



University of Essex

# Natural Choices for Health and Wellbeing



## A Report for Liverpool Primary Care Trust and The Mersey Forest

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## Abbreviations

Green Infrastructure	GI
Physical Activity	PA
Primary Care Trust	PCT
Short Form Warwick Edinburgh Mental Wellbeing Scale	SWEMWBS
Warwick Edinburgh Mental Wellbeing Scale	WEMWBS
World Health Organisation	WHO

## Executive Summary

Wellbeing in Liverpool is the lowest in the entire North West region, with an average wellbeing score of 25.7. The Natural Choices for Health and Wellbeing programme aimed to promote health and wellbeing in Liverpool residents using natural environments and thus create a city focused upon natural choices for health and wellbeing. Wellbeing card data identified that wellbeing improved by 18% from the start to the end of the programme in participants who completed wellbeing cards at three time points and 16% in participants who completed wellbeing cards at the start and end of the programme. These changes are larger than other wellbeing programmes where 10% improvements have been identified. Furthermore, by the end of the programme participants had 'average' or 'above-average' scores when compared to the mean score for Liverpool residents, highlighting a significant shift from the below average starting scores.

The increase in wellbeing was achieved through the facilitation of each of the five ways to wellbeing (Connect, Be active, Take Notice, Keep Learning and Give). The programme:

- Encouraged participants to connect with their local community, environment and other project participants through the sharing of knowledge, skills, experience and stories. These activities are likely to have developed social cohesion and networking, thereby reducing social isolation which positively impacts on health and wellbeing.
- Helped participants to be active, both physically and within their communities, resulting in increased fitness, social cooperation and teamwork.
- Enabled participants to take notice of the environment by becoming more aware of their local environment and learning about conservation/actions to protect it. Enjoying having contact with nature is likely to have significant benefits for mental wellbeing.
- Provided opportunities for participants to keep learning through assistance with gaining qualifications or enrolling on courses, skill and knowledge sharing and educational sessions

to learn about nature and their local environment. Learning is likely to enhance self-efficacy, self-esteem and overall wellbeing.

- Enabled participants to give to others by volunteering, listening and talking, helping in the community and giving up their time. Working with others can develop social cohesion, reduce isolation and increase mutual cooperation, all of which contribute to improved health and wellbeing.

The Natural Choices programme was a joint venture between Liverpool PCT and The Mersey Forest, providing funding to projects across Liverpool which could demonstrate that they were i) helping to improve wellbeing through as many of the five ways to wellbeing as possible and ii) making use of the natural environment in the delivery of the project. The aims of the programme were to: 1) Support Liverpool communities experiencing low wellbeing and previously having low uptake of activity; 2) Enable Liverpool residents to feel well and to recognise and fulfil more of their potential throughout their lives; 3) Develop progression routes for activity that encourages new long term interests in the natural environment for individuals, communities and organisations; 4) Provide opportunities for young people in areas of deprivation and/or circumstances of disadvantage; 5) Create a greener city which has a healthy environment, a lower carbon footprint, attracts people to live and invest in Liverpool and is resilient to change; 6) Help reduce inequalities in wellbeing across the city.

In total 38 projects were funded as part of the Natural Choices programme. The projects were located in areas where green infrastructure needs were unfulfilled and the development of green infrastructure was required. Overall the programme engaged 3,274 participants in approximately 1,243 different events across Liverpool. The ages of participants ranged from young children to the elderly, and included those with learning difficulties, mental or physical disabilities, mental illness, unemployed and homeless, families seeking asylum and young

people with behavioural or emotional difficulties. The participants were largely from deprived areas, 51.4% of the projects were located in areas within the 1% most deprived in the UK and a further 21.6% were within areas within the 5% most deprived in the UK.

All projects evaluated their effectiveness in promoting health and wellbeing and provided a report at the end of the programme, the outline of which was provided by Liverpool PCT. Evaluation methods used by the projects included logbooks, observation, visual documentation, administration records, bench marking and feedback sessions, audience surveys and wellbeing cards.

The data from the project reports was collated by University of Essex researchers and the wellbeing card data was statistically analysed. Project aims, outputs and the approaches to facilitating each of the ways to wellbeing were generated for the programme as a whole and key themes identified. The aims of the projects were categorised into seven key areas: i) gardening and food growing; ii) physical activity; iii) skills and educational development; iv) creation or improvement of the environment; v) developing connections with others and the environment; vi) mental health and vii) community support. The majority of projects (43%) primarily focused on gardening and food growing with 29% on creating or improving the environment.

The evidence from the reports regarding the ways in which individuals connected during the programme revealed that participants connected with: i) the community; ii) the environment; iii) other participants and iv) the public through sharing of knowledge and skills. The majority of projects (52%) reported that participants connected to other group members: *"The group worked well together and through the activity the women have developed friendships outside of the sessions"*. Individual projects also connected with each other through joint programme events and collaborative working. These joint events helped to create a network whereby projects could interact, work collaboratively and support each other's

learning: *"It's been great to feel part of this and very connected to all these projects"*.

Four key 'activity' themes emerged from the project reports: i) projects encouraged participants to engage in physical activity; ii) they supported activity requiring team work and socialising; iii) promoted activities which contributed to fitness, health and wellbeing or iv) created safe environments to enable physical activity. More than 85% of projects encouraged participants to take part in physical activity: *"The amount of regular physical activity delivered has been extraordinary. Perhaps 12 people regard this opportunity as their own 'gym', labouring and sweating to their hearts content"*.

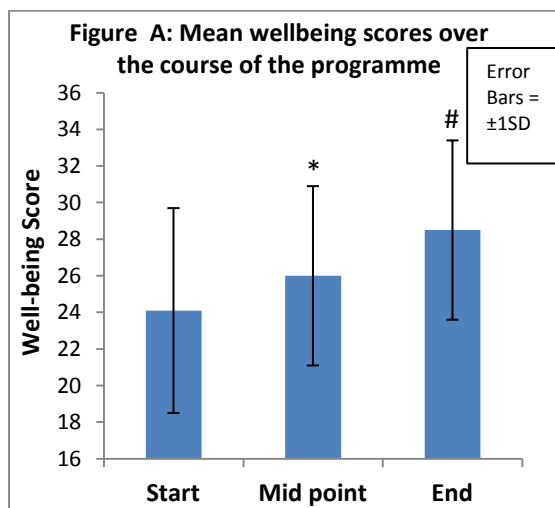
The projects also identified that participants took notice in several key ways. The participants' developed an increased awareness of their local natural environment, took part in conservation activities, learned about nature and the environment and took an interest in it. Over 50% of projects helped participants to become more aware of their environment: *"Practical tree planting sessions and food growing sessions have contributed to greater awareness in the community of caring for the immediate environment"*.

The analysis of the data regarding how the Natural Choices projects encouraged participants to keep learning revealed that: i) they facilitated learning about nature and the environment; ii) they encouraged participants to gain qualifications or enrol on courses; iii) they helped participants to share knowledge and ideas and iv) learn about non-nature aspects, including themselves. The majority of projects (over 70%) helped participants to learn about nature: *"Participants have learned how to care for the plants from seed to harvest, not only while working under supervision, but also independently in their own back yards"*.

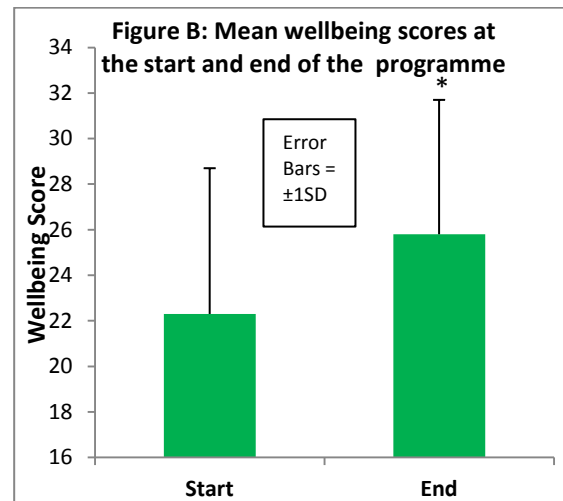
The projects also helped participants to give. This occurred in four main ways: i) through volunteering for projects; ii) giving to the community; iii) giving time and iv) giving to other

participants. Overall 43% of projects identified that their participants were involved in volunteering, both within and outside of the project: *"Volunteers have been invaluable in keeping up the watering and feeding the bees, but most of all getting the word out to more participants in the community. We were overwhelmed with how many volunteers got behind the Food for Real Festival and really made it their own"*.

Statistical analysis of the wellbeing card data for participants completing wellbeing cards at three time points (start, mid and end) during the programme revealed that scores increased, representing an improvement in wellbeing. From the start to the midpoint of the programme scores improved by 8%. From the midpoint to end, scores improved by 10%, representing an overall improvement of 18% (Figure A). In participants who completed cards at the start at end of the programme scores also significantly increased, representing a 16% improvement (Figure B). These improvements are large in comparison to other wellbeing studies where improvements in wellbeing have been approximately 10%.



(\*indicates a significant difference between start and midpoint scores ( $P < 0.01$ ), # indicates a significant difference between start and end, and start and midpoint scores ( $P < 0.001$ )).



(\*indicates a significant difference between start and endpoint scores ( $P < 0.001$ ))

The Natural Choices programme successfully engaged Liverpool residents from many different walks of life, in nature-based interventions, all of which were focused on the development of health and wellbeing. The Natural Choices programme was funded as a pilot programme and has been successful as a transition scheme to a larger scale programme. It has given projects around Liverpool the capacity to develop health and wellbeing in Liverpool residents, promoting green infrastructure and a city which is focused on good health and wellbeing for its residents. Furthermore, the success of the programme in improving wellbeing in many different groups, involving different types of interventions highlights the transferability and adaptability to other populations and settings.

The joint events held as part of the programme have also contributed to the success of the projects and the programme as a whole. Not only did the joint events allow different projects to work together, sharing experiences and learning from each other, they also initiated the project legacy process by helping projects to develop connections and partnerships which would directly benefit the future of the projects.

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## 1. Introduction

### 1.1 Health and Wellbeing

The health and wellbeing of the UK population is being shaped by the increasing prevalence of mental ill-health, adoption of sedentary lifestyles and poor dietary choices. The World Health Organisation (WHO) defines health as *'a state of complete physical, mental and social (individual) wellbeing and not merely the absence of disease or infirmity'* [1]. The health and wellbeing of the UK population needs to be improved and strategies effective at doing so, need to be implemented. In the North West of England Liverpool has the lowest level of wellbeing. More than 30% of residents have a wellbeing score which is classed as low, 64% as moderate and less than 6% high [2]. Strategies to improve wellbeing in Liverpool residents are thus of importance. In 2008, the New Economics Foundation identified five ways to wellbeing: i) Connect; ii) Be active; iii) Take notice; iv) Keep learning and v) Give [3]. It was suggested that if each of these five ways were built into daily routines, health and wellbeing would be enhanced.

#### 1.1.1 Connect

Social interaction, cohesion and connecting with others can provide important benefits for health and wellbeing. Social relationships, support and interaction can be protective against ill-health, while isolation and exclusion are associated with greater incidence of ill health[4]. Social isolation often results in a reduced quality of life, depression and low self-esteem and can also predict mortality and morbidity. In fact, social isolation provides a magnitude of health risk equivalent to that of cigarette smoking [5]. Many adults and young people are becoming disconnected from other people, experiencing loneliness and isolation [6, 7].



Thus the development of strategies to promote social inclusion and interaction within communities are essential to health and wellbeing.

#### 1.1.2 Be Active

The health benefits of being active and engaging in physical activity (PA) are well documented. Regular participation in PA can reduce the risk of cardiovascular disease and associated risk factors such as hypertension, high blood lipids and diabetes [8]. PA can also promote mental wellbeing, leading to improvements in self-esteem, mood, anxiety, depression and quality of life [8, 9]. UK adults aged 16 years and above are recommended to perform at least 30 minutes of moderate intensity PA on five or more days per week, however only 40% of adult men and 28% of adult women meet these guidelines [9]. By contrast, children and adolescents are recommended to



perform at least 60 minutes of moderate to vigorous PA each day [9]. However, as with adults, these guidelines are not being met. Approximately 26-34% of UK children aged 5-10 years and 29-43% of adolescents aged 11-15 years are failing to meet the daily recommendation [10].

While levels of PA in the UK are low, the Liverpool figures are more concerning. Nearly 79% of adults living in Liverpool do not perform 30 minutes of daily physical activity. Furthermore approximately 66% of boys and 80% of girls aged 9-11 do not meet activity guidelines [11]. Liverpool is a city which suffers from high levels of deprivation; there are many small areas which fall within the 1% most deprived in the UK. Health inequalities in areas of deprivation tend to be high, and are evident for physical activity [11].



Physical inactivity is the fourth leading cause of death globally, accounting for 6% of all deaths. The annual costs of physical inactivity in England are £8.3 billion per year, excluding those who are overweight or obese due to inactivity, which costs a further £2.5 billion per year [12]. In Liverpool approximately 80,000 adults and 13,000 children are obese, costing the Liverpool NHS £5million per year and the wider economy £15 million per year [11]. Worldwide, physical inactivity accounts for 6% of the burden of cardiovascular disease, 7% of type II diabetes, 10% of breast and colon cancer and 9% of premature mortality [13]. People who are physically active reduce their risk of developing major chronic diseases by 50% and the risk of premature death by 20-30% [8]. Thus, the promotion of physically active behaviours and the inclusion of PA into daily routines are of great importance to health and wellbeing.

### **1.1.3 Take Notice**

Many people rush through life, failing to take notice of their surroundings and the things that are going on around them. However, taking notice of our natural environment can have important benefits for health and wellbeing [14, 15]. Nature and green spaces are perceived as places to relax, escape and unwind from the daily stresses of modern life and can have positive influences on wellbeing. Simply viewing nature from a window can increase recovery from mental fatigue and improve mental wellbeing [16, 17]. Having access to natural views in the work place is associated with lower perceived stress and higher job satisfaction [17-19], while views in hospitals can increase recovery from illness [20]. The view from the home is also important, having a positive effect on concentration and cognitive function while also aiding self-discipline[21].

Local nature is also important. Being in the presence of nearby nature, whether or not it is incidental to some other activity, plays an important role in human wellbeing. Research suggests that there is a link between accessible green space and wellbeing [22, 23], as nearby nature can help recovery from stress, protect individuals from further stress and also improve concentration [19, 24]. In health care settings, gardens are particularly important, helping individuals to relax and feel that they are able to cope with their illness, reducing stress and improving mood. Furthermore, the more frequent the

visits to natural spaces the lower the incidence of stress [25-27]. People should be encouraged to access and take notice of nature as far as possible, as this is likely to have substantial consequences for their health and wellbeing.



#### **1.1.4 Keep Learning**

Learning, whether it be enrolling on a course, learning to grow vegetables, or how to make jam, or simply just trying something new, can play an important role in health and wellbeing. For children, learning contributes to social and cognitive development, increases self-esteem and social interaction and also encourages participation in PA[7], all of which can directly benefit health. In adults, learning is positively correlated with wellbeing, life satisfaction, optimism and self-efficacy, self-esteem and resilience [28, 29]. It can also give people a sense of purpose and hope, encouraging social interaction, making people feel competent [22], and providing a distraction from other unpleasant or

stressful life events [24]. By learning, problem solving skills are also developed; this in turn can lead to better coping skills, and the adoption of health practices. Learning is also protective against depression [30]. In older people in particular, work and education opportunities can lift them out of a depressive state [22]. Lifelong learning and opportunities for education and skill development can directly benefit health and wellbeing; thus people should be encouraged to learn and try new things and should be given sufficient opportunity to do so within their local communities.

#### **1.1.5 Give**

Giving to others, through volunteering, joining a community group or doing something nice for a friend or stranger, can provide substantial benefits for wellbeing. Mutual cooperation and working with others can increase neuronal responses in the reward areas of the brain, indicating that social cooperation is intrinsically rewarding [3, 31]. In the early years in particular, the rewards gained through helping and giving to others, contributes to improved cognitive and social functioning which are critical to mental capital and mental wellbeing [3]. Furthermore, feelings of life satisfaction and happiness are strongly associated with taking part in community activities, and an act of kindness every week for six weeks has been demonstrated to increase wellbeing [3]. In older people, volunteering is associated with more positive affect and life meaning, while being active within their community is associated with increased happiness. Offering support to others is also key to health and is associated with reduced rates of mortality [32]. Mental wellbeing is enhanced when an individual is able to achieve a sense of purpose in society and contribute to their community; so helping, sharing and giving alongside team-orientated behaviour is likely to be associated with increased self-worth and positive feelings [3].

## 1.2 Activities in Green Spaces and the Five Ways to Wellbeing

Performing physical activities while directly exposed to nature or green space, also termed 'green exercise', has been shown to have important benefits for health and wellbeing, providing greater improvements in self-esteem and mood than PA alone [33-35]. These improvements are achieved regardless of the type of natural environment or activity and can occur by simply taking part in moderate intensity green exercise for as little as five minutes [35]. Therefore, activities such as walking in a park or forest, or gardening can provide important benefits for health and wellbeing.

While green exercise is likely to promote wellbeing by encouraging individuals to be active and take notice of their environment, it can also encourage individuals to connect to others. Participation in green exercise indirectly promotes social interaction [36]. This connection may be facilitated through participation in community conservation activities, attending an allotment or even by engaging in an outdoor exercise group. Green exercise builds stronger communities and connects people through groups and networks [36]. Green exercise can also encourage individuals to learn something new; whether it is growing fruit and vegetables or simply taking part in a new activity. Many green exercise activities also enable individuals to give to others. This may be through growing food on an allotment for the community; building a community natural area or helping others achieve goals through a shared green exercise group. Green exercise contributes both directly and indirectly to wellbeing and so can facilitate each of the five ways to wellbeing. Incorporating green exercise activities into daily routines and lifestyles can therefore increase wellbeing for both individuals and communities.



## 2. The Natural Choices for Health and Wellbeing Programme

### 2.1 Programme Overview and Aims

The Natural Choices for Health and Wellbeing Programme represents a partnership between Liverpool PCT, The Mersey Forest and a number of community groups and organisations, all of whom are interested in engaging people in using or improving local green spaces in order to promote health and wellbeing. The Natural Choices for Health and Wellbeing programme provides support for projects throughout Liverpool which can demonstrate that they are i) helping to improve wellbeing through as many of the five ways to wellbeing as possible and ii) making use of the natural environment in the delivery of the project. A variety of different community projects are involved including community food growing, helping vulnerable groups to access nature, forest schools, reducing the carbon footprint and tree planting, developing community and therapeutic gardens and helping the homeless. Natural Choices is funded by Liverpool Primary Care Trust (PCT), who have partnered with The Mersey Forest in the management and delivery of the programme. The programme is designed as a transition scheme and future larger scale projects will therefore be based on the outcomes from Natural Choices.

The overall aims of the Natural Choices for Health and Wellbeing programme are to[37]:

1. Support Liverpool communities experiencing low wellbeing and previously having low uptake of activity;
2. Enable Liverpool residents to feel well and to recognize and fulfil more of their potential throughout their lives;
3. Develop progression routes for activity that encourages new long term interests in the natural environment for individuals, communities and organisations;
4. Provide opportunities for young people in areas of deprivation and/or circumstances of disadvantage;
5. Create a greener city which has a healthy environment, a lower carbon footprint, attracts people to live and invest in Liverpool and is resilient to change;
6. Help reduce inequalities in wellbeing across the city.

### 2.2 The Role of Liverpool PCT and The Mersey Forest

#### 2.2.1 Liverpool PCT [38]

Liverpool PCT is committed to improving the health and wellbeing of people in Liverpool and ensuring that they are provided with the best health care services. Their vision is to transform health and service provision and reduce health inequalities. Liverpool PCT is also leading the 2020 Decade of Health and Wellbeing throughout Liverpool, which focuses on helping people to feel good and function well. Liverpool PCT hopes to establish new ways of considering and acting for health among stakeholders and to develop collaborative working centred on innovative, co-ordinated and concerted city wide and community actions targeted at improving health and wellbeing. Liverpool

PCT funded 38 community projects for the Natural Choices for Health and wellbeing programme, all of which were aimed at improving health and wellbeing for Liverpool residents.

### **2.2.2 The Mersey Forest [39]**

The Mersey Forest is a growing network of woodlands and green spaces in Cheshire and Merseyside which has been creating woodlands for over 20 years. The Mersey Forest helps local authorities, businesses, private landowners and many other groups to create new woodland across the Forest, ensuring that the investment is safeguarded through management plans that will ensure healthy woodlands for decades to come. The Mersey Forest also plays a key role in the development of green infrastructure, providing shelter for wildlife and helping the Merseyside region adapt to climate change. The Mersey Forest also contributes to the economy by creating jobs, attracting investments, increasing property values, boosting tourism and reducing ill-health.



## **2.3 The Development of the Natural Choices Programme**

The Natural Choices for Health and Wellbeing Programme was developed in line with a number of existing Liverpool PCT and The Mersey Forest commitments and programmes including the Decade of Health and Wellbeing, the Green Infrastructure (GI) Strategy, the good corporate citizenship programme and third sector development scheme.

### **2.3.1 Liverpool's Decade of Health and Wellbeing**

Liverpool has declared a Decade for Health and Wellbeing up to 2020 [40], whereby the vision is: *'That Liverpool in 2020 is a city region where health and wellbeing are at the heart of purpose, culture, planning and action. Where communities, public bodies and private organizations all work together in a Liverpool which is more equal, well and green.'* The 2020 Decade of Health and Wellbeing is about encouraging people to build the five ways of wellbeing into their daily routines, which can increase life expectancy by 7.5 years. The aims of the Decade of Health and Wellbeing are[40]:

1. That communities, public and private sector organisations share the vision for the Decade of Health and Wellbeing and take action to achieve it in partnership with others;
2. To enable Liverpool people to feel well and to recognise and fulfil more of their potential throughout their lives;
3. To enable Liverpool to be more equal in terms of economic wealth opportunities, by supporting sustainable regeneration and employment growth;

4. To create a greener city that will produce a lower carbon footprint, building healthy and sustainable places and communities, resilient to change that attract people to live and invest in Liverpool;
5. To support Liverpool looking outwards, connecting with others to expand opportunities for national and international learning and recognition.

The Natural Choices for Health and Wellbeing Programme is directly linked to the Decade of Health and Wellbeing, as it aims to provide opportunities for people to participate in nature-based activities; thus promoting the five ways to wellbeing and improving the health and wellbeing of people in Liverpool.

### **2.3.2 Green Infrastructure Strategy (GI)**

Green Infrastructure (GI) in Liverpool is defined as: *“the city’s life support system-the network of natural environmental components and green and blue spaces that lies within and around Liverpool and which provides multiple social, economic and environmental benefits”* [41]. The GI strategy, written by The Mersey Forest, was jointly commissioned by Liverpool PCT and Liverpool County Council and is focused upon the development of interventions to address environmental and socio-economic needs and to capitalise on opportunities. It is also concerned with joint working on policies that support increased public health through planning of GI. The purpose of GI planning is to support aspirations for future sustainable development in Liverpool to ensure that it is one of the best places to live, work, invest and enjoy life [36]. Furthermore, the GI Strategy action plan states that the creation of a city providing natural choices for health and wellbeing is a key priority of the GI strategy. The Natural Choices for Health and Wellbeing Programme was therefore developed as a result of the GI strategy, to enable projects across the city to better use natural spaces to promote health and wellbeing. Through facilitating city wide interventions that engage communities in behaviours that are supportive of good health and wellbeing, Natural Choices thus addresses this key GI priority.

### **2.3.3 Good Corporate Citizenship Programme**

Liverpool PCT is a major employer, consumer of resources and contributor to the economy. The way in which Liverpool PCT delivers services, procures goods, manages employees, provides facilities, and engages with communities and other stakeholders has a significant impact on sustainability and health. Liverpool PCT wishes to be a good corporate citizen. Being a good corporate citizen means that influence and resources are used in a way that benefits the social, economic and environmental conditions in which people live. It also involves the reduction of health inequalities and the reduction of risk and harm arising from activities performed [42]. The GI strategy is part of Liverpool’s local NHS approach to sustainable development and engaging with communities for health and wellbeing. The idea is to develop new models of care which reduce demand within the NHS system and promote wellbeing within communities. Thus through the GI strategy and Natural Choices Programme, Liverpool PCT is ensuring that they are a good corporate citizen.

### **2.3.4 Third Sector Development Scheme**

Third sector organisations are those that are neither private or public organisations, such as voluntary and community organisations (e.g. registered charities, community groups, self-help groups etc). Liverpool PCT is committed to working with a number of organisations to ensure the delivery of world class services to improve health and wellbeing. The Natural Choices for Health and Wellbeing Programme allows Liverpool PCT and The Mersey Forest to work closely with third sector organisations and build on community assets. The purpose of the programme was to help communities to set up and manage projects that enabled them to develop a capacity for building health and wellbeing.

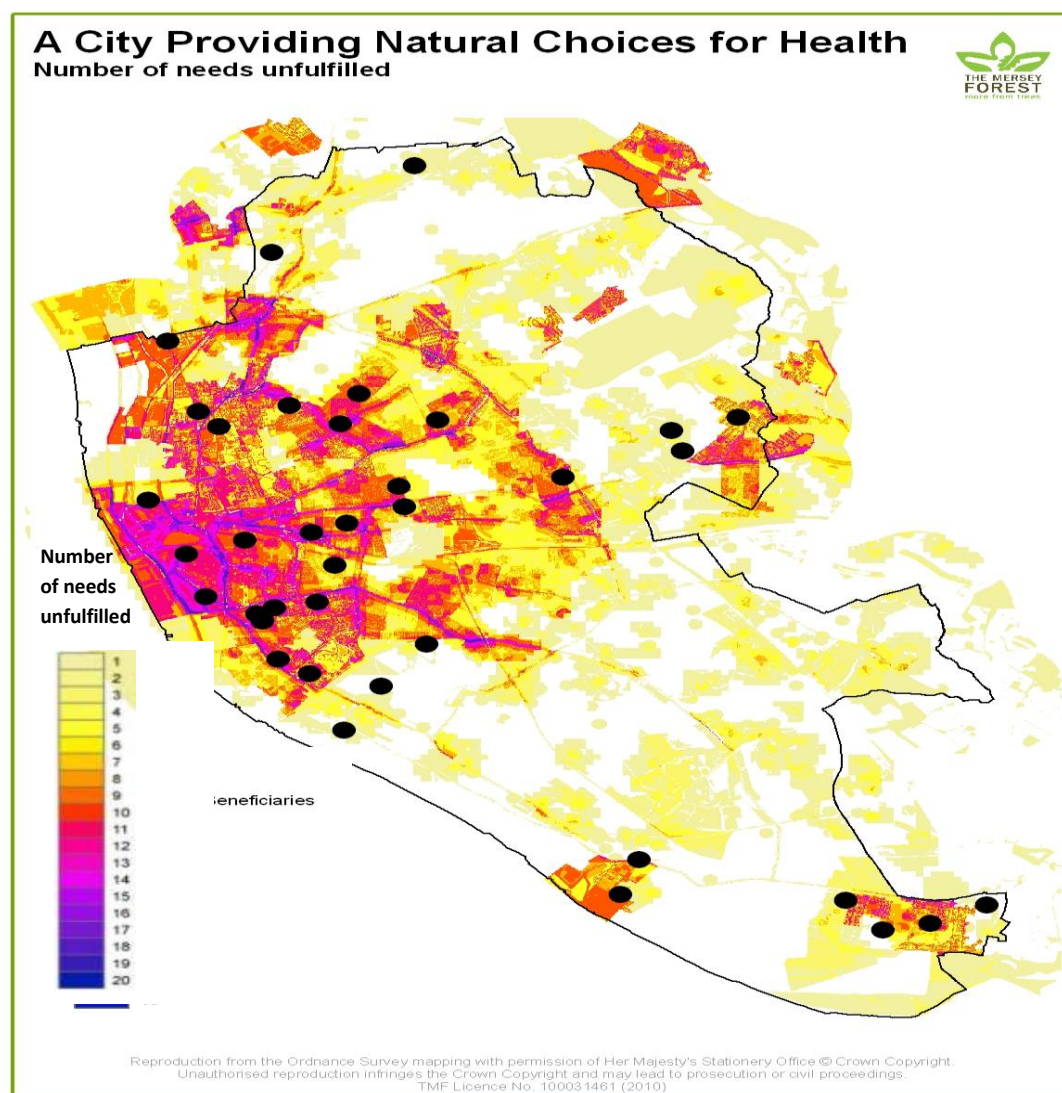
### **2.4 Project Recruitment**

The Natural Choices for Health and Wellbeing grants were advertised via several means. There were a number of press releases regarding the grants in the Liverpool Echo and BBC Liverpool news and also on BBC Radio Merseyside. Information regarding the grants was also placed on The Mersey Forest website and Project Dirt Liverpool website. A tweet was also sent out to all Liverpool PCT followers and all those on the Liverpool PCT mailing list were sent information about the project and available funding. All those interested in applying for a Natural Choices grant were invited to complete an expression of interest and send it to the Liverpool PCT and The Mersey Forest staff by 5<sup>th</sup> September 2011. Grants of up to £7,500 were available for established community groups. There were also potential opportunities for larger strategic funds.

Overall 122 expressions of interest were received for the Natural Choices grants programme and from these 53 projects were invited to submit a full application and were provided with evaluation guidance notes. In total 47 full applications were received, scored and given full consideration with final offer letters sent out in December 2011. A total of 38 projects then attended a meeting on the 24<sup>th</sup> January 2012 with all other funded groups. Funding for individual groups ranged from £1,000-38,000. The total funding provided was £308,303.

The location of the funded projects can be seen in Map 1 (denoted by a circle). The programme was designed to reflect the assets and needs of the Liverpool communities and meet the objectives of the GI and Natural Choices programme in facilitating wellbeing. The GI strategy identified the areas in Liverpool where GI needs were not being met (map 1) and thus the development of green spaces for health and wellbeing were required. The Natural Choices project was funded to directly target these areas. Many of the projects also followed an assets-based approach, whereby the resources at their disposal were being used in order to facilitate health and wellbeing. The Natural Choices programme intended to help Liverpool communities to develop a capacity for building health and wellbeing and to do so by building on the areas and facilities already present within the communities.



**Map 1: Locations of Projects and Liverpool locations with unfulfilled Green Infrastructure needs**

The programme also targeted people living in areas of deprivation; 51% of projects were in areas within the 1% most deprived in the UK (Table 1) [43]. Health inequalities are prevalent in Liverpool, particularly in areas of deprivation, thus the Natural choices project targeted these areas in order to reduce health inequalities.

**Table 1. Deprivation level at project locations.**

National level of deprivation	Number of projects in deprivation level	Percent of projects in deprivation level
0-1% (most deprived)	19	51.4%
1-5%	8	21.6%
5-10%	4	10.8%
10-20%	2	5.4%
20-50%	4	10.8%
50%+	0	0.0%

## 2.5 Project Evaluation Methods

Each of the projects funded as part of the Natural Choices for Health and Wellbeing programme were required to evaluate the effectiveness of their project in terms of how they assisted participants to engage in the five ways to wellbeing. Liverpool PCT and The Mersey Forest provided each project with an evaluation guidelines document to ensure consistency across all Liverpool PCT funded projects. The document was specifically designed (by Francois Matarasso an expert in community and arts) to assist the projects in evaluating the effects of their projects, and to ensure that standardised responses were provided by each project.

Since the evaluation was a key aspect of the programme and was a new concept for many of the project leads, specific sessions were run regularly throughout the programme to assist with the process. Projects were also required to submit two interim evaluation reports and a draft final report, so that support and assistance could be provided by the programme managers where required.

Within the guidelines document there were sections to allow each project to provide aims and objectives, details on the methods used to evaluate the health and wellbeing benefits of the project and the project outputs; for example the number of participants, the number of events held and the amount of money spent. After having documented these details, the projects were then asked to describe how their projects contributed to each of the five ways to wellbeing, to discuss the strengths and weaknesses of the project and how it could be improved upon in the future.

A number of different methods were used to evaluate the projects. All of these methods were supported by Liverpool PCT and The Mersey Forest and information about the use of each was provided in the guidelines document to assist project staff. The methods used included: session logbooks or diaries; observation; visual documentation; project administration records; benchmarking sessions; feedback sessions; and audience surveys. To compliment the evidence about how projects incorporated the five ways to wellbeing and to provide quantification of changes in wellbeing, projects were encouraged to use wellbeing cards. These wellbeing cards were a short form version of the Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS) (see section 5.0 for more information). A description of each of these methods and the number of projects which utilised them can be found in Table 2. A variety of methods were used but observation, visual documentation and administration records were the most popular with audience surveys and wellbeing cards being used less frequently.

**Table 2: Project Evaluation Methods**

<b>Method</b>	<b>Description</b>	<b>Projects using method (%)</b>
<b>Session Logbook or diary</b>	A session logbook or diary was used to record: i) the dates and times of sessions; ii) the number of session leaders, volunteers and participants attending; iii) the activities that took place; iv) accounts of incidents, stories or narrative; and v) personal impressions about the session.	80
<b>Observation</b>	Observation techniques were adopted to evaluate specific aspects of a session. For example during one session attention was paid to how well people were interacting with each other, or how active they were during the session.	91
<b>Visual Documentation</b>	Photos and video recordings helped evaluators to determine changes in the group over the course of the project and allowed participants and evaluators to reflect on previous sessions. Participants also took photographs, which were used as a good tool for developing conversation about the project.	94
<b>Project Administration Records</b>	Project administration records such as details about costing and the number of participants attending sessions helped the development of the project to be traced.	97
<b>Benchmarking Session</b>	A benchmarking session was held at the start of a project to provide an opportunity for participants to think about what they were going to do and what they hoped to achieve from participation in the project. Each participant was asked a standard set of questions, which were repeated at the end of the project, to track changes over time.	60
<b>Feedback session</b>	The feedback session was held at the end of the project and was an opportunity to reflect on the participant's journey. Similar methods to those used in the benchmarking session were often used, allowing a direct comparison of participants' answers and responses at the start and end of the project. Participant stories and comments obtained at feedback sessions were also useful for communicating project achievements.	54
<b>Audience Survey</b>	During an event where there was an audience, audience views on the project were collated through discussions or short set of questions.	37
<b>Wellbeing Cards</b>	The wellbeing cards included seven short statements about overall wellbeing and required participants to reveal how strongly they agreed or disagreed with each statement. Wellbeing cards are a useful tool for evaluating changes in wellbeing and were often completed at several stages throughout the project, including the benchmarking and feedback sessions. The cards used were the short form of the Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS)	43

### **3. University of Essex Evaluation- Overview**

#### **3.1 The Role of the University of Essex**

There is growing empirical evidence to show that exposure to nature brings substantial mental health benefits. At the same time, physical activity is known to result in positive physical and mental health outcomes. For the last ten years the Green Exercise research team at the University of Essex have combined these ideas into a programme of research on 'green exercise' and 'green care'. This interdisciplinary team has a strong track record of evaluating nature based projects at both a regional and national level and is currently leading research in this field. The University of Essex have therefore been commissioned to evaluate the Natural Choices for Health and Wellbeing Programme.

#### **3.2 Evaluation Aims and Objectives**

The aims of the University of Essex evaluation are:

1. To provide an independent evaluation of the overall programme outputs and outcomes to inform future planning;
2. To establish how effective the overall programme has been at improving participants health and wellbeing (connect, be active, take notice, keep learning, give) using evidence provided;
3. To assess how well the programme has been delivered;
4. To conduct a cost-benefit analysis to provide a wellbeing investment indicator;
5. To contextualise findings within the 2020 Decade for Health and Wellbeing and the Green Infrastructure Strategy.

The objectives of the evaluation are therefore:

1. To provide an objective assessment of the process;
2. To provide an independent overview of the outcomes from the collective programme;
3. To address key issues related to the evaluation process;
4. To identify any learning outcomes of the process itself;
5. To quantify the value derived from investment in the programme;
6. To draw projective conclusions to contextualise scheme investment in terms of increased wellbeing.

#### **3.3 University of Essex Evaluation Methods**

The University of Essex used three methods of evaluation: i) collation of secondary data; ii) statistical evaluation of wellbeing and iii) participatory evaluation of case studies. Collation of secondary data involved collating the information from the reports provided by each of the projects and highlighting key themes. The evaluation of wellbeing involved statistically analysing data obtained from completed wellbeing cards and participatory evaluation of case studies involved running and reporting on interactive sessions with individuals attending three of the 38 projects.

## **4. Collation and Analysis of Secondary data from the Natural Choices Projects**

### **4.1 Collation Methods**

The University of Essex received a final evaluation report from 36 of the Natural Choices projects. Two project reports were not provided, as one project did not submit a report and the other had a delayed project start date due to issues with planning permission. From each of these reports the project aims, outputs and information about how each of the projects facilitated the five ways to wellbeing were integrated and analysed.

To collate the project aims a number of categories were developed to represent key themes. For example, some of the aims focused on skill development, while others focused on physical activity or gardening. Each aim was categorised to determine the percentage of projects within each category. A similar method was used for each of the ways to wellbeing. For example, under the connect way to wellbeing, categories such as connecting with the environment, or connecting with the community were developed to describe the key connections that occurred as a result of the overall programme.

To collate the project outputs a total programme figure was generated for each aspect reported. For example, the number of volunteers involved in each project was summed to generate an overall volunteer output for the entire programme. This process was repeated for the funding received and spent, the number of events held and the size of the audience and number of participants.

Collation of the secondary data in this chapter is organized into 4 areas:

- Overall project aims and outputs;
- Participants;
- Five ways to wellbeing;
- Joint events and;
- Key lessons learned

### **4.2 Overall Project Aims and Outputs**

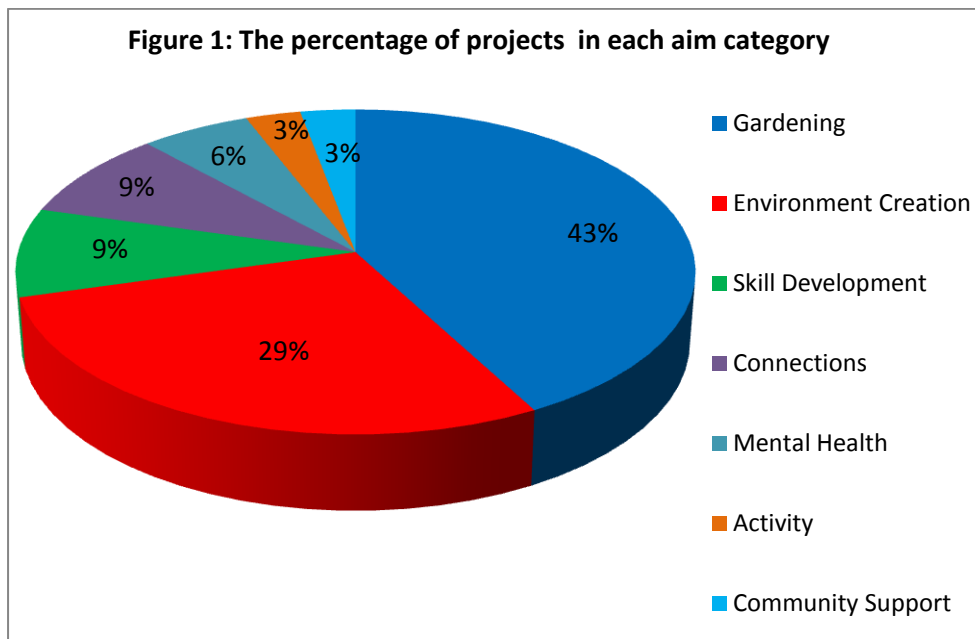
#### **4.2.1 Project Aims**

Each individual project provided an overall project aim. The aims were left open to each project due to the community assets based approach of the programme. Each project could structure their project and aims around the strengths and resources in their community, enabling them to more easily build health and wellbeing into their projects. The aims have been split into seven categories, dependent on the focus of the project and include:

- Gardening and food growing;
- Skills and educational development;
- Encouraging physical activity;

- Creating or improving environments;
- Developing connections with others and the environment;
- Improving mental health
- Developing community support.

Figure 1 reports the percentage of projects whose aim fits into each of the seven categories, while Table 3 provides some examples of the project aims within each category. The majority of projects were focused on food growing or the creation/improvement of natural environments.



**Table 3. Project Aim Categories**

<b>Category</b>	<b>Examples of Project Aims</b>
<b>1. Gardening and Food Growing</b>	<ul style="list-style-type: none"> <li>• To engage vulnerable people in food growing activities</li> <li>• To develop growing and cooking skills that impact whole families</li> <li>• To encourage clients to maintain their gardens and yards in order to grow and eat what they harvest</li> <li>• To support and develop a local food producing culture in Liverpool.</li> </ul>
<b>2. Create/improve Environments</b>	<ul style="list-style-type: none"> <li>• To create a safe environment for the members of the community</li> <li>• To turn a redundant area of open space into a location where sports-based activities can be hosted</li> <li>• To improve peoples' sense of wellbeing by improving their local environment</li> <li>• To develop a sensory garden within the hospice grounds for the babies and small children we support to enable them to grow, develop, learn and play.</li> </ul>
<b>3. Skills and Educational Development</b>	<ul style="list-style-type: none"> <li>• To engage local residents of all ages to gain skills and to educate them on environmental and health issues.</li> <li>• To develop skills in hedge laying and environmental awareness, giving families, children and individuals a better understanding of our local ecosystem.</li> </ul>
<b>4. Developing Connections with others and the environment</b>	<ul style="list-style-type: none"> <li>• To foster a connection with the self, neighbours and the environment</li> <li>• To get residents involved with each other and their environment</li> <li>• To increase integration of local community members and residents in the hospital.</li> </ul>
<b>5. Improving Mental Health</b>	<ul style="list-style-type: none"> <li>• To improve the mental health of families seeking asylum</li> <li>• To evaluate the effectiveness of horticultural psychotherapy at ameliorating emotional and/or behavioural difficulties in school-aged children.</li> </ul>
<b>6. Encouraging Physical Activity</b>	<ul style="list-style-type: none"> <li>• To develop a walking and cycling group for blind and partially sighted people.</li> </ul>
<b>7. Developing Community Support</b>	<ul style="list-style-type: none"> <li>• To support the development of more socially just, sustainable communities and to help reduce the number of households who are faced with the impossible decision of whether to heat or eat.</li> </ul>



#### 4.2.2 Project Outputs

The outputs were recorded by each project, including the number of people employed on the project, the number of volunteers, events held and the number of people who attended. Total 'in kind' funding, total other funding and how much of the budget was spent were also documented by the projects. The combined results for all 36 projects<sup>1</sup> are shown in Table 4. The overall Natural Choices programme engaged 3,274 participants from around Liverpool, in 1,243 events, with a further 6,241 people also attending events as part of an audience.

**Table 4: Natural Choices programme: Combined Outputs for Participating Projects**

Project Output	Number
Total number of people paid to run the projects	135
Total number of volunteers assisting with the projects	876
Total number of events held	1,243
Total number of participants attending events	3,274
Total number present in the audience at the events	6,241
Total 'In kind' match funding (£)	£103,088.38
Total other funding (£)	£142,285.03
Budget Spent (£)	£308,303.02

*Note: The combined outputs are calculated from those projects which provided this information and are therefore an underestimation of overall programme activity (n=35). 'In kind' funding is the value of time, services or goods that projects received free of charge, for example compost bags, gardening equipment etc.*

#### 4.3 About the Participants in the Natural Choices Programme

Information provided about participant characteristics included age range and the number of participants per project. A total of 3,274 participants took part in the programme, all from different populations. For all projects combined, participants ranged from small children to the elderly, with the oldest participants being 91 years. However some projects only worked with young people, while others worked with adults and older people. The project participants comprised a mix of males and females and individuals from different walks of life, including those with learning difficulties, mental or physical disabilities, mental illness, unemployed and/or homeless, families seeking asylum and young people with behavioural or emotional difficulties. The majority of participants were from deprived areas; with 51% of projects being located in areas within the 1% most deprived in the UK.

<sup>1</sup> A total of 38 projects were funded, however only 36 project reports were received.- One project did not provide a final report and another project had a delayed start date, resulting in a delayed report.

## 4.4 How Natural Choices Projects Contributed to the Five Ways to Wellbeing

### 4.4.1 Connect

Each project identified the ways in which their projects helped the participants to connect, one of the key contributors to wellbeing. The results show that participants connected in four key ways, by connecting to:

- i) the community - by working with and talking to them;
- ii) the environment - by working in their local natural green spaces;
- iii) other project participants - through group working and social interaction;
- iv) the public - through the sharing of knowledge, skills, experience and stories.

Table 5 displays some of the key evidence from the 36 project reports in relation to the development of these key connections. Each of the 36 projects identified that the project participants connected in at least one of the four ways in Table 5 and many projects identified that their participants connected in several ways. Approximately 39% of projects specifically identified that their participants connected to the community, 36% identified that they connected to the environment and 29% identified that they connected with the public through skills, knowledge and story sharing. However, the most common connection developed was connections with other participants with over half (52%) of projects highlighting that this connection was made throughout their project. The Natural Choices project helped participants to connect to their communities and take a more active role within them.

Some of the projects also provided quotes from participants about how they connected throughout the project. Several participants commented on how their project helped them to make friends with other participants and engage in group work, the most consistently identified connection (Box 1). Other participants commented on how the project allowed them to interact with the public and share skills and knowledge about plants.

#### **Box 1: Participant quotes about connecting**

*"I like the project and made loads of friends and I really enjoyed coming to the project"*

*"It makes me feel happy meeting new friends"*

*"There is less arguments and people are working together".*

*"I enjoyed working on selling the plants, because you come along and tell us the names of plants".*

The projects therefore played an important role in enabling participants to develop connections with each other, nature and other people whom they would normally have little opportunity to interact with in their everyday lives. Connecting with others in this way helps to reduce social isolation and increase social cohesion [3, 4], both of which contribute to increased health and wellbeing.

**Table 5: Ways the Programme Encouraged Participants to connect**

<b>connect Theme</b>	<b>Evidence from Projects</b>
<b>Connecting to the Community</b>	<p><i>"Increase in the number of new volunteers engaged in community and wider community training"</i></p> <p><i>"Group members network with the community"</i></p> <p><i>"The teacher and children have become connected with an important community resource and know, recognise and talk to members out and about in their community"</i></p> <p><i>"Development of an integrated local community support network"</i></p> <p><i>"Young people are keen to help pensioners with weeding"</i></p> <p><i>"We have engaged with members of the community through our tidy up service, who are often labelled as hard to reach"</i></p>
<b>Connecting to the Environment</b>	<p><i>"Development of an area into a safe place for all to use"</i></p> <p><i>"Families took tool kits to grow potatoes, strawberries, carrots and tomatoes at home"</i></p> <p><i>"Connected with the natural world through growing produce and visiting the Croxeth park gardens and grounds"</i></p> <p><i>"Connected with the local area"</i></p> <p><i>"In the most engaged school the levels of connections to the environment was very high"</i></p> <p><i>"Participants have enjoyed nature walks to try and spot pests and diseases on crops"</i></p>
<b>Connecting to other Participants</b>	<p><i>"Multiple user groups of the allotment were working together including children, adults, disabled and non-disabled individuals"</i></p> <p><i>"New families started interacting with others"</i></p> <p><i>"Two participants discovered a shared love of Dr Who and have arranged to attend a conference together in the new year"</i></p> <p><i>"Many members of the group commented on the friends they had made"</i></p> <p><i>"The group worked well together and through the activity the women have developed friendships outside of the sessions"</i></p> <p><i>"Intergenerational work"</i></p> <p><i>"Each of the groups had a diverse age range. As such, participants developed their understanding of other countries and cultures as they shared stories from their own experiences"</i></p> <p><i>"Family members worked well together exchanging knowledge and bringing out the best in each other"</i></p>
<b>Connecting with Public (through sharing of stories, skills, experience)</b>	<p><i>"Activities like plant sales helped the group to connect further with the public, as they were given the opportunity to share their new knowledge"</i></p> <p><i>"Chats with allotment holders sharing stories on what they were growing"</i></p> <p><i>"Other allotment holders offering advice, supporting and assisting participants"</i></p> <p><i>"The level of sharing of new knowledge and experiences was very high"</i></p>

\*The evidence is based only upon those projects who completed this section of the report (n=30).

#### 4.4.2 **Be Active**

Engaging in physical activity and being active is an important contributor to health. The Natural Choices projects identified four key be active themes. The projects:

- i) Encouraged participants to take part in physical activity;
- ii) Encouraged activity which required team work and socialising;
- iii) Provided activities which contributed to improved fitness, health and wellbeing;
- iv) Created a safe environment for physical activity.

Table 6 displays the key comments made by project staff in relation to the ways in which the projects facilitated activity. All of the responding projects identified that their respective project encouraged activity in one of these four ways; however several projects identified multiple levels of activity development. The majority of projects (85%) encouraged physical activity; while 15% found that their projects encouraged team work and socialising activities within the community. Furthermore, 19% found that their projects promoted activity sufficient to improve fitness, health and wellbeing, while 7% of projects created a safe environment for enabling physical activity.

Some of the projects also provided quotes from participants in relation to how the projects encouraged them to be active and facilitated physical activity. One participant commented on how the work kept them fit, while others commented on the activities they were doing (Box 2)

##### **Box 2: Participants quotes about 'being active'**

*"This keeps me fit by shifting and moving things, bending down, picking things up, and using the brush and doing a lot of lifting"*

*"It felt good cutting trees down"*

*"When I was cutting the trunks out of the soil and the roots it was quite hard and it kind of got my anger out".*

Being active provides a great number of benefits for health. The Natural Choices projects provided a vast number of opportunities for physical activity and activities within the community, even though in many cases being active was not the focus of the project itself.

**Table 6: Ways in which the Programme Encouraged Participants to be active**

be active Theme	Evidence from Projects
<b>Encouraged physical activity</b>	<p><i>"Increase in the number of participants enrolled on the Kick Start to health programme, including walking and cycling programmes"</i></p> <p><i>"The amount of regular physical activity delivered has been extraordinary. Perhaps 12 people regard this opportunity as their own 'gym', labouring and sweating to their hearts content"</i></p> <p><i>"The process of creating and planting the bag gardens was good, general exercise involving muscle use, hand-eye coordination and moderately increasing the heart and breathing rate"</i></p> <p><i>"Each week there was at least 3 hours of physical activity for participants to get involved in; this meets the weekly recommendation for physical exercise in adults. A lot of our volunteers have additionally joined the PSS Anfield Walking Club, adding opportunities to get active"</i></p> <p><i>"Participants have almost without exception enjoyed the physical work involved in horticultural activity"</i></p> <p><i>"Many of the young people felt that as a result of participating in this project they now choose to spend more time outside being active"</i></p>
<b>Team work/ socialising</b>	<p><i>"After a while the group understood each other's capabilities and started working as a team"</i></p> <p><i>"The tandem group cycle every Sunday provided social opportunities for blind and partially sighted people"</i></p> <p><i>"Disabled people become more integrated by working with non-disabled people in an active setting"</i></p> <p><i>"The work with the older people meant that the project team had to find new ways of working with the less physically able."</i></p>
<b>Improved fitness/health/wellbeing</b>	<p><i>"Everyone so far has reported wellbeing and enjoyment as a result of being part of a group and walking, talking and exploring with others"</i></p> <p><i>"Participants enjoyed the health benefits and cooking and eating their own produce. Many participants have indicated that this training has raised their energy levels and improved their physical stamina"</i></p> <p><i>"This environment has been hugely beneficial by helping the children to keep active which in turn impacts very positively on their health and wellbeing"</i></p>
<b>Creation of a safe environment for physical activity</b>	<p><i>"Being able to work and play in a safe environment"</i></p> <p><i>"Parents suggested that the safe environment of the site for children to move and play while being supervised.....was important for building the confidence of the children and parents in supervising their children and collaborating on physical tasks"</i></p>

\*The evidence is based only upon those projects who completed this section of the report (n=26).

#### 4.4.3 Take Notice

Project staff identified that their projects encouraged participants to take notice of nature and this has been categorised in four key ways:

- i) Through increased awareness of the local environment;
- ii) Through conservation/actions to protect the environment;
- iii) Through learning about nature and the environment;
- iv) By enjoying being in nature/taking an interest in nature.

Table 7 displays key information regarding the ways in which participants took notice of the environment. More than half of the projects (52%) developed increased awareness of the local environment, while 26% and 30% of projects encouraged participants to act to protect their environments and helped participants to learn about nature and the environment respectively. A third of projects (35%) also helped participants to enjoy being in nature.

Participants also told staff in their own words how the programme encouraged them to take notice. Taking notice of nature allowed participants to become more aware of their local natural environments and helped them to learn about nature and how it works (Box 3). Participants also commented on how much they enjoyed being in nature. The projects provided lots of opportunities for participants to interact with nature; which participants received a great deal of satisfaction from. Interacting with nature provides many benefits for health, including enhanced mental wellbeing, mood and reduced stress [14, 15, 20-22], thus the opportunities for nature interaction provided by the projects are likely to have positively impacted on participants' health and wellbeing.

#### **Box 3: Participant quotes about taking notice**

*"The mud here is the best in Speke; I'm definitely coming back here!"*

*"This wood is beautiful, I liked looking at all the wildlife and we made a super den"*

*"We always just walk past this woodland, now I think me, my dad and the dog will come here again and explore it more"*

*"I noticed that worms were coming out the soil, the soil is like an underground network with thousands of worms"*

*"Today we were cleaning Jubilee park because it makes the air clean for the plants to breathe in".*

*"We put down compost to help the flowers grow".*

*"Den making was very exciting, I liked carrying all the muddy logs around"*

*"I climbed a tree and swung off the branches, it felt amazing"*

*"Sitting in the august sun watching the workers in the garden making a lovely place even more beautiful"*

*"I am going to come back here with my family"*

*"This is the best day of my life, without my mum and dad!"*

**Table 7: Ways in which the Programme Encouraged Participants to take notice of the Environment**

<b>take notice Theme</b>	<b>Evidence from Projects</b>
<b>Increased awareness of the local environment</b>	<p><i>" Practical tree planting sessions and food growing sessions have contributed to greater awareness in the community of caring for the immediate environment"</i></p> <p><i>"Each session started with a walk around the garden, taking notice of what had changed since the last time we were there"</i></p> <p><i>"We have become better aware and informed about our local environment including history and architecture. We have also become more attuned to the natural environment- flowers, trees, birds and the changing seasons..."</i></p> <p><i>"Talking about the local area (likes and dislikes)"</i></p> <p><i>"Clients have seen how the weather has affected the harvest and are more aware of trees and green spaces outside of their own environment"</i></p>
<b>Conservation/Actions to protect the environment</b>	<p><i>"Recycling home waste on the allotment site"</i></p> <p><i>"Community members now volunteering to help sustain the environment"</i></p> <p><i>"Due to our environmental pollution problems a resident came up with the idea of growing lavender to help with the smell problems"</i></p> <p><i>"The group created panels with polite requests such as 'please do not feed the pigeons' and 'please put your cigarette ends in the bin' after they noticed how much rubbish and birds mess was in the area"</i></p>
<b>Learning about nature and the environment</b>	<p><i>"Sessions which increased awareness by all participants of the plants, wildlife and ecosystems in the local area"</i></p> <p><i>"We learned about the wildlife in the woods through a bat walk; we took photos, spotted wildlife on our walks and helped each other identify new creatures/plants"</i></p> <p><i>"The participants observed the bag garden methods and practised them, in order to understand the process. In doing so they discovered skills they had, or developed new skills"</i></p> <p><i>"Leant about the importance of worms and the roles they play in our soil...."</i></p>
<b>Enjoyment of being in nature/interest in nature</b>	<p><i>"The location provides a safe haven, an escape, for residents who have not experienced working in the outdoors or in agricultural settings. Feedback indicates that they enjoy being in a completely different environment from the hostel or the streets"</i></p> <p><i>"We witnessed an increased interest in the natural world through the engagement of children in Forest School. By allowing children to undertake Free Play, they explored their local environment in great depth and became part of the woodland environment through playing in it"</i></p> <p><i>"The seating area complete with flowers and herbs meant that we really enjoyed spending some time in each session sitting together outdoors, giving us time to notice what had changed in the garden from the last week, and to reflect on our accomplishments and hard work of that session"</i></p> <p><i>"In particular they discovered the enjoyment that could be gained from taking such visits to open park spaces"</i></p> <p><i>"Many visitors remember the garden as it was before the renovation and were thrilled to see that some personality was being reintroduced"</i></p>



#### 4.4.4 Keep Learning

Natural Choices projects also encouraged participants to keep learning and data has revealed that this occurred in four key ways:

- i) By learning about nature and the environment;
- ii) By gaining qualifications or enrolling on courses;
- iii) By sharing knowledge and ideas;
- iv) By learning about non-nature related ideas

The key project information regarding these four ways in which projects continued to learn are displayed in Table 8. Overall, 71% of projects helped participants to learn about nature, 26% helped participants to enrol on a course or gain a qualification, 16% facilitated learning of non-nature aspects and 10% encouraged knowledge or idea sharing.

Participants from some of the Natural Choices projects also commented on how the projects enabled them to keep learning. One participant in particular commented on how they would like to share the knowledge they had gained with others, while another noted that you didn't have to be good at something to take part. A teacher from one particular school-based project also commented on how the project enabled a different method of learning and teaching. The opportunities for learning provided by the projects were of great importance to the participants and helped to provide a sense of achievement and satisfaction (Box 4).



#### **Box 4: Participants quotes about learning**

*"I'm looking forward to it being finished and showing people round, so they can take a photo. I'd like to show children how to do flower arranging and decorate plant pots"*

*"...children are outside and engaged...doing something practical and that in itself can be therapeutic...a break for them, a release... turning the soil over... caring for plants and watching them grow has a better effect psychologically than anything that we could teach in lessons or that circle-time could deliver..."*

*"This is the best lesson we have ever had"*

**Table 8: Ways in which the Programme Enabled Participants to keep learning**

<b>keep learning Theme</b>	<b>Evidence from Projects</b>
<b>Learning about nature (growing plants, food, horticulture etc)</b>	<p><i>"Most of the group gained new knowledge and skills around gardening....."</i></p> <p><i>"Participants enthusiasm has led to a great deal of learning of horticultural skills"</i></p> <p><i>"92% feel they know more about growing and want to keep learning"</i></p> <p><i>"Participants have learned how to care for the plants from seed to harvest, not only while working under supervision, but also independently in their own back yards"</i></p> <p><i>"Children and young people took part in a number of trips to a local allotment, to gain knowledge about preparing their own raised beds"</i></p>
<b>Gaining Qualifications/Taking part in courses</b>	<p><i>"We have found various further education and volunteering options for volunteers and participants....."</i></p> <p><i>"We provided a comprehensive training programme for our volunteers to take part in, this included: health and safety, health and wellbeing awareness, brief interventions, first aid and basic gardening skills"</i></p> <p><i>"The horticultural courses run at Dutch Farm have provided those long term unemployed, previously homeless and rough sleepers, who have no qualifications, the opportunity to succeed in something that is instantly rewarding. 13 accreditations have been achieved with the OCN in developing skills in garden horticulture and understanding sowing and growing techniques"</i></p> <p><i>"First aid training, health and safety and food hygiene training and cycle maintenance courses have been delivered to 40 residents who passed and received certificate"</i></p> <p><i>"Some of the young people and elders have been assigned to computer courses...."</i></p>
<b>Sharing knowledge/ ideas</b>	<p><i>"We shared recipes and cooked outdoors, learning new ways of using fresh fruit and vegetables in our everyday lives"</i></p> <p><i>"Sharing of recipes between residents has taken place. New dialogue has opened up in schools and the community"</i></p>
<b>Learning about other things (non-nature related)</b>	<p><i>"We have learned about strong community connections, as well as support for people with mental health needs. We have learned how to research using archive materials and the library service and about Alice Oswald's poetry. We have looked at poetry and aesthetics and close reading and analysis, we have used our imaginations in new ways and developed our own writing. We have learned about ourselves"</i></p> <p><i>"Learning how to work in a group. Conflict within groups provided opportunity for exploration of working together, learning how to manage conflict in a positive and constructive way"</i></p> <p><i>"We have installed various pieces of sensory equipment into the garden that support development and learning and also allows children to have fun and play while learning"</i></p>

\*The evidence is based only upon those projects who completed this section of the report (n=31).

#### 4.4.5 Give

From the analysis of the 36 Natural Choices project reports, it was determined that the programme helped participants to give in four main ways:

- i) Through volunteering for projects;
- ii) By giving to the community;
- iii) By giving their time;
- iv) By giving to fellow project participants through talking and listening



Table 9 displays the information from project reports regarding the ways in which participants gave to others. The most commonly identified way of giving was through volunteering (43% of projects), with 36% of projects also stating that participants gave to the community and 29% of projects stating that participants gave up their time to the projects and gave to other participants by listening and talking to them. In relation to giving, several participants commented on how this was a key aspect of their project and how everyone helped each other (Box 5).

#### Box 5: Participant quotes about giving

*".....I get job satisfaction from coming here and making everybody happy and helping others when I can be of assistance to them".*

*".....helps me. He picks up leaves and uses the watering can"*

*"You can work on your own bits either by yourself or with friend"*

**Table 9: Ways in which the Programme Enabled Participants to give**

<b>give Theme</b>	<b>Evidence from Projects</b>
<b>Volunteering</b>	<p><i>"Children and young people volunteering for a community clear up day"</i></p> <p><i>"Many of our volunteers have also undertaken other volunteering opportunities for PSS and our partner organisations"</i></p> <p><i>"Volunteers have been invaluable in keeping up the watering and feeding the bees, but most of all getting the word out to more participants in the community. We were overwhelmed with how many volunteers got behind the Food for Real Festival and really made it their own"</i></p> <p><i>"Volunteers have supported the project maintenance on a regular basis as there has been a substantial amount of weeding required due to the wet and warm weather"</i></p>
<b>Giving to others/the community</b>	<p><i>"Local children and young people became involved in planting up the raised beds with a variety of vegetables. These were used in cookery sessions within the centre and given out to local people"</i></p> <p><i>"Harvest was shared with the local community. Food was prepared and shared via the café"</i></p> <p><i>"One of the residents worked with us to put together a community BBQ which acted as a catalyst to parents getting involved in the project"</i></p> <p><i>"The women in the bail hostel, in addition to planting their own personal aromatic plants, also chose to plant window boxes for the benefit of all residents in the hostel"</i></p> <p><i>"The children from one school donated their aromatic plants to the school garden and are now working with a gardener to create a sensory garden for the benefit of pupils and staff"</i></p>
<b>Giving time</b>	<p><i>"Through a combination of garden tidy ups, workshops and events, we have generated over 500 volunteer hours"</i></p> <p><i>"Within 8 sessions, 32 participants attended 82 times and gave approximately 300 hours of time"</i></p> <p><i>"Speke/Garston Community Fire Station and interested community members from the local and wider area volunteered their time to help construct the main infrastructure of the site....."</i></p> <p><i>"We have made a really rough calculation that the general voluntary labour donated directly into the various projects.....is somewhere in the region of 1200 hours"</i></p> <p><i>"We have given time to the project.....given time to listen to each other and support each other."</i></p>
<b>Giving to other participants</b>	<p><i>"Some shared beds are used for communal crops.....families have shared crops and exchanged food with each other"</i></p> <p><i>"One volunteer wanted to work full time on the site, helping the tutors and cascading his knowledge to other participants, especially helping those with physical/learning disabilities"</i></p> <p><i>"We have shared our experiences together generously and offered help to each other when we can"</i></p> <p><i>"People of all ages and abilities gave freely of their skills, knowledge and self. Some a little, some a lot, all as valuable as each other"</i></p>

\*The evidence is based only upon those projects who completed this section of the report (n=28).

#### 4.5 Joint Project Events

In addition to events run by individual projects, Liverpool PCT and The Mersey Forest also ran several events to enable representatives from the 38 different projects to come together. These events took place at the start (24<sup>th</sup> January 2012), midpoint (2<sup>nd</sup> May 2012) and end (25<sup>th</sup> September 2012) of the programme. The purpose of the initial event was to introduce the project leads to the programme and evaluation process. The event also gave the projects the opportunity to discuss and share what they were doing. The second event was designed to recap on the evaluation process, determine what was working well and how links between projects could be improved. It was also an opportunity to discuss how projects could use the 'Project Dirt' website (<http://www.projectdirt.com/>) to share what they were doing within their individual project experiences. The final event was an opportunity to showcase what had been achieved by the projects, run through the arrangements for evaluation submission, learn additional interactive evaluation techniques and to introduce the University of Essex staff who would be evaluating the project. Representatives from 87% of projects attended the initial event, 74% the second event and 63% the final event.

At the start and midpoint joint event, several quotes were obtained from project representatives (see Box 6). These narratives largely focused on the success of the events and how the representatives thought links between projects could be improved. The key themes emerging from the joint events were the opportunity they provided for project leads to *connect* to each other. Participants commented that the joint events helped them to '*feel very connected to other projects*' and '*to make good connections*'. Project leads were keen to work with other groups, not only to build projects but also to share experiences, so that learning could take place and best practises for these types of projects could be developed. Thus another key theme was the development of opportunities to *keep learning*. Participants could share ideas and stories with other projects which enabled them to learn how to tackle any problems or develop ideas for their own groups. The joint events were a key part of the programme and enabled project leads to connect and keep learning, thus further contributing to wellbeing and initiating the project legacy process.

### Box 6: Quotes about the joint project events

#### Start of Programme Event

*'It's been great to feel part of this and very connected to all these projects.'*

*'It's been totally reassuring to have this event and see how it all comes together- feel part of something bigger, be supported and be able to make good connections'*

*'The evaluation framework is a work of genius'*

*'It was a fantastic event.....I for one was impressed with the range of projects represented in the room and look forward to developing closer links with a number of projects based in Kensington, as well as using the services on offer through other projects'*

*'Really inspirational to hear from 38 grass roots projects really engaged in the green space and wellbeing agenda, and to see high level partner engagement'*

*'Interesting that in addition to the energy, helpfulness and enjoyment, lots of folk commented how people stayed right to the end of the event as a sign of success, which I'd not considered before'*

#### Midpoint Programme Event

*'I would welcome some guidance on making the best use of Project Dirt'*

*'I think we would like some support with evaluation and capturing the impact of the project'*

*'When to use evaluation cards'*

*'More evaluation cards'*

*'I wonder if some sort of celebration event sharing learning and experiences from different projects funded through this initiative could be interesting/helpful? In particular I think the experiences of different projects will have involved crossing many similar obstacles- there is surely a great deal that can be learnt through the sharing of this. A one day conference may work well, with smaller seminar groups focusing upon particular areas i.e. social/therapeutic horticulture, food growing, carbon reduction projects etc. This would also offer more space to build the relationships that seem to be fragmented and disjointed without a unifier'*

*'We would like help in contact other groups that may be interested in attending sessions with us'*

*"I think maybe it would be good for local projects to be encouraged to get together on a regular basis – to share ideas, difficulties and resources – This is starting to happen more for us – volunteers from the Belvedere came by this morning to discuss bed-making techniques with us and discuss suppliers."*

## 4.6 Project Learning

Each of the projects were also asked to provide feedback about their project, identifying the best aspects of success, what could work better and what they would build on next time.

### 4.6.1 The Best Aspects of the Projects

In relation to the strengths of the projects, there were several key themes which were identified from the 36 project reports:

- i) The project achieved its aims/objectives;
- ii) The dedication of the volunteers/participants;
- iii) The partnerships developed with other organisations;
- iv) Community cohesion/group working
- v) The achievements and enjoyment of the participants;
- vi) The improvements made to the environment;
- vii) The project legacy.

Table 10 displays examples of the kind of comments presented in the project reports in relation to these themes and the best aspects of the projects. Approximately 56% of projects felt that the achievement and enjoyment was one of the best aspects of the project, while 53% of projects felt that the community cohesion was the best aspect. A further 24% of projects felt that volunteer dedication and partnership development were some of the greatest achievements, with 13% commenting that project sustainability after the end of the programme was a major success. 12% of projects comments that achievement of their project aims and improvements made to the environment were the best thing about their project. Some participants commenting on how proud they were of their achievements, how they had made friends and worked with others (Box 6).

#### Box 6: Participant Quotes about the Best Aspects of the Projects

*"I go to an evening social club on a Saturday, I've been going for years, I've always felt invisible to people around me, now when I go people shout my name, ask me to sit with them or if I want a drink, introduce me to their friends, we used to chat about the allotment, what were up to now. Now we talk about all kinds of stuff family, friends and everyday life".*

*The way we all worked together on the funding bid"*

*"I thought we would get something, but I had no idea we would get the money we asked for, I was made up, I bragged about that to my family, to my mates & that."*

*"Do you know what ....., I had taken a lettuce, tomatoes, celery, radish, a cucumber a sweet corn, a cabbage, potatoes, rhubarb, & raspberries, I bought 2 pork chops, the first night I had a salad the second night I had a roast. I sat there on my own and I felt so proud of the meal in front of me that we had grown, I enjoyed every bit of them, and all it cost was the price of 2 chops and some ice-cream".*

*"I know I made a Rhubarb crumble for the grandkids and they loved it. You don't hear of kids eating rhubarb anymore, they've asked for another one for next week, cheeky things".*

*"During the bag painting session I was helping one of the centre users to get started. Working with him he began to talk a little about his life in, and departure from, Afghanistan. He was obviously getting upset, and found it difficult to explain, because of his limited ability to speak English. He clearly loved and missed his country, and friends and relatives, and held back tears, as he spoke....In the planting session, he spoke to me about food growing, and how he enjoyed it before he came to Britain, and that it gave him some comfort that he could do some growing again."*

*"I feel very proud of my work and others say they are proud of me"*



**Table 10: The Best Aspects of the Natural Choices Projects**

<b>Theme</b>	<b>Evidence from Projects</b>
<b>Achievement of aims/objectives</b>	<p><i>"Considering the bleak weather conditions this year, the project was still able to achieve its main aim:- to engage vulnerable people in growing activities on an allotment site"</i></p> <p><i>"Creation of a safe environment for all members of the St Andrews community to benefit from"</i></p> <p><i>"Planned outputs are largely being achieved"</i></p> <p><i>"We are pleased that the project reached its intended target groups....."</i></p>
<b>Dedication of participants</b>	<p><i>"The energy and enthusiasm of participants; the excitement and dedication of our staff to the programme"</i></p> <p><i>"That a core number of clients were not put off by the inclement weather"</i></p> <p><i>"One of the best aspects of the project has been the commitment of everyone involved"</i></p> <p><i>"We've been able to employ 2 local people who are passionate about gardening, to lead on regular drop-in sessions"</i></p>
<b>Partnerships developed</b>	<p><i>"Managed to establish contacts with cycle repair companies for discounts"</i></p> <p><i>"Seeing the corporate sector give their time and expertise to our community"</i></p> <p><i>"We have been able to network with other organisations to our great benefit"</i></p> <p><i>"New partnerships being brought on board"</i></p>
<b>Community Cohesion/group work</b>	<p><i>"Helping to create and improve community cohesion"</i></p> <p><i>"The compliments from the community to the members"</i></p> <p><i>"The project has also been an excellent opportunity for local community groups, organisations, and schools to connect to each other and share information and resources and help each other out"</i></p> <p><i>"The inclusive aspect of all people working together"</i></p> <p><i>"We connected with and listen to a lot of local people's views, through for example talking to the them at the Neighbours day"</i></p> <p><i>"People have come together....to plant, care for and harvest a crop of fruit and vegetables that they were able to take home for their families"</i></p> <p><i>"The best bit was how people pulled together when the original project lead dropped out. People really stepped up so that we developed some really solid volunteers in each street"</i></p> <p><i>"People and community coming together, fear being taken away of old prejudices on both sides"</i></p> <p><i>"Laughter, friendship, compassion and companionship even in the most difficult of circumstances"</i></p> <p><i>"By far the best aspect of our project was seeing the friendships being built as the project progressed..."</i></p> <p><i>"An openness of the hostel to be a place that welcomes the community into its life and the life of the residents"</i></p>

<b>Achievements/ enjoyment of participants</b>	<p><i>"The achievements of our residents in gaining new qualifications..."</i></p> <p><i>"The members growing in confidence. A huge sense of achievement"</i></p> <p><i>"The best aspect of the project was the benefit and enjoyment that the children gained from being involved in the Forest school. None of them wanted to leave the sites at the end of the sessions and they generally all developed in confidence as the sessions went on"</i></p> <p><i>"Children and families trying gardening activities with confidence and a sense of achievement"</i></p> <p><i>"The creativity and concentration demonstrated by every participant, in the decoration of their bags and their enthusiasm in planting, was remarkable"</i></p> <p><i>"The progress with reading, writing, creativity and confidence. One of the participants has just started an aim higher course at university"</i></p> <p><i>"To give people confidence, self-esteem and learn new skills"</i></p> <p><i>"Young people seeing people with physical disabilities growing produce and not letting their disability stop them achieving their aims"</i></p> <p><i>"Participants have enjoyed meeting new people, working together, learning new skills, exercising and producing their own food and flowers"</i></p> <p><i>"Noticeable impact upon pupils: confidence, communication skills, interpersonal relationships, reflection upon emotional wellbeing; sense of pride and achievement and ownership over something they could care for and fully participate in on an equal footing with others"</i></p> <p><i>"The participants have most enjoyed being outdoors and working with their friends in ways they have not done so before"</i></p>
<b>Improvements to environment</b>	<p><i>"Being able to turn a derelict site into a community resource"</i></p> <p><i>"The improvement to the infrastructure of the site"</i></p> <p><i>"Growing a beautiful urban garden and witnessing the hard concrete slabs turn into a nurturing haven"</i></p> <p><i>"Creating a green space within an urban setting"</i></p>
<b>Project Sustainability</b>	<p><i>"Formed own committee to manage group and established own bank account. This will ensure the future of the project can continue"</i></p> <p><i>"Additional legacy funding obtained....(total 4,000)..consideration of legacy sites"</i></p> <p><i>"Secured additional funding for project legacy to allow work to continue with two schools"</i></p> <p><i>"The garden is a permanent long term facility that will benefit many children and their families for many years to come"</i></p> <p><i>"10+ participants regularly attend with support workers.....4 volunteers regularly attend. This enthusiasm and commitment has allowed us to keep running after all funding has ended"</i></p>

#### **4.6.2 What Could have Worked Better?**

The projects were also asked to identify what could have worked better during their projects. The analysis of the responses highlighted that there were five key themes in this area, these were:

- i) The weather;
- ii) Land/facilities;
- iii) Partnerships;
- iv) Recruitment of participants/volunteers;
- v) Evaluation methods.

Table 11 displays the key outputs from the project reports in relation to these themes. Approximately 38% of projects felt that participant/volunteer recruitment could have worked better, as in some projects numbers were limited or the recruitment process took longer than expected. A further 31% thought that the project would have worked better if the weather was better, while 28% felt that partnerships could have worked better. Some projects (19%) would have liked improvements in land or facilities, as in some cases projects experienced a lack of space and poor land/soil quality. Approximately 22% of projects also felt that the evaluation methods could have worked better, particularly in young people as the methods had to be adapted.

However it should be noted that many of these issues are outside of both the control of the projects and of programme leaders. The weather was one such issue and is likely to have significantly impacted on the projects given that the summer of 2012 was the wettest summer on record. However some projects felt that there was nothing that could have worked better (9%), with one project commenting that: *'the project was a great success in every way'*.

#### **4.6.3 What Could be Built on/Done Differently Next Time?**

Projects were asked what they would build on or do differently next time they engaged in a similar project. The analysis of the responses highlighted five key themes in relation to what the projects would do differently, these were

- i) The addition of extra activities/ sessions;
- ii) Application for further funding;
- iii) Further planning prior to the start of the project;
- iv) Development of other skills;
- v) Development of relationships.

Table 12 displays the key comments made by project staff in relation to these key themes. The majority of projects (61%) wanted to build on the relationships they had previously made, while 29% wanted to include extra activities or sessions. Some of the projects (19%) also wanted to help participants to develop further skills, 13% apply for further funding and 16% take part in greater planning prior to the project.

**Table 11: Project Perspectives on What Could Have Worked Better**

Theme	Evidence from Projects
<b>The weather</b>	<p><i>"The weather has hindered the process...."</i></p> <p><i>"The weather was a limiting factor and the allotment became flooded and unusable on occasions due to our wet British summer"</i></p> <p><i>"The weather persisted as a large obstacle to recruitment/retention overall"</i></p> <p><i>"We had to work in adverse, wet weather conditions leading to cancellation of many events we had planned"</i></p>
<b>Land/facilities</b>	<p><i>"Due to the restraints of the land-poor soil and the amount of brick and brick dust, this led us to look at the site differently. The site needed more heavy machinery....."</i></p> <p><i>"Due to the changing nature of the project, the initial lack of an outdoor space to work in meant that we had to re-plan much of the project.....while trying to solve this issue"</i></p> <p><i>"It would have been much better if we could have used the park rangers' premises in Stanley park for more of our meetings..."</i></p> <p><i>"The initial preparation of the land could have been more thorough to prevent the establishment of weeds over a period of time"</i></p>
<b>Partnerships</b>	<p><i>"The relationships with other organisations were tested from time to time....."</i></p> <p><i>"In future we would ensure a more solid 'buy-in' from the building staff team"</i></p> <p><i>"A much stronger link between administrators, session facilitators and volunteers"</i></p> <p><i>"It would have been useful to do some marketing and promotional work with volunteers in the area prior to starting our project"</i></p> <p><i>"We were too trusting in the early stages with our partners...."</i></p>
<b>Recruitment of participants/ volunteers</b>	<p><i>"It took a long time to get....primary school on board with the whole forest school process"</i></p> <p><i>"Numbers could have been better"</i></p> <p><i>"Staffing. It turned out to be more popular than first anticipated so more planning and increases to staffing to support volunteers would be beneficial in the future"</i></p> <p><i>"Having more time and volunteers to create growing areas of interest"</i></p> <p><i>"Participants attendance has in many cases been patchy, making it difficult to train everyone else to the same level"</i></p> <p><i>"We did not have consistent participation at every meeting/session..."</i></p>
<b>Evaluation methods</b>	<p><i>"The wellbeing card evaluation option did not work due to the nature of the workshop sessions...."</i></p> <p><i>"There were still challenges with completing the (wellbeing) postcards, even though the information is anonymous"</i></p> <p><i>"The process of completing the wellbeing cards at designated points in the programme did not collect fully consistent or comparable information. We need to think about an improved process for collection of this data"</i></p> <p><i>"The evaluation format had to be adapted for the age group...."</i></p> <p><i>"Some people find the evaluation process difficult, so more time with individuals supporting them on this"</i></p>

**Table 12: What the Projects Would Like to Build on Next Time**

Theme	Evidence from Projects
<b>The addition of extra activities/sessions</b>	<p><i>"The cooking sessions and mint sauce and jam making was very positive with the group, I would definitely build on this next time round. I would also build on more activities on the computer side"</i></p> <p><i>"Organise more 'Have a go' days"</i></p> <p><i>"...To develop various projects as an on-going asset for local residents"</i></p> <p><i>"We feel that there is a great potential for mixing craft approaches with writing"</i></p> <p><i>"The events and community markets have been a great success and we would really like to make these a regular occurrence...."</i></p> <p><i>"Organise nutrition, cooking tuition on a bigger scale...."</i></p>
<b>Application for further funding</b>	<p><i>"Looking to build on regular funding sources to ensure these activities continue"</i></p> <p><i>"We are already planning finding funds to build more growing space and indoor space on the site"</i></p> <p><i>"We have raised money to continue the project and further develop the community garden"</i></p> <p><i>"We'd also secure more sponsorship to be able to extend the reach of the festival publicity"</i></p>
<b>Further planning</b>	<p><i>"More in depth tests of the lands to ensure soil and ground could sustain planting as designed"</i></p> <p><i>"I think we would have taken soil samples sooner and planted defensively sooner"</i></p> <p><i>"Putting the infrastructure in place before the project...."</i></p> <p><i>"Take time to prepare the land and incorporate a weed management programme in advance of growing crops on the lands"</i></p>
<b>Development of skills</b>	<p><i>"Integration of skills, especially digital technology"</i></p> <p><i>"We would like to build on the interest shown by families to understand in more detail how organic gardening works...."</i></p> <p><i>"We intend to develop the skills and confidence within the groups for them to take more and more responsibility over the garden, its maintenance, and its future including fund raising"</i></p> <p><i>"We need to build on the basic planting with the children"</i></p> <p><i>"Aim to build in skills and capacity"</i></p>
<b>Development of relationships</b>	<p><i>"We will continue to develop better relationships with other providers and outreach into the local community"</i></p> <p><i>"Need to make more use of Project Dirt and social media as part of the legacy"</i></p> <p><i>"We will further build on supporting more established clients and ex-clients....."</i></p> <p><i>"We plan to work to engage more members of the community, through workshops and events"</i></p> <p><i>"As there are no other environmental activities available in this area, we will build on partnerships we have already formed to engage with more learners....."</i></p> <p><i>"We will build on the relationships made with other businesses"</i></p>

## 5 Evaluation of Wellbeing Cards

### 5.1 Wellbeing Card Methodology

In order to quantify changes in participant wellbeing, projects were encouraged to ask participants to complete wellbeing cards, where possible and appropriate. The wellbeing cards contained a short form version of the Warwick Edinburgh Mental Wellbeing Scale (SWEMWBS). A modified version for use with children was also provided.

The Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) was developed by the Universities of Warwick and Edinburgh, to enable the measurement of mental wellbeing in adults and adolescents in the UK. The scale comprises a global wellbeing measure, including affective-emotional aspects, cognitive evaluative dimensions and psychological functioning, and is short enough to be practical for use in population-level surveys [44]. The long form WEMWBS is a 14 item scale of mental wellbeing, in which all items are worded positively and address aspects of positive mental health. The short form scale incorporates just seven of these items. The positively focused design of the WEMWBS enables its use by mental health promotion initiatives [45]. The 7- item scale is scored by summing responses to each item answered on a five point likert scale, from 1 (none of the time) to 5 (all of the time). The minimum scale score for the seven item version is 7 and the maximum is 35, with a higher score representing a better wellbeing. Both the long form and short form WEMWBS have been validated for use in the UK with those aged 13 years and above [46-48]<sup>2</sup>.

All wellbeing data was entered into SPSS statistical analysis software. Statistical analysis was used to compare wellbeing scores in participants who completed the cards at the three time points<sup>3</sup> (start, mid and end) or two time points<sup>4</sup> (e.g. start and end) during the project. The start, mid and end points at which wellbeing cards were completed varied between projects, as all projects started and finished at different times.

### 5.2 Wellbeing Cards Results

#### 5.2.1 Overall Findings

Sixteen of the thirty six projects used the wellbeing cards. A total of 300 participants completed the wellbeing cards at at least one time point. Of these, 41% were male and 59% of the participants were female. The average age of participants were  $44 \pm 18$  years ranging from three to 91 years.

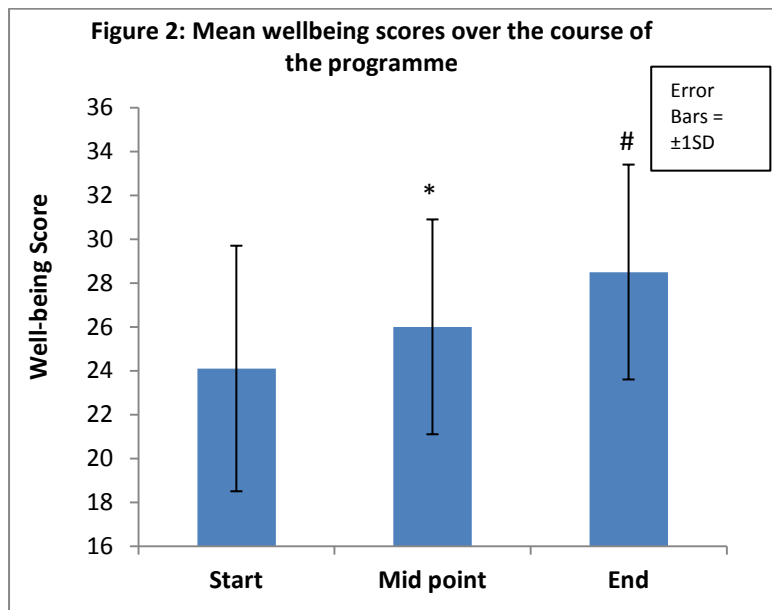
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<sup>2</sup> The scales show good content validity; with Cronbach's alpha scores ranging from 0.89 to 0.91 and high correlations with other mental health and wellbeing scales. Test-retest reliability at one week was high (0.83) and social desirability bias was lower or similar to that of other comparable scales

<sup>3</sup> One way within ANOVA

<sup>4</sup> Paired t-test

A total of 92 people (31% of those who completed wellbeing cards) completed wellbeing cards at all three time points during the programme, enabling changes in individuals' wellbeing to be measured over time. Statistical analysis of the scores of these 92 participants revealed a significant difference between all three time points<sup>5</sup>, with differences between scores at start and mid-point<sup>6</sup>, start and end<sup>7</sup> and mid and end point<sup>8,9</sup> (Figure 2). Wellbeing scores therefore increased over the course of the programme, representing a significant improvement in wellbeing. Scores improved by 8% from the start to midpoint, 10% from the midpoint to end and 18% overall.



(\* indicates a significant difference between start and midpoint scores ( $P < 0.01$ ), # indicates a significant difference between start and end and midpoint and end scores ( $P < 0.001$ ))

A total of 141 participants (47% of those who completed cards) only completed wellbeing cards at the start and end of the programme, therefore also allowing the measurement of changes in wellbeing over time. Between the start and end of the programme wellbeing significantly increased<sup>10</sup>, representing an improvement in wellbeing of 16% (Figure 3).

<sup>5</sup> ( $F(2,182) = 38.3$ ;  $P < 0.001$ )

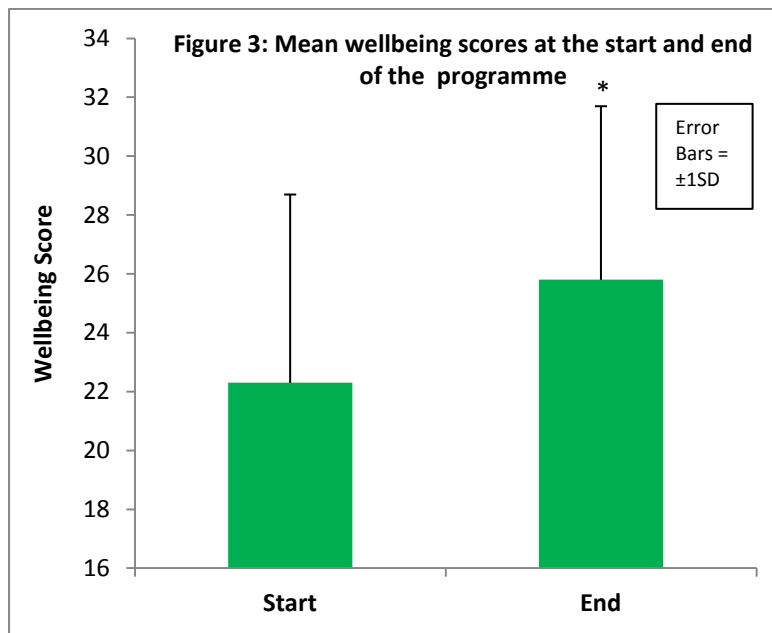
<sup>6</sup>  $P < 0.01$

<sup>7</sup>  $P < 0.001$

<sup>8</sup>  $P < 0.001$

<sup>9</sup> Further analysis revealed that there were no differences in scores between males and females, the different types of projects (e.g. food growing, creation of green space, environmental awareness) or different age groups<sup>9</sup>

<sup>10</sup>  $T(140) = -11.3$ ;  $P < 0.001$



(\* indicates a significant difference between scores at time 1 and time 2 ( $P < 0.001$ )).

Although 300 people completed wellbeing cards at various stages of the evaluation, there were 67 participants who only completed a wellbeing card at one time point. As the changes in participants wellbeing could not be analysed from this data, statistical analysis was not performed.

### 5.2.2 Contextualising Project Findings

Overall the Natural Choices programme increased wellbeing by 18% and 16% in participants completing cards at three and two time points respectively. In comparison to other nature-based wellbeing programmes these improvement values are high. One programme using the natural environment to promote wellbeing only identified 9.8% improvements in wellbeing scores [49]. Thus, the Natural Choices programme was successful at improving wellbeing in relation to other wellbeing projects.

The average wellbeing score in Liverpool as identified by the North West Wellbeing survey is 25.7 [2]. Average participant scores at the start of the programme in participants who completed cards at all three time points were 24.2, and at two time points were 22.3. Thus the average starting wellbeing scores of the programme participants were lower than the average Liverpool resident. The midpoint score for participants who completed three wellbeing cards and the endpoint score for those who completed two wellbeing cards were similar at 25.9 and 25.8 respectively, putting participant scores level with the Liverpool average. In participants who completed three wellbeing cards, end of programme scores were above average for Liverpool (26.9). Thus the programme helped participants to improve wellbeing scores to meet the Liverpool average and in the most



engaged participants, who completed three cards, increased their scores to above the Liverpool average.

In addition to helping to increase wellbeing scores to average or above for Liverpool, the programme also altered how participants' wellbeing was classified nationally. SWEMWBS scores can be classified as 'low', 'average' or 'high'<sup>11</sup>. Figure 4 displays the changes in the classification of scores for individuals who completed the wellbeing cards at all three time points. By the end of the programme fewer participants had a 'low' and 'average' wellbeing score and more had a 'high' wellbeing score.

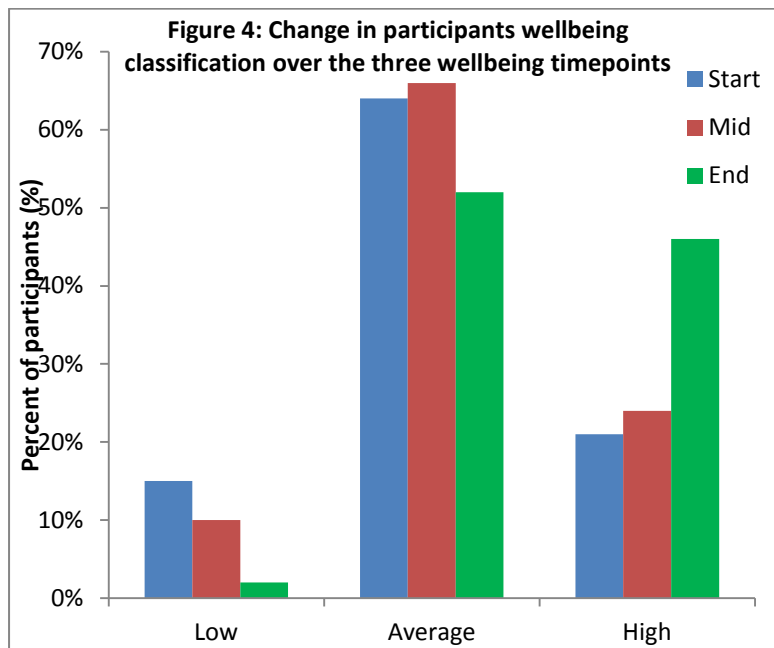
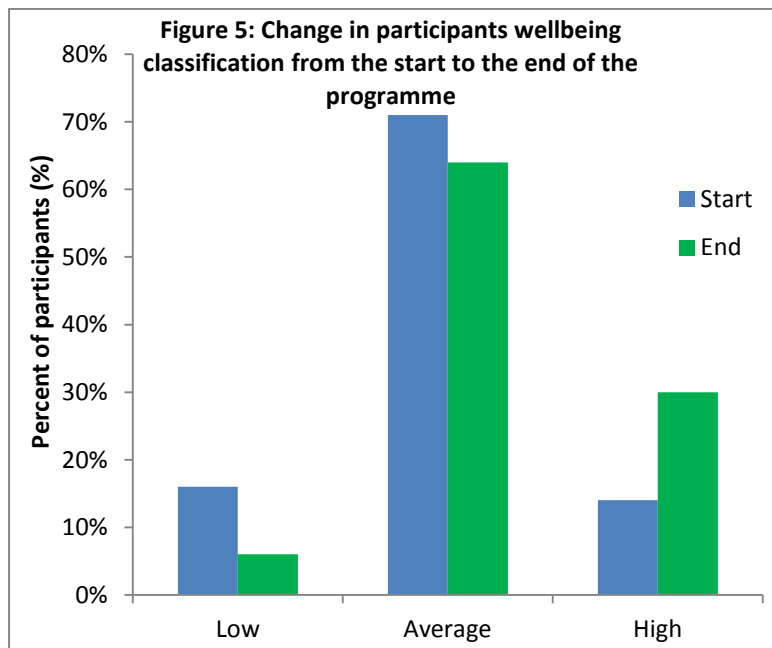


Figure 5 displays the changes in the classification of scores in those who completed start and end point questionnaires. In these participants a great proportion of participants also had 'high' wellbeing scores by the end of the programme, while fewer had 'low' or 'average' scores.

<sup>11</sup> For the SWEMWBS 'Low', 'average' and 'high' wellbeing scores are determined by the mean and SD of data. A 'low' wellbeing is classed as more than one SD below the mean, 'average' as within one SD of the mean and 'high' one SD or more above the mean. The mean and SD used were the start of programme wellbeing scores for participants completing the cards at three time points ( $24.1 \pm 5.6$ ) and two time points ( $22.4 \pm 6.4$ ). A 'low wellbeing' for participants completing at three time points was less than 17.3, a 'high' wellbeing greater than 29.3 and an 'average' wellbeing between 17.3 and 29.3. At two time points a 'low' wellbeing was less than 16, a 'high' wellbeing greater than 28.8 and an average wellbeing between 16 and 28.8. The proportion in each category was determined by the number below or above the specified value, divided by the number who completed the card at the given time point.



### **5.2.3 Key Wellbeing Results**

Overall the analysis of wellbeing data identified that:

- Wellbeing increased by 18% over the programme in participants who completed cards at all three time points; and 16% in those who only completed start and end of programme questionnaires;
- At the end of the programme participants report 'average' or 'above average' wellbeing scores when compared to the mean score for Liverpool residents, highlighting a significant shift from the below average starting scores;
- A greater proportion of participants' wellbeing was classed as 'high' as opposed to 'low' or 'average' by the end of the programme.

## 6 Case Studies

Three of the Natural Choices projects were selected as case studies, to give a more in-depth example of how projects in the Natural Choices programme have developed. These case studies include the North End Writers Group, St Michaels in Hamlet Gardening Group and Faiths4Change project. These groups were selected to act as case studies as they varied in project type and involved different participant groups. The Faiths4change group was primarily aimed at children, while the other two were focussed on adults.

Researchers from the University of Essex visited the North End Writers and St Michaels in Hamlet group to talk to participants about their experiences of the project and the impact it had on them. The informal focus groups were structured around several key areas:

- i) Successes and what participants enjoyed most about the project;
- ii) Challenges and anything they did not enjoy;
- iii) Anything they would change/build on in the future;
- iv) Whether the project changed how they felt about themselves, nature or other people;
- v) What was the most important aspect of the project (e.g. the activities, being outside, being with other people etc)?

### 6.1 Case Study 1: The North End Writers Group

The North End Writers project supports people experiencing mental distress in gaining confidence through shared reading and writing on green themes and other activities to develop a sense of improved mental wellbeing. The group meets on a regular basis to write poems or stories and to share these with each other. Involvement in the Natural Choices project enabled 23 literary workshops to be held, providing writing support, opportunities to talk to experts, to develop ideas and to share writing with other group members. Four tours of the local green spaces also took place allowing participants to explore Stanley Park, be inspired and develop ideas for their writing. Between 12 and 17 participants regularly attended the workshops and 34 people attended the park tours. Ages of group members ranged from 24 right up to 91 years, with the average age being 58. Three of the regularly attending participants, the project leader and a trustee, all spared the time to speak to University of Essex researchers about their project.

#### 6.1.1 Successes

The three North End Writers all felt that the best thing about the project was the strong friendships and intergenerational links which developed. Participants told us that they felt that the group '*came together*' very well and that the project provided opportunities get to know and share ideas with people of all ages, due to the large mix of participants. One participant had a physical disability,

The project also enabled participants to work with other group, as the project extended into the local community. In the project enabled them to *connect* with each other in the wider community. One participant explained that she would have not been able to walk into a new situation (such as her own and meet people that she didn't know, but now she had the confidence to come in on her own. She also being able to read out her poems in public, an experience

The Natural Choices project gave the participants a chance to see places that they wouldn't normally access and to *take notice* of the environment around them. The participants enjoyed taking photos of the park as the seasons changed, to give them an idea of how nature transformed as time passed. The project gave participants "*time to open their minds to nature*", and allowed them to *keep learning* about the environment around them.

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particular, participants commented on how they enjoyed exploring the poetry of Alice Oswald, a local poet. The group wrote a letter to Alice Oswald critically analysing one of her poems as a group, which she responded to by writing the group a very supportive letter.

All of the poems and stories from the group were also made into a book which participants told us they loved doing and were very proud of it having experienced a great sense of achievement from doing this, which they told us had helped to improve their self-esteem.

### **6.1.2 Challenges**

Participants identified very few aspects of the project that they did not like and those that they did identify tended to be beyond the control of the project. One of the challenges mentioned was how, at times, bad weather affected the project. Rain and snow made it difficult for participants to access the outdoor environments, particularly due to health and safety considerations.

The group also felt that the level of available funding sometimes limited the scope of what they could do and how far they could travel to parks and other green spaces. However, participants rose to the challenge and developed new ideas for tasks and venues closer to home. One participant also commented that she often had to stay indoors, when the group went on walks around the park as she was unable to walk very far.



### **6.1.3 Opportunities for Future Improvement**

There were very few aspects of the project that participants felt they would change in the future, apart from the desire to have longer sessions and more resources, directly linking back to a wish for more funding. Participants told us that they could do more, if they had more money. It was also noted that it would be good to include more participants with disabilities in future North End Writer sessions.

#### **6.1.4 Changes in Feelings about Self, Nature and Other People**

##### **i) Self**

The participants felt that the project had helped them to feel very differently about themselves. It improved their self-esteem and self-confidence and helped them to think for themselves more. It allowed them to mix more easily with people from different walks of life.

Many of the participants noted that the project organiser had a big impact on participants and through her warmth and friendliness was able to *“bring people out of their shells”*. She was able to gather people together to really facilitate their achievement. The project did not have a set curriculum, and participants were free to write poetry or stories, to do as much or as little as they wanted and there was no pressure to be involved. The project leader encouraged participants to write all their feelings down, as a way of expressing themselves, and many told us that they found this very beneficial. One participant commented that during the project they *“grew individually and grew as a group”*.

One of the participants reported on how the project had had a massive impact on her personally. Prior to the project she never used to be part of a group, or talk to people that she didn't know. The project has helped her to communicate with others without so much anxiety and worry. It has allowed her to write poetry with support from others and take on new challenges that she couldn't have done a year ago. She has faced strangers, read a poem in a pub on her own and has developed her independence. She said that *“it has had a big impact....and has helped me to become a different person”* and that she could *“live her life again”*. Another participant is now attending college as a result of the project.

##### **ii) Nature**

Two of the participants felt that the project had a big impact on the way they felt about nature. They commented that they had started to *take notice* of the environment in a much bigger way. One of the participants commented that although he was always interested in nature, the project brought this home. He said that he was always looking out of the window, wanting to go outside. He also said that he wanted to find more out about nature and in particular birds, so much so that he told us that he had *“became a bit of a twitcher!”*.

Another participant in the project who had always taken walks in nature, having lived by the park for many years told us that walking in nature was already part of her routine so the project didn't really change how she felt about nature.

### iii) Other People

The participants told us that the project had really helped them to relate to other people more easily, and to be more accepting of others by not focusing on their disabilities or shortcomings. Being part of North End Writers helped them to be part of a group and work together, understanding that everyone has different ideas and interpretations of poetry and writing. Half way through the project, one of the participants became the project chairwoman and felt that this had further helped her to think more responsibly about helping other people.

#### **6.1.5 Most Important Aspects of the Project**

The participants were asked what they felt was the most important part of the project: the writing; the nature; being with other people or something else all together. Generally, the participants felt that it was a mix of all of these aspects that were important and which made the project unique. The challenge and the opportunity to try something new and *keep learning* about nature, writing and themselves were identified as key, alongside the opportunity to work as a group. The project allowed one participant to write about things from her past, while it helped the other two we spoke to explore different types of writing. One of the participants started writing poetry instead of stories, while the other started writing stories instead of the usual poetry. Participants told us that *“each week of the project was a challenge, which made you think about something new and to try out new ideas”*.

#### **6.1.6 Project Legacy**

Following on from this project the group are enthusiastic to do more and to continue with another project - inspired by Shakespeare called ‘Tempest in the Park’. This has directly stemmed from being involved in the Natural Choices programme and the members are all keen to get involved. Although the project has no further funding after the Natural Choices grant, the group is confident that the project will continue as the participants all enjoy it and wish to continue to attend. The participants told us they were very loyal to the project and turned up no matter what the weather.

The project leader was identified as an important asset to the group and was referred to as *“the match that lit the fire”*. It was felt that she helped to bring out the best in the group participants. Overall the North End Writers project seems to have had a significant impact on its participants, helping them to *connect* to other people, *take notice* of nature and *keep learning* about themselves, writing, the environment and other people.



## 6.2 Case Study 2: St Michaels in Hamlet Gardening Project

The St Michaels in Hamlet Gardening project focused on gardening and art with single men living in a homeless hostel. The project was centred on the needs of the residents to improve their health and wellbeing and to increase and develop the use of green space within the hostel grounds. The men in the hostel are considered to be the most chaotic in the city, often experiencing addictions and mental health problems. The majority are disconnected from families and support systems. As part of the project the men laid a sensory garden, planting trees and landscaping an area which will consist of a seating area made from recycled trees along with a sculpture made of log, carved to represent the residents' 'journey through life'.



1. The men at the start of the project

As well as gardening, a major part of the project was the use of counselling and art therapy. Throughout the project approximately nine art therapy workshops were held, along with a wildlife



2. The men during the project

watch workshop, several other internal workshops and five visit days out into the local area. Throughout the project 6-15 of the residents were actively involved in the workshops and planting, while 18 of the residents attended the outings. Approximately half of the hostels 35 residents therefore took part in the project. The ages of the men ranged from 25 to 78 years with the average age being 48. Six of the men who had been involved in the project spoke to University of Essex researchers during the focus group, along with the project leader.



### **6.2.1 Successes**

The men gave us varied responses as to what they felt was the most successful part of the hostel gardening project. Some said that they liked the project because it *“helped to pass the time”*, and gives the man interest which breaks the monotony of being in the hostel environment and makes them feel better about themselves. One of the men said that now he has developed an interest in gardening he would like to continue it, even after the project has ended. The project allowed participants to develop a new interest and learn about nature (*keep learning*).

Other residents said that they liked the project, as it was nice to talk and express their feelings by reflecting on their lives and that the gardening was a useful tool for helping them to let go of the loss in their lives. One resident in particular said *“we all want to leave the hostel, but it is where we are going after that is important”*. The project has helped the men to look towards the future and towards leaving the hostel and independent living in future.

Other participants said that they liked the fact that through the gardening project they could work outside and that it was nice to do so. The men liked the animals particularly the squirrels and the foxes which they see regularly in the garden, and were able to share their observations about the daily routines and behaviours of the wildlife and birds (*take notice, keep learning*).

Working as a team and helping out other residents in the hostel were also mentioned by the participants as being a part of the project which they enjoyed. Several of the participants also made links with the wider community through the project with a local resident who came into the garden and joined the men bird watching, taking part in the RSPB Big Garden Bird watch. The project thus helped participants to *connect* to each other in the team, fellow residents and people from the local community.

The men also told us that they liked the painting aspect of the project and the day trips very much, - particularly the cathedral visit and learning about its history (*keep learning*) and visiting Lord Derby's' gravestone. All of these things reminded the men of their childhood as many of the residents had played and visited the park when they were younger.

### **6.2.2 Challenges**

Very few of the residents felt that there was anything that they did not enjoy about the project. However, one resident did comment that the poor weather put him off going outside into the garden.

### **6.2.3 Opportunities for Future Improvement**

In general, the participants seemed to be satisfied with the project and the garden that they had created and would continue to work on. Participants suggested that they would like to have a water feature in the garden, (but that was not possible due to cost and health and safety issues) and would like to keep some chickens in a secure coop and run in the garden (although given the regular fox visits they appreciated that this may not be possible either!)

### **6.2.4 Changes in Feelings about Self, Nature and Other People**

#### **i) Self**

The residents told us that being involved in the St Michaels in Hamlet Gardening Project has helped to relieve their depression and make them feel better about themselves, particularly as it gives them something to focus on. The contact with nature and visiting different areas of Liverpool facilitated by the project also reminded them of happier times and their childhood. Two residents said that visiting the parks and estates in Liverpool reminded them of how they used to play in the parks when they were children.



3. The men at the end of the project

#### **ii) Nature**

With regards to how the participants felt about nature, most of the comments were about this connection to nature in their past as children and a reconnection with nature and their own memories. Working together in the garden took the men back to their pasts. One resident said that he used to spend a lot of time working with his father on the allotment when he was a child and that he had remembered his past gardening skills as a result of the project. Another participant told us that the Big Garden Bird watch reminded him of when

he used to go birding and egg collecting as a child and young man and how he was surprised how many birds that he could still recognise and name. Being reminded of their childhood through contact with nature as part of the gardening project and recalling how happy they were playing in natural environments is likely to encourage the men to continue to interact with their local green spaces in the future, which is likely to have a direct impact on their health and wellbeing.

### iii) Other People

As previously highlighted in the successes of the project, participants learned how to work with other residents in the hostel, completing the garden areas as a team. All of the men had different ideas about the garden, which they all collated to develop a garden plan together. Many of the hostel residents have also suffered bereavements and the project has helped some of them to address their grief and other related issues. We were told that one particular resident had only ever come out of his room in order to take part in the project. Being involved was a big step for this participant and emphasises how effective the project was in engaging vulnerable people. The project therefore helped the men to learn that they could work well together, with other hostel residents and to make links with the wider community (*connect*).

#### 6.2.5 General Project Comments

The project leader told us that the garden had provided some of the men with a good distraction from their drinking, the associated effects of which underpinned many of the issues that the residents were experiencing. Many of the residents find it difficult to tackle their drinking problems and participants and leaders said that the gardening and art therapy project had helped this.



Together with a new drug and alcohol addiction service soon to be opening a few doors down from the hostel, this is also likely to be beneficial for the residents.

Overall, the St Michaels in Hamlet Gardening Project has helped the participants to *connect* to each other and people within the community. It helped them to *connect* to and *learn* about themselves, through trips and events which reminded them of their childhood and helped them to address underlying alcohol issues. The project also allowed them to *keep learning* by taking part in new activities including gardening

and bird watching and also *take notice* of the environment and wildlife. The gardening has also helped the men to *be active*. From talking to the residents of the hostel it was apparent the project was beneficial to the men and enjoyed by all involved.

### 6.3 Case Study 3: Faiths4Change

The Faiths4Change project enables people of faith and goodwill from across the North West to learn and work together, supported by partners from all sectors, to care for people and the environment. The Natural Choices programme funded one Faiths4Change initiative which aims to *‘foster connection with the self, neighbours and environment in Overbury Street, Edge Hill, Liverpool, to encourage longer term interests and skills contributing to the green infrastructure strategy and 2020 Decade of Health and Wellbeing’*. This project was designed to provide workshops and support to residents to enable people of all ages to plant and care for food, trees and seeds and to discover biodiversity in their neighbourhood. Approximately 12 workshops were held throughout the project, including green infrastructure awareness, biodiversity recording, food and nutrition and tree planting workshops. Approximately 290 participants attended the workshops; these included primary and secondary school children, community residents, asylum seekers, carers and parents.

As the majority of participants in the project were younger schoolchildren it was considered most appropriate for researchers to develop the case study material by speaking to project leaders and by collating testimonials and letters of support from the teachers of project beneficiaries.

The letters from groups who had participated were highly supportive of the Faiths4Change project.

One of the participating schools told us that pupils, staff and parents had all benefited from the opportunity to review green infrastructure, biodiversity and food growing and nutrition options. The range of tree planting and biodiversity workshops in particular were recognised in helping participants to learn about these issues (*keep learning*).



Another school also commented on how the Faiths4Change project had given them the opportunity to host a food workshop for pupils and parents on the school's allotment. The school allotment is managed by parent volunteers who plant with younger pupils, facilitating intergenerational links. The workshop run by Faiths4Change staff and volunteers has helped more pupils and parents to get become involved in the school allotment. The school also told us that they would *“very much appreciate continued support and input around food growing”* to enable them to build on their current food growing initiative.





The school felt that the partnership with Faiths4Change throughout the project was very positive and has been greatly valued by the school. The partnership has provided them with a platform for developing more points of contact with residents and community, particularly in relation to greening the area (*connect*).

Another group involved in the Faiths4Change project is a Liverpool Asylum seekers group. This group had been working in partnership with Faiths4Change for seven years, (including the current project, supported by Natural Choices), targeting the development of allotments and health and wellbeing initiatives. In their letter of support for Faiths4Change, attention was drawn

to the success of the project in engaging people living in under-funded or deprived areas of the city. The environmental approach combined with aspects of community cohesion allowed all people to get involved in the project and allowed asylum seekers to meet and share their stories with existing community groups (*connect*). This allowed a better understanding of the cultures and backgrounds of the asylum seekers to be developed by community members (*keep learning*) and generated topical discussions such as healthy eating. The group commented that *“the experience has been extremely positive and one which we are keen to continue”*.

A local newspaper has also taken an interest in this project and has published an article detailing how pupils of a school were planting hanging baskets for people in their local community and providing further information about the different project workshops and the types of activities that children were engaging in.

The Faiths4Change project has therefore provided opportunities for children, local people, vulnerable and disengaged groups to connect to each other and to their local community through food and gardening based workshops; to keep learning about gardening and healthy food, about other cultures and about nature and to be active in the outdoor environment and within the community.

## 7 Key Findings

The Natural Choices for health and wellbeing programme funded 38 community projects using nature to promote health and wellbeing. The programme targeted people living in some of the most deprived areas of Liverpool and enabled communities to develop a capacity for building health and wellbeing. Each of the projects regularly engaged participants in the five ways to wellbeing, with many projects involving vulnerable and disadvantaged groups from different backgrounds.

The key findings of the evaluation were that:

- 43% of projects' primary aims focused upon gardening and food growing, 29% on creating or improving environments and 9% on skill and educational development and developing connections. A further 6 % aimed to improve mental health and 3% focused on both physical activity promotion and community support development.
- Where wellbeing was quantified, there was an 18% improvement in participants who completed the wellbeing cards at three time points and a 16% improvement in those who completed cards at two time points.
- At the end of the programme participants reported 'average' or 'above average' wellbeing scores when compared to the mean score for Liverpool residents, highlighting a significant shift from the 'below average' baseline scores.
- A greater proportion of participants' wellbeing was classed as 'high' as opposed to 'low' or 'average' by the end of the programme.
- Individuals connected to their local community and environment, other project participants and the wider public, through the sharing of knowledge, skills, experience and stories. These activities are likely to have developed social cohesion and networking, thereby reducing social isolation which positively impacts on health and wellbeing.
- Participants were both physically active and active in working with their communities, resulting in increased fitness, social cooperation and teamwork.
- Participants took notice of nature, by becoming more aware of their local environment and learning about conservation/actions to protect it. Enjoying having contact with nature is likely to have significant benefits for mental wellbeing.
- Participants gave to others by volunteering, listening and talking, helping the community and giving up their time. Working with others can develop social cohesion, reduce isolation and increase mutual cooperation, all of which contribute to improved health and wellbeing.
- Opportunities for learning occurred through assistance with gaining qualifications or enrolling on courses, skill and knowledge sharing and educational sessions to learn about nature and their local environment. Learning is likely to enhance self-efficacy, self-esteem and overall wellbeing.

- Connections and opportunities for learning also took place via joint project events organised by Liverpool PCT and The Mersey Forest. Projects leads connected with each other and other project participants to share knowledge, experiences and ideas, both in person and via an interactive website. Learning informed best practice and ensured a continual learning process to ensure project legacy.

## 8 Conclusions

### 8.1 Discussion of Findings

#### 8.1.1 Programme Aims:

The aims of the Natural Choices for Health and Wellbeing programme were to:

1. Support Liverpool communities experiencing low wellbeing and previously having low uptake of activity;
2. Enable Liverpool residents to feel well and to recognise and fulfil more of their potential throughout their lives;
3. Develop progression routes for activity that encourages new long term interests in the natural environment for individuals, communities and organisations;
4. Provide opportunities for young people in areas of deprivation and/or circumstances of disadvantage;
5. Create a greener city which has a healthy environment, a lower carbon footprint, attracts people to live and invest in Liverpool and is resilient to change;
6. Help reduce inequalities in wellbeing across the city.

The programme had much success in meeting these aims. The projects helped to support people from Liverpool communities who were experiencing mental illness or low wellbeing, were physically inactive or not an active citizen within their communities. Some of the projects also targeted young people experiencing disadvantage and successfully engaged them in outdoor activities. Of the participants who completed the wellbeing cards at all three time points during the programme, 15% were classified as having 'low' wellbeing at the start of the programme. This value decreased to 2% by the end of programme and was complimented by significant improvements in wellbeing, indicating that the programme was very effective at helping participants to feel more positive and probably fulfil more of their lifetime potential.



The programme also engaged people who were previously having low uptake of activity. In Liverpool 79% of adults do not engage in sufficient activity, while 60% of male children and 80% of female children also fail to meet recommendations [11]. Throughout the programme 85% of projects



encouraged people to regularly take part in physical activity, thus addressing the levels of low activity in Liverpool and engaging people in activity. Health inequalities in physical activity are often prevalent in deprived communities. Of the projects involved in the programme over 50% were in communities within the 1% most deprived in the UK, with a further 22% and 11% being in areas within the 5% and 10% most deprived in the UK respectively [43]. The programme therefore engaged disadvantaged communities in activities supportive of wellbeing.

Throughout the programme participants also developed new interests. Several participants from the case studies told us how they would like to continue to engage in the activities which they had taken part in throughout the project. Furthermore, the funding provided by the programme allowed projects and communities to continue to engage in activities, which without this funding, would have ceased. This promotes long term sustainability of the projects to ensure there is a project legacy.

The Natural Choices programme clearly helped Liverpool to become a greener city, creating a healthier environment and lowering the carbon footprint. The programme facilitated the creation of green spaces, especially in areas where GI needs were largely unsatisfied, ensuring natural choices for health and wellbeing across the city.

#### **8.1.2 Contribution of the Programme to Existing Liverpool PCT and The Mersey Forest Schemes**

The Natural Choices programme was developed in line with the 2020 Decade of Health and Wellbeing, Liverpool's GI strategy, Liverpool PCT's good corporate citizenship scheme and the third sector development scheme. Overall, the programme was an important aspect of all of these schemes. The vision of the 2020 Decade for Health and Wellbeing is *'That Liverpool in 2020 is a city region where health and wellbeing are at the heart of purpose, culture, planning and action. Where communities, public bodies and private organizations all work together in a Liverpool which is more equal, well and green.'* It is also about encouraging people to build the five ways to wellbeing into their daily routines. The GI strategy is focused on the development of interventions to address environmental and socio-economic needs and to support increased public health. The Natural Choices programme helped participants to focus on health and wellbeing by connecting to others, being active, taking notice of the environment, learning and giving, thus directly contributing to the vision of the 2020 Decade for Health and Wellbeing and the GI strategy. By participating in the five ways to wellbeing participants are likely to have experienced increased social cohesion and inclusion, reduced social isolation, and improved fitness, self-esteem and self-efficacy, all of which can contribute to improved mental wellbeing and reduced health inequalities.

The programme also helped people to directly interact with third sector organisations in developing green spaces for the benefit of people throughout Liverpool. Encouraging participants to work with

community organisations to improve their local area and provide and deliver world class health and wellbeing services is the core vision of the third sector development scheme. Thus the Natural Choices programme has significantly contributed to supporting this scheme.

Through the provision of funding for the Natural Choices programme, Liverpool PCT also ensured that they were a good corporate citizen. The money provided was used to benefit people living in Liverpool, to ensure that activities supportive of health were provided and easily accessible by all individuals', from all backgrounds. The resources provided by Liverpool PCT for the programme were used to directly benefit the social, economic and environmental conditions of people living in Liverpool, including those with socio-economic and environmental needs. Liverpool's NHS aims to develop new models of care which reduce demand within the NHS system and promotes wellbeing within communities; all of which was achieved through the Natural Choices programme.

### **8.1.3 Social Costs Saved**

The Natural Choices programme ran from January 2012 to November 2012, lasting a total of 44 weeks. The total funding spent on the Natural Choices programme was £308,303, with an estimated 3,274 participants taking part. The weekly cost of the programme was therefore estimated at £7,007, equating to £2.14 per participant, per week.

While there are substantial costs to running a programme such as the Natural Choices, the costs to society of not running this programme could be estimated to be larger. Nature-based programmes can improve mental wellbeing [33-35], facilitate behaviour change[6, 50] and reduce criminal activity and anti-social behaviour [51] and thus imprisonment. Nature-based interventions can also help individuals to develop skills, which may help them to re-enter employment [6] and help people to tackle alcohol or drug addiction [52]. Contact with nature can also promote physical activity, which may in turn help to improve health [9, 53].

The Natural Choices programme could be considered as a valuable investment opportunity, when compared to the weekly costs incurred to society due to unemployment, crime and ill-health. Table 13 displays the costs of the possible pathways of individuals and groups if these behaviours were not intervened, by programmes such as Natural Choices. However, it should be noted that the costs in Table 13 are estimated values for each of the risk behaviours.

**Table 13: Social Costs of 'Risk' Behaviours in Adults and Young People**

<b>Risk</b>	<b>No.</b>	<b>Yearly Social Cost#</b>	<b>Weekly cost per person#</b>
<b>Youth Mental ill health (aged 5-15 yrs)</b>	Approximately 850,000 young people in the UK have a mental health problem [54]	£160 million [55]	£3.62
<b>Adult Mental Ill health</b>	Approximately 13 million people have a mental illness each year [56, 57]	<b>Health and social care costs:</b> £21.3 billion <b>Lost economic output:</b> £30.3 billion <b>Human suffering:</b> £53.6 billion <b>Total:</b> 105.2 billion [58]	<b>Health and social care costs:</b> £31.50 <b>Lost economic output:</b> £44.80 <b>Human suffering:</b> £79.30 <b>Total:</b> £155.6
<b>Antidepressant costs</b>	46.7 million prescriptions for anti-depressants are dispensed each year [59]	£270.2 million [59]	£0.11 (per prescription, per week)
<b>Alcohol /drug addiction</b>	Approximately 2million people are addicted to alcohol and 500,000 people are addicted to drugs at any one time [60]	<b>Alcohol addiction:</b> £25.1 billion <b>Drug addictions:</b> £15 billion [61, 62]	<b>Alcohol addiction:</b> £241 <b>Drug addiction:</b> £577
<b>Anti- social behaviour</b>	Approximately 3.3 million cases of anti-social behaviour are recorded each year [63]	£3.4 billion [64]	£19.81
<b>Physical Inactivity</b>	Approximately 34.1 million people are physical inactive [7,66]	£8.3 billion [7]	£4.68
<b>Obesity and risk factors</b>	Approximately 13 million adults and 3.3 million young people are obese [56, 65]	£5.1 billion [66]	£6.02
<b>Youth unemployment (aged 16-24 yrs)</b>	Approximately 945,000 unemployed [67]	<b>Productivity loss to the economy:</b> £12.9 billion <b>Cost in job seekers allowance:</b> £2.8 billion <b>Total:</b> 15.7 billion [68]	<b>Productivity loss to the economy:</b> £262 <b>Cost in job seekers allowance:</b> £56.25 <b>Total:</b> £318.87
<b>Adult Unemployment</b>	Approximately 1.5 million unemployed [69]	<b>Productivity loss to the economy:</b> £39.5 billion <b>Cost in job seekers allowance:</b> £5.5 billion <b>Total:</b> £45 billion [70, 71]	<b>Productivity loss to the economy:</b> £506 <b>Cost in job seekers allowance:</b> £71 <b>Total:</b> £577

<b>Youth Crime (aged 10-21 yrs)</b>	Approximately 301,870 young people are convicted of a crime each year [68]	1.2 billion [68]	£76.45
<b>Youth Violence</b>	Approximately 38,744 youths commit violent crimes each year [68]	£12.6 billion [72]	£6,254
<b>Adult Crime</b>	Approximately 9.6 million criminal offences occur each year [63]	£15 billion [73]	£30
<b>Youth Imprisonment (aged 10-21 yrs)</b>	Approximately 8,317 young people aged 18-21 years and 2,222 young children under 18 are in prison [74, 75]	<b>Adult prison (aged 18+):</b> £341 million <b>Secure children's home*:</b> £20.6 million <b>Secure training centre*:</b> £42.2 million <b>Young offenders institution*:</b> £107.6 million [74, 75]	<b>Adult prison:</b> £789 <b>Secure Children's home:</b> £2400 <b>Secure Training centre:</b> £3074 <b>Young Offenders institution:</b> £1154
<b>Adult Imprisonment</b>	Approximately 78562 UK adults are in prison [76]	£3.2 billion [74, 77]	£789

\*Figures were calculated based upon the number of young people in each institution, as documented by the Ministry of Justice. # Calculation based upon UK population and % of people who display the risk

As calculated above, the weekly cost of the Natural Choices programme per participant is £2.14. We used a retrospective modelling approach to predict potential economic savings, as actual participant data was not available. Using a conservative estimate of 300 people (approximately 10% of programme participants) (adults/youth/both) for the number who might engage in the 'risk' behaviours in Table 13 without the Natural Choices programme intervention, we can provide some estimates for associated weekly costs (Table 14).

**Table 14: Estimated Social Savings Associated with the Natural Choices Programme**

<b>Risk</b>	<b>Weekly cost if 300 people were engaging in 'risk'</b>
<b>Youth Mental ill health</b>	£1,086
<b>Adult Mental Ill health</b>	<b>Health and social care costs:</b> £9,450 <b>Lost economic output:</b> £13,440 <b>Human suffering:</b> £23,790 <b>Total:</b> £46,680
<b>Antidepressant drugs</b>	£33.00 (for 300 prescriptions for one week)
<b>Alcohol /drug addiction</b>	<b>Alcohol addiction:</b> £72,300 <b>Drug addiction:</b> £173,100
<b>Anti- social behaviour</b>	£5,943
<b>Physical Inactivity</b>	£1,404
<b>Obesity and risk factors</b>	£1,806
<b>Youth unemployment</b>	<b>Productivity loss to the economy:</b> £78,600 <b>Cost in job seekers allowance:</b> £16,875 <b>Total:</b> £95,475
<b>Adult Unemployment</b>	<b>Productivity loss to the economy:</b> £151,800 <b>Cost in job seekers allowance:</b> £21,300 <b>Total:</b> £173,100
<b>Youth Crime</b>	£22,935
<b>Youth Violence</b>	£1,876,200
<b>Adult Crime</b>	£9,000
<b>Youth Imprisonment</b>	<b>Adult prison:</b> £236,700 <b>Secure Children's home:</b> £720,000 <b>Secure Training centre:</b> £922,200 <b>Young Offenders institution:</b> £346,200
<b>Adult Imprisonment</b>	£236,700
<b>Weekly Cost of the Programme</b>	<b>£642.00</b>

From these estimated costs weekly savings can also be estimated. The savings are calculated based on the weekly cost of £642 for 300 participants to take part in the Natural Choices programme and the weekly cost of the 'risk' behaviour for the 300 participants. For example, if the Natural Choices programme:

- Enabled 300 adults to be employed for one week, the estimated saving would be £172,458
- Prevented 300 adults from being imprisoned for one week, the estimated saving would be £236,058.

- Prevented young people from developing mental ill health for just one week, the saving would be £444.
- Prevented anti-social behaviour for one week, the estimated saving would be £5,301
- Encouraged people to be physically active for one week, the estimated saving would be £762.

However, it should be noted that the savings calculated are projected values and are therefore the 'potential' cost savings associated with preventing participants involved in the programme from engaging in the 'risk' behaviours identified.

## 8.2 Limitations of Research

As with any study, there are a number of limitations which may have affected the results of this research. Firstly, evaluating 36 diverse projects is always challenging. All of the projects had their own individual aims, objectives and structures, thus each project varied in terms of their outcomes, what they were doing and when. In order to minimise this challenge, Liverpool PCT provided an evaluation framework to all projects in order to ensure similar outputs and results were captured by all projects where possible, but in reality individual project reports varied in the level of detail. Furthermore, as the reports were by design, completed by project leaders, the reports may have been subject to some element of bias. In addition it must be noted that the findings in this report are based on project reports rather than direct participant feedback. Data received was therefore mainly secondary, thus the majority of analysis was not carried out on primary data gathered by an independent evaluator.

All of the projects targeted different client groups, and inevitably some of the recommended methods were unsuitable for those projects who involved people with learning difficulties. The use of wellbeing cards in particular was limited, as in many cases participants were unable to complete them or they were not suitable for the specific group of participants.

The evaluation would also have benefitted from the use of more standardised instruments generating additional quantifiable data to complement the stories of



participants, as this data would have helped to further back up the evidence from project reports. In an ideal situation it would have also been beneficial to have had a comparison group who were not engaged in the Natural Choices programme (or any other programme) to compare to the Natural Choices participants, as this would have allowed a comparison in the changes in wellbeing of these groups over time. In future research it would therefore be beneficial to:

- Obtain individual feedback from participants about their given projects;
- Include a comparison group of participants to compare to those in the programme;
- Obtain more quantifiable data from standardised instruments;
- Enable collection of primary data from the projects by independent evaluators.

### **8.3 Concluding Comments**

Overall, the Natural Choices for Health and Wellbeing Programme successfully engaged Liverpool residents from a number of different backgrounds, ages and socio-economic status. The programme helped participants to engage in nature-based interventions across Liverpool, all of which were focused on the development of health and wellbeing. The projects helped participants to connect to their communities, the environment, other participants and the public and to be active in safe environments whereby team work and fitness could be facilitated. The projects also enabled participants to take notice of their environment by learning about it, becoming more aware of and enjoying their surroundings and engaging in activities to protect and conserve the environment. The participants were able to keep learning about themselves, their communities, nature and other people, with many participants enrolling on courses, gaining qualifications and sharing knowledge with others. Participants were also enabled to give time and volunteer for projects, giving back to the community and giving to other participants by talking and listening to them. The project had a significant impact on wellbeing and participants reported enjoying the projects that they were engaged in. The programme can be used as a tool for learning and developing knowledge and awareness about nature-based programmes and will help individual projects to develop and build upon the projects which have been set up and run as part of the programme. This pilot programme has been successful as a transition scheme to a larger scale programme and has given projects around Liverpool the capacity to develop health and wellbeing in Liverpool residents, promoting a green infrastructure and a city which is focused on good health and wellbeing for its residents.

## 9 References

1. World Health Organisation, *Preamble to the Constitution of the World Health Organization as adopted by the International Health Conference, 1946*, World Health Organisation: New York.
2. Centre for Public Health. (2009) North West Mental Wellbeing Survey 2009. Liverpool:Centre for Public Health
3. New Economics Foundation. (2008) Five ways to wellbeing: A report presented to the Foresight project on communicating the evidence base for improving people's wellbeing. London:New Economics Foundation
4. Tones, K. and Green, K., *Health promotion: planning and strategies*. 2nd ed 2010, London: Sage.
5. House, J. (2001), Social isolation kills, but how and why? *Psychometric Medicine*. 63: 273-274.
6. Wood, C., Bragg, R., Pretty, J., and Barton, J. (2012) *The Turnaround Project- Phase 3*. Colchester: University of Essex
7. Hall-Lande, J.A., Einsenberg, M.E., Christensen, S.L., and Neumark-Sztainer, D. (2007), Social isolation, psychological health and protective factors in adolescents. *Adolescence*. 42: 265-287.
8. Department of Health, *Be active, be healthy: A plan for getting the nation moving 2009*, 2009, Department of Health: London.
9. Department of Health, *Start active, stay active: a report on physical activity from the four home countries' Chief Medical Officers*, 2011, Department of Health: London. p. 1-62.
10. NHS Information Centre, *Health survey for England 2010*, 2011, The Health and Social Care Information Centre: London.
11. Liverpool Primary Care Trust. (2012) *Liverpool Active City Strategy 2012-2017*. Be Active, Be Healthy: Creating a moving culture. Liverpool:Liverpool Primary Care Trust
12. Department of Health, *At least five a week. Evidence on the impact of physical activity and its relationship to health.*, 2004, Department of Health: London.
13. Lee, I., Shiroma, E.J., Lobelo, F., Puska, P., Blair, S.N., and Katzmarzyk, P.T. (2012), Effect of physical inactivity on major non-communicable diseases worldwide: an analysis of burden of disease and life expectancy. *The Lancet*. 380: 219-229.
14. Mitchell, R. and Popham, F. (2008), Effect of exposure to the natural environment on health inequalities: an observational study. *The Lancet*. 372: 1655-1660.
15. Hine, R., Wood, C., Barton, J., and Pretty, J., *The Health and Wellbeing effects of a walking and outdoor based therapy project*, University of Essex: Colchester.
16. Kaplan, R. (1992), The psychological benefits of nearby nature. *Role of Horticulture in Human Wellbeing and Social Development: A National Symposium*.134-142.
17. Maller, C., Townsend, M., Pryor, A., Brown, P., and St Leger, L. (2006), Healthy nature healthy people: 'contact with nature' as an upstream health promotion intervention for populations. *Health Promotion Interventions*. 21: 45-54.
18. Kaplan, R. and Kaplan, S. (1989), *The Experience of Nature: A Psychological Perspective.*, New York: Cambridge University Press.
19. Hine, R., Peacock, J., and Pretty, J., *Green lungs for the East of England.* , 2007, University of Essex report for the National Trust: Colchester.
20. Diette, G.B., Lechtzin, N., Haponik, E., Devrotes, A., and Rubin, H.R. (2003), Distraction therapy with sights and sounds reduced pain during flexible bronchoscopy. A complimentary approach to routine analgesia. *Chest Journal*. 123: 941-948.



21. Taylor, A.F., Kuo, F.E., and Sullivan, W.C. (2002), Views of nature and self-discipline: evidence from inner city children. *Journal of Environmental Psychology*. 22: 49-63.
22. Tanako, T., Nakamura, K., and Watanabar, M. (2002), Urban residential environments and senior citizens' longevity in megacity areas: the importance of walkable green spaces. *Journal of Epidemiology and Community Health*. 56: 913-918.
23. De Vries, S., Verheij, R.A., Groenewegen, P.P., and Spreeuwenberg, P. (2003), Natural environments-healthy environments? An exploratory analysis of the relationship between green space and health. *Environment and Planning A*. 35: 1717-1731.
24. Maller, C., Townsend, M., Brown, P., and St Leger, L. (2002) *Health parks, healthy people: The health benefits of contact with nature in a park context*. Melbourne:Deaken University and Parks Victoria
25. Cooper-Marcus, C. and Barnes, M. (1995) *Gardens in health care facilities: Uses, therapuetic benefits and design recommendations*. The Centre for Health Design
26. Whitehouse, S., Varni, J.W., Seid, M., Cooper-Marcus, C., Ensburg, M.J., and Jacobs, J.R. (2001), Evaluating a children's hospital garden environment: utilisation and consumer satisfaction. *Journal of Environmental Psychology*. 21: 301-314.
27. Ulrich, R.S. *Health benefits of gardens in hospitals*. 2002.
28. Feinsten, L. and Hammond, C. (2004), The contribution of adult learning to health and social captial. *Oxford Review of Education*. 30: 199-221.
29. Hammond, C. (2004), Impacts of lifelong learning upon emotional resilience, psychological and mental health: fieldwork evidence. *Oxford Review of Education*. 30: 551-568.
30. Feinsten, L., Vorhaus, J., and Sabates, R. (2008) *Forsight menbtal capital and wellbeing project. Leanring throughout life: Future challenges*. London:The Government Office for Science
31. Rilling, J.K., Glenn, A.L., Jairam, M.R., Pagnoni, G., Goldsmith, D.R., Elfenbein, H.A., and Lilienfeld, S.D. (2007), Neural correlations of social cooperation and non-cooperation as a function of psychopathy. *Biological Psychiatry*. 61: 1260-1271.
32. Greenfield, E.A. and Marks, N.F. (2004), Formal volunteering as a protective factor for older adults' psychological wellbeing. . *Journals of Gerontology, Series B*. 59: 258-264.
33. Pretty, J., Peacock, J., Sellens, M., and Griffin, M. (2005), The mental and physical health outcomes of green exercise. *International Journal of Environmental Health Research*. 15: 319-337.
34. Pretty, J., Peacock, J., Hine, R., Sellens, M., South, N., and Griffin, M. (2007), Green exercise in the UK countryside: effects on health and psychological wellbeing, and implications for policy and planning. *Journal of Environmental Planning and Management*. 50: 211-231.
35. Barton, J. and Pretty, J. (2010), What is the best dose of nature and green exercise for improving mental health? A multi-study analysis. *Environmental Science & Technology*. 44 3947-3955.
36. Pretty, J., Barton, J., Colcbeck, I., Hine, R., Mourato, S., MacKerron, G., and Wood, C. (2011), Health values from ecosystems *The UK National Ecosystem Assessment Technical Report. UK National Ecosystem Assessment* In: *The UK National Ecosystem Assessment Technical Report*. UK National Ecosystem Assessment. Cambridge: UNEP-WCMC pp. 1153-1181.
37. The Mersey Forest. (2011) *Natural Choices for Health and Wellbeing Guidance Notes*. Liverpool:The Mersey Forest
38. Liverpool Primary Care Trust. About us. 2012; Available from: [http://www.liverpoolpct.nhs.uk/Your\\_PCT/about\\_us/default.aspx](http://www.liverpoolpct.nhs.uk/Your_PCT/about_us/default.aspx).
39. The Mersey Forest. What is the The Mersey Forest? 2012; Available from: <http://www.merseyforest.org.uk/about-the-mersey-forest/what-is-the-mersey-forest/>.

40. Liverpool Primary Care Trust. 2020 The decade of health and wellbeing. 2012; Available from: <http://www.2010healthandwellbeing.org.uk/index.php>.
41. The Mersey Forest. Liverpool's Green Infrastructure Strategy. 2012; Available from: <http://www.merseyforest.org.uk/our-work/Liverpool-Green-Infrastructure-strategy/>.
42. Liverpool Primary Care Trust. (2010) Good Corporate Citizenship. Sustainability Strategy 2010-2013. Liverpool:Liverpool Primary Care Trust
43. Liverpool City Council. (2011) The index of multiple deprivation 2010. A Liverpool Analysis. Liverpool:Liverpool County Council
44. Tennant, R., Hiller, L., Fishwick, H., Platt, S., Joseph, S., Weich, S., Parkinson, J., Secker, J., and Stewart-Brown, S. (2007), The Warwick Edinburgh Mental Wellbeing Scale: development and UK validation. *Health and Quality of Life Outcomes*. 5: 63.
45. Parkinson, J., *Measuring positive mental health: developing a new scale*, Scottish Executives National Programme for Improving Mental Health and Wellbeing, Editor 2006: NHS Scotland Briefing Paper.
46. Stewart-Brown, S. and Janmohamed, K. (2008) Warwick Edinburgh Mental Wellbeing Scale. User guide. Version 1
47. Clarke, A., Friede, T., Putz, R., Ashdown, J., Martin, S., Blake, A., Adi, Y., Parkinson, J., Flynn, P., Platt, S., and Stewart-Brown, S. (2011), Warwick Edinburgh Mental Wellbeing Scale (WEMWBS): Validated for teenage students in England and Scotland. A mixed methods assessment. *BMC Public Health*. 11: 487.
48. Stewart-Brown, S., Tennant, A., Tennant, R., Platt, S., Parkinson, J., and Weich, S. (2009), Internal construct validity of the Warwick-Edinburgh Mental Wellbeing Scale (WEMWBS): a rasch analysis using data from the Scottish Health Education population survey. *Health and Quality of Life Outcomes*. 7: 15.
49. Wood, C., Bragg, R., Pretty, J. and Barton, J. (2012). The health benefits of the Generations Growing Together Community Allotment Project. Colchester: University of Essex.
50. Peacock, J., Hine, R., and Pretty, J. (2007) The TurnAround 2007 Project. Colchester:University of Essex
51. Pretty, J., Wood, C., Bragg, R., and Barton, J. (2012), Nature for rehabilitating offenders and facilitating therapuetic outcomes in youth at risk. *Routledge International Handbook of Green Criminology* In: N. South and A. BrismanEditors Routledge International Handbook of Green Criminology. Routledge pp. 184-196.
52. Annerstedt, M. and Wahrborg, P. (2011), Nature assisted therapy: systematic review of controlled and observational studies. *Scandinavian Journal of Public Health*. 39: 371-388.
53. Wells, N.M., Ashdown, S.P., Davies, E.H.S., Cowett, F.D., and Yang, Y. (2007), Environment, design, and obesity. Opportunities for interdisciplinary collaborative research. *Environment and Behavior*. 39: 6-33.
54. Young Minds. The voice of young people's mental health and wellbeing. 2012; Available from: <http://www.youngminds.org.uk/>.
55. Kings Fund. (2008) Paying the price: the cost of mental health care in England to 2026. Kings Fund
56. Office for National Statistics. (2012) 2011 Census: Population and household estimates for UK. London:Office for National Statistics
57. Mental Health Foundation. Mental Health Statistics: UK and Worldwide. 2012 [cited 2012 16th July]; Available from: <http://www.mentalhealth.org.uk/help-information/mental-health-statistics/UK-worldwide/>.
58. Centre for Mental Health, *The economic and social costs of mental health problems in 2009/10.*, Centre for Mental Health: London.

59. Health and Social Care Information Centre (2012). Prescriptions dispensed in the Community, England- Statistics for 2001 to 2011. Health and Social Care information Centre: London.
60. Institute of Alcohol Studies. (2009) Alcohol, other drugs and addiction. London:Institute of Alcohol Studies
61. House of Commons. (2010) Tackling problem drug use. London:House of Commons
62. Alcohol Concern. Key Statistics and facts. 2012; Available from: <http://www.alcoholconcern.org.uk/consultancy-and-training/resources2/resources/key-stats-and-facts>.
63. Home Office. Anti-social behaviour. 2012; Available from: <http://www.homeoffice.gov.uk/crime/anti-social-behaviour/>.
64. Living Streets. (2012) Tackling anti-social behaviour: Healthy environments toolkit. London:Living streets
65. NHS Information Centre, *Statistics on obesity, physical activity and diet: England 2012*, NHS Information Centre, Editor 2012, The Health and Social Care information Centre London.
66. Department of Health. Obesity. 2012; Available from: <http://www.dh.gov.uk/health/category/policy-areas/public-health/obesity-healthy-living/>.
67. Hough, D. (2012) Youth unemployment statistics. London:House of Commons Library
68. The Princes Trust. (2010) The cost of exclusion: counting the cost of youth disadvantage in the UK. London:The Princes Trust
69. The Poverty Site. Young adult unemployment. 2012; Available from: <http://www.poverty.org.uk/35/index.shtml>.
70. Office for National Statistics. (2012) 2012 Annual survey of earnings and hours. London:Office for National Statistics
71. The Site.org. Job seekers allowance. 2012; Available from: <http://www.thesite.org/homelawandmoney/money/benefitsandtax/jobseekersallowance?gclid=CMuB1rHn7LQCFXDLtAodOz0AbQ>.
72. Wood, S., Bellis, M.A., nurse, J., and Sirotkin, M. (2010) Youth violence: A review of evidence for prevention. Liverpool:Centre for Public Health
73. Sinclair, M. and Taylor, C. (2008) The cost of crime. London:Tax Payers Alliance
74. Ministry of Justice. (2012) Youth Justice Statistics 2010/11. England and Wales. London:Ministry of Justice
75. Prison Reform Trust. (2012) Old enough to know better. A briefing on young adults in the criminal justice system in England and Wales. London:Prison Reform Trust
76. Berman, J. (2012) Prison population statistics. London:House of Commons Library
77. Ministry of Justice. (2012) Costs per place and costs per prisoner. London:Ministry of Justice