studied. Through interviews, literature review, and trend analysis, related results were

### Table 1 Methods for data collection, including site visits, personal communications, & literature review, by order of occurrence. EC=email correspondence, Int.= interview, Tod=

<table>
<thead>
<tr>
<th>Data collection method</th>
<th>Key topics</th>
<th>Interviewee</th>
<th>Action</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Email correspondence</td>
<td>IET, IE Network (Currently Limited), plants, references, demographics, global activity</td>
<td>Estelle Brown, Media Lead of IET / EC</td>
<td>9/10/2015</td>
<td></td>
</tr>
<tr>
<td>Email correspondence</td>
<td>IE Network</td>
<td>Mary Clear, Chair of IET</td>
<td>9/10/2015</td>
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</tr>
<tr>
<td>Site Visit 1:</td>
<td>Observation &amp; investigation of the area, interviews, IE tour observation and IE historical background</td>
<td>Site Visit 1: Todmorden (Green Route 9/23, 11:30am tour, Town visit, Presentation, Int.)</td>
<td>9/23/2017</td>
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<tr>
<td>Presentation</td>
<td>IE Network, IE principles, background, history</td>
<td>Mary Clear</td>
<td>11/30-12/09, m.</td>
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<tr>
<td>Tour &amp; Interview</td>
<td>IET system, history, goals, achievements</td>
<td>Estelle Brown / Int., tour of Green Route</td>
<td>12/00-12/30, m.</td>
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<td>Interview</td>
<td>Changes in Tod: since IET began, usage of the landscape</td>
<td>3 interviews: shop owner, IET vol., volunteer, and boutique clerk</td>
<td>3/20-3/50, m.</td>
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<td>Site Visit 2:</td>
<td>Interviews, further investigation of the area</td>
<td>Site Visit 2: Todmorden (Int., Central Tod, visit)</td>
<td>9/26/2017</td>
<td></td>
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<tr>
<td>Interview</td>
<td>Changes in Tod: Use of IE plants for business; town environment, aquaponics site &amp; family immigration</td>
<td>3 interviews: herb shop clerk, restaurant owner: dairy farmer &amp; aquaponics volunteer</td>
<td>3/10, m., 5:30, &amp; 5:00-7:00 p.m.</td>
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<td>Interview</td>
<td>IET system, history, goals, achievements changes, IE methods</td>
<td>Pam Warhurst, Chair/Founder of IET, &amp; Int.</td>
<td>3/20-4:20, p.m.</td>
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<td>Email correspondence</td>
<td>Numbers of cases, demographics, additional reference materials about IE</td>
<td>Tanya Wall, IE Network Staff</td>
<td>1/16/2017</td>
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</tr>
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<td>Email correspondence</td>
<td>French IE, system &amp; cases of member communities</td>
<td>Jean-Michel Herbillon, National Coordinator of IE France / EC</td>
<td>11/7/2017</td>
<td></td>
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<tr>
<td>Literature Review</td>
<td>Details about dates, numbers of IE communities, activities, stakeholders, landscape, etc.</td>
<td>Incredible!2014, scholarly papers, news, articles, websites, IE and other blogs</td>
<td>9/10/2015, 9/23/2015</td>
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perused and juxtaposed for both aims to research the previous Todmorden and current Todmorden, as well as associated global and local trends over time.

In-person interviews were done on two site visits. On September 23rd, 2015, there were several in-person interviews⁵,⁶ and a Todmorden site visit, an Incredible Green Route tour with founder Estelle Brown⁷ and a presentation on the organization and history by Mary Clear⁸. Another site visit to Todmorden and interview with Pam Warhurst⁹ and citizens and business owners was done on September 26th, 2015¹⁰. All interviewees are either volunteers or founders of the non-profit organization IET, or own or work at businesses within one block of the Incredible Green Route. There has been continued email correspondence with IET and IE Network staff (Now part of IE Ltd.) over a period of two years⁶,⁸,¹⁶,²³.

Multimedia and traditional literature review of various sources including books, journals, documentaries, newspaper articles, and government distributions was also done, beginning in 2012. Using the Google Search Engine for press releases and news articles, and Google Scholar for scholarly paper search, searches with the keywords “Todmorden” and “Incredible Edible” were made between January 2016 and November 2017. The IE blogs¹⁵,¹⁷ and Facebook page were perused for relevant data. Documentary films found through the latter sources, including Tomorrow / Demain (2016)¹¹ and the TED Talk How We Can Eat Our Landscapes (2012)²⁴, as well as their distribution dates, were included in the accumulation of data. Information was collected and arranged in a timeline based upon local and global events as well as peaks or changes in the number of IE locations outside Todmorden.

2. RESULTS

Changes within the town of Todmorden between 2007 and 2016 are outlined in Table 2. The categories in the left column of the table are methods used by IET to obtain sustainable community development, and can be referenced in the book Incredible! (2014), which documents how the town has changed and gives a general framework for doing so in one’s own community.

In the process of gathering data during this study, these categories headings were stressed aspects of importance to the organization, repeatedly found evidence in different sources. Table 2 was created by collecting them and then documenting how they had affected the town over the past nine years. These headings are delineated below in quotes:

“Sustainable natural environment” and “Biodiversity: awareness & increase” were essential goals strived towards by the organization from the beginning. With a philosophical basis of “Kindness” and “The power of small actions”, IE moved forward, and continues to expand, not only within the community, but worldwide by utilizing the technique of “Ethnobotanical landscape”, which refers to landscaping with past, current, and future culturally significant plants (hard, or physical changes in space), and with the soft, or social planning, which is expressed by teaching of “Heritage and the ’Lost Arts’, ancient traditions that have been forgotten. “Events” are an important way of connecting what IET refers to as the “Three Spinning Plates: Community, Education & Business”, to the landscape and to each other. With “Online visibility” and how IET “Employs mass media”, people outside and within the town can learn more about the activities of the organization. “Actions Independent to Government”, including refusal to wait for permission to plant has been an important part of the way that IET conducted their “propaganda planting”, which began as guerilla gardening projects in the beginning, before they had the support of the community and the local government. This support came as a result of these various efforts and the propaganda gardens. Positive results of IET activities have also been documented as increases in “Tourism level”, “Business”, and “Immigration”. The following subsections elucidate these key points, results of which can be found which can be succinctly found in this phrase from David Peter Stroh’s book, Systems Thinking for Social Change: “the key is to
help participants cultivate a deep awareness of current reality as something they have created instead of as something that exists outside of and independent of them”. Or, as written in Incredible! (p.53) as the IET ‘mantra’: “‘action not words; we are not victims; and don’t wait for permission.”

2.1 Ethnobotanicals: how heritage and plants are used to increase interest in Todmorden

Results show that although the people in this economically depressed zones desired change, there was a feeling of helplessness due to the conceived great effort and not knowing where to start, as well as of possibly going against the wishes of the government and community, that prevented them from trying. From various multimedia literature review, interviews and site visits, we know they wanted to convert the economic situation to a sustainable one. They also

<table>
<thead>
<tr>
<th>Table 2 Differences over time: Todmorden 2016 and 2007</th>
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</thead>
<tbody>
<tr>
<td>Sustainable Dev.</td>
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<tr>
<td>Natural environment</td>
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<td>Biodiversity: awareness &amp; increase</td>
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<td>“Kindness”</td>
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<tr>
<td>Key Phrase</td>
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<tr>
<td>Ethnobotanical Landscape</td>
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<tr>
<td>Heritage &amp; “Lost Arts”</td>
</tr>
<tr>
<td>Events</td>
</tr>
<tr>
<td>“Three Spinning Plates: Community, Education &amp; Business”</td>
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<tr>
<td>Online visibility</td>
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<tr>
<td>Employ mass media</td>
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<td>Actions Independent to Government</td>
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<td>“Propaganda Planting”</td>
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<td>Tourism level</td>
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<td>Business</td>
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<td>Immigration</td>
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want to maintain their heritage and share it but did not know how (Warhurst and Dobson, 2014).

Before the advent of IET, there were few local, large-scale events other than the annual Agricultural Show, held for over 100 years now (Hyams, 1953). In addition, even if people had wanted to have this kind of event more often, the plant ingredients might be rare or have to be bought, because the landscape was non-edible, with no basis in the sharing of cultural heritage, and had no use other than for esthetic purposes, as is normal in modern townscapes, as they are chosen in terms of functionality for landscape architecture, with consideration to aspects such as shape, color and size (Watson et al., 2003), not usefulness to residents. Had the landscape been edible, it can be against the law to gather food on public council land, depending on how (picked versus dug up) and what part of a plant is being collected (fruit versus cuttings) (Nguyen, 2006). The people, disconnected from land and community, had little connecting them to Todmorden itself, and as such, the population was withering away with emigration, low education levels, and crime (Warhurst and Dobson, 2014). Not only that, the pollution from industrialization had lowered the quality of life in the area (Warhurst and Dobson, 2014).

To address these problems, a basic philosophy of “kindness” was set, for fellow persons and the planet, as well as the idea that there is “power in small actions” (Brown, 2015), such as propagating planting in small areas with labels naming plants, uses, and harvest times and small to large events, with the hope that with perseverance, transparency and confidence, the ideas would take root (Brown, 2015). According to a presentation during the first site visit by Mary Clear, a founder of IE, not waiting for permission to plant in an area reduces time lag caused by waiting for permission from the governing agency or owner (Brown, 2015). Also, the probability of acceptance by the community is high, since IET select guerilla planting areas by whether or not they have been neglected, and because, with time it has become increasingly easier to appropriate land due to support from the local government and the public (Brown, 2015). The organization uses signs to educate collectors about the name of the plant, when to harvest, how to use, and other useful information. Finally, another essential aspect of their activities includes involving all areas of community in what is referred to by IET as the “three spinning plates”: of Education, Community, and Business (Warhurst, 2012). Through application of the IE sustainable development actions by IET volunteers, the town was able to do a drastic turnaround. Descriptions of the former state are that there were “prickly plants” all around the new hospital, there was none of the landscaping on the Incredible Green Route, and the pocket parks as well as other edible spaces throughout the town were not there and suffered from debris, dog-walking waste, and criminal activity. Because of their installation, now there are flowers and fruit supporting biodiversity, and there have been special events, incorporating locals, for biodiversity awareness. Tourists and locals frequent these areas, dissuading issues of criminality. Plant harvesting has created new opportunities for informal communication, such as the raspberry patch at the hospital (Brown, 2015). Learning opportunities are part of the process, and IE can be found in local school and elderly home gardens. Schools also have IE integrated courses, such as permaculture and aquaponics (Brown, 2015), which is the circulation of nutrients to grow fish and plants (Rakocy et al., 2006). Food at the schools is sourced to IE, ensuring locally-grown, pest-free, organic food. Local businesses can harvest vegetables and herbs for use in their kitchens (Warhurst and Dobson, 2014). IEET had a goal of using TK, such as recipes and other uses, for ETB plants, and going beyond that, to teach their propagation, from forest gardens to grafting, thus creating self-sufficiency and sustainable environments intertwined with heritage appreciation. Ethnobotany is important in many ways for IE. It creates reasons for people to learn about each other and communicate to share TK with tourists and newcomers (Brown, 2015). It is generally a group of plants that are native or adapted to the area, so they can be harvested and cultivated while fitting into the natural environment without strain on natural resources or ecological systems.
(Warhurst and Dobson, 2014). Being useful plants, they often have important roles in nature for sustaining not only humans, but other animals, such as pollinators and birds, as well. Increasing their numbers in a generous way, we can increase biodiversity in urbanized areas. Although various plants are used by the organization, including non-natives – they use what is obtainable – respect is given to heritage plants and plants that would increase the local biodiversity and retain species and cultivars in accordance with their motto of “kindness”. The book, Incredible! Plant Veg Grow a Revolution by Pam Warhurst and Joanna Dobson (Warhurst and Dobson, 2014), about the history of IE, gives a description of this in Chapter 7, “The Lost Arts”, which discusses the loss of TK in England, such as the grafting of apple trees, and the predicament of the associated cultivars:

“In the past, more than 2,000 varieties of apples were grown in the UK but now our large commercial orchards concentrate on about ten common types, standard supermarket fare... not all fruit grows equally well all over the country. A tree that produces sweet, juicy eating apples in the warm sunshine of Kent is likely to be hopeless in wet and windy Calderdale... tends to be very sharp and used only for cooking”... (Nick, a co-founder of IET) “set about getting varieties tough enough to withstand... our climate... apple cultivars that originate in Yorkshire.”

– Incredible!, p. 97

The book contains 16 chapters and 22 recipes. The majority of these recipes, though not traditional, give a way to use the ETB plants in the landscape – a landscape that was forgotten until recently.

The heritage, or heirloom, cultivars of fruits and vegetables have a variety of positive aspects, such as heightened flavor and olfactory qualities, climate adaption, and increased or different harvest periods, that engender encouragement to use them. In addition, they have cultural elements, such as names that fit their uses and distinctions, typical of ETBs (Nguyen, 2006), such as apple cultivars “Dog’s Snout” for its shape, and “Flower of the Town” because it ages easily and becomes dry and powdery (Warhurst and Dobson, 2014).

IET’s Estelle Brown submitted photographs to the authors of an heirloom variety, ‘White Soul’ (Fig.1), in the Edimental (edible ornamental) IET garden on November 8th, 2017. It is a strawberry with white fruit, fruiting in winter. It is one of the eight cultivars of Fragaria vesca in this particular garden, which is an alpine strawberry native to Europe and having been cultivated since the 1300s in France, and later, in the 16th Century it was being grown in the gardens of English nobles and sold in the streets of London (Hyams, 1953). Another reason that the landraces and heritage plants are desirable, is due to the qualities such as flavor and nutrition levels. Agriculturally common strains are easy to cultivate, transport and store. However, due to lengthy transportation and damage prevention efforts, strains can have inferior flavor and nutritional value (Lamikanra, 2002) to locally grown edibles.

Studying the ETB plants of the area, questions regarding their feelings toward the plants were asked during both site visits. Responses were positive, such as “yes, I pick them (vegetables and spices) and use them here”, and people want to retain the ETB TK for future generations, as well as to share the rich cultural heritage associated with heritage plants, such as apple pie and shepherd pie, and have embraced new ones, like innovative food made with IET fruit, vegetables and herbs, and sold at local businesses.

Figure 1 White IET heritage strawberries, fruiting in November, 2017. Photograph courtesy Estelle Brown.
IET has invested effort into landscape with heritage plants, as per the book *Incredible!,* and incorporating them into current local culture. On Site Visit 1, during the presentation as well as the tour, heritage apples along the river, and traditional medicinal herbs in the hospital Apothecary Garden on the Incredible Green Route were shown\(^5\). Blog entries on the IE Todmorden website document events associated with the Heritage Garden, heritage seeds and heritage tea\(^{4,12}\), all events promoting TK or associated plants\(^{22}\). Before the tour during Site Visit 1, Mary Clear’s presentation recounted the desperation and need for a connection to heritage and culture before IET began in 2007\(^9\). The interest had been there, however, townspeople did not yet have a concrete plan of how to use the TK for economically and environmentally sustainable tourism, as well as sustainable development\(^{22}\). At first, despite efforts in bringing free food events to different areas in Todmorden, community members, with the exception of children, were hesitant to join in, and had little knowledge about growing food or even identifying it (Warhurst, 2012). However, slowly, with the volunteers connecting the community and businesses, as well as helping nursing homes and schools to become self-sufficient with local food and incorporation of TK into new and traditional plants, there is TK associated with this geographic area as well as evolving here\(^{4,12,15,17,19,25}\). A study of Todmorden before IE shows its many differences, which can be viewed in Table 2. Small rural communities worldwide hold similarities with the former Todmorden, including scant yearly community events, social norms and economic situations (Warhurst and Dobson, 2014).

### 2.2 The effects of media and grassroots activity on local and global interest in Incredible Edible

Figure 2 shows the increase in adoption of the IE method for sustainable development in towns worldwide. The following instances, also indicated in Figure 2, were collected from different sources, and the authors compiled and analysed them. Labelled arrows in the graph indicate important global events, or events preceding a spike in the number of communities adopting the IE concept. The timeline begins in 2008, after the establishment of IET. The first arrow to the left is the 2008 Subprime Loan Crisis in the United States of America, which affected the international economy, including the UK, breeding desperation\(^3\). For two years, IET was doing various planting and community activities, for example, over 30 events were held in 2009 and 2010, over 50 ‘vegetable tours’ were held for tourists, and nine UK communities were listed as having been started as a result of IET\(^{22}\). In 2010, Prince Charles of Wales visited the town and IE as part of his *Start UK* campaign, to inspire people to live more sustainably, drawing local and national attention in newspapers\(^2,21\). Two publications had different numbers for IE towns in the UK in 2011, one said 16 and the other said there were “at least 20” (Paull, 2011, 2013). It is assumed that this was due to publication times differing with data gathering dates; in any case, it is deduced that between 2009 and 2011, there was first one (IET), then there were 16, and subsequently 20 IE towns in the UK, with the bubbles indicating the UK trend in Fig. 2. Also in 2011, a French visitor,

![Figure 2](image_url)

**Figure 2** IE communities worldwide over time juxtaposed with major IET and global events. Arrows show important events in the IE movement timeline. Numbers were estimated based on evidence collected over a two-year period. Numbers in circles are UK values, squares are French data, and numbers lacking a shape represent other worldwide data totals.
Francois Rouillay took the idea of growing vegetables to share, back to Alsace village in France, and it was so popular that the following year he was receiving one inquiry per day from other communities (Warhurst and Dobson, 2014). By 2014, there were more than 300 *Incroyables Comestibles* communities in France, and had extended projects into French-speaking African countries.\(^{15,16}\)

The next arrow points to 2011, when IET won 500,000 pounds in the National Lottery to build a food hub and aquaponics garden on school land\(^{19,24}\), and the Incredible Green Route, which runs as a main walkable way through the town, significantly altering the landscape into a more artistic and ethnobotanically oriented one\(^{5}\). In 2012, Pam Warhurst did a TED Talk, aired online, which reached people across the globe\(^{24}\). Until then, their activity had been mainly limited to the UK, but this was a major shift into global media, significant not only to Todmorden and the UK, but also to the world. In 2013, it was announced that there were 50 IE communities in the UK, and hundreds worldwide, including 300 in France (Warhurst and Dobson, 2014). In 2014 they were interviewed, and in 2015 the French documentary movie *Tomorrow (Demain)*\(^{11}\) was released in France, creating another globally relevant impact. According to the IMDb (the Internet Movie Database website), within the first 12 weeks, it received 718,000 views\(^{10}\). Half a year later, 400 towns in France became IE Network towns\(^{16}\). There are 467 communities currently listed on the French website. There are currently estimated to be approximately 700 communities referencing community development aspects to the IE Network\(^{15,22}\).

3. DISCUSSION

The results in Table 2 and Figure 2 as well as in the accompanying text, show the various ways in which IE has affected change in Todmorden and consequently in the world.

Todmorden was not special in it’s suffering. This is a story that many isolated communities have, whether it be tourism or industry, that of a failed local economy. An economy in this state fits the focus of SDG 11 (UN General Assembly, 2015). Although there is a movement worldwide toward agriculture within communities, the difference is the branding and the technique which is established in IE, including food events, such as inviting popular chefs to cook, parades with costumes, all ages, and incorporating all essential levels of community in the “three spinning plates” of Education, Community, and Business\(^{24}\). This ensures a tight-knit action and support system for renewal, planning and deployment (Warhurst and Dobson, 2014).

### 3.1 Independent Mass Media

One aim was to study the spread of the IE movement on a global scale by analyzing the relationships of local and global events and media surrounding peaks of growth. Coinciding with mass media expressions of improvements in Todmorden, the movement has crossed borders in particular intervals of time, expanding the complex system into a global occurrence. Currently there are estimated to be over 700 towns worldwide that conduct activities attributed to Incredible Edible.

Although IE holds many town wide events each year, and significant events associated with IE precede spikes in increases in outside community adoption of the IE concept. As can be seen in the graph, with significant IE events, or with globally significant events, there are subsequent increases or steady increases in IE activity. In particular, the global media events, the TED Talk by Pam Warhurst in 2012 and the initial screening of the movie “Demain” in France in 2015, preceded major increases in interest in the IE Network outside the UK, coinciding with increases in what IET refers to as “Vegetable Tourists”, tourists who come to visit Todmorden’s IE system, some of whom have taken the information home and created their own IEs, around the world. This shows that independent media can be a powerful force with future possibilities. If used strategically, in combination with an active and clearly sustainable system, it shows that it can boost visitation and
dissemination of information worldwide\textsuperscript{24}, and even create feedback\textsuperscript{11}.

3.2 IE Effects on Todmorden through ETB landscape

Another aim of this study was to research the differences between Todmorden in 2016 and Todmorden in 2007, and we did this through a two-year study based on key ideas and objectives of the sustainable development organization, Incredible Edible (IE) Todmorden, with data collected over that period from multiple-sources. The changes to Todmorden show those of a complex system: a town and community are changed culturally, and adapt to the non-linear changes in new and traditional ethnobotanical surroundings (Warhurst and Dobson, 2014). Through teaching and learning of traditions new and old, in conjunction with the use of new and heritage plants for biodiversity, such as alpine strawberries, heirloom apples, and other useful botanicals from the surrounding landscape, weaving them through events into the “Three Spinning Plates” of education, community and business, the town has enabled the envisioning of a new, self-sustaining paradigm for Todmorden, in turn increasing business and interest in the town in an upward spiral. By connecting the learning of “the Lost Arts”, recipes, ways of propagation, and other ways to relate to an existing and evolving landscape, IET is building a deep relationship between community, plants and the landscape. Greenery has a positive effect on society. However, food, and especially culturally significant food in ethnobotany as greenery, goes one step further by also supporting and creating opportunities in society for connections and resilience (Folke, 2006).

This evolutionary schema fits the concept of sustainable development for SDG 11 (UN General Assembly, 2015), and is also appropriate for socio-ecological systems theory (Folke, 2006). The Todmorden of 2007 was a system based on inaction, self-victimization, and waiting for someone else to do something: a common story across the world in small communities lacking socio-economic strength (Warhurst and Dobson, 2014). Our main finding for the differences in years was that, compared to a time without ETB landscape, its incorporation into community planning can have deeply positive sociological and environmental effects, including the preservation and evolution of cultural heritage, increased biodiversity, and community resilience through sustainability. Thus, the story of IET is an important marker in the history of success of systems-based change in a community, and serves as a blueprint for use in similarly affected communities.

3.3 Why the IET movement was successful in Todmorden

The issue of a desire for change in depressed communities but not knowing how or having the hopes to succeed are a big issue (Mok et al., 2013). In this case, IE appeared, and changed things. There were many special aspects to why this happened that the authors deem important, such as, for example, the labeling of plants, or social events. However, we think that two were particularly important in combination. These are the leadership aspects and the basic idea of food.

IE was originally led by Pam Warhurst, who is a charismatic speaker, as can be seen in her TED Talk, and a few of her friends, for instance Mary Clear, Estelle Brown and Nick Green. From observation and interviews, and actually time immemorial, we have seen that with the support of those around them, one charismatic person can lead change a community and that oftentimes such a catalyst is necessary. In particular, Warhurst teaches methods and empowers others, thereby immediately expanding her values through communication. The IE “mantra” in Incredible! (p.53) “action not words; we are not victims; and don’t wait for permission”, shows this mentality clearly. In our interview\textsuperscript{9}, she said that “sharing the story” was essential, and that “you can do it, there, too.” She also said, “you have to believe in people; that they will catch you.”\textsuperscript{10} Her words and other data show that with belief in others, the IET movement was able to spread.

It is important to recognize that although the premise of local food is simple, the way that IE combines the “three spinning plates” of community is profound. Transition Town ideology is important
for long-term sustainability, but its premise is far more complex than that of food. This supports the idea that, in its simplicity, IE is a foothold with which to begin to change\(^5\). In IET and the IE Network, we see word of mouth and local events are powerful forces, and even more so when combined with the explosive effect of media. Once IE has connected the three fundamental elements of community, learning, and business, it creates a web of resilience against possible economic and environmental problems, and this web also serves as a foundation from which and with which other things can grow, including other movements like Transition Towns and Slow Food\(^6\).

**CONCLUSIONS**

In this study we aimed to research the changes associated with the integration of IE into the Todmorden community. It was found that there have been significant changes catalyzed by the activities of IET. We also aimed to study the trends associated with the distribution rate worldwide of IE with major events. We discovered that world events do have a significant effect on adoption of the system, as do major media events, but that volunteer effort is essential for maintenance and steady growth. In this grassroots way, the people can connect with their cultural heritage through ETB.

The method used in IE Todmorden is not just a benefit to the community, but the actions of integrating the three fundamental aspects of community into the edible and medicinal landscape created a link into cultural heritage and allow for cultural growth beyond the current moment in tangent with the greenery, thus creating unprecedented possibilities for a new kind of socio-cultural evolution. We believe that deeper research into the activities currently underway in Todmorden, such as with the schools and the aquaculture facility would benefit studies in sustainable development. Further research in how new IE Network communities are faring would also be beneficial to understand the pitfalls and benefits in other communities.

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**NOTES**

8. **Clear, M.** (9/10/2015). Tomorrow IE [Email corr.]
17. Incredible Edible Todmorden. (9/20/2017 updated).
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