



Ecominds effects on mental wellbeing: An evaluation for Mind

Rachel Bragg, Carly Wood & Jo Barton
Essex Sustainability Institute and School
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University of Essex

Ecominds



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Glossary

AAI	Animal assisted interventions
ANOVA	Analysis of Variance
ART	Attention Restoration Theory
CBT	Cognitive Behavioural Therapy
CLES	Centre for Local Economic Strategies
CNS	Connection to Nature Scale
Defra	Department of Environment Food and Rural Affairs
DoH	Department of Health
GP	General Practitioner
nef	new economics foundation
NHS	National Health Service
NICE	National Institute for Health and Care Excellence
PET	Psycho-Evolutionary Theory
POMS	Profile of Mood States
RCT	Randomised Control Trial
RSES	Rosenberg Self Esteem Scale
RSPB	Royal Society for the Protection of Birds
STH	Social and Therapeutic Horticulture
TCV	The Conservation Volunteers
TMD	Total Mood Disturbance
WEMWBS	Warwick Edinburgh Mental Well Being Scale
WHO	World Health Organisation

Executive summary

Ecominds

In 2007, Mind called for a new green agenda for mental health highlighting the growing evidence in support of an accessible, cost-effective and natural addition to existing treatment options, using ecotherapy interventions. Through the management of Ecominds (a £7.5 million Big Lottery Fund supported open grant scheme) Mind subsequently funded 130 ecotherapy projects ranging from horticultural and agricultural schemes, through to walking groups and regeneration initiatives in local parks. Ecominds has helped 12,071 people living with mental health problems to get involved in green activities to improve confidence, self-esteem, and their physical and mental health.

Background

One in four people in England will experience a mental health problem in any one year. Mental health problems also inflict additional economic and social costs and treatment is becoming increasingly more expensive. Public spending on mental health services is continually rising and in England alone during 2009/10 it is estimated that £21.3 billion was spent on mental health services in total, with £1.2 billion on drug prescriptions. The cost of antidepressants has grown dramatically and between 2010 and 2011, antidepressant drug prescriptions and their costs saw the largest increase of any drug category. Despite these increases, mental health services represent only 13 per cent of NHS spending, when mental health problems account for 23 per cent of the burden of disease.

There is now more need than ever to explore different preventative and curative therapies to add to the 'toolbox' of treatment options; interventions which while comparable in their success rates, are often more accessible and less costly to employ. The health of the individual (and family members involved in care provision) clearly supersedes any financial cost, but if there is a potential solution that could address both issues simultaneously, then this could significantly reduce both human costs and public spending.

Ecotherapy

'Ecotherapy' (sometimes called green care), comprises nature-based interventions in a variety of natural settings. Ecotherapy initiatives usually consist of a facilitated, specific intervention, for a particular participant, rather than simply 'an experience in nature' for the general public. Ecotherapy approaches are 'therapeutic' in nature although some ecotherapy initiatives also include formal therapy (e.g. counselling sessions, CBT, psychotherapy etc) as an integral part of the programme.

Although the area of ecotherapy is very diverse, the common linking ethos is the contact with nature in a facilitated, structured and safe way, where many vulnerable groups gain therapeutic benefits. By increasing participation and awareness, ecotherapy initiatives have the potential to improve health and wellbeing for individuals and to significantly reduce public health costs by encouraging healthier communities. Ecotherapy also has the potential to enable resilience and can help build up an individual's capacity to cope with life stresses and have a preventative effect against future mental health problems.

However the majority of GPs do not even consider the use of ecotherapy as a treatment option for mild to moderate depression; and many patients are not aware that a prescription for an ecotherapy intervention could be an effective treatment for their illness. In times of burgeoning mental health costs, economic hardship, shrinking budgets (across all sectors) and amidst worries that we are becoming a society of sedentary and obese people, increasingly disconnected from nature, can we really afford not to promote ecotherapy as one of the solutions?

Ecominds wellbeing evaluation - University of Essex

Mind commissioned the Green Exercise Research Team at the University of Essex to carry out an independent, academic evaluation of the Ecominds scheme to examine the effects on psychological health and wellbeing of beneficiaries. This evaluation focused on three main themes: i) Wellbeing, ii)

Social inclusion and iii) Connection to nature and two secondary themes: iv) Healthy lifestyles and v) Environmentally friendly behaviour. The University of Essex evaluation of Ecominds involved an evaluation of the Ecominds scheme as a whole and an in-depth evaluation of a sub-sample of nine Ecominds projects. The evaluation was questionnaire based and a range of composite questionnaires were developed, composed of a mixture of internationally recognised, standardised questionnaires (WEMWBS, RSES, POMS, CNS) bespoke questions and questions used in the Big Lottery Fund Changing Spaces evaluation.

Key findings

- A total of 803 participants took part in the evaluation with 515 taking part in the 'All projects' and 287 in the 'In-depth' studies. In both studies participants were mainly male (66-69 per cent), predominantly 'White British' and with an average age of around 40 (ages ranged from 14 to 85). Both studies involved a range of different ecotherapy projects, taking a range of different approaches, of differing sizes and in different locations all over England.
- **Mental wellbeing:** In the In-depth study, three standardised, internationally recognised instruments were used to measure different elements of mental wellbeing. For the majority of participants both their wellbeing and self esteem scores showed a statistically significant increase from the beginning to the end of their involvement with Ecominds, indicating an improvement in participant wellbeing over the duration of the Ecominds scheme. On average a participant experienced increases in wellbeing of 17 per cent and of self esteem of 11 per cent (see Figure A).

Figure A. Change in mean participant wellbeing scores from the beginning to the end of the Ecominds programme

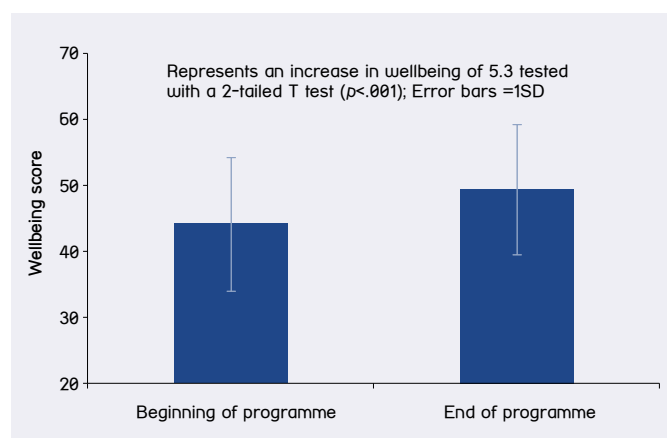


Figure B. Changes in TMD before and after an Ecominds session - pre/post study

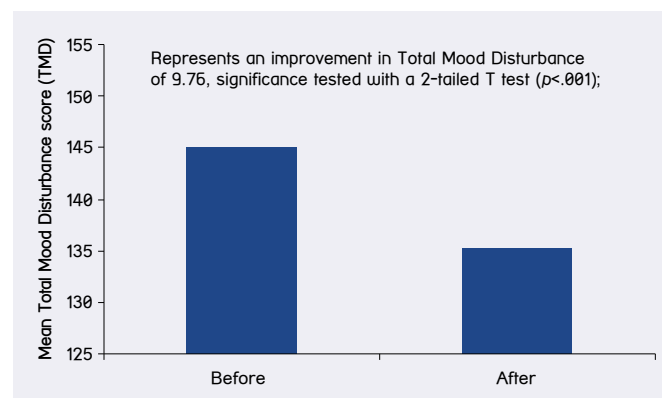
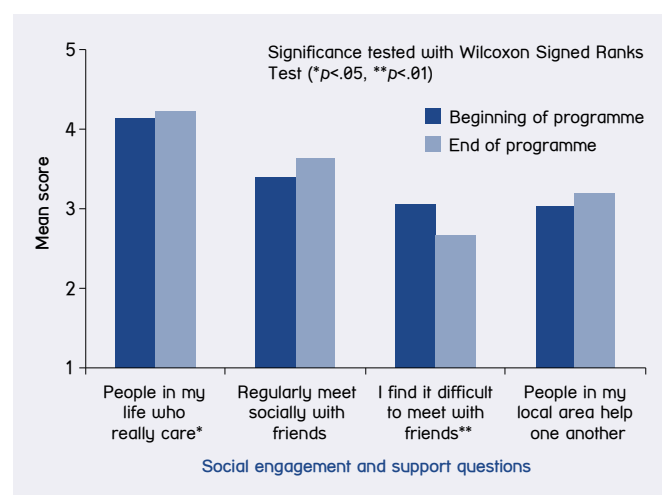


Figure C. Change in social engagement and support parameters after participating in Ecominds



At the start of the programme the average wellbeing scores for Ecominds participants were lower than average; but by the end of the programme, participant scores had risen to a level in line with the population norm. 76 per cent of participants also experienced mood improvements after a single Ecominds session, with participants experiencing statistically significant decreases in total mood disturbance, anger, confusion, depression and tension after taking part in an Ecominds session (see Figure B).

- **Social inclusion:** Findings of the 'In-depth' study showed a statistically significant increase in participants' social engagement and support scores from the beginning to the end of their involvement with Ecominds, representing an improvement in social engagement of 10 per cent on average, although some people experienced improvements of up to 89 per cent (see Figure C).

81 per cent of beneficiaries showed an increase in the frequency of getting involved in community activities after having been involved with Ecominds. At the start of the programme, many participants said that they did not feel they belonged to their community but by the end of the Ecominds scheme, the opposite was true, with the majority saying that they did feel they belonged to their immediate community – representing an improvement of social inclusion for many participants.

- **Connection to nature:** Statistically significant increases in participant connection to nature were found from the start to the end of the programme (for 61 per cent of people) implying that these participants had become more connected to nature over the duration of the Ecominds scheme.
- **Healthy lifestyles:** Statistically significant increases in participant self-perceived 'health' status were observed both over the duration of the Ecominds scheme (where 59 per cent of participants saw improvements in health of on average 31 per cent) and after taking part in one session.
- **Environmentally friendly behaviours:** In the 'In-depth' evaluation, in order to assess any changes in participant behaviour as a result of taking part in the Ecominds scheme, six questions relating to environmentally friendly practices were included. Starting responses indicated that the majority of participants were a reasonably environmentally pro-active group at the beginning of the programme anyway but nevertheless a statistically significant increase in overall environmentally friendly behaviour scores was found from the start to the end of the Ecominds scheme for 60 per cent of beneficiaries, showing an increase in environmentally friendly practices.
- The importance of the three key aspects of the Ecominds scheme: i) being with other people, ii) being outside in nature and iii) taking part in exercise or activities; were assessed and the importance of all three aspects were shown to be of roughly equal importance to participants, both at the end of the Ecominds scheme as a whole and after taking part in a single session, which suggests that participants value the combination of the three aspects of the Ecominds projects, rather than one particular feature.
- Participants also told us in their own words about what they enjoyed the most about the Ecominds project that they were involved with. Out of the 113 comments received, three major themes emerged i)

the social contact – being with other people as part of a group; ii) being outside in nature – the fresh air, the scenery and the beauty; and iii) the activities – learning new skills, enjoying the activities. Many other comments expressed how people felt calm and safe outside, had fun, liked being active and felt a sense of achievement.

The results of the study found that ecotherapy can:

- be effective in raising mental wellbeing to 'average' levels
- enhance social inclusion, vital to the recovery of those living with mental health problems
- be successful in both increasing contact with and connection to nature, enabling participants to benefit further from the associated health and wellbeing benefits
- can improve wellbeing and social inclusion and equip participants with useful coping skills
- can also help the development of healthier lifestyles and environmentally friendly living.

What is particularly revealing in the evaluation of Ecominds is that in both studies, these improvements to wellbeing, social inclusion and connection to nature happen right across the range of ecotherapy interventions involved in the Ecominds scheme regardless of: i) type of ecotherapy intervention; ii) participant age and gender; or iii) whether or not the project included formal therapy or not. This suggests similar benefits to participant wellbeing, social inclusion, nature connection, healthy lifestyles and environmental behaviour can result from all types of ecotherapy.

Analysis of the data and comments from participants themselves, have shown that through ecotherapy, the recommended Five Ways to Wellbeing can be addressed. Participants involved in Ecominds have:

- been more **Active** by taking part in exercise and activities in natural environments – gaining physical and mental health benefits;
- **Connected** both with other people, the wider community and with nature, thus increasing social inclusion;

- started to **Take Notice** of nature and the green environment around them – gaining the associated mental health benefits and increasing connectedness to nature;
- managed to **Keep Learning** – both developing new skills and learning about themselves; and
- been able to **Give** – through sharing and supporting each other and working as a team and also by giving back to nature through shaping and restoring natural environments.

This study adds to the growing evidence base that highlights the effectiveness of ecotherapy interventions.

Recommendations for policy:

Ecotherapy has important policy implications for a wide range of sectors. The health and social care sector particularly needs to consider the contribution that ecotherapy makes to both individual mental health and public wellbeing, as a more resilient population has the potential to save money for the NHS and wider public purse. The impacts of ecotherapy on social inclusion also have implications for social care and employment policy and resulting knock-on effects can potentially lead to cost savings to society, an important consideration in times of diminishing public budgets.

- Ecotherapy initiatives have been proved not only to be successful at increasing mental wellbeing and building resilience but also to simultaneously produce other positive life outcomes; but there remains a lack of knowledge and acceptance among GPs (and other care providers) of the benefits to patients gained from using ecotherapy as an additional treatment for mental health problems such as depression. Commissioners of health and social care services should take the idea of ecotherapy more seriously and more GPs should be supported to consider and recognise the value of ecotherapy.
- Ecotherapy represents another treatment choice for GPs and service users. The addition of another tool in the toolbox to tackle mental health problems is especially pertinent given the long waiting lists for CBT and the increasing costs of antidepressants. With this in mind, NICE should also be called upon to consider the evidence in order to recommend the use of ecotherapy interventions alongside other current treatment options for depression, such as antidepressants and CBT.
- Good health and wellbeing is multifaceted, but this has not been converted into either measures of success or funding streams. Ecotherapy can improve multiple factors simultaneously, but ‘traditional’ measures of success within healthcare do not adequately recognise this. Establishment of the effectiveness of a treatment option should also consider: i) multiple outcomes of treatment (wider than the clinical health context); ii) the holistic effect of multifaceted interventions; iii) benefits to public health; and iii) benefits and cost savings to the wider society.
- There is a need for ecotherapy initiatives to be incorporated into health and social care referral systems, particularly in light of the recent changes with clinical commissioning groups and health and wellbeing boards. Implications for personal budgets should also be recognised and those in receipt of direct payments supported to access ecotherapy treatments.
- Commissioners should be encouraged to consider that ecotherapy represents an enjoyable, socially acceptable treatment option for mental health conditions such as depression, and the observed positive effect on adherence levels could prove to be effective in encouraging uptake of mental health treatment and especially successful in re-engaging men with mental health services.
- There is also a need to raise awareness amongst health professionals and patients that ecotherapy is a valid and effective treatment option for depression. A major concern is to overcome the patient’s perception of whether or not ecotherapy is as an effective treatment response. Education is therefore needed for GPs and patients alike, to highlight the additional social and wellbeing benefits that an ecotherapy intervention can provide that antidepressants, for example, do not.





- Encouraging people to incorporate more green exercise activities into daily routines and supporting more ecotherapy opportunities has the potential to increase wellbeing, not only for those already living with a mental health problem, but also in terms of health promotion and illness prevention at the population level. Increasing support for a wide range of ecotherapy options for all sectors of society is also likely to produce substantial public health benefits and economic savings, and therefore should be promoted.
- Agencies responsible for providing social care services and promoting social inclusion would also benefit from recognising the potential of ecotherapy activities to reduce social exclusion, increase social capital and to help people to re-integrate into society after a period of ill-health, something that is particularly relevant today.
- If we are all to have this access to nature, there is need i) for more quality green spaces, (especially in urbanised areas); and ii) to actively protect and conserve our existing green spaces in both rural and urban locations.

Concluding comment

Through the funding of 130 ecotherapy projects and the 12,071 people that directly benefitted from the programme, Ecominds can be considered to have had a major impact, both in terms of supporting people suffering from mental ill-health and in sustaining the provision of ecotherapy services across England.

The majority of Ecominds participants will leave the programme with better wellbeing and self-esteem; feel more socially included; will have gained new skills and developed healthier lifestyles; have enhanced psychological health and wellbeing; and an increased connection to nature.

These significant improvements as a result of the Ecominds scheme all have implications for not only the mental wellbeing and resilience of individuals but also for public health and the management of natural environments.

I. Nature and mental wellbeing

1.1 Introduction

Increasingly sedentary lifestyles, poor diets and the prevalence of mental health problems are seriously hindering the health of the world's population. It is believed that at any one time, at least one in six individuals is suffering from a 'significant' mental health problem¹, and in the UK one in four people will experience mental illness at some time in their lives². Mental ill health compromises an individual's quality of life, is a leading cause of disability and affects not only the individual but families as well. Mental health problems also inflict additional economic and social costs both directly (health and social care; human cost) and indirectly (through output losses). Unhappily, problems surrounding social exclusion and discrimination of those living with a mental health problem are still significant challenges to overcome.

There are many different interventions for tackling mental ill health but one approach increasingly being used by professionals is that of 'ecotherapy' (or Green care), which comprises nature-based interventions in a variety of natural settings. There is a mounting body of evidence that highlights the benefits of contact with nature, such as improved health and wellbeing, enhanced connection both with other people and with nature, adoption of healthier lifestyles and an increase in the desire to protect nature. The natural environment is available to most of us on our doorsteps and at minimal cost. Could one answer to improving our population's mental health be to encourage people to interact with nature and green space and to get active outdoors³? Could ecotherapy interventions help more people living with a mental health problem recover and to become less isolated from society? Is there another option available to enable mental health professionals to help service users?

Through Mind's lottery-funded Ecominds scheme, 130 such ecotherapy projects, specifically for people with mental health problems, have been supported. This study puts this scheme into context and evaluates the wellbeing effects to participants from these nature-based interventions.

1.2 Mental ill-health in the UK

In England it is believed that in any one year, at least one in four people will experience a 'significant' mental health problem⁴. Sufferers of anxiety and depression are commonplace and by 2020 it is predicted that depression will be the second most common cause of disability in the developed world⁵. It is estimated that the total cost of mental health problems in England in 2009-10 was approximately £105.2 billion⁶. The majority of these costs fall mainly on those who experience mental health problems and their families, but it also generates sizeable costs for taxpayers and for business. With poor mental health often carrying more of a cost to society than crime⁷ it is also therefore a major public health issue (See Box 1).

Public spending on mental health services is continually rising and the cost of antidepressants has grown dramatically. In England alone, during 2009/2010 it is estimated that £21.3 billion was spent on mental health services in total, with £1.2 billion on drug prescriptions⁸. In 2010 the number of antidepressant prescriptions dispensed in England was 42.8 million and by 2011 this number had risen to 46.7 million. This represents a cost of £270.2 million and implies an increase in cost of 22.6 per cent in just one year⁹. Between 2010 and 2011 antidepressant drug prescriptions and their costs saw the largest increase of any drug category. Despite these spending increases, the NHS share of budget for mental health care is far lower proportionally when the significant mental health burden of disease is considered: poor mental health accounts for 23 per cent of the burden of disease whilst only accounting for 13 per cent of the NHS budget in England¹⁰.

1 WHO 2001;

2 WHO 2004, Mental Health Foundation 2013

3 Bermann et al 2008

4 Mental Health Foundation 2013; ONS 2009

5 World Bank 1993

6 The Centre for Mental Health 2010

7 Sainsbury Centre for Mental Health 2003

8 Centre for Mental Health 2010

9 NHS 2012

10 Centre for Economic Performance's Mental Health Policy Group 2012

Box 1: The burden of mental illness in the UK

- At least 1 in 4 individuals are affected in any one year
- 1 in 10 children and young people aged 5-15 years suffer from a mental health problem
- Instances of common mental disorders such as depression and anxiety in people aged 6-64 years rose from 15.5% in 1993 to 17.6% in 2007
- £53.6 billion represents the human cost of mental illness due to reduced quality of life, suffering, pain, disability and distress
- £30.3 billion is the cost of output losses in the economy due to peoples inability to work
- £21.3 billion is the annual cost of health and social care provided by the NHS and Local Authorities and informal care given by family and friends
- £1.9 billion is spent on GP consultations yearly
- £1.2 billion per year is spent on drug prescriptions

Sources: Mental Health Foundation 2013 (bullets 1 - 2); NHS 2009 (3); Centre for Mental Health 2010 (4-6); The Centre for Economic Performance 2012 (7-8);

The government is also currently spending more money on training therapists to co-ordinate psychological therapies such as cognitive behavioural therapy (CBT). Alongside antidepressant drugs, CBT is recommended as one of the first options for the treatment for many mental health problems¹¹. However, only 1 in 3 people receive CBT within six months of being referred; 1 in 5 wait over one year and 1 in 10 wait over two years; with increased waiting times resulting in reduced treatment effectiveness¹². The recommended number of sessions required for psychological therapies are also failing to be met. For mild to moderate mental illness, six low intensity sessions of CBT are recommended, whilst for severe mental illness up to 20 high intensity sessions are recommended. Currently, some people with severe mental illness are receiving as few as three sessions of CBT and only 40 per cent of patients feel that they receive enough sessions to be beneficial.

There is now more need than ever to explore alternative preventative and curative therapies to add to the 'toolbox' of treatment options; interventions which while comparable in their success rates, are often more accessible and less costly to employ. The health of the individual (and family members involved in care provision) clearly supersedes any financial cost, but if there is a potential solution which could address both issues simultaneously, then this could significantly reduce both human costs and public spending.

1.3 Mental wellbeing and contact with nature

1.3.1 Health and mental wellbeing

The 'health' of an individual is widely considered to be multifaceted. The World Health Organization (WHO) defines health as being "a state of complete physical, mental and social (individual) wellbeing, and not merely the absence of disease or infirmity"¹³. Similarly the term 'wellbeing' (despite the lack of a universal definition) is also considered in a wider context, described by Defra (2007) as "a positive physical, social and mental state; it is not just the absence of pain, discomfort and incapacity. It requires that basic needs are met, that individuals have a sense of purpose, and that they feel able to achieve important personal goals and participate in society. It is enhanced by conditions that include supportive personal relationships, strong and inclusive communities, good health, financial and personal security, rewarding employment, and a healthy and attractive environment."¹⁴

Five Ways to Wellbeing

Following on from this more holistic definition of wellbeing, in 2008, the new economics foundation (nef) – commissioned by the UK Government's Foresight Project on Mental Capital and Well-being – identified five evidence-based actions to improve wellbeing: i) Connect; ii) Be active; iii) Take notice; iv) Keep learning and v) Give¹⁵. It was suggested that if each of these five ways were built into daily routines, health and wellbeing would be enhanced.

¹¹ NICE 2009

¹² We need to talk coalition 2010

¹³ WHO 1948

¹⁴ Defra 2007

¹⁵ Nef 2008, 2013

Connect

Social interaction, cohesion and connecting with others can provide many important benefits for health and wellbeing. Social relationships, support and interaction are critical for promoting wellbeing and can be protective against ill-health, whereas social isolation and exclusion are associated with greater incidence of ill health¹⁶. Social isolation often results in a reduced quality of life, depression and low self-esteem and can also predict mortality and morbidity (see Section 1.5.2). Many adults and young people are becoming disconnected from other people, experiencing loneliness and isolation¹⁷. Therefore the development of strategies and initiatives to promote social inclusion and interaction within communities are essential to health and wellbeing.

Be active

Physical activity has long been proved to be an important determinant of both physical health and psychological wellbeing¹⁸. Moderate regular exercise reduces morbidity rates by 30-50 per cent, has a particularly protective effect against several health conditions¹⁹ and lowers blood pressure, improves blood lipid and glucose profiles and boosts the immune system²⁰. Physical activity also enhances mental health by improving mood and self-esteem, reducing stress, enriching an individual's quality of life and diminishing the chance of depression.

Between 24-40 per cent of children, young people and adults fail to meet recommended physical activity guidelines in the UK²¹ and the annual costs of physical inactivity in England are reported to be approximately £8.3 billion²², excluding individuals who are obese due to inactivity, which contribute a further cost of £2.5 billion per year to the economy. These figures incorporate both costs to the NHS and associated costs to the economy (e.g. work absenteeism). People who are physically active reduce their risk of developing major chronic diseases by 50 per cent and the risk of premature death by 20-30 per cent²³. Thus, initiatives that promote physically active behaviours and their inclusion into daily routines are of great importance to wellbeing.

Take notice

Many people these days have hectic lifestyles and often fail to take notice of their surroundings and things that are going on around them. Studies have shown that being aware of what is taking place in the present directly enhances your wellbeing and

'savouring the moment' can help to reaffirm your life priorities²⁴. Heightened awareness also enhances self-understanding and allows positive choices to be made based on an individual's own values and motivations²⁵. Again initiatives which encourage individuals to take notice of their environment, to be mindful and aware of themselves will enhance participant health and wellbeing.

Keep learning

Whether it is trying something new, learning new skills or enrolling on a course, learning has been shown to play an important role in health and wellbeing. For children, learning contributes to social and cognitive development, increases self-esteem and social interaction whilst also encourages participation in physical activities²⁶. In adults, learning is positively correlated with wellbeing, life satisfaction, optimism and self-efficacy, self-esteem and resilience²⁷ and it can also give people a sense of purpose and hope, encouraging social interaction and making people feel competent²⁸. By learning, problem solving skills are also developed; this can in turn lead to better coping skills and the adoption of healthier practices. Learning is also protective against depression²⁹, with older people in particular, work and education opportunities can lift them out of a depressive state. Projects and initiatives which encourage people to learn and which provide opportunities for education and skills development can directly benefit health and wellbeing.

Give

Giving to other people, through volunteering, by joining a community group or doing something good for someone else, can provide substantial benefits for mental wellbeing. Mutual cooperation and working with others can increase neuronal responses in the reward areas of the brain, indicating that social

16 Tones and Green 2010

17 Wood et al 2012; Hall-Lande et al 2007

18 CDC 1996; Laumann et al. 2003; DoH 2004; Foresight 2007; Sandercock et al. 2010

19 E.g. maturity onset Type II diabetes, coronary heart disease, musculo-skeletal diseases and cancer

20 DoH 2009, 2011

21 DoH 2011; NHS 2011

22 DoH 2004, NICE 2009

23 DoH 2009

24 Brown and Ryan 2003; Ryan and Deci 2000

25 Nef 2008

26 Hall-Lande et al 2007

27 Feinstein and Hammond 2004; Hammond 2004

28 Tanaka et al 2002

29 Feinstein et al 2008

30 Nef 2008; Rilling et al 2007

cooperation is intrinsically rewarding³⁰. In the early years, the rewards gained through helping and giving to others, contribute to improved cognitive and social functioning, critical to mental wellbeing³¹. Furthermore, feelings of life satisfaction and happiness are strongly associated with taking part in community activities and for older people, volunteering is associated with a more positive life meaning. Offering support to others is also beneficial to health and is associated with reduced rates of mortality³². Mental wellbeing is enhanced when an individual is able to achieve a sense of purpose in society and contribute to their community; so initiatives where helping and sharing go hand in hand with giving and teamwork are likely to be associated with increased self-worth and positive feelings.

1.3.2 Nature and wellbeing - The evidence base

There is convincing evidence to show that exposure to the natural environment positively affects health and wellbeing³³. Research from a variety of outdoor settings, from the open countryside, fields and forests, remote wilderness, parks and open spaces, to street trees, allotments and gardens has shown that engaging with nature on a number of different levels (from simply viewing nature, to incidental exposure, through to active involvement in nature-based activities) can produce mental (and physical) health benefits. Natural, green environments are often perceived as places to relax, escape and unwind from the daily stresses of modern life, thus having a positive effect on our emotional wellbeing.

Three key theories offer explanations relating to the relationship of man with nature, and all focus on the restorative effects of the natural environment³⁴:

i) the Biophilia hypothesis³⁵; ii) the Attention Restoration Theory (ART)³⁶; and iii) the Psycho-evolutionary stress reduction theory (PET)³⁷. The 'Biophilia hypothesis' suggests there is an innate evolutionary basis to the relationship of humans with nature and recognises man's fundamental dependence on, and desire to connect with, nature³⁸. Attention Restoration focuses on the cognitive changes associated with restoration, while PET argues that restorative effects are derived from the reduction of stress, and acknowledges emotional changes. There is however consensus in all three theories that nature contributes to enhanced wellbeing, mental development and personal fulfilment³⁹.

Evidence has shown that exposure to nature brings substantial mental health benefits, however if this exposure to nature also includes participating in

physical activities (long known for their positive physiological and psychological health outcomes) then it is even more beneficial⁴⁰. Over the last 10 years at the University of Essex, these ideas have been combined into a programme of research investigating the synergistic benefits of engaging in physical activities whilst simultaneously being exposed to nature and this is referred to as 'green exercise'⁴¹.

From this wide variety of research, we have discerned three broad health outcomes: i) improvement of psychological wellbeing (by enhancing mood and self-esteem, whilst reducing feelings of anger, confusion, depression and tension)⁴²; ii) generation of physical health benefits (by reducing blood pressure and burning calories) and iii) facilitation of social networking and connectivity (by enhancing social capital). In addition, a recent green exercise dose-response study indicated that these benefits can accrue even from short engagements in green exercise, as little as 5 minutes and then diminishing but still positive returns⁴³.

Scientific evidence of the positive relationship between exposure to nature and an individual's health and wellbeing is continually increasing. Given the challenges facing our society, nature can act as an essential health resource and given the significant costs incurred to the individual and increased expenditure in the provision of care, the importance of access to nature and green space is vital. As a result of this mounting evidence base, together with mental health charity campaigns and much positive media attention, public bodies, government departments and voluntary organisations alike, are promoting the importance of contact with nature for us all⁴⁴.

31 Nef 2008

32 Greenfield and Marks 2004

33 Maas et al. 2006, Pretty et al. 2006, Van den Berg et al. 2007, Bird 2007, Weinstein et al 2009, Hansen-Ketchum et al. 2009, Barton and Pretty 2010, NEA 2011; O'Brien and Morris 2013

34 Barton et al 2009

35 Wilson 1984

36 Kaplan and Kaplan 1989

37 Ulrich 1981

38 Wilson 1984; Kellert and Wilson 1993; White and Heerwagen 1998

39 Barton et al 2009

40 Barton et al 2009, NEA 2011

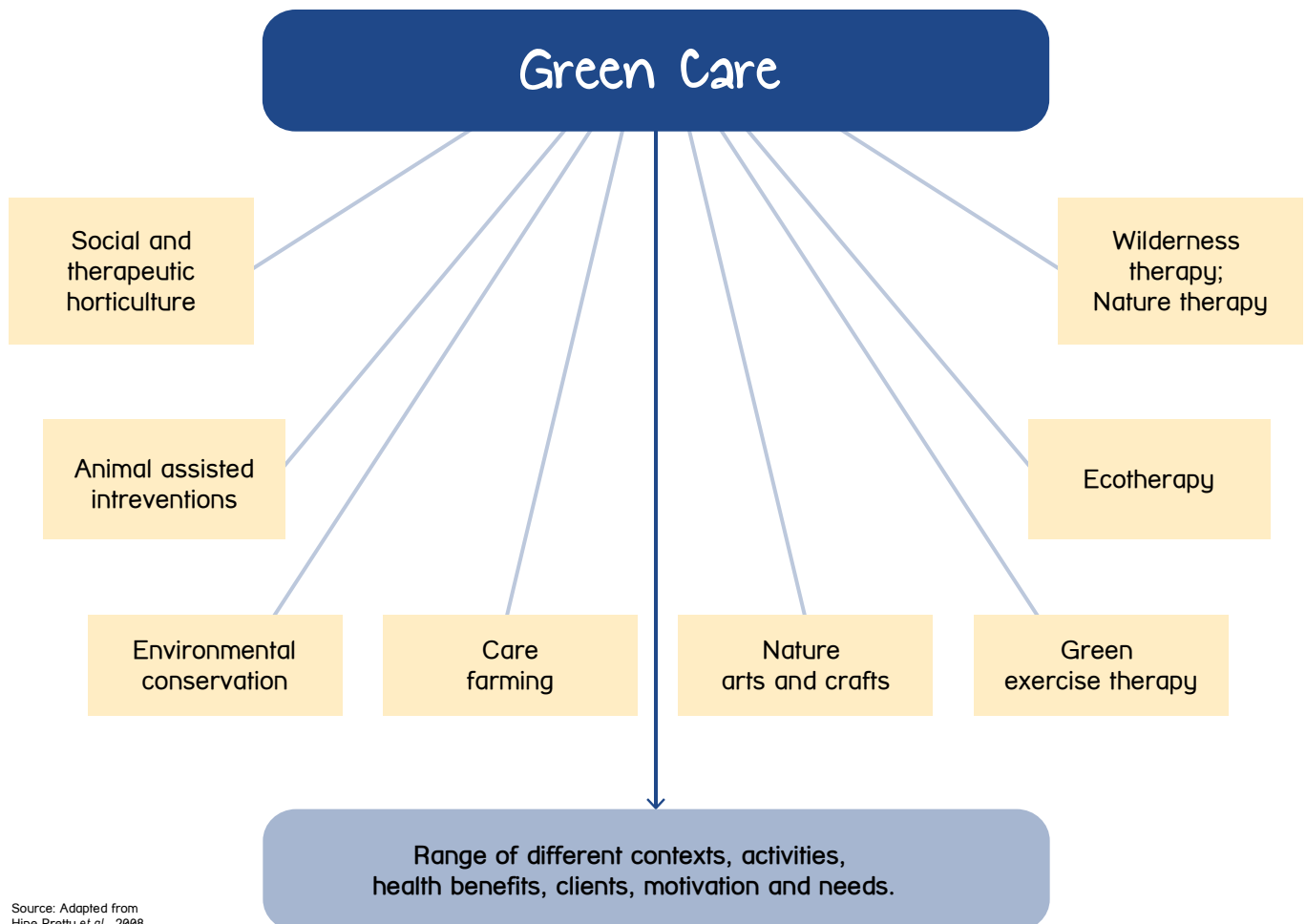
41 Pretty et al, 2003, 2004, 2005, 2006, 2007; Pretty, 2004, 2007; Peacock 2007; Mind, 2007; Hine et al. 2007a,b; Hine et al. 2008a,b, c; Hine 2008; Hine et al, 2009; Barton et al. 2009; Pretty et al. 2009, Hine 2010; Barton and Pretty 2010; Hine et al, 2011; Bragg et al, 2012; Wood et al 2012 a,b

42 Research into the benefits of activities in nature for those living with dementia has also found that green exercise can enable individuals to feel well and experience a 'dampening down' or temporary absence of their dementia related symptoms. Contact with nature was also found to contribute to the emotional, psychological and spiritual aspects of wellbeing for people with dementia.

43 Barton and Pretty 2010

44 See Defra 2011, Natural Environment White Paper

Figure 1. The Green Care Umbrella



Source: Adapted from Hine Pretty *et al.*, 2008

1.4 Ecotherapy and green care

Evidence also suggests that green exercise can have therapeutic applications for a range of vulnerable people when delivered as facilitated interventions. These nature-based applications are collectively termed ‘green care’⁴⁵, although more recently the term ‘ecotherapy’ has been widely used by projects, participants and the media alike to describe these approaches. The word ecotherapy has subsequently become largely a “general term for nature-based interventions rather than a specific example of a nature-based intervention”⁴⁶. In this report the term ‘Ecotherapy’ will be used in the general sense, that is, synonymously with green care.

Ecotherapy initiatives usually consist of a facilitated, specific intervention, for a particular participant (or group of service users), rather than simply a ‘natural’ experience for the general public. Ecotherapy approaches are ‘therapeutic’ in nature although some

ecotherapy initiatives also include formal therapy (e.g. counselling sessions, CBT, psychotherapy etc) as an integral part of the programme. There is a growing movement towards ecotherapy in many contexts, ranging from green exercise therapy, social and therapeutic horticulture, animal assisted interventions; to wilderness therapy, environmental conservation and care farming (see Section 1.4.1 and Figure 1).

45 Pretty 2006; Hine *et al* 2008, Sempik *et al* 2010
46 Sempik and Bragg 2013

1.4.1 Ecotherapy interventions

Social and therapeutic horticulture (STH)

Essentially, social and therapeutic horticulture (STH) is using gardening and plants to help individuals develop wellbeing and this can be done through spending time in gardens, participating in gardening activities or doing something more active such as growing food⁴⁷. Horticulture in a variety of contexts has proved itself to be a useful activity in promoting health and wellbeing, rehabilitation; and in enabling vulnerable and disadvantaged individuals to reach their true potential. Because of the diversity of activities associated with horticulture and the settings in which it can be carried out, horticulture can be adapted to suit a wide range of clients and it has been used to achieve physical, social and psychological benefits for people with mental health problems, learning difficulties, physical disabilities, survivors of stroke, drug and alcohol problems, social problems and others⁴⁸.

Animal assisted interventions (AAI)

Animal assisted interventions (AAI) is the general term used for a variety of ways of utilising animals in the rehabilitation or social care of humans⁴⁹. AAI includes both i) activities in which animals are present and are considered to have a therapeutic effect (e.g. feeding livestock, petting animals, collecting eggs etc.) and ii) the more formal animal assisted therapy (AAT) which is a specific goal-directed intervention where an animal is an integral part of the treatment process which is directed, documented and evaluated by professionals (e.g. equine assisted therapy, pet therapy, and dolphin therapy)⁵⁰.

Care farming

Care farming is defined as the therapeutic use of agricultural landscapes and farming practices⁵¹ and its use is increasing within the UK⁵². On care farms, components of either the whole or part of the farm are used to provide care through a supervised, structured programme of farming-related activities for a wide range of people. All care farms offer some elements of farming (involving crops, horticulture, livestock husbandry, use of machinery or woodland management etc); however, there is much variety across care farms in terms of the context, the client group and the type of farm⁵³. Mental health benefits from attending care farms within the UK include significant improvements in both self esteem and mood⁵⁴ and research from European care farm studies with different client groups imply that care farms have specific qualities that many participants benefit from⁵⁵.

These include the relationship between the farmer and the client, being part of a social community and engaging in meaningful activities in a green environment. The fact that the farm provides an informal, non-care context, closer to 'real life', is also valued.

Nature arts and crafts

Nature arts and crafts, are as the name would suggest, typically art based activities that take place whilst in the natural environment, and/or that use natural materials such as grass, clay, leaves and sticks⁵⁶. Many ecotherapy approaches or contexts include elements of nature art and craft within their programmes.

Green exercise therapy

Green exercise has previously been defined as engaging in physical activities whilst simultaneously being exposed to nature. Green exercise therapy as a treatment option typically involves participating in green exercise activities which are facilitated and led by an instructor (e.g. walking groups). Therapeutic applications of green exercise (particularly walking) as green exercise therapy may prove to be an even more effective treatment response than exercise alone in mild to moderate depression as it encourages people to re-connect with nature and experience the additional positive health benefits that are associated with this⁵⁷.

Ecotherapy

Ecotherapy (in its specific rather than generalised meaning) is a psychological approach that is rooted in the experience of nature, which acknowledges the interdependence of human health with the health of the environment. Ecotherapy initiatives use activities and exercises that emphasise the notion of "mutual healing and growth"⁵⁸ where the reciprocity between human and nature enhances an individual's wellbeing, which then promotes positive action towards the environment which in turn improves community wellbeing⁵⁹.

47 Mind 2013a

48 Sempik et al, 2005; Sempik and Bragg 2013

49 Kruger and Serpell, 2006

50 Sempik and Bragg 2013

51 Hassink, 2003, Haubenhofer et al 2010, Care Farming UK 2012

52 Hine et al., 2008a

53 Sempik et al 2010, Hine et al 2008a

54 Pretty, 2006, Peacock et al., 2007, Hine et al., 2008a

55 Elings 2012

56 Mind 2013a

57 Barton et al, 2011; Peacock et al, 2007; Mind, 2007; Sempik and Bragg 2013

58 Chalquist 2009

59 Pedretti-Burles 2008

Environmental conservation

Facilitated environmental conservation work is increasingly being used as a form of ecotherapy for a variety of marginalised groups where structured, facilitated activities take place, specifically designed with the conservation or management of the natural places in mind. Environmental conservation activities include land clearing, maintaining woodland areas and other managed areas and restoring habitats for wildlife. Environmental conservation approaches are often very similar to ecotherapy or green exercise therapy for the mutual benefit of both nature and health. Several therapeutic applications of environmental conservation activities are organised in partnership with organisations such as the Forestry Commission (with offenders)⁶⁰ and The Conservation Volunteers (Green Gyms)⁶¹.

Wilderness therapy

Wilderness therapy can be defined as an “experiential programme that takes place in wilderness or a remote outdoor setting”⁶², where a range of personal development and wellbeing opportunities are provided, through immersion in natural, wild, and wilderness settings. Wilderness therapy programmes are often composed of two elements, i) using nature as ‘co-therapist’ and ii) using therapeutic activities (including formal therapy) whilst in a wilderness location. Wilderness therapy programmes typically provide healthy exercise and diets, group and individual therapy sessions and separate participants from daily negative influences, placing them in a safe outdoor environment⁶³. Wilderness therapy programmes have been in existence in the US for many years, largely working with adolescents with behavioural problems, however in Europe, it is an emerging treatment intervention which uses

a systematic approach to work with a variety of groups but also most commonly with adolescents with behavioural problems and adults with mental ill health⁶⁴.

Although the area of ecotherapy is very diverse, the common linking ethos is the contact with nature – using a coherent and deliberate strategy to generate health, social or educational benefits using nature. Linking the exposure to nature with various facilitated and structured activities, in a safe way, can offer therapeutic benefits for many different vulnerable groups. By increasing participation and awareness, ecotherapy initiatives have the potential to improve health and wellbeing for individuals and to significantly reduce public health costs by encouraging healthier communities.



60 Carter and Hanna 2007 and see www.targetwellbeing.org.uk/profile/greener_outside

61 BTCV 2008

62 Conner 2007

63 Sempik and Bragg 2013; Sempik et al 2010

64 Hine et al, 2011



1.5 Using ecotherapy for wellbeing

1.5.1 Ecotherapy and the Five Ways to Wellbeing

Ecotherapy approaches can potentially enhance wellbeing through all of the Five Ways to Wellbeing, thus providing multiple health outcomes. Ecotherapy can encourage individuals to connect to others and to nature. Participation in green exercise activities often directly and indirectly promotes social interaction⁶⁵. This connection may be facilitated through participation in environmental conservation activities, attending an allotment or a STH project. Many ecotherapy participants say that being with other like minded people or with those with mental health problems can be very supportive. Ecotherapy (and green exercise in general) has been found to build stronger communities and connect people through groups and networks. In addition, ecotherapy interventions have been proven to increase participant connection to nature, which in itself is an important predictor of subjective wellbeing and ecological behaviour⁶⁶. The evidence base has highlighted the health and wellbeing benefits of both contact and connection with nature, and when combined with the concerns that we are becoming more and more

disconnected from the natural world, ecotherapy can therefore help with the resultant drive to reconnect us with the outdoors⁶⁷.

Undertaking physical activities in outdoor green environments could also offer a more viable and appealing option in maintaining long-term activity levels in adults and children alike, as often it is the interaction with nature and the social contact that are the main incentives rather than the 'exercise' per se (even though they often provide greater improvements in self-esteem and mood than physical activity alone⁶⁸). In this situation, the health benefits gained from the physical activity are not the main focus and so become a secondary outcome. With the current concerns over an increasingly inactive population, many of whom fearful of attending a gym or exercise class, exploring the use of ecotherapy to encourage physical activity could prove to be a benefit for all⁶⁹.

65 NEA 2011

66 Mayer and Frantz 2004, Hine et al, 2008b

67 See for example NE 2009, RSPB 2010, Moss 2012

68 Pretty et al, 2005, 2007; Barton and Pretty 2010

69 Mind 2007

Taking notice of the environment around us, particularly if it is a natural environment can have important benefits for health and wellbeing⁷⁰. 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. Furthermore, the more frequent the visits to natural spaces the lower the incidence of stress⁷¹. Noticing the natural environment is also likely to increase connection to nature, for example feelings of connectedness to nature reported after wilderness experiences range from the aesthetic appreciation of beautiful scenery and landscapes to a deep sense of belonging to the natural world. In this context nature connection has also been taken to include feelings of peacefulness and harmony; a sense of timelessness; creation of a sense of vulnerability which is humbling; learning a respect for nature and developing a sense of place⁷². People should therefore 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.

Many ecotherapy approaches encourage and enable participants to learn something new, develop new skills and increase healthy and environmentally friendly behaviours, thus contributing to increased wellbeing. Whether this new knowledge is growing fruit and vegetables, learning bushcraft skills or simply taking part in a new activity, it all has the potential to enhance wellbeing through learning. Similarly, 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. In addition some ecotherapy interventions (particularly environmental conservation and ecotherapy) also encourage individuals to give something back to nature either directly through direct tasks or indirectly through environmentally friendly behaviours.

Ecotherapy can contribute both directly and indirectly to wellbeing and therefore can facilitate each of the Five Ways to Wellbeing. Incorporating more green exercise activities into daily routines and lifestyles and supporting more ecotherapy opportunities has the potential to increase wellbeing for both individuals and communities alike.

1.5.2 Wellbeing and the environment - linking environmental enhancement and conservation activities

Leading on from the Five Ways to Wellbeing, there has been a growing recognition of the multiple health and wellbeing impacts of contact with nature in a range of different settings and contexts. A recent piece of research by the European Centre for Environment and Human Health, University of Exeter Medical School and the Peninsula Technology Assessment Group (which included a systematic review⁷³) examined a wide variety of different quantitative and qualitative studies of people taking part in environmental activities. From this research, a model has been developed which illustrates the pathways through which multiple health and wellbeing impacts may occur for those participating in environmental enhancement and conservation activities. Although specifically developed for environmental enhancement and conservation activities the model could also be adapted for and applied to other nature based interventions and may provide a useful framework for several ecotherapy approaches (see Box 2).

1.5.3 Ecotherapy and healthy life pathways

Contact with nature does not only affect immediate health and wellbeing but also can also affect health throughout a lifetime. There is growing evidence to show that contact with nature and consequent levels of physical activity in childhood affects not only wellbeing at the time but also in later life⁷⁴. Many of the social and environmental conditions of childhood can predict or track adult health status and childhood physical and mental ill-health is carried forward in later life⁷⁵. Later emotional wellbeing and cognitive capacity is also profoundly influenced by early social development⁷⁶.

In the same way childhood experiences in nature appear to fix environmental sensitivity (a predisposition to be interested in learning about caring for and conserving nature⁷⁷) in adults, suggesting a need to establish good behaviours early⁷⁸.

70 Mitchell and Popham 2008; Hine et al 2011

71 Cooper-Marcus and Barnes 1995; Whitehouse et al 2001; Ulrich 2002-

72 Russell et al. 1998; Russell 1999, 2001; Russell et al, 2000; Caulkins et al. 2006; Hine et al 2009

73 Husk et al 2013

74 Wells and Lekies 2006, Frenn et al 2005, Pretty et al 2010

75 Danner et al 2001, Foresight 2008

76 Ainsworth and Bell 1970, Ainsworth et al. 1974

77 Chalwa 1998

78 Chawla and Cushing 2007, Cheng and Monroe 2010, Ernst and Theimer 2011

The 'Wellbeing and the Environment' model illustrates the pathways through which health and wellbeing impacts may come about following participation in environmental enhancement and conservation activities. Health-related outcomes (mental health, social functioning and physical health) are affected by 'mechanisms of change and process outcomes' which are broad themes derived from the research evidence and either link the activity to the health-related outcomes or are considered as desirable outcomes in their own right.

Moderators are the factors which might influence the outcomes and have been categorised into three sources – mechanisms of action, environment in which an activity is undertaken and those related to the types of activity itself (i.e. the programme). Personal mediators are included to demonstrate that the evidence suggests that factors such as personal expectations and social identity are important and that these may influence the outcomes. Motivation is considered separately because it emerged as a key factor as to how individuals approach and potentially benefit from the programme.

Finally, the circular arrows are used to demonstrate that participation is a dynamic process whose outcomes can change and affect one another. These outcomes then cannot therefore be considered in isolation or as strictly independent (e.g. increased social contact may improve a participant's confidence which may result in further opportunities for social contact, ability to take on leadership roles and so on).

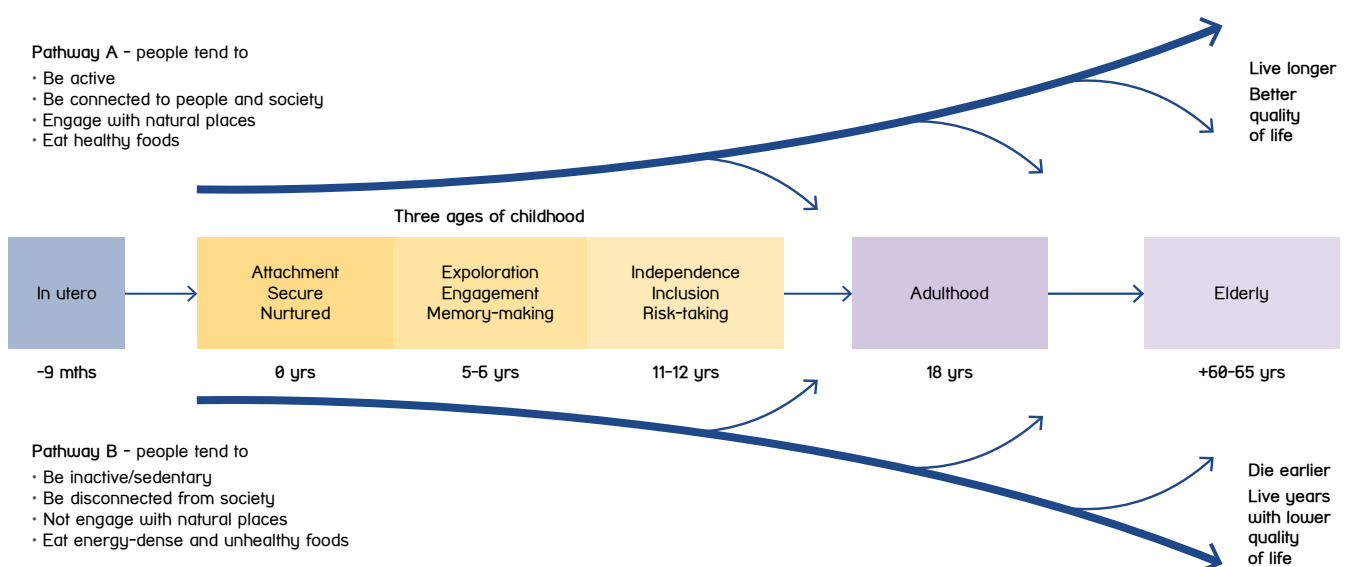
For more information see <http://onlinelibrary.wiley.com/doi/10.1002/14651858.CD010351/abstract>

Further University of Essex research⁷⁹ has developed a funnel of pathways within which all our lives are shaped (Figure 2). At the top, people live longer with a better quality of life; at the bottom they die earlier and often live years with a lower quality of life. On the healthy pathway, people tend to be active, be connected to people and society, engage with natural places, and eat healthy foods. As a result, they tend to have higher self-esteem and better mood, be members of groups and volunteer more, keep learning, engage regularly with nature and be more resilient to stress, thus fulfilling many of the Five Ways to Wellbeing.

Conversely, on the unhealthy pathway, people tend to be inactive and sedentary, be disconnected from society and social groups, not engage with natural places, and eat energy-dense and unhealthy foods. They also tend to have lower socio-economic status, be in more stressful jobs, live where active travel to work or school is difficult, have increased likelihood of being mentally ill, and be overweight or obese.

79 Pretty et al 2010

Figure 2. Life pathways



Source: Pretty et al., 2009

There are clearly numerous pathways that lie between healthy path A and unhealthy path B - the figure has been simplified for illustration purposes only. There are many other factors that affect our long-term life and health pathways but the research describes the key mediators, such as social status, mental health, social inclusion, physical activity, urban design and contact with nature.

It is proposed that it is possible to shift across these life pathways – from B towards A as a result of adopting healthy behaviours, or from A to B as a result of shocks or an accumulation of stresses. Resilient individuals remain able to absorb and cope with shocks and stresses and remain on pathway A. It follows therefore that contact with nature through green exercise or involvement in ecotherapy interventions can help an individual shift across the life pathways for a healthier, happier life through improving wellbeing, increasing physical activity and fostering a connection to nature, often at the same time as enabling healthy lifestyle behaviours and creating healthier communities.

1.6 Ecotherapy and resilience

At some point in our lives, we will all unfortunately experience difficult periods. How we cope with these times of stress, loss, failure or trauma will undoubtedly influence our wellbeing. Although there is a lack of a standardised definition, ‘resilience’ is considered to be both the ability of an individual to bounce back after times of stress; and their capacity to adapt in the face of challenging circumstances and adversity, whilst maintaining a stable mental wellbeing⁸⁰. A person’s resilience has been found to be dynamic, we may respond to the same circumstances differently at different stages in our lives and what affects one person may not affect someone else in the same way⁸¹. Our level of resilience will also affect how we live our lives, how open we are to new opportunities and learning new skills, and how we let ourselves grow and develop⁸².

Resilience can be seen as a kind of ‘defence mechanism’⁸³ in the battle against adversity and building up an individual’s resilience can be seen as a preventative approach to future stresses. The development of psychological ‘coping strategies’ is therefore important to build up our resilience and maintain good mental health. Initiatives and treatments that help to develop different coping strategies and build up our resilience should therefore be encouraged.

Our resilience is said to be influenced by three main factors: i) how we develop as children and young people; ii) external factors (such as our relationships with other people, social inclusion, having a faith etc); and iii) internal factors (such as how we choose to interpret events, manage our emotions and regulate our behaviour)⁸⁴. Initiatives which positively shape these factors will help to grow resilience.

The resilience approach to increasing wellbeing is in line with the WHO concept of mental health as ‘a positive state of psychological wellbeing, going beyond the absence of disease’⁸⁵. However the lack of either a single definition or a unified approach to resilience research and practice⁸⁶ has meant that inevitably healthcare professionals and third sector organisations are developing a wide variety of approaches to increasing resilience for the benefit of mental health.

For Mind, their model of resilience building⁸⁷ takes the approach that resilience should be developed by communities as well as individuals and recognises the importance and interrelatedness of three key elements in reducing the likelihood of mental health problems:

- Promoting wellbeing through nef’s Five Ways to Wellbeing.
- Building social networks and social capital – human relationships are key to our capacity to respond to adversity and challenge so a strong focus on reducing isolation is needed.
- Developing psychological coping strategies – to build resilience we need to develop increased levels of understanding around what affects our mental health. Mind wants to promote insight into psychological coping strategies; driven by principles of positive psychology, and psychological therapies including Cognitive Behavioural Therapy (CBT), Interpersonal Psychology (IPT) and also mindfulness.

Whilst there has been much promotion of wellbeing and social capital by local authorities and the voluntary sector⁸⁸ according to Mind, the contribution

⁸⁰ Mind 2013b

⁸¹ Maston and Wright 2010 and see Action for Happiness www.actionforhappiness.org/10-keys-to-happier-living/find-ways-to-bounce-back/details

⁸² Reivich and Shatte 2003; Tedeschi and Calhoun 2004; Masten et al, 2009; Styles 2011

⁸³ Davydov et al, 2010

⁸⁴ Reivich and Shatte 2003; Maston and Wright 2010 and Action for Happiness

⁸⁵ WHO 2005

⁸⁶ Davydov et al, 2010

⁸⁷ For more information see ‘Resilience in Mind’ Mind 2013b

⁸⁸ See www.neweconomics.org/publications/the-role-of-local-government-in-promoting-well-being

of interventions that develop psychological coping strategies has been under examined⁸⁹. Evidence is growing concerning the use of psychological treatments (including but not limited to CBT) for the purposes of prevention and resilience and a recent meta-analysis suggests that up to 38 per cent of major depressive episodes could be prevented with currently available methods⁹⁰. However the evidence base has not so far been translated into practice and there is quite a limited protocol for delivering these interventions in either statutory or voluntary sector settings: “Full use of evidence-based depression prevention strategies has yet to be realized. This gap between what is known and implementation of these strategies requires attention, action, and the strengthening of research and dissemination efforts”⁹¹.

Ecotherapy has the potential to enable resilience development through the promotion of wellbeing, the increase of social inclusion and of mindfulness and also by providing a natural, calm setting for more formal therapy. All of which can help build up an individual’s capacity to cope with life stresses and have a prophylactic effect against poor mental health in the future.

1.7 Ecotherapy as a treatment for depression

With mental health problems and especially depression on the increase, what is known about ecotherapy and green exercise therapy as a potential treatment option? Visiting the GP is frequently the first step that people take when they feel depressed and it is usually the GP who is primarily responsible for organising their treatment.

Currently UK NICE guidance recommends talking therapies (such as CBT) and/or antidepressants as the first two treatment options for depression. They also promote a stepped-care model using a multifaceted treatment approach (e.g. combination of both medication and psychological support)⁹². However, in an article reviewing four meta-analyses of efficacy trials for antidepressant drugs and CBT in 2010, it revealed that both often fail to result in sustained positive effects for the majority of people who receive them. Only 51 per cent of studies have found positive effects of antidepressants when compared to placebos⁹³.

Whilst antidepressants and CBT are the first two treatment options for depression, the Department of

Health’s evolving ‘Improving Access to Psychological Therapies (IAPT)’ initiative continues to promote alternative treatment options⁹⁴. Epidemiological evidence shows that physical activity is associated with a decreased risk of developing clinically defined depression and that the antidepressant effect of exercise is interestingly, of a similar magnitude to antidepressant drugs and psychotherapeutic techniques⁹⁵. In a report by the Chief Medical Officer it was stated that “physical activity is effective in the treatment of clinical depression and can be as successful as psychotherapy or medication, particularly in the longer term”. Therefore, a compelling argument for exercise therapy to be advocated as a treatment option can be formulated. Exercise has less negative side effects and can positively treat patients experiencing a combination of physical and mental health problems.

However, a common concern is that people experiencing a period of depression do not have the desire or motivation to exercise; but compliance rates are often much better than for medication, especially if they are receiving adequate support and encouragement. That said, only four per cent of GPs offer exercise as their first treatment option for depression and only 21 per cent put exercise within their top three treatment options⁹⁶.

The option of ecotherapy (and green exercise therapy in particular) may prove to be an even more effective treatment than exercise alone as it encourages people to re-connect with nature and experience the additional positive health benefits that are associated with this. Contact with nature and green space is often uplifting and restorative, helps to reduce stress and improve mood and combining this with physical activity will offer a very efficacious treatment option. In addition as the nature and the activities are usually the primary focus, the ‘exercise’ component seems secondary, and so often seems much less daunting for participants than gyms or fitness clubs. Ecotherapy also promotes social inclusion and enables people to make healthier choices and adopt a more sustainable healthier lifestyle. However, even though the evidence is

89 Mind 2013b

90 Muñoz et al, 2012

91 Pim Cuijpers et al 2012

92 NICE 2009

93 Piggott et al, 2010

94 DoH 2012

95 Mead et al, 2010

96 Mental Health Foundation 2009

continually growing, to date there is still relatively little evidence on the effects of ecotherapy in the treatment of depression.

1.8 Ecotherapy in the UK

The last few years has seen an increase in the number of ecotherapy projects across the UK, ranging from walking initiatives and Green Gyms through to STH projects and care farms (see Box 3).

Government departments (Defra, DoH), organisations such as Natural England and large national charities such as the National Trust, RSPB, TCV and Mind all have campaigns to encourage us to have more contact with nature, to take up green exercise for our health and wellbeing and to re-connect to natural spaces, both as adults and children. The term 'green exercise' has been taken up by many local authorities and public health professionals for use in promoting healthier lifestyles and ecotherapy initiatives have been working effectively with many different vulnerable groups and communities. The Big Lottery Fund has supported ecotherapy projects not only directly through the Ecominds scheme, but also indirectly through other funding streams such as 'Access to Nature' and 'Local Food'.

It is apparent that there is an emerging body of evidence supporting green exercise and ecotherapy and it is becoming increasingly recognised as an idea which can be linked to current government health and social care policies. However there is still a way to go before ecotherapy is considered 'mainstream' as a way to increase wellbeing or as a treatment option in mental healthcare. The majority of GPs do not even consider the use of ecotherapy as a treatment intervention for mild to moderate depression; and many patients do not consider a prescription for an ecotherapy intervention as either an adequate response to their illness by their doctor or as an effective treatment.

Box 3: Some examples of ecotherapy initiatives currently in the UK

- Approximately 200 care farms operating in the UK – using farming to improve health, wellbeing and social inclusion for many vulnerable groups. See www.carefarminguk.org
- Well over 1000 Social and Therapeutic Horticulture projects in the UK – using gardening and horticulture to deliver health and wellbeing benefits. See www.thrive.org.uk and www.asthp.org.uk
- Nationwide programme of over 95 TCV Green Gyms – endorsed by local health practitioners, encouraging participation in local nature conservation activities to improve health and wellbeing since 1997. See www.tcv.org.uk/greengym
- Wilderness therapy programmes for people with mental ill-health and for disaffected young people and youth at risk. See for example www.discoveryquest.org/ www.wildernessfoundation.org.uk and www.wildernessfoundation.org.uk/category/turnaround/
- Natural England Green Exercise campaign and eight demonstration projects around the UK. See www.naturalengland.org.uk/ourwork/enjoying/linkingpeople/health/greenexercise/default.aspx
- Walking for Health over 600 walking schemes run by the Ramblers and Macmillan Cancer Support See www.walkingforhealth.org.uk
- Ecominds – 130 projects across England using ecotherapy for people suffering with mental distress. See: www.mind.org.uk/ecominds
- Various groups offering ecotherapy interventions. See for example: www.ecotherapy.org.uk/ www.andymcgeeney.com and www.eco-therapy-uk.com/
- Animal assisted interventions over UK. See for example: www.scas.org.uk/animal-assisted-interventions/ and www.equine-animal-assisted-therapy.org.uk/
- Social forestry initiatives – See Forestry Commission website and <http://dx.doi.org/10.1080/13549839.2013.790354>

So why is this the case? Is there a lack of evidence to support the use of ecotherapy approaches? Is it simply a lack of knowledge on the behalf of GPs and patients that alternatives exist? Are there not enough ecotherapy initiatives out there to cater for demand? Is it that there is currently no coherent funding for such initiatives? Is there a lack of political will? Is it because ecotherapy is not yet supported by NICE guidelines? Elements of all of these factors are probably responsible and all of these statements may be true in part, but in times of burgeoning mental health costs, economic hardship, shrinking budgets (across all sectors) and amidst worries that we are becoming a society of sedentary and obese people, increasingly disconnected from nature, can we really afford not to promote ecotherapy as one of the solutions?

1.9 Limitations of evidence

1.9.1 Limitations of current evidence base

The evidence base for the benefits of ecotherapy is continually growing and can be considered convincing but not yet complete. There is also a large amount of anecdotal data showing a strong link between various ecotherapy or green care approaches and improved health and wellbeing for a variety of cohorts. There is still a need for further quantitative data to support the qualitative narrative as many evaluations of such initiatives are purely qualitative or descriptive with much emphasis on narrative evidence.

Many studies unfortunately suffer from methodological limitations that cast some doubt over their effectiveness as a therapeutic intervention. The lack of standardised, reliable and validated measures assessing changes in health and wellbeing parameters; absence of a control group;

together with small sample sizes are often major limitations of the research findings⁹⁷. Methodologies are often not replicable and not all details are reported, so there is a general lack of comparable findings⁹⁸. There is also a lack of longitudinal study designs as many studies do not administer follow-up measures to evaluate the long-term effects of participation⁹⁹. Therefore, there is a real need for a mixed approach adopting both robust standardised instruments to quantify outcomes and qualitative methodologies which capture rich quotes to support the quantitative analyses. There is therefore a need for further research to address these limitations.

In addition, there is limited evidence concerning the application of ecotherapy initiatives in the mental health population. Steps are being taken to engage more individuals experiencing mental illness in ecotherapy (particularly Green Gym, Ecominds, care farming, wilderness therapy etc – see Box 2). Green Gym groups often attract individuals experiencing mental illness and evaluation findings have reported significant increases in mental health state scores, a reduction in depression and a trend towards weight loss¹⁰⁰.

97 Davis-Berman & Berman, 1994; Sempik 2005; Willis and Liesl 2005; Peacock et al 2007; Hine et al 2008c

98 Winterdyk & Griffiths, 1984; Gillis, 1992; Cason & Gillis, 1994; Hattie et al., 1997

99 Russell, 1999; Epstein, 2004; Sempik 2007

100 Reynolds 1999, 2002, BTCV 2008



The research has also not yet fully addressed the issues of exposure time and sustainability. Research has demonstrated that in the short term and after relatively short exposures to nature, of as little as five minutes, ecotherapy is beneficial in improving mental health and wellbeing, but it is not known whether this automatically leads to longer-term improvements. Another important unanswered question for sustainability is to what extent do the benefits of such ecotherapy interventions continue off-site? How long do the psychological benefits last once you return to a more stressful environment? Do the benefits last for the day, the next day or for the next week? Does contact with nature provoke long-term changes in thinking, leading to social (and political) transformations and improved public health?

Finally, to date, there has been little research conducted which directly compares ecotherapy with more traditional treatment options, such as anti-depressants or CBT. We anticipate that ecotherapy will be effective, but the robust scientific evidence to support this hypothesis is still incomplete. Comparative economic or 'cost-benefit' research for ecotherapy is also currently very limited. For the idea of ecotherapy to gain credibility and influence government policy and the health sector, more detailed research needs to be undertaken.

1.9.2 Evaluation of ecotherapy interventions

In the field of healthcare evaluation, the robustness and effectiveness of evidence has been historically assessed using an idea of a 'hierarchy of evidence'. In the traditional hierarchy, particular elements of evaluation design are seen as indispensable if the 'scientific' nature of evidence is to be preserved. Foremost among these are:

- the application of a comparative method including a 'control' sample
- the use of randomness as a principle in the construction of samples
- the use of 'blinding' (where research participants only (single blind) or participants and researchers (double blind) are uncertain of which individuals have received an intervention and which a placebo)
- the use of replicable methodology and standardised, validated instruments for the measurement of health gain and other outcomes.

Because the randomised control trial (RCT) contains three of the elements above (comparison, randomisation and blinding) it is seen as the 'gold standard' in effectiveness methodology. The RCT is considered a 'fair test', involving the comparison of two treatments or interventions under conditions that remove any bias either in the selection of participants or the measurement of outcomes¹⁰¹. However, evaluation of nature-based interventions may find it difficult to live up to this standard, as they, by their very nature, preclude the use of one (or several) desirable methodological elements. The main reasons for this are that ecotherapy interventions:

- do not necessarily involve the application of a discrete or defined 'treatment' such as a medicine
- are often not amenable to placebo (e.g. it is very difficult to design an activity that is just like being in nature, but isn't in nature at all)
- cannot easily be blinded as it would not be possible for a patient to be honestly unsure whether they had been outside or not¹⁰²
- outcomes are not necessarily discrete or easily measurable (e.g. feelings of improved general wellbeing, increased social inclusion, feeling useful, empowered and more confident etc).

In addition, it could be construed as unethical to deny participants access to ecotherapy interventions (i.e. withholding treatment) when they themselves consider that it might be beneficial to their health and wellbeing. Given that ecotherapy interventions can be characterised by these elements, the 'gold standard' of a blinded and randomised control trial, has up until now, not necessarily been considered an appropriate (or even possible) choice. Dismissing the RCT as 'inappropriate' for the evaluation of nature-based interventions though, may be limiting the perception of the effectiveness of such initiatives. Unfortunately conducting a RCT is a costly process and to date, there seems to have also been a lack of will by funders of healthcare research to support an ecotherapy RCT. However regardless of how viable RCTs are considered for nature-based ecotherapy interventions, enhanced monitoring and evaluation of these programmes is undoubtedly needed to assess changes in health, social and economic outcomes.

¹⁰¹ Sempik 2007

¹⁰² i.e. an individual is bound to realise that they have had the 'nature' treatment rather than an alternative

2. Ecominds evaluation

2.1 Background¹⁰³

Mind provides advice and support to empower anyone experiencing a mental health problem and campaigns to improve services, raise awareness and promote understanding of mental health problems.

In 2007, following the commissioning of two research studies into green exercise initiatives¹⁰⁴, Mind called for a new green agenda for mental health through their ecotherapy campaign for Mind week. The campaign highlighted the growing evidence in support of an accessible, cost-effective and natural addition to existing treatment options, using ecotherapy interventions. The campaign was instrumental in raising awareness of nature-based initiatives for those with mental health problems.

Leading on from this work, Mind was chosen as an award partner for the Big Lottery Fund Changing Spaces programme¹⁰⁵ to manage Ecominds; a £7.5 million open grant scheme. Over the five years since the launch of the scheme in 2008, Ecominds has funded 130 environmental projects in England that help people living with mental health problems get involved in green activities to improve confidence, self-esteem, and their physical and mental health.

Ecominds projects range from horticultural and agricultural schemes, through to walking groups and regeneration initiatives in local parks. All projects encourage participants to enjoy and benefit from nature and green spaces in urban and rural environments.

2.2 Ecominds wellbeing evaluation

Mind commissioned the Green Exercise Research Team at the University of Essex to carry out an independent, academic evaluation of the Ecominds scheme to provide robust, scientific data on the effects on psychological health and wellbeing of beneficiaries derived from taking part in Ecominds projects. This evaluation focused on three main themes: i) Wellbeing, ii) Social inclusion and iii) Connection to nature and two secondary themes: iv) Healthy lifestyles and v) Environmentally friendly behaviour.



There are two levels to the University of Essex evaluation of Ecominds

- a) Evaluation of the Ecominds scheme as a whole (a meta-analysis)
- b) More in-depth evaluation of a sub-sample of nine individual Ecominds projects

The evaluation was not about measuring the 'performance' of individual projects but rather measuring outcomes for beneficiaries, projects and the Ecominds scheme as a whole. The process was designed to be as flexible and inclusive as possible with evaluation tools specifically formulated not to be a burden on projects or too onerous for beneficiaries. Details of the evaluation approach can be found in Chapter 3.

¹⁰³ This section is taken from www.mind.org.uk and www.mind.org.uk/ecominds/what_is_ecominds

¹⁰⁴ See Mind 2007 and Peacock 2007

¹⁰⁵ See www.biglotteryfund.org.uk/ for more information



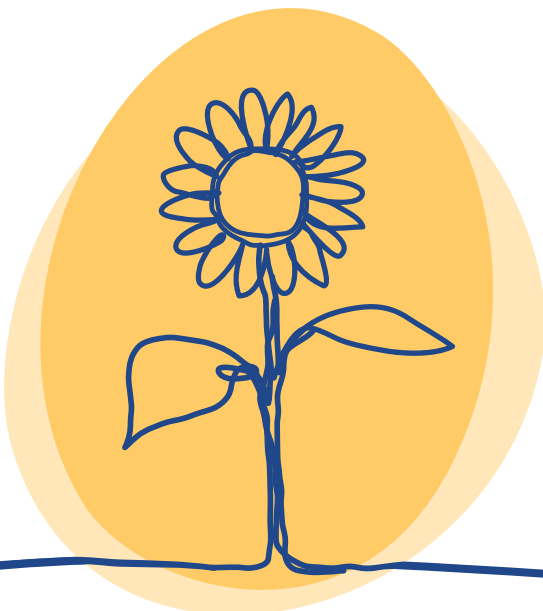
2.3 Green Exercise Research Team at the University of Essex

The *Green Exercise Research Team* involved in this study forms part of the *Essex Sustainability Institute (ESI)* at the University of Essex. There is growing empirical evidence to show that exposure to nature brings substantial mental health benefits¹⁰⁶ and at the same time, physical activity is known to result in positive physical and mental health outcomes. Over the last 10 years at the University of Essex, we have combined these ideas into a programme of research on 'green exercise' (activity in the presence of nature) and 'green care' (therapeutic applications of green exercise and other nature based interventions). These address current concerns about the adverse health effects of modern diets, sedentary lifestyles and a disconnection with nature, along with growing evidence that stress and mental ill-health have become substantial health problems for many people in industrialised societies.

This cross-disciplinary University of Essex project team is engaged in primary research on i) the health benefits of green exercise – investigating the mental and physical health benefits of physical activities under exposure to different rural and urban environments; ii) measuring connection to nature; and iii) evaluating a wide variety of green care options in varying contexts (including care farming, facilitated green exercise, ecotherapy and wilderness therapy); and is currently leading research in this field¹⁰⁷. The Green Exercise Research Team were also involved in conducting the original research that supported Mind's Ecotherapy campaign in 2007.

The Essex sustainability Institute is also a leading authority on the use of Participatory Appraisal and Action Research to assess the needs and opinions of communities. With over 25 years' experience of participatory assessment, we have worked with a wide variety of organisations and target groups both within the UK and internationally. The ESI has developed innovative participatory techniques that engage communities as active participants and this approach encourages community ownership of outcomes so that they are self-sustaining in the longer term.

¹⁰⁶ Pretty et al, 2003, 2004, 2005, 2006, 2007; Pretty, 2007; Peacock 2007; Mind, 2007; Hine et al. 2007a,b; Hine et al. 2008a,b, c; Hine 2008; Hine et al, 2009; Barton et al. 2009; ; Pretty et al. 2009; Hine 2010; Barton and Pretty 2010. Hine et al, 2011; Bragg et al, 2012; Wood et al 2012 a,b
¹⁰⁷ See www.greenexercise.org/ for more details of this research



3. Methodology

This section provides an overview of the research process and sampling strategy; details of support given, ethical procedure and data protection; and information on the questionnaire development; before outlining the outcome measures used in the composite questionnaires and the methods employed to analyse them.

3.1 Overview of research process

The University of Essex provided an independent monitoring and evaluation process to assess key outcomes of the Ecominds scheme. The University of Essex evaluation of Ecominds was based on the experiences of participants rather than ‘performance’ of projects and focused on three main themes: i) Wellbeing, ii) Social inclusion and iii) Connection to nature, and two secondary themes: iv) Healthy lifestyles and v) Environmentally friendly behaviour.

The aims of the University of Essex Ecominds evaluation were:

- To examine changes in beneficiary wellbeing as a result of participation in Ecominds
- To determine any changes in feelings of connection to nature and to other people as a result of participation in Ecominds
- To determine likely perceived or actual changes

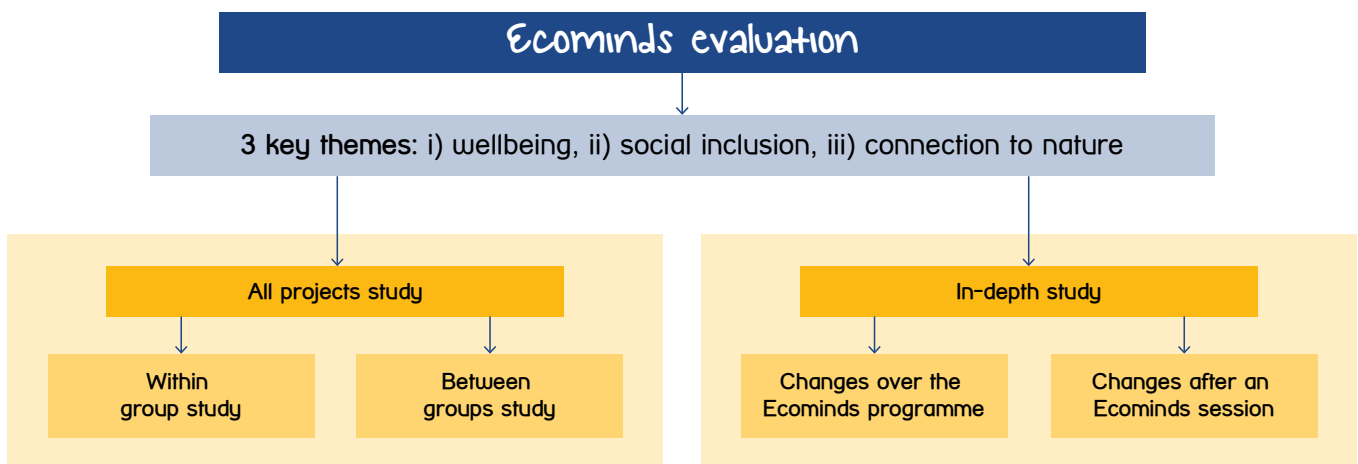
in lifestyle behaviour for beneficiaries as a result of participation in Ecominds in terms of healthier lifestyles and environmental behaviour indicators

3.2 Evaluation design and sampling strategy

The most appropriate approach to the Ecominds evaluation, in terms of financial and ease of administration considerations, was deemed to be the use of a predominantly questionnaire-based methodology. The composite questionnaires were therefore specifically designed to provide comparative data, over time, on the personal outcomes of participating in Ecominds (e.g. improved psychological wellbeing, social inclusion etc).

There are two levels to the University of Essex evaluation of Ecominds: firstly an evaluation of the Ecominds scheme as a whole (a meta-analysis type approach) - which we have called the ‘All projects’ study; and secondly a more in-depth evaluation of a sub-sample of nine individual Ecominds projects – which we have termed the ‘In-depth’ study. Furthermore, within each of these two levels, there are different elements of the research (see Figure 3). The details of the study design and the sampling strategy of the two levels of the evaluation will be addressed separately in the following sections (3.2.1 and 3.2.2).

Figure 3. Overview of the University of Essex Ecominds evaluation





3.2.1 The 'All projects' evaluation

The 'All projects' evaluation was open to all projects except: i) the projects involved in the 'In-depth' evaluation, ii) those projects being evaluated by CLES and NEF as part of the Big Lottery Fund National Wellbeing Evaluation and iii) projects which were participating in their own external evaluations; in order to avoid project participants suffering from 'questionnaire fatigue'. In addition, projects where it was not considered ethically appropriate to use the University of Essex questionnaires were also omitted (for example where participants were deemed by project staff to be particularly vulnerable, too young or too traumatised and therefore not able to complete the composite questionnaires, even with assistance).

Every Ecominds project was sent 10 printed copies of the short two-page participant questionnaire by post (and electronically by email when requested) and project staff then asked five participants at random in their project to complete the questionnaires at the start of their involvement with Ecominds. Completed questionnaires were then sent back to the University of Essex by Freepost. Towards the end of the programme project staff asked the same five participants (if possible or five different participants if not) to complete the remaining five questionnaires and once again the completed questionnaires were returned to the University of Essex for analysis. Projects were also encouraged

to involve more than five people in the evaluation if they wished to do so. More details of the 'All projects' questionnaire are covered in Section 3.5 and a copy of the questionnaire can be found in Appendix A. Each Ecominds project involved a slightly different context, with varying numbers of participants, differing activities and timescales. Timings for the questionnaire completion could therefore not be specified exactly and had to be flexible, so were left to the discretion of the project staff (with guidance given – see Section 3.3).

The 'All projects' study comprised two separate elements which were dependent on whether the projects had been able to ask the same people to fill out questionnaires both at the beginning and at the end of the programme or whether different participants had been involved in completing questionnaires at the two time points.

Firstly, for projects who had managed to ask beneficiaries to complete both a start of programme questionnaire and then another questionnaire at the end of the programme a direct comparison of parameters and any changes that have occurred over time could be made on an individual basis. We have called this a 'within group' study.

Secondly, for projects whose participants had either completed one questionnaire at the start of their time at the project or one questionnaire at the end of the project, a comparison of the outcome measures between two different groups of participants (those who have just started at a project and those who have just finished) could be made and any resulting differences reported. We have called this a 'between groups' study.

3.2.2 The 'In-depth' evaluation

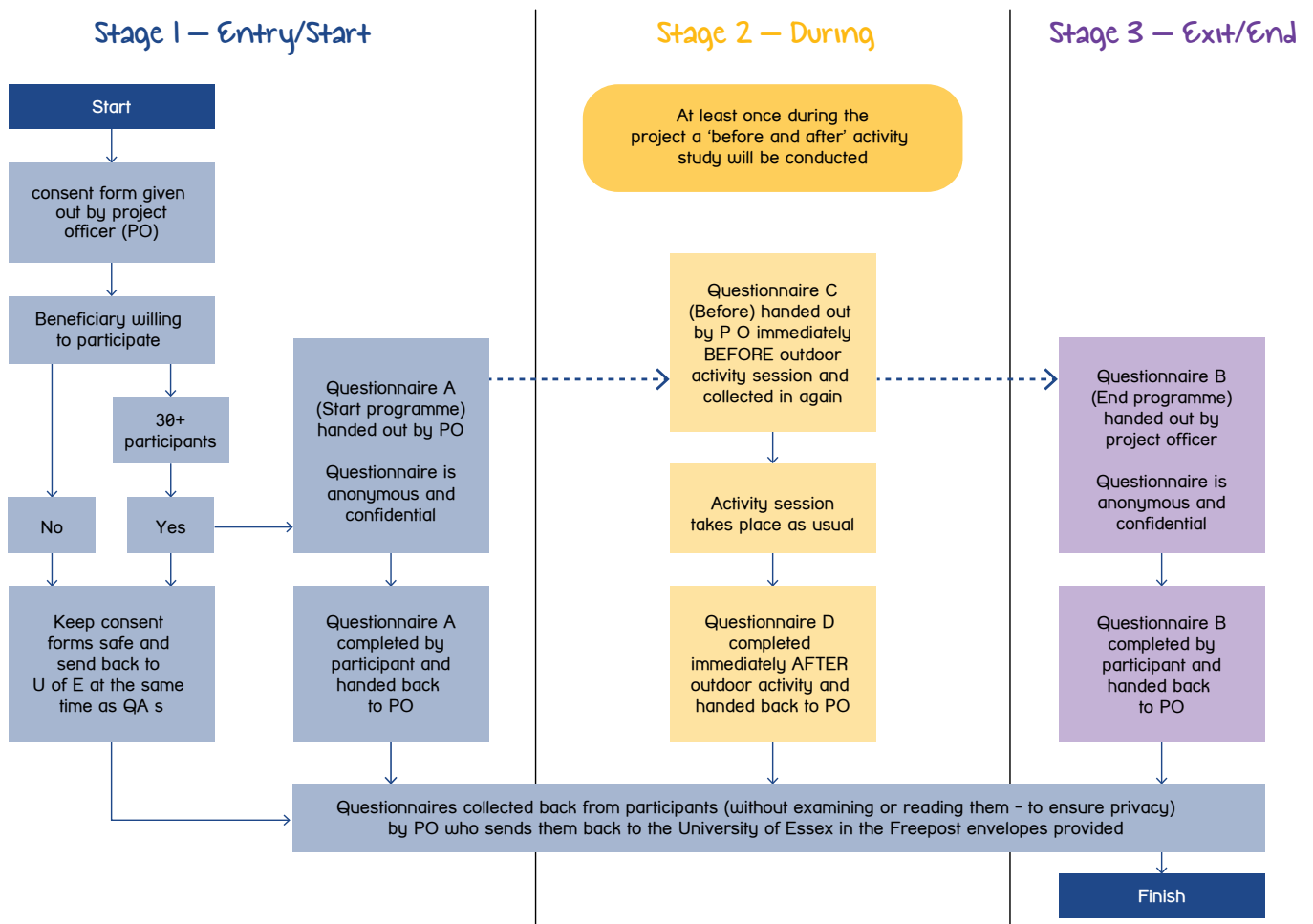
A subset of Ecominds projects were chosen to give more in-depth information on the effects on participant wellbeing, social inclusion and connection to nature. The aim was to provide a representative sample of Ecominds projects to include: i) all types of project, i.e. a mix of care farming, social and therapeutic horticulture, environmental conservation, facilitated green exercise and nature art and crafts projects; ii) projects both with and without a formal therapy element, iii) projects from all of the geographic regions; iv) a range of project sizes (in terms of number of beneficiaries); and v) a variety of different grant sizes.

The 'In depth' Ecominds evaluation is also composed of different research elements. Firstly, participants have completed questionnaires at the beginning and at the end of their involvement with Ecominds, enabling an analysis of any changes in outcome measures on a longitudinal basis over the Ecominds programme (longer term changes, commonly known as changes in 'trait'). In addition, participants also completed a series of slightly different questionnaires immediately before (pre) and after (post) taking part in an Ecominds session to enable analysis of any changes in outcome measure over a much shorter period of time (commonly known as changes in 'state'). Finally, several of the outcome measures were repeated not only in the beginning and end questionnaires but also in the pre and post activity questionnaires, enabling an analysis of outcome measures at regular intervals throughout the programme. The aim was to encourage at least 30 participants from each project to take part in the

evaluation, however again, each of the nine projects were slightly different, with varying numbers of participants, activities and timescales, so this number had to be flexible.

The evaluation process followed the steps laid out in the 'Flowchart for project staff' (Figure 4). After reading the guidelines document, project staff administered the consent forms and participant information sheets to project beneficiaries. Once participants agreed to take part in the evaluation they were asked to fill in a questionnaire at the start of their involvement with Ecominds. Further (slightly different) questionnaires were administered by project staff before and after an activity session together with a questionnaire coversheet. Depending on the set up of the project, the before/after activity element happened again at regular intervals throughout the duration of the project. Finally the 'end of programme' questionnaire was administered when the participant was nearing the end of their

Figure 4. University of Essex Ecominds Evaluation Process - Flow chart for project staff



time with the project or at a set period of time after the project has begun. All completed questionnaires, consent forms and coversheets were returned to the University of Essex for analysis. More details of the 'In-depth' questionnaires are covered in Section 3.5 and a copy of the questionnaires can be found in Appendices B and C.

3.3 Evaluation support for projects

Various documents and other resources for support were provided for projects involved in the Ecominds evaluation. For both the 'All projects' and the 'In depth' studies, full guidelines documents were prepared which gave details of all aspects of the evaluation from what to do and when, through to how to administer questionnaires in an ethically sound way and some handy tips and hints. Telephone and email support from the University of Essex and from Ecominds grants officers relating to the evaluation was available for project staff throughout the evaluation process.

In addition, the lead researcher also gave a presentation to Ecominds project staff in 2009 detailing both the University of Essex Ecominds evaluation and the BIG Wellbeing and Changing Spaces evaluation, as well as highlighting possible further evaluation options for projects not selected to be part of the In-depth study.

In May 2012 the lead researcher also ran an interactive workshop on evaluation tools and tips for Ecominds project staff at the 'Making Connections' networking event in order to help projects to:

- show how their project works
- highlight successes and further needs
- convince existing or potential funders
- become sustainable
- add to the evidence base.

3.4 Ethics, consent and data protection

Ethical approval for the research was given by the Science and Engineering Faculty Ethics Committee¹⁰⁸ at the University of Essex, which reviewed and approved the research. In line with University of Essex ethics procedure, participant consent was gained prior to their taking part in the Ecominds evaluation. All potential participants were told that their participation was on a purely voluntary basis and that they could withdraw from the research at any time without prejudice and without providing a reason.

In the 'All projects' evaluation, all participants were asked if they consented to take part and if they would complete a short questionnaire either once or at two intervals during their involvement with Ecominds, by completing the first section of the questionnaire which outlined the research process, what would happen to their data, how to withdraw from the study and then if they consented to take part (see Appendix D).

For the 'In-depth' evaluation, potential participants were given an information sheet (Appendix D) to read (or project/ care staff member read one out aloud to them), before being asked to sign the consent form if they agreed to becoming involved in the evaluation. The participant information sheet provided: i) details of the research process; ii) details on how to withdraw from the evaluation or how to contact the research team; and iii) information on the storage of participant data (in line with the Data Protection Act).

Only beneficiaries, who consented to take part in the research, were accepted onto the evaluation and given questionnaires. All questionnaires were designed to be anonymous with the only personal data collected being participant postcode and initials, purely to enable collation of questionnaires from the same participant at different time points. All data collected will be held by the University of Essex in hard copy for the duration of the Ecominds scheme (until 2013) and electronically for up to two years after this. The data will only be accessible to the three researchers at the University of Essex, and will not be passed on to any third party.

3.5 Questionnaires

A range of composite questionnaires were developed for the Ecominds evaluation, composed of a mixture of internationally recognised, standardised questionnaires, bespoke questions and questions used in the BIG Changing Spaces evaluation. All questionnaires included questions on ethnicity, gender and age as is required by the Big Lottery Fund and participants were also asked whether they were filling out the questionnaire for themselves, helping someone with it or completing it on someone else's behalf (to enable those who were not able to complete the questionnaires themselves to be included in the evaluation). Participants were asked to complete the questionnaires individually and not to compare or discuss their answers with other people.

The 'All projects' evaluation used the same short two-page questionnaire at both time points and the 'In-

depth' evaluation used a series of four slightly longer questionnaires (four pages): one for the start of the programme, one for the end of the programme, one for the pre activity and another for the post activity. Project staff also completed a questionnaire coversheet which recorded various aspects of the day that the pre/post questionnaires were administered giving information that could have an overly negative or positive effect on the visit such as the weather, duration of visit and type of activities etc (see Appendix E). All questionnaires and coversheets were then collated and sent to the University of Essex for independent analysis.

The types of questions and outcome measures used are covered in more detail in Section 3.6 and complete questionnaires are included in Appendices A-D

3.5 Outcome measures

The University of Essex evaluation of Ecominds focused on three main themes: i) Wellbeing, ii) Social inclusion and iii) Connection to nature, and two secondary themes: iv) Healthy lifestyles and v) Environmentally friendly behaviour. Outcome measures used to measure these parameters are therefore organised by theme.

3.5.1 Mental wellbeing

Mental wellbeing is one of the main themes for the Ecominds evaluation. One simple scale on 'positivity' and three standardised, internationally recognised instruments (measuring wellbeing, self esteem and mood) and were therefore used in this evaluation to assess the different elements of mental wellbeing.

a) Warwick-Edinburgh Mental Well-being Scale (WEMWBS)

Wellbeing was measured using the Warwick-Edinburgh Mental Well-being Scale (WEMWBS). The WEMWBS is a relatively new measure developed by the University of Warwick and the University of Edinburgh, to enable the measurement of mental wellbeing of adults in the UK¹⁰⁹. The scale examines a wide idea of wellbeing, including affective-emotional aspects, cognitive evaluative dimensions and psychological functioning, and is short enough to be practical for use in both population-level surveys¹¹⁰ and at the individual level¹¹¹.

The long-form of WEMWBS is a 14-item scale of mental wellbeing covering subjective wellbeing, in which all items are worded positively and address

¹⁰⁹ funded by the Scottish Government's National Programme for Improving Mental Health and Wellbeing and commissioned by NHS Health Scotland

¹¹⁰ Tennant et al 2007

¹¹¹ Maheswaran et al 2012



aspects of positive mental health¹¹². The positively focussed design of the WEMWBS enables its use by mental health promotion initiatives¹¹³. There is also a short-form 7-item version of WEMWBS validated for use (known as the SWEMWBS).

The scale is scored by summing responses to each item answered on a 5-point Likert scale where 1 is 'none of the time' and 5 is 'all of the time'. For the long form WEMWBS, the minimum scale score is 14 and the maximum is 70 and for the SWEMWBS the minimum score is 7 and the maximum is 35, with higher scores representing higher levels of wellbeing. Both forms of the WEMWBS have been validated for use in the UK with those aged 13 and above¹¹⁴. WEMWBS shows good content validity; Cronbach's alpha scores range from 0.89 to 0.91 and WEMWBS shows high correlations with other mental health and well-being scales. Test-retest reliability at one week was high (0.83) and social desirability bias was lower or similar to that of other comparable scales¹¹⁵.

The WEMWBS is not designed to identify individuals with exceptionally high or low levels of positive mental health, so cut off points have not been developed¹¹⁶. However, a three-fold classification for WEMWBS scores has been used in research, where 'poor', 'average' and 'good' mental wellbeing scores are determined by the mean and standard deviation (SD) of the data¹¹⁷. A 'poor mental wellbeing' is classed as more than one SD below the mean, 'average' as within one SD of the mean and 'good mental wellbeing' as one SD or more above the mean. The mean and SD used in this study were the national averages taken from the most recent Scottish Health Survey in 2011 (M=49.9, SD 8.36)¹¹⁸.

b) Rosenberg Self Esteem Scale (RSES)

Self-esteem was measured using the one-page 10-item Rosenberg Self-Esteem Scale (RSES), which provides a one-dimensional measure of global self-esteem¹¹⁹. Its validity is widely acknowledged, it is easy to administer¹²⁰ and is considered to be the most widely-used and popular self-esteem measure in health psychology, psychotherapy and social science research and evaluation studies¹²¹.

The instrument's reliability (internal consistency and test-retest) and face validity (convergent and discriminant) compares favourably with that of more elaborate measures¹²². Test-retest correlations typically range from 0.82 to 0.88 and reported Cronbach's alpha coefficients range from 0.77 to 0.88¹²³. The scale's superior reliability and validity

has been demonstrated with many different sample groups and its use has been validated for adolescents, adult and elderly populations. There are no universally recognised normative population datasets available for comparison purposes however data from recent published research show mean scores of between 23-27 for adults with severe mental illness¹²⁴ and 32.62 for US adults¹²⁵. There are also no recommended discrete cut-off points representing high and low self-esteem although several (non-peer reviewed) studies suggest that scores between 15 and 25 are 'normal'.

RSES comprises 10 statements relating to overall feelings of self-worth or self-acceptance and each item has four response choices ranging from strongly agree (4) to strongly disagree (1). The scoring method used in this research provided an overall singular score ranging from 10 (poor self-esteem) to 40 (high self-esteem), thus higher scores represent higher self-esteem.

c) Profile of Mood States (POMS)

Mood is defined as "the subtle subjective state or feelings of a person at any given moment"¹²⁶. It refers to certain sets of subjective feelings (e.g. lively, grumpy, tense, relaxed, excited and weary) which consequentially occur in everyday life and provides a reliable and valid indicator of the quality of the leisure experience¹²⁷.

The instrument used to provide a 'snapshot' of mood state and quantify any changes in mood factors was the Profile of Mood States (POMS) standardised 30-item short-form one page version¹²⁸. This is an adaptation of the original standard form, which was a widely applied self-report instrument, used to assess current mood states and fluctuations. According to

112 Parkinson 2006

113 Parkinson 2006

114 Stewart-Brown and Janmohamed, 2008; Stewart-Brown et al 2009; and Clarke et al 2011

115 Parkinson 2006

116 Health Scotland 2009

117 Braunholtz et al 2007

118 Rutherford et al 2012

119 Rosenberg, 1965;

120 Fox 2000

121 Rosenberg 1989; Cusumano & Robinson 1992; Brown et al. 1995; Palmer 1995; Mactavish & Searle 1992; Torrey et al, 2000; Hughes et al, 2004; Kubany et al, 2004; and Sinclair et al, 2010.

122 Pretty et al. 2003

123 Blascovich & Tomaka 1993; Rosenberg 1986

124 Torrey et al 2000; Hine et al 2011;

125 Sinclair et al 2010

126 Hull 1991

127 McIntyre & Roggenbuck 1998

128 McNair et al. 1971; 1992

Biddle, the POMS is the dominant instrument for measuring mood in studies examining the relationship between mood states and exercise¹²⁹ and is historically the most frequently used tool¹³⁰. A recent edition of the POMS bibliography¹³¹ also reported that more than 2,900 articles have cited the instrument. This comprehensive inventory of POMS citations highlights the range of settings of its application.

The POMS consists of 30 adjectives which collectively measure six identifiable mood factors: tension-anxiety, depression-dejection, anger-hostility, fatigue-inertia, vigour-activity and confusion-bewilderment. Each adjective is rated using a 5-point Likert scale where a '0' indicates 'not at all' and a '4' indicates 'extremely'. Participants were instructed to complete the form according to how they felt at that moment. The six subscales yield a global estimate of affective state referred to as Total Mood Disturbance (TMD). The TMD score denotes an overall assessment of emotional state and is calculated by summing the five negative subscales and subtracting the only positive affect subscale (vigour)¹³².

Reliability and validity of the shortened edition of the POMS was established by Grove and Prapavessis (1992). Internal consistency of the POMS inventory ranges from 0.84 to 0.95, and test-retest reliability coefficients range from 0.65 to 0.74¹³³. The validity of this version has been substantiated with Cronbach's alpha reliabilities for a sample of college students, ranging from 0.67 to 0.93¹³⁴. In this study, with participants having been diagnosed as having severe and enduring mental health issues, mood sub-factor scores were calculated using outpatient norms.

d) Perceived positivity scale

In the shorter questionnaires used in the 'All projects' evaluation, as a proxy for measuring mental wellbeing, a one-off, simple question on 'positivity' was included to allow participants to give their perceptio and asking the question both at the beginning and at the end of participants' involvement with Ecominds, enabled comparative data to be gathered and any changes in score to be calculated.

3.6.2 Social inclusion

Social inclusion is another important theme of the Ecominds evaluation and four measures were used to assess different elements of social inclusion. All of the measures used were developed (or adapted) by the Centre for Local Economic Strategies (CLES) and nef¹³⁵ as part of their 'Wellbeing evaluation tools'¹³⁶

a) Social engagement and support

A social engagement and support measure (taken from the Social Wellbeing Module (SWB) of the CLES and nef wellbeing evaluation tool) was used in the In-depth evaluation. Participants were asked how much they agreed or disagreed with a series of four statements relating to different aspects of social engagement and support. These statements from the SWB are composed of a mix of customised statements and together with others adapted from the European Social Survey (ESS)¹³⁷.

Responses were scored on a 5 point Likert scale where respondents were asked to choose from 'strongly agree', 'agree', 'neutral', 'disagree' and 'strongly disagree', for each item and an overall social engagement and support score was then calculated for each respondent (the sum of score for each question divided by 4). Social engagement and support scores therefore range from a minimum of 1 to a maximum of 5.

b) Neighbourhood belonging

A simple question on 'neighbourhood belonging' allowed participants to give their perception of how much they feel they belong to their local neighbourhood or community. This question is taken from the 'Social Wellbeing Depth' questionnaire from CLES and nef and was originally adapted from 'The Place Survey'¹³⁸.

Participants were asked both at the beginning and at the end of their involvement with the Ecominds project "How strongly do you feel you belong to your immediate neighbourhood or community?" and could respond on a 4 point scale from 'very strongly' through to 'not at all strongly'. This measure was included in both the 'All projects' and the 'In-depth' evaluations.

129 Biddle 2000; Grove & Prapavessis 1992

130 Yeung 1996

131 McNair et al. 2003

132 Cashel et al. 1996; McNair et al. 1992

133 Hansen et al. 2001

134 McNair et al. 1992

135 www.biglotteryfund.org.uk/research/health-and-well-being/evaluating-well-being

136 Available at: www.biglotteryfund.org.uk/wellbeing_evaluation_tools.pdf

137 The European Social Survey is an academically-driven social survey, designed to chart and explain the interaction between Europe's changing institutions and the attitudes, beliefs and behaviour patterns of its diverse populations. See www.europeansocialsurvey.org/ for more information.

138 The Place Survey collects the views of people on a range of issues concerning the place they live. Results are used to measure progress on National Indicators in the Local Performance Framework. See http://data.gov.uk/dataset/place_survey

c) Neighbourhood satisfaction

Similarly a question rating participant satisfaction with their local neighbourhood or community was used in both the 'All projects' and 'In-depth' evaluations. Participants were asked "Overall, how satisfied or dissatisfied are you with your neighbourhood as a place to live" and could again respond on a 4 point scale from 'very strongly' through to 'not at all strongly'. This question is also taken from the 'Social Wellbeing Depth' questionnaire and adapted from 'The Place Survey'.

d) Involvement in community activities

In order to determine the frequency that participants were involved in community activities, a question (from the SWB and adapted from ESS) was included in the 'In-depth' evaluation which asked: "How often in the last year have you helped with or attended activities organised in your local area?" Response options ranged from 'once a week' to 'never' and also included an 'I don't know' option.

3.5.3 Connection to nature

Connection to nature is also one of the main themes of the Ecominds evaluation and was assessed using two measures. One measure is an adapted form of a recognised connectedness to nature measure and the other is a simple scale of nature connection.

a) CNS adapted short form

A measure for connectedness to nature was included in the 'In-depth' questionnaires. This measure is based on the standardised and validated Connectedness to Nature Scale (CNS)¹³⁹, which is a 'measure of individuals' trait levels of feeling emotionally connected to the natural world'. Connection to nature is considered to be an important predictor of ecological behaviour and subjective wellbeing. Connectedness to nature has also been shown to be related to an increase in both awareness of environmental issues and in environmentally friendly behaviour¹⁴⁰. A simplified version of the CNS, adapted (but not validated) by the University of Essex was used in this context to assess whether being exposed to nature during involvement in an Ecominds project increases an individual's sense of feeling connected to nature.

Seven questions are scored on the scale range from a minimum of 1 to a maximum of 5, with a score of 5 indicating the most connected to nature. CNS score is calculated by adding the score for each item and then dividing by 7 to give a score between the minimum of 0 and a maximum of 5 (which represents the highest

connectedness to nature). Although there are no published norms for this measure, from University of Essex data, mean scores from a mixed sample of 500 UK adults typically vary from 3.62 (SD=.64) at time 1 to 3.84 (SD=.60) at Time 2.

b) Perceived connection to nature

In the shorter 'All projects' questionnaire, as a proxy for measuring connection to nature, a one-off, simple question on 'connection to nature' was included to allow participants to give their perception of their own nature connection status. This simple question was devised by University of Essex and has been successfully used by the team in similar green care evaluation contexts. Participants were asked to complete on a scale of 1 – 10, "how connected to nature do you feel at the moment?" and asking the question twice, enabled comparative data to be gathered and so any changes in score as a result of Ecominds involvement, to be calculated.

3.5.4 Healthy lifestyles

Healthy lifestyles was one of the two secondary themes of the Ecominds evaluation. A mix of four questions relating to perceptions of overall 'health', the importance of healthy food and healthy eating habits were used in this study.

a) Perceived health scale

In the same way, as a proxy for determining positivity and nature connection, a one-off, simple question on 'health' was included in the 'All projects' and the 'In-depth' evaluation to allow participants to give their perception of their own health status. This simple question was again devised by University of Essex and has been successfully used by the team in similar green care evaluation contexts. Participants were asked to complete on a scale of 1 – 10, "how healthy do you feel at the moment?" and by asking the question both before and after involvement, comparative data was gathered to calculate any changes in score as a result of Ecominds.

b) Healthy eating

Questions on priorities relating to food perceptions and eating habits were also included in the Ecominds evaluation. One question used was one from CLES

139 Mayer and Frantz 2004

140 Hine et al 2007 and 2008a

and nef (from the 'Core tool'), a 5-point Likert scale asking participants to state how much they agree or disagree with the statements: "I enjoy putting effort and care into the food that I eat" and "Healthy food often tastes nicer than unhealthy food".

Finally, a question was also included on frequency of eating fresh cooked meals – i.e. "How often do you eat a meal that has been cooked by yourself or someone else from basic ingredients?" Responses were scored on a 5-point Likert scale where respondents were asked to choose from 'always', 'often', 'sometimes', 'rarely' and 'never'.

3.6.5 Environmental behaviour

Another secondary theme of the Ecominds evaluation was environmentally friendly behaviour. To assess levels of participant environmental behaviour, questions were asked relating to environmental behaviour indicators for sustainability (from previous University of Essex research¹⁴¹). The set of six questions was adapted from the original 14, to account for use with Ecominds participants, referring to practices which are easily achievable and require little or no cost (e.g. turning off power at the plug when appliances are not in use). Responses were scored on a 5 point Likert scale where respondents were asked to choose from 'always', 'often', 'sometimes', 'rarely' and 'never' and overall behaviour scores were obtained for each respondent (the sum of score for each question divided by 6). Environmental behaviour scores therefore range from a minimum of 1 to a maximum of 5.

3.6.5 Other aspects of the questionnaire

In addition to the outcome measures, other questions included those relating to how long participants had been attending the project and their frequency of attendance. Qualitative narrative was also collected in the 'In-depth' evaluation using an open-ended question where beneficiaries were asked to tell us what they enjoyed most about the Ecominds project they were involved with. Further anecdotal evidence was gathered by project staff and Ecominds Grants Officers.



A question on the comparative importance of the various aspects of the Ecominds project to participants composed of three simple scales, developed (and used extensively) by the University of Essex, was also included. Participant perceptions on how they felt about being with other people, about being outside in nature and about the exercise or activities were assessed using the 'importance scale', where respondents answer by placing a cross somewhere on an importance scale of 0-5, where 0 is 'not very important' and 5 is 'very important'. This question was used in both the 'All projects' and the 'In-depth' evaluations.

3.7 Statistical analyses

Questionnaires were collated and stored electronically on a SPSS/PASW 18.0 database to assist in manipulating data, detecting inconsistencies and statistically analysing the results. All data measures were tested, where appropriate, for normality (Kolmogorov–Smirnov test), homogeneity of variance (Levene's test), sphericity (Mauchly's Test of

Sphericity), linearity (visual) and heteroscedasticity. Descriptive statistics were obtained for each measure and mean differences between beginning and endpoint and before and after activity scores were recorded along with the 95 per cent confidence interval for the estimated population mean difference. Statistical significance was set at $p < 0.05$.

A series of one-way analysis of variances (ANOVA) were conducted on major outcome measure starting scores to see if there were any differences between the data from different projects. No significant differences were observed so data from projects were analysed as one group.

Analyses used parametric techniques including: i) Paired samples t-test; ii) one-way between-subject ANOVA (with post hoc Tukey

comparisons where appropriate); iii) one-way within-subjects (or repeated measures) ANOVA (with Greenhouse Geisser corrections and post hoc Bonferroni analysis where appropriate); iv) mixed between-within subjects ANOVA (with with Greenhouse Geisser corrections and post hoc Tukey/ Bonferroni comparisons where appropriate); v) one -way between subjects multivariate analysis of variance MANOVA (with post hoc Bonferroni analysis where appropriate); vi) Pearson's Product Moment Correlation Coefficient. Where the data were not normally distributed or did not fulfil the sample size and stringent assumptions of parametric techniques, analyses used non-parametric techniques including: i) Mann-Whitney U test; and ii) Wilcoxon Signed-Rank Test (with Bonferroni correction applied where appropriate). Percentage changes¹⁴² of major variables over time were calculated and where appropriate, effect size (eta-squared and partial eta-squared¹⁴³), strength of relationships¹⁴⁴ and shared variances¹⁴⁵ were reported.

3.8 Organisation of results in this report

The results in this report have been organised as follows:

- Chapter 4 contains the findings of the 'All projects' evaluation. Key findings are given first, followed by the participant demographics and details of the projects are outlined, before the results of both the 'within group' and the 'between groups' studies are organised under the five Ecominds themes.
- Chapter 5 contains the findings of the 'In-depth' evaluation. Again key findings precede the participant demographics followed by details of the projects included in the study and their activities. Finally the changes that have occurred both over the course of the programme and over the duration of a session are arranged under the five Ecominds themes.

142 $[(T2 - T1) / T1] \times 100 = \%$

143 Effect size interpretations for eta squared .01 = small effect, .06 moderate effect; and .14 large effect (Cohen 1988)

144 Strength of relationship: $r = .10$ to $.29$ small; $r = .30$ to $.49$ medium; $r = .50$ to 1 large

145 "amount of the total variance in the dependent variable that is predictable from the knowledge of the levels of the independent variable" (Tabachnick and Fidell, 2001 p52)



4. Results: 'All projects' evaluation

4.1 'All projects' evaluation: Key findings

- The 'All projects' evaluation was open to all of the Ecominds funded projects and 52 projects (54%) returned data to the University of Essex for analysis. The majority of projects in the evaluation were social and therapeutic horticulture type projects (26), followed by environmental conservation (12), nature arts and crafts (9), facilitated green exercise (3) and care farming (2). These numbers were representative of the total numbers of projects in each category.
- Projects in the evaluation were located all over England with the most projects in London, Yorkshire and the Humber, and the South West. Projects in the evaluation represented all grant size categories and size of projects in the evaluation ranged from 1-20 beneficiaries (two projects) to over 100 beneficiaries (25 projects); those benefitting 21-40 people (12 projects), 41-60 (five projects), 61-80 (five projects) and 81-100 (one project).
- A total of 515 participants completed questionnaires for the 'All projects' evaluation, made up of 180 in the 'within group' study and 335 participants in the 'between groups' study. There were more male participants (66%) than either female (34%) or transgender (<1%). Ages of respondents ranged from 15- 85 years, with an average of 42 years. 22 per cent of participants were aged 30 or under, 43 per cent aged between 31-50 and 35 per cent aged 51 or above. The majority of participants (84%) described their ethnic origins as 'White British'.
- **Mental wellbeing:** There was a statistically significant increase in participant positivity from start to end of the Ecominds scheme. The majority of participants (63%) experienced a rise in their positivity scores of 40 per cent over the course of the programme on average and interestingly, where 59 per cent of the participants scored over 5 on the 1-10 scale at the beginning of Ecominds, this proportion had risen to 89 per cent after involvement with the Ecominds. Positivity scores significantly increased for both men and women from the start to the end of the programme but the results also show that women had significantly lower positivity scores than men.
- **Social inclusion:** The proportion of participants who told us that they either fairly strongly or very strongly belonged to their local neighbourhood increased over the duration of the Ecominds scheme. At the start of Ecominds, 46 per cent of participants said that they felt they belonged to their neighbourhood, but by the end of the programme this proportion had risen to 61 per cent. Participant perceptions on the importance of being with other people had significantly increased (on average by 48 per cent) from the beginning to the end of the Ecominds scheme implying that participants valued spending time with others as part of Ecominds.
- **Connection to nature:** There was a statistically significant increase in perceived connection to nature scores from after taking part in the Ecominds scheme and the majority of participants (68%) saw an increase in connection of 39 per cent on average. Perceived connection to nature scores positively correlated with age (i.e. as one variable increases, the other variable also increases) meaning that in the evaluation, connection to nature also increased slightly with age. Importance of being outside in nature scores significantly increased from the beginning to the end of the Ecominds scheme.
- **Healthy lifestyles:** Tests revealed a statistically significant increase in health scores from the beginning to the end of the Ecominds scheme – the majority of participants (62%) saw an increase in scores of an average 38 per cent improvement in health. Perceived health scores significantly positively correlated with time spent at the project. In this study, both men and women experienced a significant increase in health scores after taking part in Ecominds, but women had significantly lower perceived health scores than men. The mean importance of exercise scores slightly increased from the beginning to the end of the Ecominds scheme, but this finding was not found to be statistically significant.
- Results for the 500+ participants in the 'All projects' Ecominds evaluation, show that the majority of people feel more positive, more healthy, more socially included and better connected to nature after taking

part in the Ecominds scheme regardless of whether the projects were using horticulture, farming, green exercise, nature art or conservation activities; or whether or not they included formal therapy.

4.2 About the 'All projects' evaluation

The 'All projects' Ecominds evaluation was open to all projects except the nine involved in the 'in-depth' evaluation, projects which were participating in their own external evaluations and projects where it was not considered ethically appropriate (for example where participants were deemed by project staff to be particularly vulnerable, too young or too traumatised and therefore not able to complete questionnaires).

The 'All projects' Ecominds evaluation comprises two separate analyses. Firstly, for those people who completed both a start of programme (or Baseline / Time point 1) questionnaire and then another questionnaire at the end of the programme (or at Endpoint / Time point 2) a direct comparison of parameters and any changes that have occurred over time can be made on an individual basis. We have called this analysis a 'within group' study.

Secondly, some participants either completed one questionnaire at the start of their time at the project or one questionnaire at the end of the project enabling a comparison of the outcome measures between two different groups of participants (those who have just started at a project and those who have just finished) and any resulting differences to be reported. We have called this part of the analysis a 'between groups' study.

Both of these analyses are reported together in this results section under the various themes highlighted below, as the findings were very similar. The data for the 'within group' or matched questionnaire study were normally distributed and so enabled parametric statistical tests to be carried out on the data; however the data for the 'between groups' study were not normally distributed¹⁴⁶ and so alternative non-parametric statistics were used. As parametric statistics are generally considered more robust, these have been reported first in more detail, with additional data from the non-parametric statistics reported afterwards.

Results from the 'All projects' evaluation have been organised under the following themes:

- About the participants
- About the projects
- Mental wellbeing
- Social inclusion
- Connection to nature
- Healthy lifestyles

4.3 About the participants

A total of 515 participants completed questionnaires for the 'All projects' evaluation, made up of 180 in the 'within group' study and 335 participants in the 'between groups' study (where 44 per cent of participants completed questionnaires at the start and 56 per cent at the end of the programme). There were more male participants (66%) that took part in the evaluation than either female (34%) or transgender (<1%). Ages of respondents ranged from 15-85 years, with an average of 42 years. 22 per cent of participants were aged 30 or under, 43 per cent aged between 31-50 and 35 per cent aged 51 or above. For both the 'within group' and the between groups' analysis, the majority of questionnaires (75%) were completed by the participants themselves, 23 per cent were helped by project workers and two per cent of participants were helped by a carer.

The majority of participants (84%) described their ethnic origins as 'White British' with no other categories featuring more than four per cent of respondents - see Table 1.

¹⁴⁶ Even after transformations were applied.



Table 1. Ethnicity of respondents in the 'All projects' Ecominds evaluation

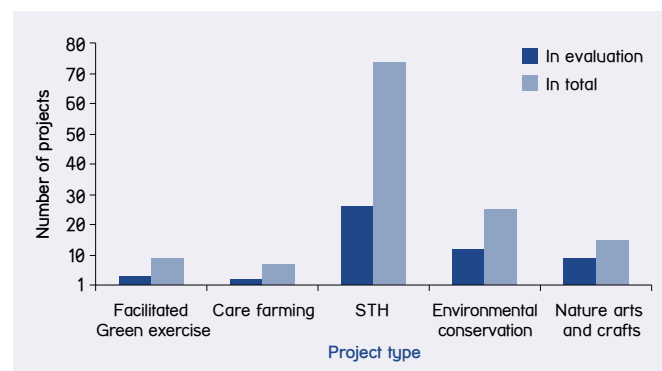
Ethnic group	Per cent %
White British	84.4
White Irish	1.8
White other	3.3
Asian Indian	1.2
Asian Pakistani	.4
Asian Bangladeshi	.2
Asian other	.4
Chinese	.4
Black Caribbean	1.9
Black African	1.4
Black other	.6
Mixed White and Black Caribbean	.8
Mixed White and Black African	.6
Mixed White and Asian	.4
Mixed other	.6
Any other	1.4
Rather not say	.4

The length of time participants had been attending the projects varied from 1-208 weeks (i.e. one week to four years; some participants for even longer). The baseline or start of project questionnaire was generally completed between 1-4 weeks of the participant's involvement with the project and the endpoint questionnaire was filled out any time after five weeks, depending on the structure and timing of the particular project. However, for the majority of respondents (90%) this was after one year or less.

4.4 About the projects

The 'All projects' evaluation was open to all projects not including the nine involved in the 'in-depth' evaluation and the two being evaluated by CLES and nef as part of the Big Lottery Fund National Wellbeing Evaluation. Projects which were participating in additional external evaluations (22) were also not expected to take part in the University of Essex evaluation, to avoid project participants suffering from 'questionnaire fatigue'. Out of the remaining 97 projects, 52 projects (54%) returned data to the University of Essex for analysis.

Figure 5. Number and type of Ecominds projects in total and involved in the 'All projects' evaluation



The majority of projects in the evaluation were social and therapeutic horticulture type projects (26), followed by environmental conservation (12), nature arts and crafts (9), facilitated green exercise (3) and care farming (2). These numbers were representative of the total numbers of projects in each category (see Figure 5).

Only one of the projects involved in the 'All projects' evaluation included formal 'therapy' (i.e. counselling sessions, CBT etc provided by qualified mental health practitioner) as part of its programme. This is representative of the Ecominds scheme as a whole, as although the majority (95%) of the projects are mental health interventions and are developed, delivered and managed by staff who are qualified mental health practitioners, they provide more of a 'therapeutic' nature-based intervention rather than formal 'therapy' (e.g. counselling, CMT, psychotherapy sessions etc.) in an outdoor environment.

Table 2. Location of projects in 'All projects' evaluation.

Region	Number of projects
Yorkshire and the Humber	10
North West	2
North East	2
West Midlands	3
East Midlands	3
South West	10
South East	5
London	11
East	5
South	1

in the evaluation were located all over England with the most projects in London, Yorkshire and the Humber, and the South West. Numbers per region are shown in Table 2. Projects in the evaluation represented all grant size categories: including flagship projects (1), large (14), medium (9) and small (28). In terms of numbers of beneficiaries, projects in the evaluation ranged from 1-20 beneficiaries (3) to over 100 beneficiaries (25); those benefitting 21-40 people (12), 41-60 (5), 61-80 (5) and 81-100 (1).

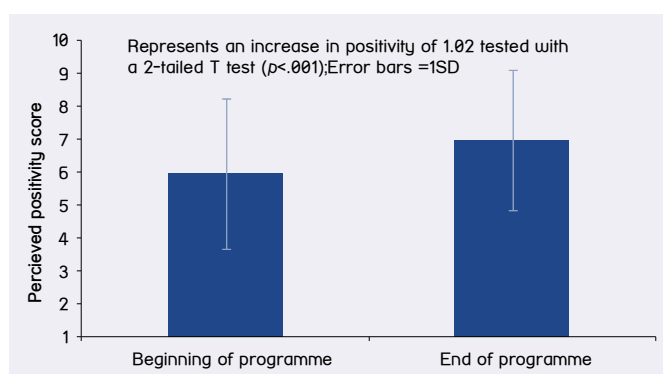
4.5 Mental wellbeing findings

4.5.1 Perceived positivity

The one-off, simple question on ‘positivity’ allowed participants to give their perception of their own positivity or happiness status. Participants were asked to complete on a scale of 1 – 10, “how positive do you feel at the moment?” both at the beginning and at the end of their involvement with the Ecominds project.

Analyses on the data for both the within group and the between groups study showed similar results. For the within group study, a paired T test revealed a statistically significant increase ($p < .001$)¹⁴⁷ in mean positivity scores from ($M = 5.95 \pm 2.29$) the beginning ($M = 6.97 \pm 2.13$) to the end of the Ecominds scheme (see Figure 6). The majority of participants (63%) experienced a rise in their positivity scores over the course of the programme¹⁴⁸ and the average percentage change for participants was in improvement in positivity of 40 per cent. Interestingly, where 59 per cent of the participants scored over 5 at the beginning of Ecominds, this proportion had risen to 89 per cent of participants after involvement with Ecominds. Results for the between groups study shows a similar significant rise in positivity scores¹⁴⁹.

Figure 6. Change in mean perceived positivity scores after participation in Ecominds



The data¹⁵⁰ were further examined to assess the impact of gender on participant positivity scores between the start and the end of the Ecominds scheme using a mixed between-within subjects analysis of variance (ANOVA). There was no significant interaction between gender and time ($p > .05$)¹⁵¹ meaning that that gender did not affect or predict the amount of increase in positivity scores, but there were significant main effects for both time¹⁵² ($p < .001$) and for gender¹⁵³ ($p < .01$). This shows that whilst like the overall findings, positivity scores significantly increased for both men and women from the start to the end of the programme but the results also show that women had significantly lower positivity scores ($M = 5.52$ time 1 rising to $M = 6.33$ at time 2) than men ($M = 6.18$ time 1 rising to $M = 7.29$ at time 2), indicating lower positivity than men overall.

4.6 Social inclusion findings

Measures of social inclusion in the ‘All projects’ Ecominds evaluation, consisted of a measure of neighbourhood belonging together with a scale of the ‘importance of being with other people’.

4.6.1 Neighbourhood belonging

A simple question on ‘neighbourhood belonging’ allowed participants to give their perception of how much they feel they belong to their local neighbourhood or community. Participants were asked both at the beginning and at the end of their involvement with the Ecominds project “How strongly do you feel you belong to your immediate neighbourhood or community?” and could respond on a four point scale from ‘very strongly’ through to ‘not at all strongly’.

There was a very slight change in neighbourhood belonging for the within group study from the beginning ($M = 2.63$, Median = 3) to the end of programme ($M = 2.34$, Median = 2) but this was not found

147 [$t(179) = -5.850$, $p < .001$, $d = .236$ – indicating a large effect size]

148 17% stayed the same and 20% decreased

149 A Mann Whitney U test showed a significant increase [$U(353) = 15,944$; $z = 3.52$, $p < .001$] in mean scores of those participants completing questionnaires at the end of their involvement with Ecominds ($M = 6.85 \pm 2.10$, Median = 7) compared to those people who filled out questionnaires at the start of the programme ($M = 6.03 \pm 2.17$, Median = 5)

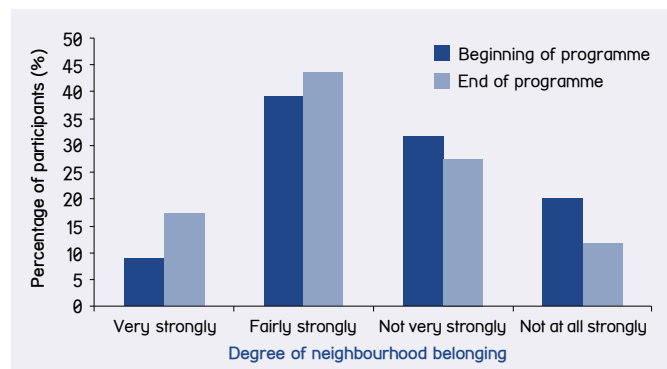
150 From the within group study only

151 [Wilks' $\lambda = .997$]

152 [Wilks' $\lambda = .868$, $F(1,177) = 28.816$, $p < .001$; partial $\eta^2 = .132$ – medium effect size]

153 [$F(1,177) = 7.776$, $p < .01$; partial $\eta^2 = .042$ – small effect size]

Figure 7. Changes in proportion of participants in each neighbourhood belonging category after participation in Ecominds



to be statistically significant¹⁵⁴. Similarly the between groups study also showed a negative effect (when tested with a Mann Whitney U test) with a significant decrease¹⁵⁵ in mean scores of those participants completing questionnaires at the end of their involvement with Ecominds ($M=2.40 \pm .80$, Median =2) compared to those people who filled out questionnaires at the start of the programme ($M=2.61 \pm .88$, Median=3). Half of the participants (50%) remained constant in how they felt about their neighbourhood, 34 per cent experienced an increase in feelings of belonging and 16 per cent experienced a decrease.

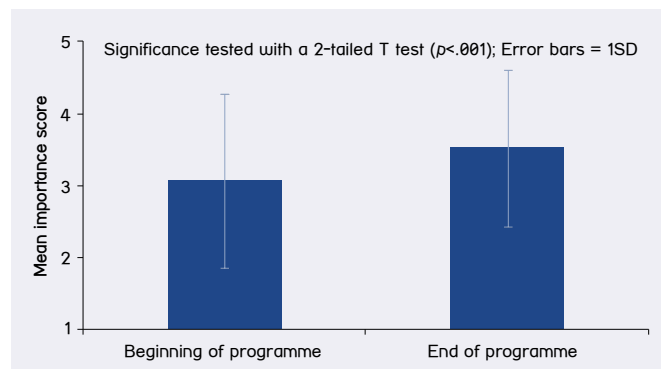
However the proportion of participants who told us that they either fairly strongly or very strongly belonged to their local neighbourhood rose over the duration of the Ecominds scheme from just under half (45%) to 61 per cent and the proportion who felt not very connected to their community, decreased (See Figure 7), implying that for many participants a positive change was experienced.

There were no statistically significant differences between genders and ages of participants in terms of neighbourhood belonging.

4.6.2 Importance of being with other people

Participant perceptions on the importance of being with other people were assessed using the question "how important is being with other people to you [at the moment]?" answered on a scale of 0-5, where 0 is 'not very important' and 5 is 'very important'. In the within group study, a paired T test showed that the mean scores significantly increased ($p<.001$) from the beginning ($M=3.06 \pm 1.21$) to the end ($M=3.52 \pm 1.09$) of the Ecominds scheme¹⁵⁶ implying that participants valued spending time with others as part of Ecominds

Figure 8. Change in mean importance of other peoples scores after participation in Ecominds



(see Figure 8). The majority of participants (57%) experienced an increase in being with others importance scores, with 16 per cent remaining constant and 27 per cent decreasing. The average participant saw an increase in importance of being with other people of 48 per cent over the programme. Similarly, the between groups data also showed a comparable trend, with higher mean scores of those participants who completed questionnaires at the end of their involvement with Ecominds ($M=3.47 \pm .90$) compared to those people who filled out questionnaires at the start of the programme ($M=3.33 \pm 1.16$), but this was not found to be statistically significant ($p=.66$). Again, no statistical differences between trends for participants of different genders or ages were found.



154 When tested with Wilcoxon signed rank test, $p>.05$

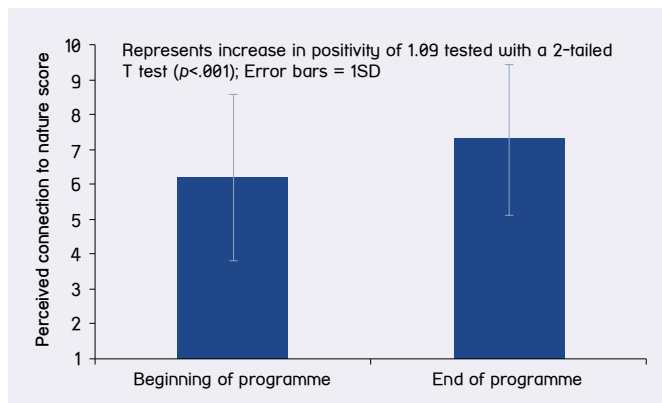
155 [$U(353)=15,944$; $z=3.52$, $p<.001$]

156 [$t(179)=-5.822$, $p<.001$; $d=.235$ – indicating a large effect size]

4.7 Connection to nature findings

Measures of connection to nature in the 'All participants' Ecominds evaluation, consisted of two scales, one on connection to nature and one on the importance of being outside in nature.

Figure 9. Change in mean perceived connection to nature scores after participation in Ecominds



4.7.1 Perceived connection to nature

In order to determine any changes in participant perception of feeling connected to nature, participants were asked to complete on a scale of 1 – 10, “how connected to nature do you feel at the moment?” at the start and then again at the end of the Ecominds scheme. The data from both the within group and the between groups studies showed similar trends with significant increases in connection to nature scores over the duration of the Ecominds scheme.

A paired T test revealed a statistically significant increase ($p < .001$)¹⁵⁷ in mean connection to nature scores in the within group study from ($M = 6.22 \pm 2.38$) before to ($M = 7.31 \pm 2.15$) after taking part in the Ecominds scheme (see Figure 9). The majority of participants (68%) saw an increase in connection to nature score which was an increase of 39 per cent on average.

The between groups study shows a similar trend as a Mann Whitney U test showed a significant increase¹⁵⁸ in mean scores of those participants completing questionnaires at the end of their involvement with Ecominds ($M = 6.71 \pm 2.33$, Median = 7) compared to those people who filled out questionnaires at the start of the programme ($M = 6.16 \pm 2.32$, Median = 6).

Further analysis (a mixed between-within subjects analysis of variance - ANOVA) was conducted to assess the impact of gender on participant connection to nature scores between the start and the end of

the Ecominds scheme. There was no significant interaction between gender and time¹⁵⁹, nor main effects for gender¹⁶⁰, but there were significant main effects for time¹⁶¹ meaning that as with the overall findings, for both men and women scores increased over time but gender had no effect on these scores.

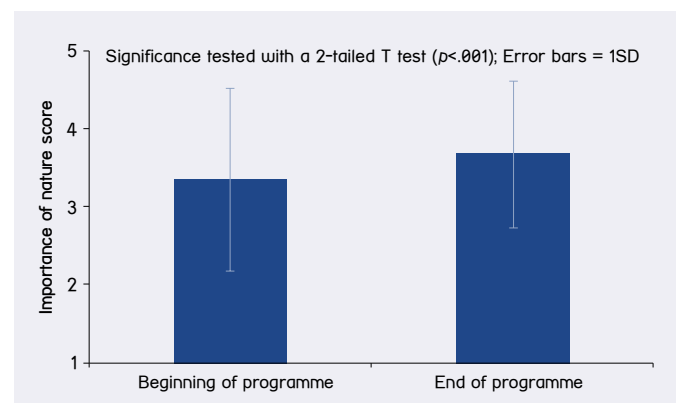
Other statistical analyses (using a series of Pearson product-moment correlation coefficients) found that perceived connection to nature scores at both time points showed a weak positive correlation (i.e. where one variable increases, the other variable also increases) with age for both time 1¹⁶² and time 2¹⁶³.

4.7.2 Importance of nature

In addition, a question on the importance scale, where participants were asked “how important is being outside in nature to you?” was included, where a scale of 0-5 (where 0 is ‘not very important’ and 5 is ‘very important’) was used.

For the within group study, a paired T test showed that the mean importance of nature scores significantly increased ($p < .001$) from the beginning ($M = 3.36 \pm 1.17$) to the end ($M = 3.68 \pm .94$) of the Ecominds scheme¹⁶⁴ (as shown in Figure 10), with 56 per cent of participants experiencing an increase in scores.

Figure 10. Changes in mean importance of nature scores after participation in Ecominds



157 [t(177) = -6.960, $p < .001$; $n_2 = .376$ – indicating a large effect size]

158 [U(325) = 14,950; $z = 2.35$, $p < .05$]

159 [Wilks' $\lambda = .999$, $p > .05$]

160 [F(1,175) = 1.562, $p > .05$; partial $\eta^2 = .009$ – very small effect size]

161 [Wilks' $\lambda = .811$, F(1,175) = 40.758, $p < .001$; partial $\eta^2 = .189$ – indicating a large effect size]

162 Preliminary analyses were performed to ensure no violation of normality, linearity and homoscedasticity. [r(172) = .250 (6% shared variance, weak positive correlation), $p < .001$]

163 [r(172) = .171 (3% shared variance, weak positive correlation), $p < .05$]

164 [t(175) = -4.883, $p < .001$; $n_2 = .157$ – indicating a large effect size]

The between groups data shows a very slight decrease in mean scores of those participants completing questionnaires at the end of their involvement with Ecominds ($M=3.50 \pm 1.01$) compared to those people who filled out questionnaires at the start of the programme ($M=3.50 \pm .94$) but this change was not found to be statistically significant ($p=.53$). There were also no statistical differences in nature importance scores between the different genders and age groups.

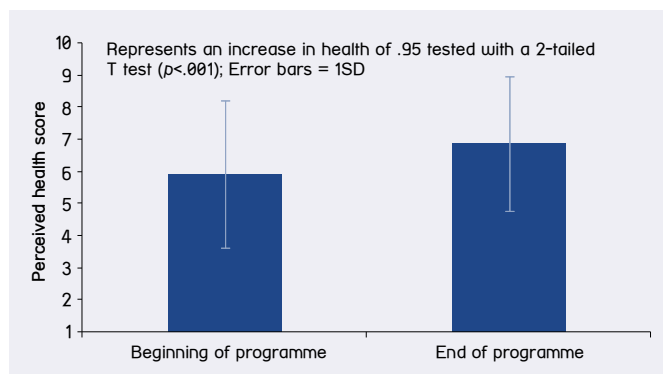
4.8 Healthy lifestyles findings

Measures of healthy lifestyles in the 'All participants' Ecominds evaluation, consisted of three scales, one on perceived health, one on the importance of exercise and one on the importance of eating healthy food.

4.8.1 Perceived health

Participants were asked to complete on a scale of 1 – 10, "how healthy do you feel at the moment?" and by asking the question both at the beginning and end of the Ecominds scheme, comparative data was gathered to calculate any changes in score.

Figure 11. Change in mean health perception score after participation in Ecominds

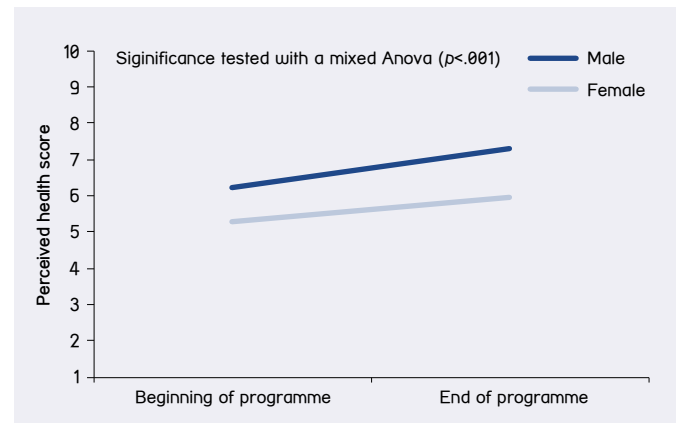


For the within group study, a paired T test revealed a statistically significant increase ($p<.001$)¹⁶⁵ in mean perceived health scores from the beginning ($M=5.62 \pm 2.31$) to the end ($M= 6.87 \pm 2.10$) of the Ecominds scheme (see Figure 11). The majority of participants (52%) experienced an increase in scores of an average 38 per cent improvement in their health.

The between groups study shows a similar effect as a Mann Whitney U test showed a significant increase¹⁶⁶ in mean scores of those participants completing questionnaires at the end of their

involvement with Ecominds ($M=6.48 \pm 2.1$, Median =7) compared to those people who filled out questionnaires at the start of the programme ($M=5.96 \pm 2.06$, Median= 6). In terms of proportion of participants scoring over 5, at the start of the programme 54 per cent scored over 5, but by the end of the programme this had risen to 74 per cent.

Figure 12. Difference in male and female health scores between the beginning and end of the Ecominds programme



To assess the impact of gender on participant health scores between the start and the end of the Ecominds scheme a mixed between-within subjects analysis of variance (ANOVA) was conducted. There was no significant interaction between gender and time¹⁶⁷ (meaning that gender does not affect or predict the amount of increase in scores) but as there were significant main effects for time¹⁶⁸ and for gender¹⁶⁹ this shows that not only do both men and women see a significant increase in health scores after taking part in the Ecominds scheme, but also that women had significantly lower scores ($M=5.27$ time 1 rising to $M=5.98$ at time 2) than men ($M=6.24$ time 1 rising to $M=7.31$ at time 2), as shown in Figure 12.

Further analysis using Pearson product-moment correlation coefficient, showed that perceived health scores also significantly positively correlated with the time participant spent at the project¹⁷⁰, implying that participants feel healthier the longer they are involved with an Ecominds project.

165 [$t(177) = -5.907$, $p<.001$; $n2 = .245$ – indicating a large effect size]

166 [$U(327) = 15,234$; $z = 2.48$, $p<.05$]

167 [Wilks' $\lambda = .994$, $p>.05$]

168 [Wilks' $\lambda = .868$, $F(1,177) = 26.666$, $p<.001$; partial $n2 = .132$ – moderate effect size]

169 [$F(1,175) = 15.808$, $p<.001$; partial $n2 = .079$ – moderate effect size]

170 [a weak positive correlation $r(162) = .23$, $p = .003$]

4.8.2 Importance of exercise

Participants were asked to gauge “how important is taking part in exercise to you [at the moment]?” by placing a cross somewhere on an importance scale of 0–5, where 0 is ‘not very important’ and 5 represents ‘very important’. Although the mean importance of exercise scores slightly increased from the beginning ($M=3.30 \pm 1.11$) to the end ($M=3.74 \pm 3.13$) of the Ecominds scheme, this finding was not found to be statistically significant for either the within group study¹⁷¹ or for the between groups study¹⁷². However a little over half of the Ecominds participants (53%) did experience an increase in exercise importance scores (Figure 13). No statistical differences between genders and ages were found.

4.8.3 Importance of healthy food

Participants were then asked “how important is eating healthy food to you?” and answered by placing a cross somewhere on an importance scale of 0–5, where 0 is ‘not very important’ and 5 is ‘very important’.

For both the within group¹⁷³ and the between groups study¹⁷⁴, the mean importance of eating healthy food scores slightly increased from the start to the end of the Ecominds scheme, but these findings were not found to be statistically significant. Again, no statistical differences between genders and ages were found either.

However, the majority (50%) of participants in the within group study experienced an increase in importance of eating healthy food scores (Figure 14).

Figure 13. Proportion of participants experiencing change in importance of exercise scores after Ecominds

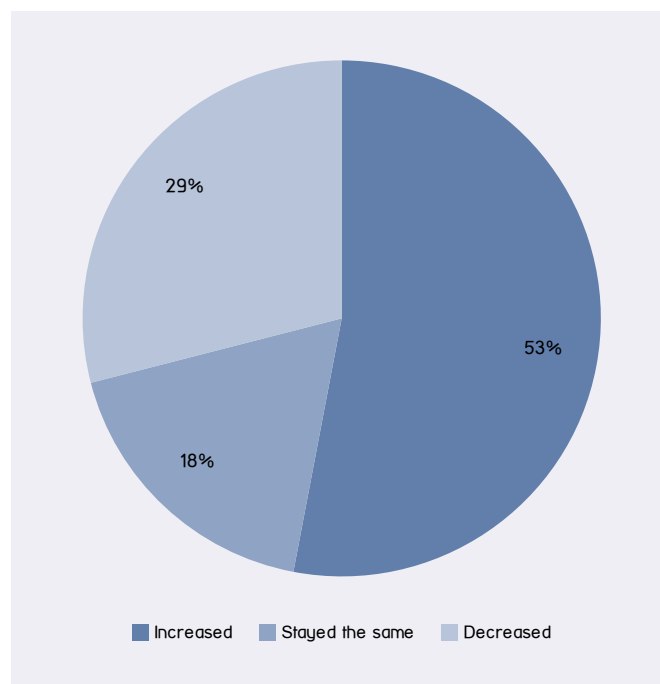
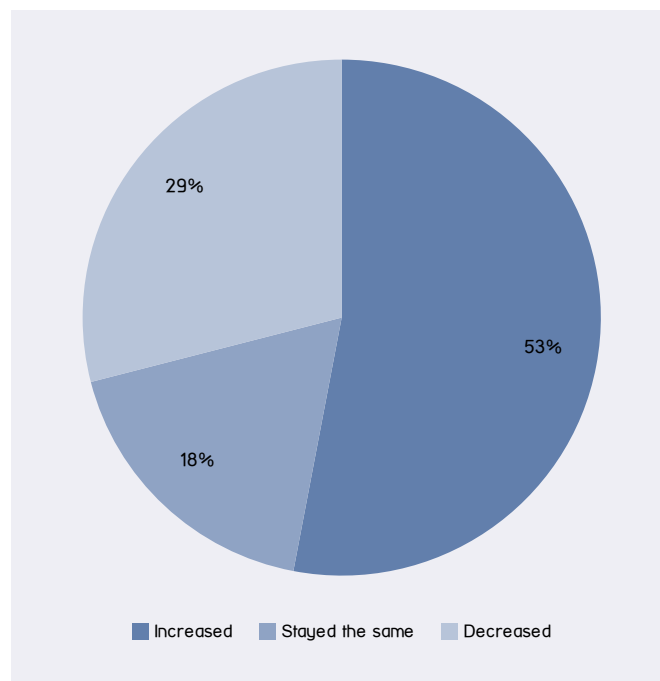


Figure 14. Proportion of participants experiencing change in importance of eating healthy food scores after Ecominds



171 [$t(179) = -1.841, P > .05$]

172 Data showed no real change in mean scores of those participants completing questionnaires at the end of their involvement with Ecominds ($M=3.37 \pm 1.04$) compared to those people who filled out questionnaires at the start of the programme ($M=3.45 \pm 1.06; p=.45$)

173 [Start ($M=3.31 \pm 1.18$); End ($M=3.44 \pm 1.08$); $t(179) = -1.593, P > .05$]

174 [Start ($M=3.50 \pm 1.09$); End ($M=3.51 \pm 1.09$); $p=.93$]



4.9 Comparative importance of aspects of the Ecominds scheme.

Increases in score were observed from the beginning to the end of the Ecominds scheme for three out of the four 'importance' scores: importance of being with other people, importance of being outside in nature and importance of the exercise or activities. However, the importance of eating healthy food scores remained roughly constant, as shown in Figure 15.

4.10 Other findings

For the three scales for self-perceived i) positivity, ii) connection to nature and iii) health, similar starting scores and increases over time were found (Figure 16).

To assess the impact of type of project (i.e. care farm, STH, environmental conservation project; and whether the project had a 'formal therapy' element or not) on participant health scores between the start and the end of the Ecominds scheme a series of mixed between-within subjects analysis of variance (ANOVA) were conducted on the main variables. None of these analyses were statistically significant, suggesting that project typology did not affect the findings and all types of projects saw similar positive outcomes, regardless of whether they were using horticulture, farming, green exercise or conservation activities or whether they incorporated a formal therapy element into their programmes or not.

Figure 15. Comparative changes of 4 importance scores over the Ecominds programme

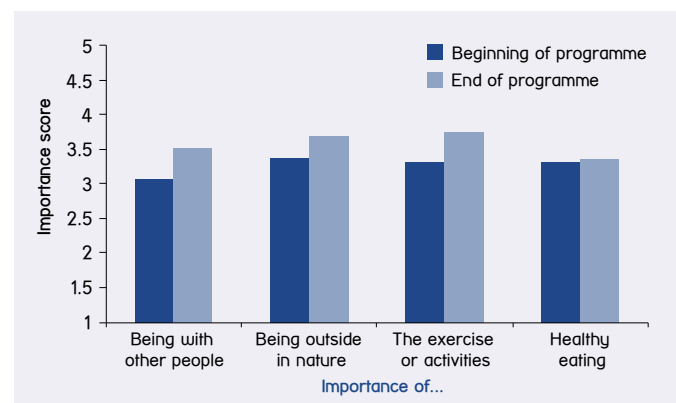
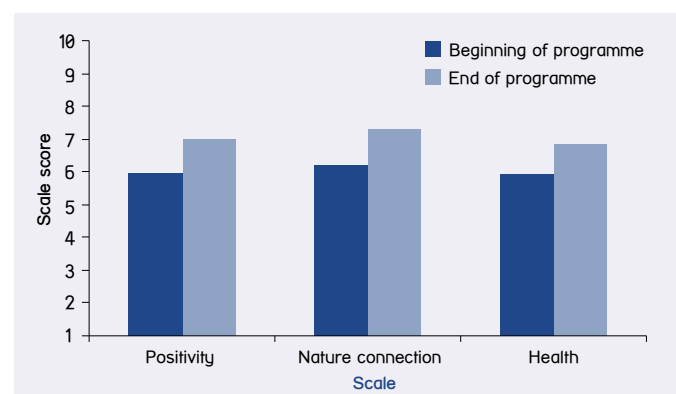


Figure 16. Comparative changes between the 3 perception scales: Positivity, Nature connection and Health over the Ecominds programme



5. Results: 'In-depth' evaluation

5.1 'In-depth' evaluation: Key findings

- Nine projects took part in the 'In-depth' evaluation representing a mixture of project types (social and therapeutic horticulture, care farming and environmental conservation); projects that included formal therapy and those that did not; projects from all of the geographic regions and projects of different sizes. In total, 287 people with mental health problems took part in the 'In-depth' evaluation conducted by the University of Essex, the majority of which were male (69%) and 'White British' (93%). Ages of respondents ranged from 14 to 78 years of age, with an average age of 36.
- **Mental wellbeing:** In the In-depth study, three standardised, internationally recognised instruments were used to measure different elements of mental wellbeing. For the majority of participants both their wellbeing and self esteem scores showed a statistically significant increase from the beginning to the end of their involvement with Ecominds, indicating an improvement in participant wellbeing over the duration of the Ecominds scheme (on average a participant experienced increases in wellbeing of 17 per cent and of self esteem of 11 per cent). At the start of the programme the mean wellbeing scores for Ecominds participants were lower than average; but by the end of the programme, participant scores had risen to a level in line with the population norm.
- The majority of participants also experienced self esteem (55%) and mood (76%) improvements after a single Ecominds session, with participants experiencing statistically significant *increases* in self esteem and *decreases* in total mood disturbance, anger, confusion, depression and tension after taking part in an Ecominds session. Age and project type did not significantly alter mood scores, but there was a statistically significant difference in mood scores between the genders, in that women had significantly lower scores than men, signifying better overall mood.
- **Social inclusion:** Four different measures were used to assess various elements of social inclusion over the course of the Ecominds scheme. Findings of the 'In-depth' study showed a statistically significant increase in most (57%) participants' social engagement and support scores from the beginning to the end of their involvement with Ecominds, representing an improvement in social engagement of 10 per cent (on average), although some people experienced improvements of up to 89 per cent. At the start of the programme, many participants said that they *did not* feel they belonged to their community but by the end of the Ecominds scheme, the opposite was true, with the majority (59%) saying that they *did* feel they belonged to their immediate community – representing an improvement of social inclusion for many participants. Similarly, more people felt 'satisfied' or 'extremely satisfied' at the end of their involvement with the Ecominds scheme than they did at the beginning. When participants were asked how many times in the last year they had helped with or attended activities organised in their local area, 81 per cent showed an increase in the frequency of getting involved in community activities after being involved with the Ecominds scheme.
- **Connection to nature:** An adapted form of the Connectedness to Nature Scale was used in the 'In-depth' evaluation to detect changes in nature connection over the course of the Ecominds scheme. Again, statistically significant increases in participant connection to nature were found from the start to the end of the programme (for 61 per cent of people) implying that these participants had become more connected to nature over the duration of the Ecominds scheme. There was also a weak positive correlation between age and connection to nature in this study, showing that connection to nature increased slightly with participant age.
- **Healthy lifestyles:** Using a mix of four questions relating to: perceptions of overall 'health'; the importance of healthy food; and healthy eating habits, elements of healthy lifestyles were assessed. Statistically significant increases in participant self-perceived 'health' status were observed both over the duration of the Ecominds scheme (where 59 per cent of participants saw improvements in health of on average 31 per cent) and after taking part in one session. The majority of participants already either 'agreed' or 'strongly agreed' with the statements "I enjoy putting effort and care into the food that I eat" (68%) and "Healthy

food often tastes nicer than unhealthy food” (56%) at the beginning of the programme so although very slight increases were seen over the Ecominds scheme these were not statistically significant. There were however changes in agreement with the first statement “I enjoy putting effort and care into the food that I eat” where more people agreed and less people disagreed with the statement at the end of the programme than at the beginning.

- **Environmentally friendly behaviours:** In the ‘In-depth’ evaluation, in order to assess any changes in participant behaviour as a result of taking part in the Ecominds scheme, six questions relating to environmentally friendly practices were included. Starting responses indicated that the majority of participants usually ‘often’ or ‘always’ recycle; buy energy saving light bulbs; turn off the power at the plug; and turn off the tap when cleaning their teeth anyway, suggesting a reasonably environmentally pro-active group at the beginning of the programme. Nevertheless, slight increases were seen in four out of the six individual behaviour scores (recycling, buying energy saving light bulbs, turning off the tap and feeding wildlife) as a result of participating in the Ecominds scheme, whilst the remaining two (turning off power at the plug and buying local or organic food) remained constant. However, only the change in recycling glass, paper or metal was found to be statistically significant. In terms of total environmentally friendly behaviour, a statistically significant increase in overall scores was found from the start to the end of the Ecominds scheme for 50 per cent of beneficiaries, showing an increase in environmentally friendly practices.
- The importance of the three key aspects of the Ecominds scheme: i) being with other people, ii) being outside in nature and iii) taking part in exercise or activities; were assessed using a simple ‘importance scale’. The importance of all three aspects were shown to be of roughly equal importance to participants, both at the end of the Ecominds scheme as a whole and after taking part in a single session, which suggests that participants value the combination of the three aspects of the Ecominds projects, rather than one particular feature.
- Improvements in all the major variables (wellbeing, social inclusion, connection to nature, healthy lifestyles and environmentally friendly behaviour) were regardless of: i) whether the participants attended a care farm, a STH or an environmental

conservation project; ii) whether they were male, female or transgender; iii) whether they were under 30 or over 30 or iv) whether or not the project included formal therapy. This suggests that although the 130 Ecominds projects differed in context and content and delivery, similar benefits to participant wellbeing, social inclusion, nature connection, healthy lifestyles and environmental behaviour occur for all the nature-based projects evaluated.

- Participants also told us in their own words about what they enjoyed the most about the Ecominds project that they were involved with. Out of the 113 comments received, three major themes emerged i) the social contact - being with other people as part of a group; ii) being outside in nature - the fresh air, the scenery and the beauty; and iii) the activities - learning new skills, enjoying the activities. Many other comments expressed how people felt calm and safe outside, had fun, liked being active and felt a sense of achievement.

5.2 About the ‘In-depth’ evaluation

The ‘In-depth’ Ecominds evaluation is composed of different research elements. Firstly, participants have completed questionnaires at the beginning and at the end of their involvement with Ecominds, enabling an analysis of any changes in outcome measures on a longitudinal basis (commonly known as changes in ‘trait’) as a result of the Ecominds programme. In addition, participants also completed a series of slightly different questionnaires immediately before and after taking part in an Ecominds session to enable analysis of any changes in the outcome measures over a much shorter period of time (commonly known as changes in ‘state’). Finally, several of the outcome measures were repeated not only in the beginning and end questionnaires but also in the pre and post activity questionnaires, enabling an analysis of outcome measures at regular intervals throughout the programme.

All three of these elements of the analysis are reported together in this results section, organised under the following themes:

- About the projects, participants and activities
- Mental wellbeing
- Social inclusion
- Connection to nature
- Healthy lifestyle
- Environmental behaviours

5.3 About the projects, participants and activities

This section contains details on the projects that took part in the In-depth evaluation, the participants who were involved, the type of activities undertaken, the length of sessions and time spent at the project.

5.3.1 The projects in the evaluation

Nine projects took part in the 'In-depth' evaluation. The aim was to provide a representative sample of Ecominds projects to include:

- all types of project, i.e. a mix of care farming, social and therapeutic horticulture, environmental conservation, facilitated green exercise and nature art and crafts projects;
- projects that both included formal therapy and those that did not;
- projects from all of the geographic regions;
- a range of project sizes (in terms of number of beneficiaries); and
- a variety of different grant sizes.

As with any programme of this type, where an evaluation takes place over a number of years, degrees of 'buy-in' to the evaluation will vary between projects and some level of drop-out is to be expected as changes in project staffing, skills or resources occur over the duration of the programme. As a result, although the variety in geographical region, project size and grant size is represented, neither a project specified as predominantly facilitated green exercise nor as nature arts and crafts is included in the 'In depth' evaluation. However, due to the flexible approach of ecotherapy, many of the projects included do actually incorporate elements of facilitated green exercise or nature arts and crafts. Only one of the projects involved in the 'In-depth' evaluation included formal 'therapy' as part of its programme and the other eight projects are 'therapeutic' nature-based interventions (which is representative of the Ecominds programme as a whole). More details of the projects included in this evaluation can be seen in Table 3 and in Chapter 7.

Table 3. Name, type, size and location of projects in the 'In-depth' evaluation

Name of project	Type of project	Number of beneficiaries	Grant Size	Region
Grow It	Social and Therapeutic Horticulture	100+	Large	East Midlands
Grow2Grow	Care farming	21-40	Flagship	South East
Growing Clearer Minds	Social and Therapeutic Horticulture	100+	Small	East
Growing Well	Care Farming	100+	Large	North West
Seed to Succeed	Social and Therapeutic Horticulture	1-20	Small	London
Spring to Life	Environmental Conservation	100+	Large	South West
The Outdoor Club	Environmental Conservation	21-40	Small	South West
Wellbeing comes naturally (Sheffield and Bedford)	Environmental Conservation	100+	Flagship	Nationwide
The Wildwood Ecominds Project	Environmental Conservation	100+	Large	South East

5.3.2 Participants

In total, 287 people with mental health problems took part in the 'In-depth' evaluation conducted by the University of Essex. The majority of these participants were male (69%), 31 per cent were female and <1% were transgender.

In terms of the number of participants taking part in the evaluation from each of the types of Ecominds project, the majority (62%) were from environmental conservation projects, 16 per cent were from care farming projects and 22 per cent were from STH projects.

Ages of respondents in the Ecominds In-depth evaluation ranged from 14 to 78 years of age, with an average age of 36 – see Figure 17. Nearly half (46%) of participants were 30 or younger, 34 per cent aged 31–50 and 20 per cent were aged over 51 years.

Figure 17. Ages of Ecominds participants in the 'In depth' evaluation

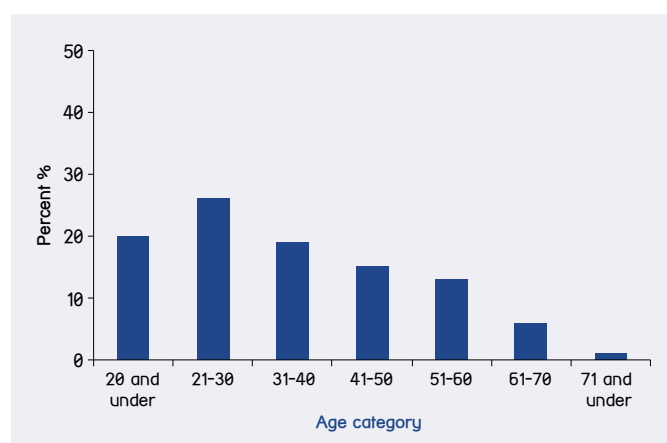


Table 4. Ethnicity of respondents in the 'In-depth' Ecominds evaluation

Ethnic group	Per cent %
White British	92.6
White Irish	0
White other	2.1
Asian Indian	0.4
Asian Pakistani	0
Asian Bangladeshi	0.4
Asian other	0
Chinese	0
Black Caribbean	0.7
Black African	0.7
Black other	0
Mixed White and Black Caribbean	0.4
Mixed White and Black African	0
Mixed White and Asian	0
Mixed other	0.4
Any other	0
Rather not say	1.1

Most of the questionnaires (85%) in this evaluation were completed by the participants themselves, 14 per cent were helped by project workers and 1 per cent of participants were helped by a 'carer'. The majority of participants (93%) described their ethnic origins as 'White British', with no other categories featuring more than 2 per cent of respondents (see Table 4).

5.3.3 Activities, sessions and time spent at the project

Length of sessions

A typical session for the Ecominds projects involved in this survey lasted from 1 to 8 hours, with the average session being five hours.

Frequency of attendance and length of time spent at project

Frequency of attendance and duration varied between projects as all had slightly different contexts and ways of working, with differing aims, objectives and participant groups. However, the majority of participants (81%) attended their Ecominds project either once or twice a week – as shown in Figure 18.

In terms of how long a participant attended the project programme, again this varied depending on the way each project was run, with some projects offering services to each intake of participants for an eight-week

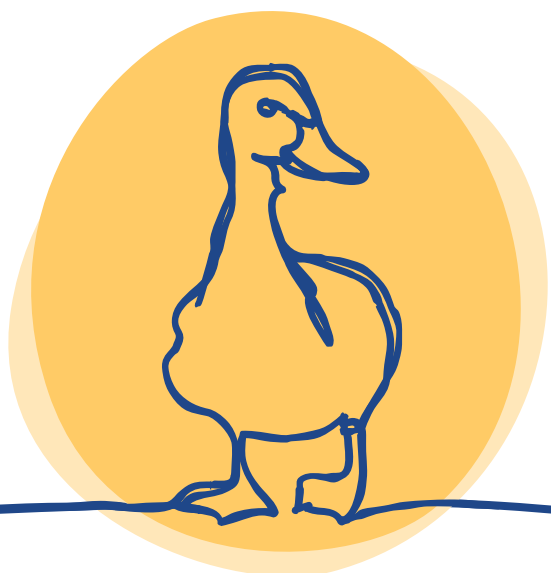
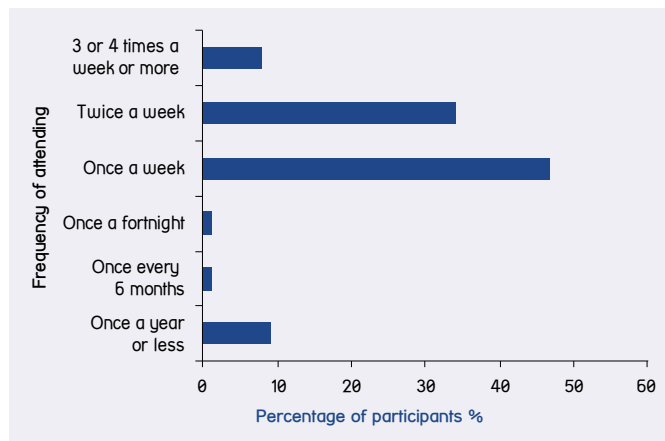


Figure 18. Frequency of attending Ecominds project



period and others offering sessions for participants for as long as they wanted to attend. However in this study the duration varied from eight weeks to four years with an average length of time that participants had been attending being six months (26 weeks).

Activities for beneficiaries

A variety of different activities were undertaken in the Ecominds projects evaluated in this ‘In depth’ study, ranging from gardening activities and conservation work to fire making and canoeing. Many projects also included cooking activities using the produce participants had grown and then the group ate the food they had prepared. Other activities mentioned by respondents have been categorised by the three types of projects involved in the evaluation: care farming, Social and Therapeutic Horticulture (STH) and environmental conservation projects (Table 5).

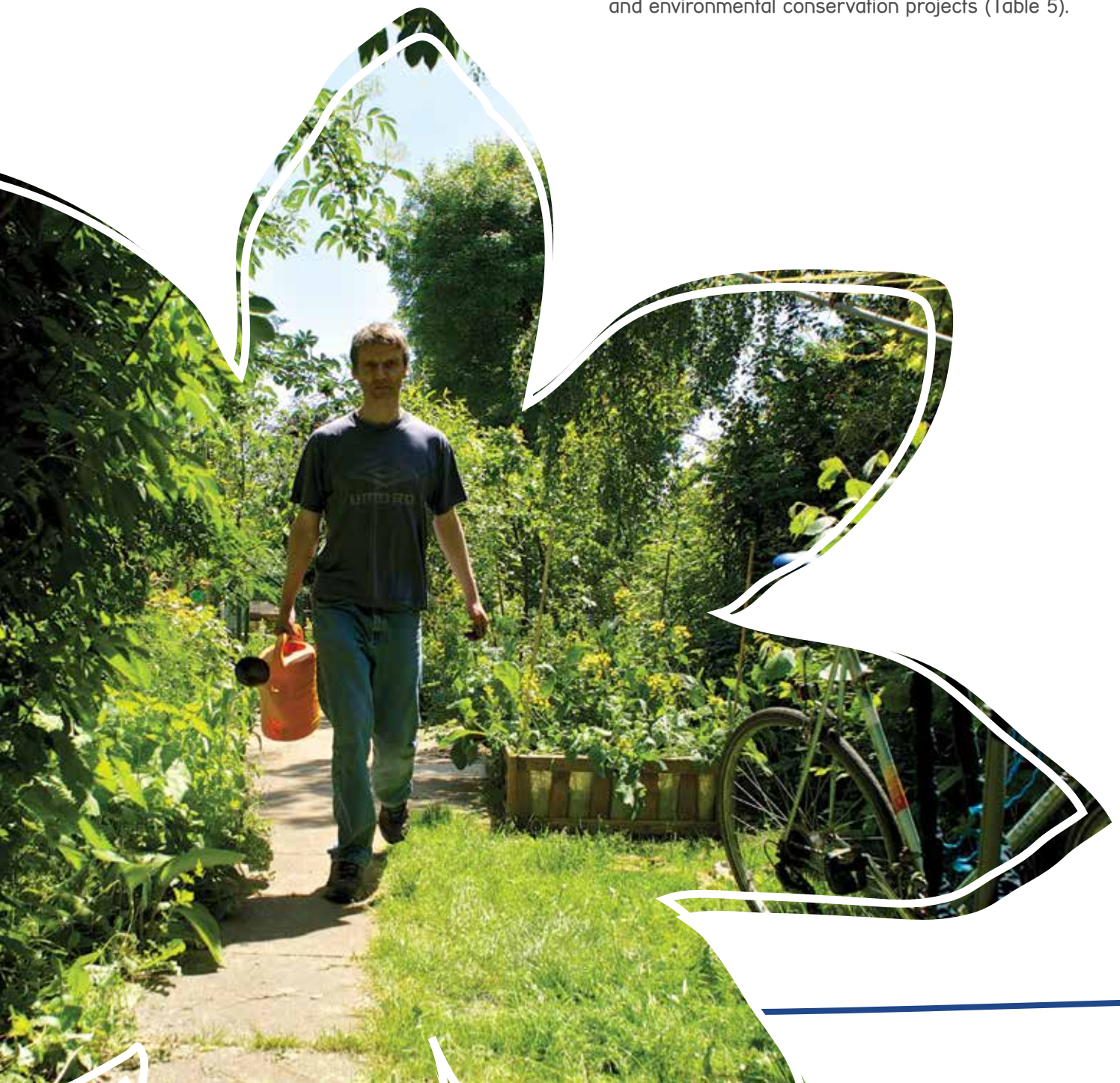


Table 5. Examples of Ecominds project activities, as described by participants.

Examples of care farming activities undertaken (in participants' own words):	
<ul style="list-style-type: none"> • Planted onions, did the checklist • Saw the cows • Had something to eat • Planting onion sets, watering everything • Mowing • Watering plants • Seed sowing • Digging 	<ul style="list-style-type: none"> • I lawn mowed the grass • Collected some wood • Shovelling compost • Hoeing and weeding • Picking salad leaves • Weighing, sealing and labelling salad bags to compute order • Looked around the farm at the machinery
Examples of STH activities undertaken (in participants' own words):	
<ul style="list-style-type: none"> • Sowing onion seeds and broad beans • Made some fresh pasta and pasta salad • Looking round Harlow Carr gardens • Christmas wreath making • We spent the day on the farm. Firstly we made home-made pasta in the kitchen with flour, egg, oil and rolled with two rolling pins. Then we made fresh salad in a metal tub for dinner. After dinner we were escorted around the project. I saw a roof garden and a combine harvester worth £250K and staff showed us different crops grown • Looked at flowers in the field 	<ul style="list-style-type: none"> • Laid a stone path and some digging • Weed collecting, raking, spreading chitter • Digging, weeding • Tried pushing a massive fallen tree • Today we are displaying the finished sculpture for display in the woodland setting- Willow sculptures • Bird box making, bird watching • Stone and rubbish collecting • Laid stone, went to shop • Digging • Filling barrow with stones from the field
Examples of environmental conservation activities undertaken (in participants' own words):	
<ul style="list-style-type: none"> • Chopping down trees, collecting tree waste, chipping tree waste • Cleared plots • Cleared some weeds from raised bed, picked vegetables • Cut grass along edges of plots, weeded raised beds, added vegetation to compost, planted seeds • De-turfing, digging, bagging and watering trees • Planting vegetable seeds • Adding grass to compost container • Dry stone wall reconstruction/rebuilding work • Finished off wooden box and done some glasswork art • Group activities and cooking • I etched and engraved glass to make a useful sculpture. I also finished my jewellery box and continued my spoon • Mixing with other people, willow weaving and bog pond • Organic food growing, harvesting, weeding • Raking vegetation and clearing bracken • Sanded and painted a didgeridoo • Started a fire, prepared shelter and made a tripod for the billy can 	<ul style="list-style-type: none"> • Canoeing • Making fire • Clearing vegetation from allotment plots, picked vegetables, dug out weeds around wildlife area • Wheel-barrowing to skip • Digging over soil, digging in top soil • Helped design and plan for a wooden structure at the pit • Made own pizza in pizza oven outdoors and talked to everyone. Watched how to weave hazel to make a fence • Made tea for the whole group, gathered firewood for the tea making job • Was given my own plot, spent time weeding and planning for the future • Taking woodchip from main pile and filling it in around plots. General gardening and harvesting lettuce • Painted a wooden recycled seat • We built a shelter for six people using a lean to method and a trap; we prepared a kitchen area and two fires, one a kitchen fire and one a group fire. We created a toilet area • Preparing flower beds

5.4 Mental wellbeing

Mental wellbeing is the main theme for the Ecominds evaluation. In the In-depth study, three standardised, internationally recognised instruments were used in the evaluation to measure different elements of mental wellbeing. Firstly, the Warwick Edinburgh Mental Wellbeing Scale (WEMWBS) and Rosenberg Self Esteem (RSE) scales were used to measure changes in participant wellbeing and self-esteem over the duration of the Ecominds programme – i.e. by comparing outcome measures at the beginning and at the end of the programme. Secondly, the Profile of Mood States (POMS) (used to measure participant mood) and the RSE were used to measure changes in mood and self-esteem over the course of a session at an Ecominds project – i.e. by comparing outcomes before and after a typical session. Thirdly, where self-esteem had been measured at intervals over a period of time, longitudinal trends over the programme could also be observed.

5.4.1 Wellbeing - WEMWBS

Changes over the Ecominds scheme

Participant WEMWBS scores showed a statistically significant increase from the start ($M=44.14 \pm 10.22$) to the end ($M=49.43 \pm 9.81$) of the participant involvement with Ecominds, when tested with a paired samples t-test ($p<.001$). This indicates an increase in wellbeing over the programme¹⁷⁵ - See Figure 19. An increase in WEMWBS score of five points is considered to represent a significant increase¹⁷⁶ and in this study the difference between the mean score at the beginning and at the end of the programme was 5.3, again implying a significant increase in wellbeing.

The majority of participants (69%) in the In-depth evaluation experienced this increase in their WEMWBS scores¹⁷⁷. The average percentage change was a 17 per cent increase in wellbeing (although some people experienced an increase in wellbeing of as much as 214 per cent)¹⁷⁸.

Using population level data, WEMWBS scores have been categorised into three groups: poor, average and good wellbeing¹⁷⁹ and when the scores in this study were further examined, there were less people in the 'low' wellbeing category and more in the 'average' and 'high' wellbeing categories at the end of the Ecominds scheme than at the beginning (as shown in Figure 20).

In fact, 35 per cent of participants experienced changes in WEMWBS so significant, that they changed wellbeing category. For example, six people (7 per

cent of those who had both beginning and end scores for wellbeing) moved from 'average' to 'high' wellbeing; 22 people (25%) went from 'low' to 'average' and three people (3%) went from 'low' to 'high' wellbeing as a result of being involved in an Ecominds project.

At the start of the programme the mean WEMWBS score for Ecominds participants was lower than the population average (although still within the 'average wellbeing' range).

However by the end of the programme, the mean score had increased to a level in line with the population average score (of 49.9)¹⁸⁰.

Figure 19. Change in mean participant wellbeing scores from the beginning to the end of the Ecominds programme

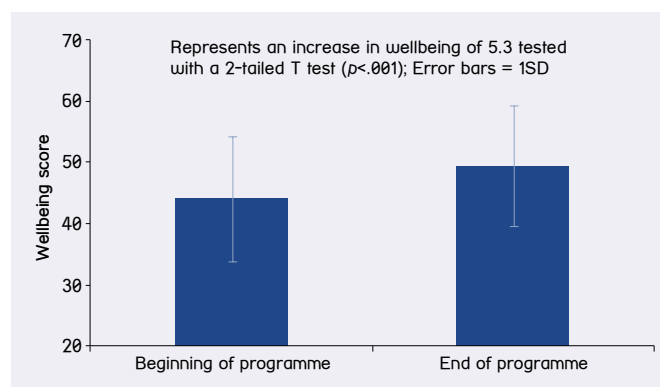
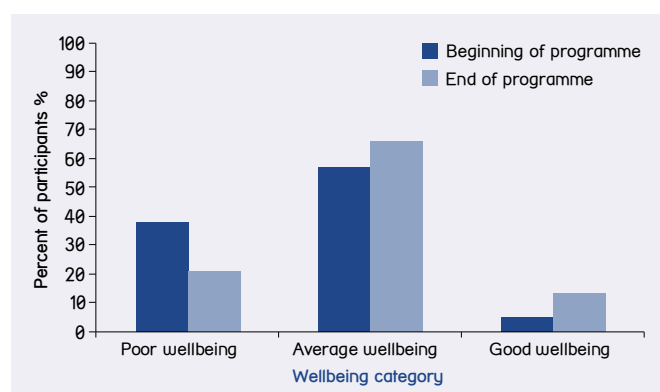


Figure 20. Proportion of participants in each wellbeing category after taking part in Ecominds



175 $t(88) = -5.001, P < .001; \eta^2 = .403$ – indicating a large effect size]

176 Health Scotland 2009

177 29% decreased, 2% constant

178 range -43 to +214%

179 Wellbeing categories are calculated using the standard deviation of the population mean. Scores which fall into the range 1 SD below the mean or more (i.e. 49.9 - 8.36) are considered to have poor wellbeing, scores that fall within 1 SD above or below the mean are considered average and those over 1SD above the mean are said to have good wellbeing – see Health Scotland 2009

180 As taken from SHeS 2011 - Rutherford et al 2012

5.4.2 Self-esteem - RSES

Changes over the Ecominds scheme

When self-esteem scores were tested using a paired-samples t test, results showed a statistically significant increase from the start of a participant's involvement with Ecominds ($M=25.48 \pm 4.26$) to the end ($M=27.71 \pm 4.54$, $p<.001$) indicating an increase in self esteem over the programme¹⁸¹ (see Figure 21).

Again, the majority (52%) of participants experienced an increase in their self-esteem after involvement in the programme¹⁸² on average an improvement in self-esteem of 11 per cent; although some people showed larger improvement of up to 80 per cent¹⁸³.

In order to assess longitudinal changes in self esteem over the Ecominds scheme, to identify the presence of any trends, participant self esteem scores taken at regular intervals over the whole course of the programme were then examined. Unfortunately as not many of the projects had completed more than one interim measure of self esteem, the sample size decreased leaving only three time points with

satisfactory amounts of data for statistical tests. However, a repeated measures ANOVA showed a statistically significant change in self esteem scores over time¹⁸⁴ ($p<.01$) and post-hoc analysis with a Bonferroni adjustment revealed that self esteem scores were significantly increased between the start of the programme ($M= 25.11 \pm 4.80$) and 'before activity' ($M=26.33 \pm 5.26$, $p=.04$); and between start and end of the programme ($M= 27.44 \pm 4.49$, $p=.004$) – as shown in Figure 22.

Changes after an Ecominds session

When comparing the self esteem scores over the duration of a single Ecominds session, a paired samples t test also showed a statistically significant increase from before the Ecominds project session ($M=27.15 \pm 5.10$) to after the session ($M=28.27 \pm 4.86$) indicating an increase in self esteem over a shorter period of time¹⁸⁵ (see Figure 23). Over half of participants (55%) saw an increase in self-esteem after a session, on average a 6 per cent improvement of self esteem (again with some participants experiencing increases in self esteem as high as 79%).

Figure 21. Change in participant self esteem scores after involvement in Ecominds programme

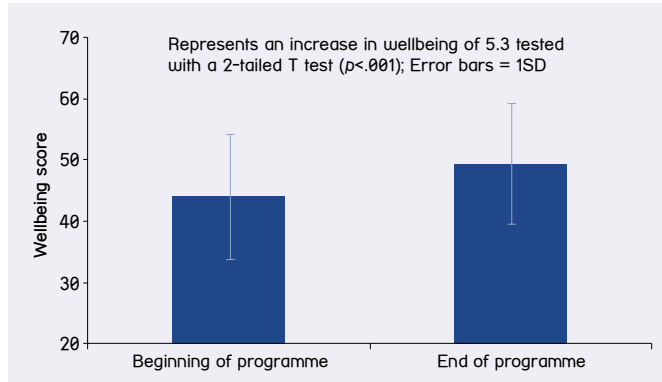


Figure 23. Changes in self esteem before and after participation in an Ecominds session - pre/post study

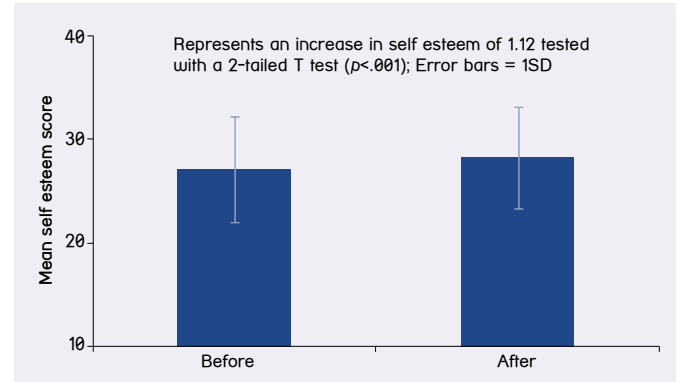
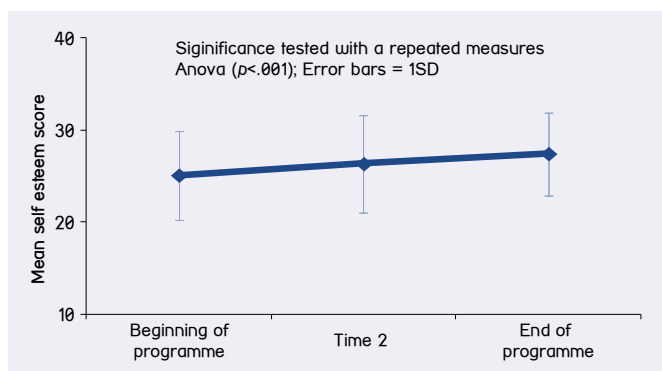


Figure 22. Changes in self esteem at 3 time points across Ecominds programme



181 $[t(52) = 4.196, P<.001; n2= .221$ – indicating a large effect size]

182 16% stayed constant and 22% decreased

183 Ranged from a decrease of 22% through to increases of 80%

184 $[F(2, 70) = 6.486, p<.01]$

185 $[t(94) = 4.343, P<.001; n2= .167$ – indicating a large effect size]

5.4.3 Mood - POMS

Changes after an Ecominds session

The Profile of Mood States (POMS) was used in the pre and post session study only. When looking at the overall measure for Total Mood Disturbance (TMD), a paired samples t test showed a statistically significant decrease in participant TMD scores (representing an improvement in mood) from before (M=145.11, \pm 22.49) to after the Ecominds session (M=135.35, \pm 18.87, $p < .001$)¹⁸⁶, as highlighted in Figure 24.

The majority of participants (76%) experienced an improvement of mood (i.e. a decrease in TMD) over the course of an Ecominds session, with an average improvement in mood of 6 per cent¹⁸⁷, although some participants experienced improvements in mood of up to 40 per cent.

To determine if there were statistically significant changes in mean POMS subfactor scores, a one-way between groups MANOVA¹⁸⁸ was conducted to evaluate the impact of the session on the six mood sub-factors: anger, confusion, depression, fatigue, tension and vigour.

There was a statistically significant difference ($p < .001$)¹⁸⁹ between before and after scores on the combined dependent variables. Significant decreases in anger ($p < .01$), confusion ($p < .001$), depression ($p < .05$), and tension ($p < .01$) were found and although fatigue scores decreased very slightly, this change was not found to be significant¹⁹⁰.

Figure 24. Changes in TMD before and after an Ecominds session - pre/post study

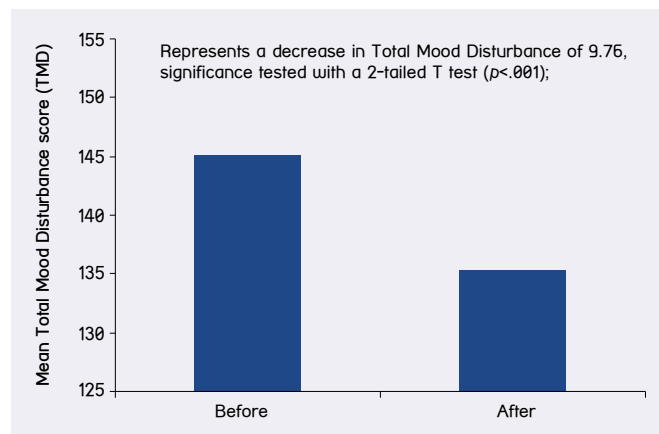


Table 6. POMS subfactor changes in participant mood scores after Ecominds session

POMS Subfactor	Score before Ecominds session		Score after Ecominds session		Mean percentage change (%)	Percentage of participants seeing changes in score (%)
	Mean	Median	Mean	Median		
Anger	39.48 \pm 3.94	38	38.14 \pm 3.10	37	Improvement of 3%	43% decrease, 48% constant, 9% increase
Confusion	39.14 \pm 5.58	37	36.31 \pm 3.93	36	Improvement of 6%	71% decrease, 17% constant, 12% increase
Depression	36.69 \pm 3.18	36	35.69 \pm 2.78	35	Improvement of 2%	48% decrease, 40% constant, 12% increase
Fatigue	42.81 \pm 6.71	42	42.61 \pm 5.88	42	Improvement of 1%	39% decrease, 20% constant, 41% increase
Tension	33.40 \pm 4.73	32	31.49 \pm 4.17	30	Improvement of 5%	64% decrease, 23% constant, 13% increase
Vigour	46.80 \pm 6.78	45	48.54 \pm 7.21	48	Increase of 5%	28% decrease, 12% constant, 60% increase

Note: for negative factors anger, confusion, depression, fatigue and tension a decrease represents an improvement; for the positive sub factor vigour an increase is desirable.

186 [$t(97)=5.288$, $p < .001$; $n_2 = .223$ – indicating a large effect size]

187 ranged from an increase of 23% through to decreases of 40%

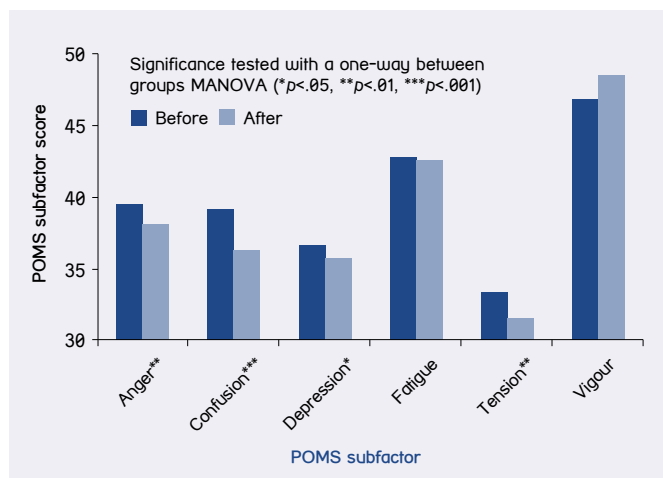
188 Preliminary assumption testing was conducted to check for normality, linearity, outliers, homogeneity of variance-covariance matrices and multicollinearity with no serious violations noted.

189 [$F(6, 212)=4.38$, $p < .001$; Wilks' $\lambda = .89$; partial $\eta^2 = .11$ – indicating a large effect size]

190 Anger [$F(1, 217) = 7.461$, $p < .01$]; Confusion [$F(1, 217) = 17.986$, $p < .001$]; Depression [$F(1, 217) = 6.171$, $p < .05$]; Fatigue [not significant $p = .945$]; Tension [$F(1, 217) = 9.214$, $p < .01$]; Vigour [not significant, $p = .075$];

Vigour scores increased¹⁹¹ after the Ecominds session indicating that although participants may well have been tired, their energy levels still increased as a result of the activities. Changes in mean scores are shown in Figure 25 and mean and median scores from all subfactors at both time points together with mean percentage changes can be found in Table 6. The majority of participants (50-71%) experienced decreases in tension and confusion and increases in vigour.

Figure 25. Change in POMS subfactors after participating in an Ecominds session



5.4.4 Effect of project type, participant gender and age on mental wellbeing findings

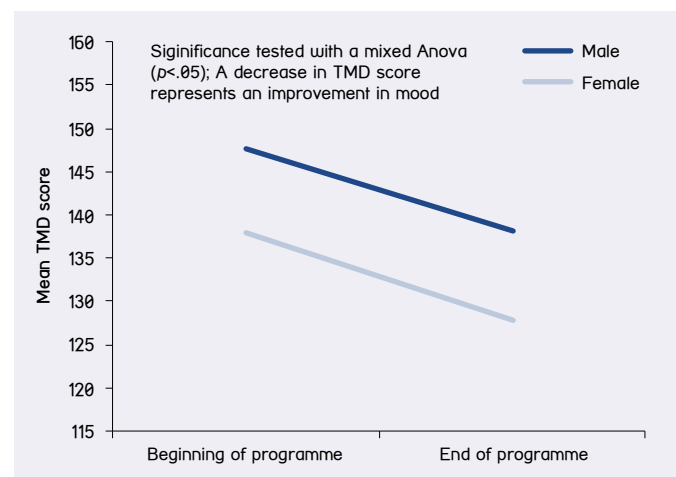
A series of mixed between-within subjects analysis of variance (ANOVA) were conducted to assess the impact of project type, presence of formal therapy, participant gender and participant age on wellbeing measures (WEMWBS and RSES) between the start and the end of the Ecominds scheme and also for TMD scores over the course of a session.

In terms of WEMWBS and self esteem, as for the overall analysis, there was a significant increase in wellbeing and self esteem scores over time after taking part in Ecominds regardless of: i) whether the participants attended a care farm, a STH or an environmental conservation project; ii) whether or not the project had a 'formal therapy' element; iii) whether they were male, female or transgender; or iv) whether they were under 30 or over 30.

There were no significant differences in the wellbeing and self esteem scores between the different project types, different genders or different age groups and no interaction effects¹⁹² and so it can therefore be concluded that these factors did not affect either

i) levels of wellbeing and self esteem or ii) the magnitude of change in scores between the start and the end of the programme. For the mood (TMD) scores analysis, findings largely mirrored those for wellbeing and self esteem in that there was a significant improvement in mood (a decrease in TMD) for participants of all gender and ages and for all project types over the session. Age and project type did not significantly alter mood scores, but there was a statistically significant difference ($p<.05$) in mood scores between the genders¹⁹³, in that women had significantly lower scores, ($M=137.93$ time 1 falling to $M=127.89$ at time 2) than men ($M=147.61$ time 1 falling to $M=138.14$ at time 2) as shown in Figure 26. This signifies that although mood improvements were experienced by both genders, women had better overall mood than men both at the start and at the end of the session.

Figure 26. Differences in male and female TMD scores between the beginning and end of Ecominds session



¹⁹¹ Although this was not statistically significant

¹⁹² A significant interaction effect would mean that the amount of change (either an increase or decrease in scores between the 2 time points) would be affected by gender, age or project type.

¹⁹³ [There was no significant interaction between gender and time (Wilks' $\lambda = .100$ $p=.89$), but there were significant main effects for time [Wilks' $\lambda = .810$, $F(1,95) = 22.318$, $p<.001$; partial $\eta^2 = .190$ –large effect size] and for gender [$F(1,95) = 6.019$, $p<.05$; partial $\eta^2 = .060$ –moderate effect size].

5.4.5 Other mental wellbeing findings

The three mental wellbeing measures correlated well, both in terms of actual scores and percentage changes with a strong positive correlation between WEMWBS and RSES (51% shared variance) and medium negative correlations for TMD with WEMWBS

(15% shared variance) and with RSES (10% shared variance). This implies that all the wellbeing measures show the same improvement trends over the course of the programme with self-esteem and wellbeing both increasing as mood disturbance decreases. Correlation results for the three wellbeing variables and subfactors are shown in Table 7.

Table 7. Correlation matrix for mental wellbeing measures (based on percentage change from Time 1 to Time 2)

	WEMWBS	RSES	TMD
WEMWBS	1.0		
RSES	.714**	1.0	
TMD	-.385*	-.315**	1.0
Anger	-.344*	-.444**	.680**
Confusion	-.391*	-.384**	.723**
Depression	-.409*	-.346**	.564**
Fatigue	-.394*	-.159	.641**
Tension	-.454**	-.396**	.579**
Vigour	.314	.161	-.496**

Notes: r values are reported. **. Correlation is significant at the 0.01 level (2-tailed). *. Correlation is significant at the 0.05 level (2-tailed).

5.4.5 Comments from participants – Mental wellbeing

What participants enjoyed most – Mental wellbeing

Calming and therapeutic activity.

Chilling out.

Talking and learning.

Working with a group and finding direction.

Doing something I haven't tried before.

Getting outside, being free.

Learning a new thing that I have never done before. I really enjoy doing it.

5.5 Social inclusion findings

Social inclusion is one of the key themes of the Ecominds evaluation and in the 'In-depth' study, five measures were used to assess different elements of social inclusion:

- Social engagement and support
- Neighbourhood belonging
- Neighbourhood satisfaction
- Involvement in community activities
- Importance of being with other people

All five of these measures were used to assess changes in participant social inclusion over the duration of the Ecominds programme (i.e. by comparing outcome measures at the beginning and at the end of the programme).

5.5.1 Social engagement and support

Participants were asked how much they agreed or disagreed with a series of four statements relating to different aspects of social engagement and support. Responses were scored on a 5-point Likert scale where respondents were asked to choose from 'strongly agree', 'agree', 'neutral', 'disagree' and 'strongly disagree' and an overall total engagement and support score was then calculated.

To determine if there were statistically significant changes in mean scores for each statement, a series of Wilcoxon Signed Rank Tests were performed¹⁹⁴. A statistically significant increase in participants feeling that they have people who care about them ($p < .05$), and a significant decrease in participants feeling that it is difficult to meet with like-minded people ($p < .01$) was found after taking part in the Ecominds scheme, representing an improvement on both parameters. Although increases were also shown for the other two parameters after participating in the programme: participants felt that it was easier to meet regularly with friends and family and that people in the area help each other more; these improvements were not found to be statistically significant (Figure 27 and Table 8).

Figure 27. Change in social engagement and support parameters after participating in Ecominds

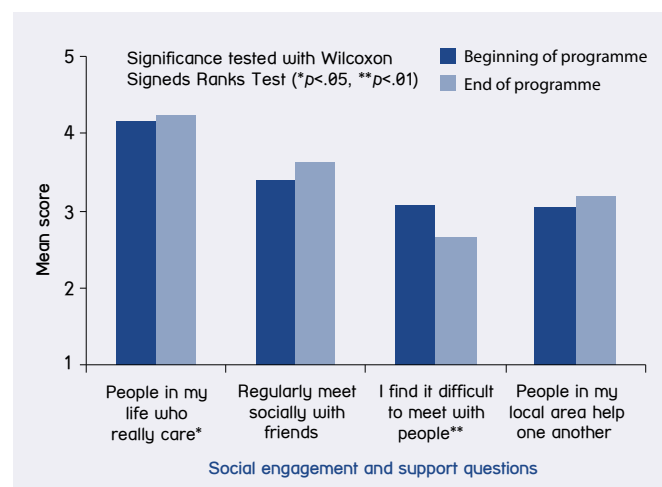


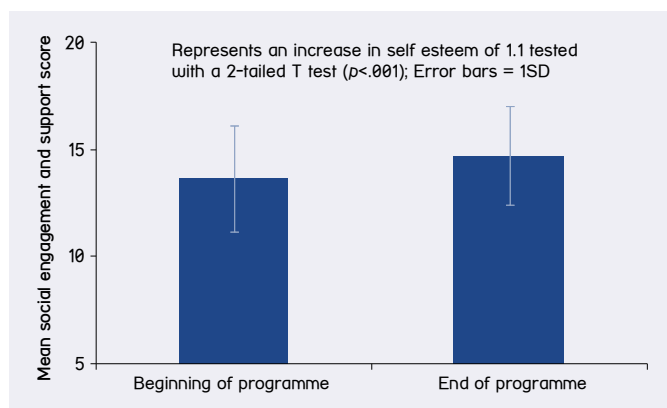
Table 8. Social engagement and support scores after participation in Ecominds

Social engagement and support item	Ecominds baseline score		Ecominds endpoint score		Percentage of participants seeing changes in score (%)
	Mean	Median	Mean	Median	
There are people in my life who really care about me	4.15 ±.89	4	4.23 ±.75	4	11% decrease, 61% constant, 28% increase
I regularly meet socially with friends and relatives	3.40 ±1.13	4	3.53 ±.97	4	19% decrease, 45% constant, 36% increase
I find it difficult to meet with people who share my hobbies or interests	3.06 ±1.02	3	2.66 ±1.13	2	46% decrease, 35% constant, 19% increase
People in my local area help one another	3.03 ±1.03	3	3.19 ±.94	3	19% decrease, 50% constant, 31% increase

194 People who care [$z(71) = 2.403, p < .05$]; Regularly meet [not significant $p > .05$]; Difficult to meet people [$z(70) = -3.155, p < .01$]; People help each other [not significant $p > .05$];

In terms of overall total social engagement and support scores, a paired samples t test showed a statistically significant increase in participant social engagement and support scores from the start (M=13.64, ± 2.47) to the end of Ecominds scheme (M=14.72, ±2.29, $p<.001$)¹⁹⁵ representing an improvement in social engagement (as highlighted in Figure 28). The majority (57%) of participants saw an increase in their social engagement and support score over the Ecominds scheme and the average change was a social engagement improvement of 10 per cent (although some people experienced improvements of up to 89 per cent¹⁹⁶).

Figure 28. Change in social engagement and support scores after participation in the Ecominds programme



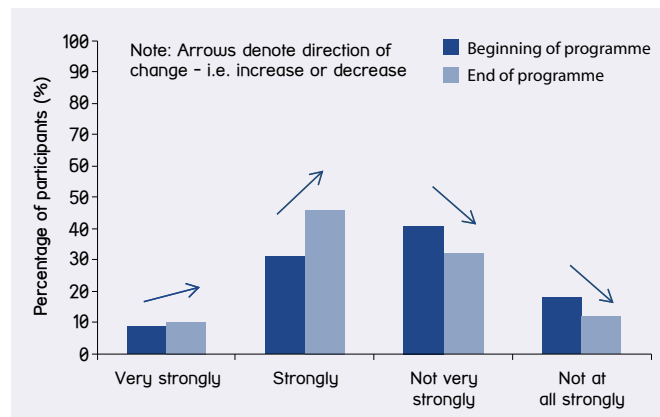
5.5.2 Neighbourhood belonging

Participants were asked both at the beginning and at the end of their involvement with the Ecominds project “How strongly do you feel you belong to your immediate neighbourhood or community?” and could respond on a 4-point scale from ‘very strongly’ through to ‘not at all strongly’.

Mean scores for neighbourhood belonging appeared to be very similar at the beginning and at the end of the programme and when tested with a Wilcoxon Signed Rank test no significant differences ($p=.588$) in score were found between the two time points indicating no change as a result of involvement in Ecominds (Time 1 M=2.60 ±.83; Time 2 M=2.50 ±.68’).

However when the results were examined more closely, at the start of the programme, the majority of participants (60%) said that they did not feel they belonged to their community whereas by the end of the Ecominds scheme, the opposite was true, with the majority (59%) saying that they did feel they belonged to their immediate community (Figure 29) – representing an improvement in feelings of inclusion for many participants.

Figure 29. Change in how strongly participants feel they belong to their immediate neighbourhood or community

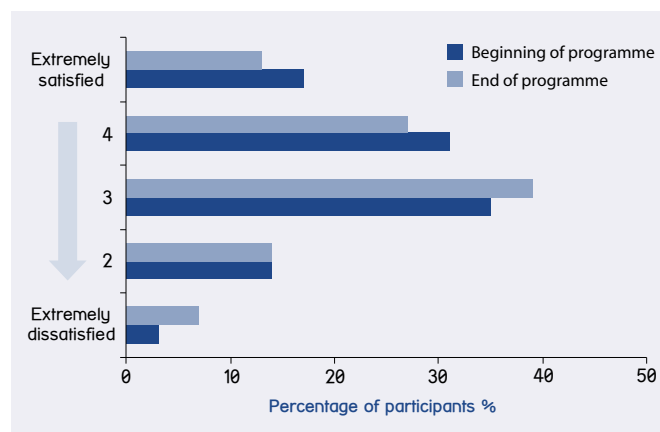


5.5.3 Neighbourhood satisfaction

Similarly, participant perceptions of neighbourhood satisfactions appeared to remain fairly constant or even slightly decrease over the programme. A Wilcoxon signed rank test showed no significant differences ($p=.325$) in participants’ satisfaction with their local neighbourhood between the start (M=3.75 ±1.08¹⁹⁸) and the end (3.45 ±1.04) of the Ecominds scheme.

However when the categories are looked at more closely, more people felt satisfied or extremely satisfied at the end of their involvement with the Ecominds scheme than they did at the beginning, as highlighted in Figure 30.

Figure 30. Changes in participant perception of neighbourhood satisfaction after participating in Ecominds



195 [$t(66)=-3.895$, $p<.001$; $d=.358$ – indicating a large effect size]

196 ranged from a decrease of 22% through to increases of 89%

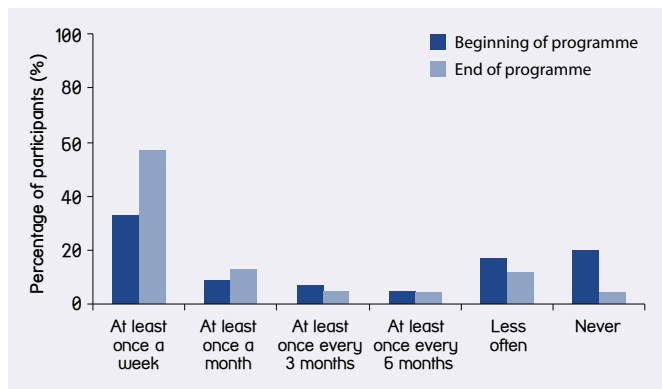
197 Medians for both start and end were 3

198 Medians for both start and end were 3

5.5.4 Community involvement

When participants were asked how many times in the last year they had helped with or attended activities organised in your local area, the majority of them (81%) showed an increase in the frequency of getting involved in other community activities¹⁹⁹ after being involved with the Ecominds scheme (Figure 31).

Figure 31. Changes in frequency of participant involvement in community activities as a result of the Ecominds programme



5.5.5 Effect of project type, participant gender and age on social inclusion

Either a series of mixed between-within subjects analysis of variance – ANOVA (where the data were parametric); or a series of Wilcoxon Signed-Rank Tests on a split data file (when the data were non parametric) were conducted to assess the impact of project type, participant gender and participant age on the social engagement and support, community belonging and neighbourhood satisfaction scores between the start and the end of the Ecominds scheme. There was a significant increase in social engagement and support scores after taking part in Ecominds regardless of: i) whether the participants attended a care farm, a STH or an environmental conservation project; ii) whether or not the project had a ‘formal therapy’ element; iii) whether they were male, female or transgender; or iii) whether they were under 30 or over 30. As with wellbeing findings, there were no significant differences in social engagement and support, community belonging or neighbourhood satisfaction scores between the different project types, different genders or different age groups and no interaction effects and so it can be concluded that none of these factors affected levels of the social inclusion measures used or the amount of change in scores between the start and the end of the programme. This suggests that all observed changes were due to taking part in the Ecominds scheme.

5.5.6 Comments from participants – Social inclusion

5.6 Connection to nature findings

Connection to nature is another main theme of the Ecominds evaluation and was assessed in the

What participants enjoyed most – Social inclusion

Mixing with people, getting on the job, working with a group and taking direction.

Being out in scenic surroundings and the teamwork aspect of the task.

Sense of satisfaction upon completion of the project.

The company of our group in the fine weather.

Chatting with friends.

Working as a team, the company and food. Sleeping under the stars.

Looking what other allotments have been doing, meeting people.

Chatting to other women.

Meeting new people, chatting and getting to know the place.

Made close friends...

Meeting fellow students/tutors. We want it to be a celebration day and the sun has come out.

The overall meeting up of people. Helpful and friendly staff, teamwork.

‘In-depth’ evaluation with an adapted form of the Connectedness to Nature Scale. This measure was used both to detect changes over the course of the Ecominds scheme and also to examine changes as a result of one Ecominds session.

5.6.1 Connection to Nature Scale (CNS) adapted short form

Changes over the Ecominds scheme

A paired samples t test showed a statistically significant increase in participant connection to nature from the start ($M=3.66, \pm .49$) to the end of the Ecominds scheme

¹⁹⁹ i.e. in addition to Ecominds



($M=3.86, \pm .48, p<.01$)²⁰⁰, implying that participants had become more connected to nature over the duration of the programme (Figure 32). Both the scores and the amount of increase in connection are similar to those seen in other nature based interventions evaluated by the University of Essex where scores are typically around 3.62 at Time 1 and 3.84 at Time 2. The majority of participants (61%) experienced increases in nature connection of an average 6 per cent (although some beneficiaries saw increases of 32 per cent²⁰¹).

Changes after an Ecominds session

The changes in connectedness to nature over the course of an Ecominds session are not so significant. When tested with a paired t test the increases from the score pre session ($M=3.69 \pm .45$) to the score post session ($M=3.72 \pm .47$) were not found to be significant ($p=.421$). However 43 per cent of participants did experience an increase in nature connection over the Ecominds session and although the average change was a small improvement of 2 per cent, some beneficiaries saw their connection to nature scores increase by 38 per cent²⁰².

200 [$t(63)=-3.578, p<.001; n2= .254$ – indicating a large effect size]

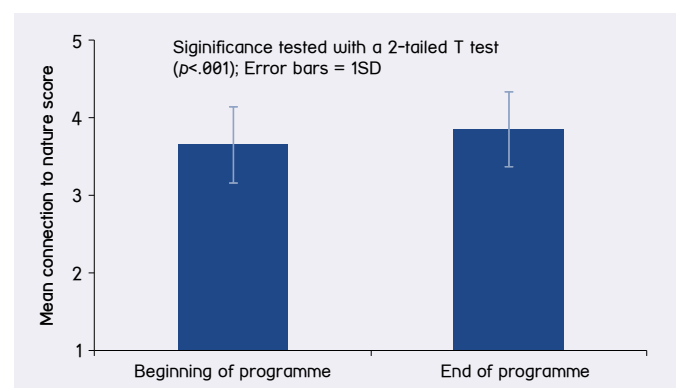
201 ranged from a decrease of 30% through to increases of 32%

202 Ranged from a decrease of 19% to an increase of 38%

5.6.2 Effect of project type, participant gender and age on connection to nature

A series of mixed between-within subjects analysis of variance (ANOVA) were conducted to assess the impact of project type, participant gender and participant age on the connection to nature scores between the start and the end of the Ecominds scheme. There was a significant increase in connection to nature scores after taking part in Ecominds regardless of: i) whether the participants attended a care farm, a STH or an environmental

Figure 32. Change in connection to nature scores after participation in Ecominds



conservation project; ii) whether or not the project had a 'formal therapy' element; iii) whether they were male, female or transgender; or iii) whether they were under 30 or over 30. There were no significant differences in connection to nature scores between the different project types, different genders or different age groups and no interaction effects and therefore none of these factors affected levels of connection or the amount of change in scores between the start and the end of the programme.

There was however a weak positive correlation between age and connection to nature at both time points: beginning of programme ($r=.231$, $p=.001$, 5 per cent shared variance); and end of programme ($r=.250$, $p=.02$, 6 per cent shared variance) when tested using a Pearson's Product Moment Correlation Coefficient, implying that connection to nature increased slightly with age in this study.

5.6.3 Comments from participants – Nature

5.7 Healthy lifestyles findings

What participants enjoyed most – Nature

Being out in scenic surroundings and the teamwork aspect of the task.

The scenery whilst canoeing down the river Dart.

Being close to nature and interacting socially.

Sleeping out in the woods, the company, food and teamwork.

Being in the sunshine.

Being involved in group activities, being at one with nature seeing signs of animal activities i.e. deer and badger, being with new friends and leaving without a trace.

I enjoyed being round the different crops grown out in the fields, such as barley and oats and plants that attract bees, learning what the crops look like.

'Healthy lifestyles' was one of the two secondary themes of the Ecominds evaluation. A mix of four questions relating to perceptions of overall 'health', the importance of healthy food and healthy eating habits were used in the 'In-depth' study.

Perceived health

Participants were asked to complete on a scale of 1–10, "how healthy do you feel at the moment?" and by asking the question both at the beginning and end of the Ecominds scheme and pre and post session, any changes in score can be calculated.

Changes over the Ecominds scheme

A paired samples t test showed a statistically significant increase in participant 'health' scores from the start ($M=6.05$, ± 2.13) to the end of the Ecominds scheme ($M=7.02$, ± 1.82 , $p<.001$)²⁰³, implying that participants had felt healthier over the duration of the programme. The majority of participants (59%) saw increases in their perceived health and on average this was an improvement in health of 31 per cent after participating in Ecominds (some participants experienced increases in their health as large as a 300 per cent²⁰⁴).

Changes after an Ecominds session

A paired samples t test also showed a statistically significant increase in participant 'health' scores from the pre score ($M=6.45$, ± 2.03) to the post score of the Ecominds session ($M=7.26$, ± 1.79 , $p<.001$)²⁰⁵, implying that participants had felt healthier after a session at the project. The majority of participants (57%) saw increases in their perceived health of on average an improvement in health of 21 per cent after participating in Ecominds (but some participants experienced increases in their health as large as a 250 per cent²⁰⁶).

Longitudinal changes

Also a repeated measures ANOVA (with a Greenhouse-Geisser correction) showed a statistically significant change in self perceived health over time²⁰⁷ and post-hoc analysis with a Bonferroni adjustment revealed that health scores were significantly increased ($p=.003$) between the start of the programme ($M= 6.03 \pm 2.02$) and at time 2²⁰⁸ ($M=7.11 \pm 1.85$); and between the start and end of

203 [$t(64)=-3.763$, $p<.001$; $n2=.284$ – indicating a large effect size]

204 Ranged from decrease of 78% to an increase of 300%

205 [$t(109)=-5.469$, $p<.001$; $n2=.378$ – indicating a large effect size]

206 Ranged from decrease of 50% to an increase of 250%

the programme ($M= 7.24 \pm 1.73$, $p= .003$) as shown in Figure 33. This implies an improvement in participant health over the course of the Ecominds scheme.

Figure 33. Changes in health at 3 times points across Ecominds programme

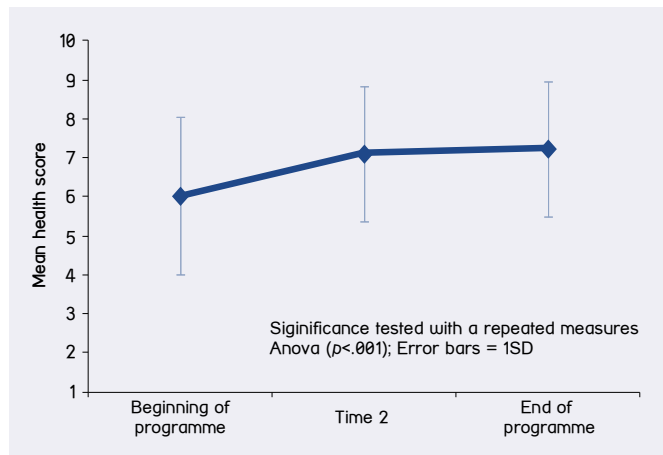
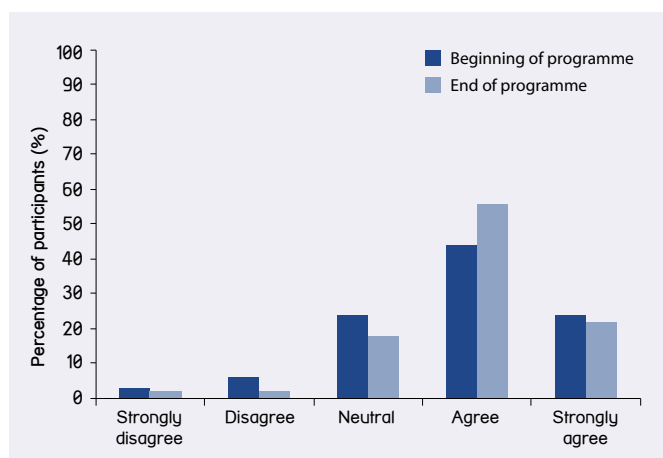


Figure 34. Changes in how strongly participants agree with the statement: "I enjoy putting effort and care into the food that I eat" after Ecominds



5.7.2 Effect of project type, participant gender and age on perceived health

A series of mixed between-within subjects analysis of variance (ANOVA) were conducted to assess the impact of project type, participant gender and participant age on participant health scores between the start and the end of the Ecominds scheme. As with the overall findings in 5.7.1, there was a significant increase in health scores after taking part in Ecominds regardless of: i) whether the participants attended a care farm, a STH or an environmental conservation project; ii) whether they were male, female or transgender; iii) whether they were under 30 or over 30. There were no significant differences in health scores between the different project types, different genders or different age groups and no interaction effects and so therefore none of these factors affected either levels of health or the amount of change in scores between the start and the end of the programme.

5.7.3 Healthy eating

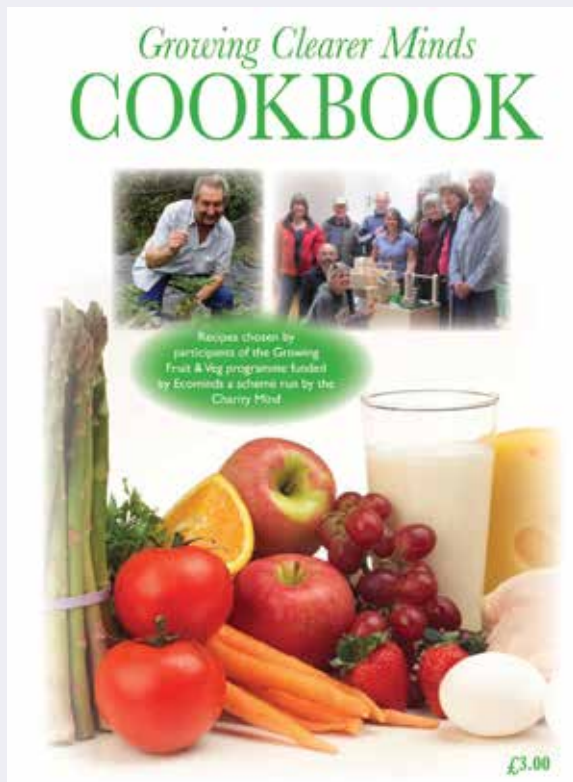
Questions on priorities relating to food perceptions and eating habits were included in the Ecominds evaluation. One question, a 5 point Likert scale asked participants to state how much they agreed or disagreed with the statements: "I enjoy putting effort and care into the food that I eat" and "Healthy food often tastes nicer than unhealthy food". The majority of participants either agreed or strongly agreed with both these statements at the beginning of the programme anyway (68% and 66% respectively) and although the mean scores for both items showed a very slight increase over the Ecominds scheme²⁰⁹, these changes were not found to be statistically significant (when tested with a Wilcoxon Signed-Rank test). There were however changes in agreement with the first statement "I enjoy putting effort and care into the food that I eat" where more people agreed and less people disagreed with the statement at the end of the programme than at the beginning (Figure 34).

207 [F(1.488, 74) = 8.585, $p < .01$]

208 'after activity'

209 [Enjoy putting effort into food: Start - $M=3.8 \pm .96$, Median 4; End - $M=3.93 \pm .83$, Median 4] [Healthy food often tastes better: Start - $M=3.8 \pm 1.04$, Median 4; End $M=3.85 \pm 1.01$, Median 4]

Box 4. Example of healthy eating outcome from an In-depth evaluation project.



'Growing fruit and veg in small spaces' and 'Growing people' are both initiatives from one of the projects in the 'In-depth' evaluation – Growing Clearer Minds. Over the summer months, each member of the group was allocated a metre plot of allotment to dig, plant and harvest. The produce was so abundant that project participants and staff decided to swap recipes and extend their culinary skills, enjoying the food they had grown by cooking it creatively. As a result of this growing, cooking and sharing, a recipe book has been developed for sale, with all proceeds being used entirely to help fund the Growing for Clearer Minds Programme which as well as Growing Fruit & Veg, includes Willow Sculpture, Garden Mosaics and Caring for Potted Plants.

For more information see:
www.mindinmidherts.org.uk/page55.html

Participants were also asked how often they would "Eat a meal that has been cooked by yourself or someone else from basic ingredients" and could answer 'always' through to 'never' on a 5 point Likert scale. However no significant changes in this parameter were observed over the duration of the Ecominds scheme and mean values were 3.8 for both time points.

5.7.4 Comments from participants – Health

What participants enjoyed most – Health

The air and exercise.

The open air and company.

Good exercise and teamwork.

The fresh air, skimming stones and singing.

Weather was nice, general gardening, had scones and damson jam made by a volunteer from damsons picked from a tree at the allotment.

The exercise and also the fire tending and cooking on the fire.

Being out in the fresh air.

I enjoyed spending the day in the country in the summer sun, eating fresh salad grown from the project for dinner, such as radish, very tasty!....

5.8 Environmentally friendly behaviour findings

Another secondary theme of the evaluation was environmentally friendly behaviour. Six questions relating to various environmentally friendly behaviours were asked at the beginning and at the end of the Ecominds scheme to discern if there had been any changes in participant behaviour as a result of taking part in the programme.

5.8.1 Environmentally friendly behaviours

When the frequency of environmentally friendly behaviours was examined, the starting responses indicate that the majority of participants usually often or always recycle; buy energy saving light bulbs; turn off the power at the plug; and turn off the tap when cleaning their teeth anyway, suggesting a reasonably

environmentally pro-active group in the first place. Nevertheless, slight increases were seen in 4 out of the 6 individual behaviour scores (recycling, buying energy saving light bulbs, turning off the tap and feeding wildlife) as a result of participating in the Ecominds scheme, whilst the remaining two (turning off power at the plug and buying local or organic food) remained constant (see Figure 35). When tested with a series of Wilcoxon Signed-Rank tests, only the change in recycling glass, paper or metal was found to be statistically significant ($p < .05$) with mean scores rising from 3.95 (± 1.32) at the start of the programme to 4.33 (± 1.01) at the end²¹⁰.

Overall environmentally friendly behaviour scores were calculated²¹¹ for each participant at the beginning and at the end of the programme and when tested with a paired-samples t test a statistically significant increase ($p < .05$) in overall scores was found from the start ($M = 3.65 \pm .08$) to the end ($M = 3.81 \pm .08$)²¹² of the Ecominds scheme, implying an increase environmentally friendly practices by participants (see Figure 36).

The majority of beneficiaries (60%) saw increases in their overall environmentally friendly behaviour

Figure 35. Change in the proportion of participants undertaking various behaviours 'often' or 'always' after taking part in Ecominds

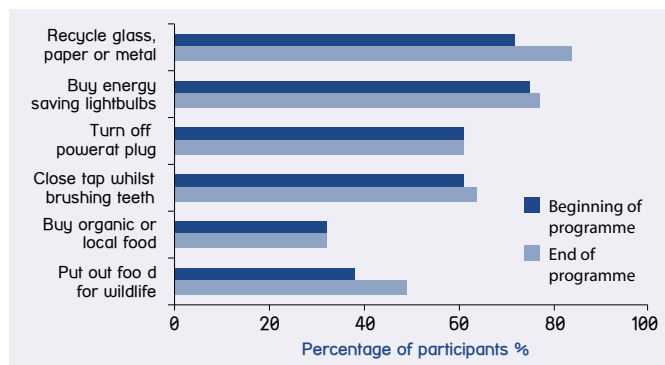
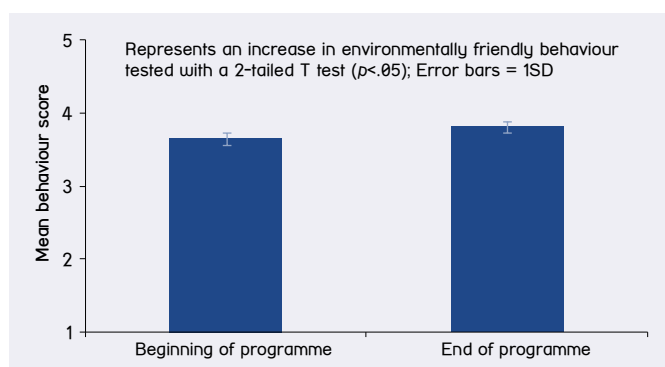


Figure 36. Change in environmentally friendly behaviour scores participating in the Ecominds programme



scores, on average seeing a 7 per cent improvement in environmentally friendly behaviour (although some people increased by as much as 100 per cent²¹³).

5.8.2 Effect of project type, participant gender and age on environmental behaviours

A series of mixed between-within subjects analysis of variance (ANOVA) were conducted to assess the impact of project type, participant gender and participant age on environmental behaviour scores between the start and the end of the Ecominds scheme. As with the overall findings, there was a significant increase in environmental behaviour scores after taking part in Ecominds regardless of i) whether the participants attended a care farm, a STH or an environmental conservation project; ii) whether or not the project had a 'formal therapy' element; iii) whether they were male, female or transgender; or iii) whether they were under 30 or over 30. There were no significant differences in behaviour scores between the different project types, different genders or different age groups and no interaction effects and therefore none of these factors affected either levels of environmental behaviour or the amount of change in scores between the start and the end of the programme.

5.8.3 Comments from participants – Environment

What participants enjoyed most
– Environmental activities

Working in wildlife area, clearing weeds from plot, picking vegetables, hoeing, drink and cake and friends.

Being out on the water.

Making the bird box.

Creating a display for all the work.

Building part of the wall with the help of the group leader and another volunteer.

Moving wood and sawing down trees/hedge.

210 [$z(66) = -1.975, p < .05$]

211 Cronbach's alpha coefficient was used to assess the internal consistency of the environmentally friendly behaviour measure used in this study. Coefficients can range from 0 to 1; and in this study Cronbach's alpha was .68 - which is generally considered acceptable for a newly developed scale.

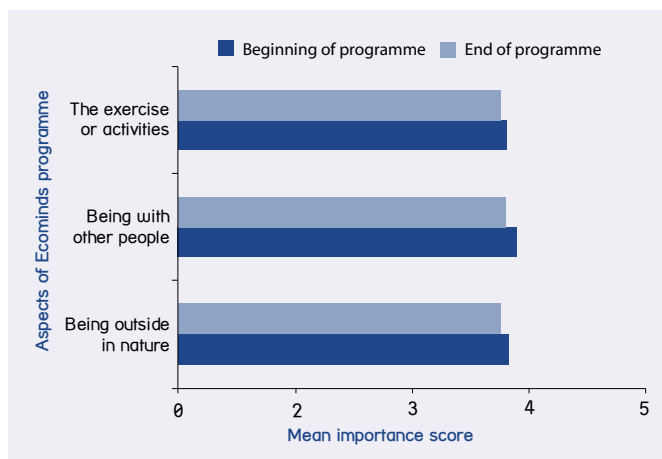
212 [$t(66) = -2.328, p < .05; n_2 = .089$ - indicating a medium effect size]

213 ranged from a decrease of 35% through to increases of 100%

5.9 Comparative importance of aspects of the Ecominds scheme

A question on the comparative importance of the various aspects of the Ecominds project to participants composed of three simple scales was included in the 'In-depth' evaluation. Participant perceptions on how they felt about being with other people, about being outside in nature and about the exercise or activities were assessed using the 'importance scale', both at the end of the programme as a whole and after participants had taken part in a particular Ecominds session.

Figure 36. Change in environmentally friendly behaviour scores participating in the Ecominds programme



The importance of all the three aspects seemed to be of roughly equal importance to participants, both at the end of the Ecominds scheme as a whole and after taking part in an Ecominds session (see Figure 37), which suggests that participants valued the combination of the three aspects within the Ecominds projects rather than one particular feature.

5.10 Other findings

All of the major variables correlated well with the wellbeing measures, both in terms of actual scores and percentage changes. The only exception was environmentally friendly behaviours, which only correlated with health (medium, positive correlation, 12 per cent shared variance). There were strong positive correlations between social engagement and self-esteem (33% shared variance); and medium positive correlations between wellbeing and connection to nature, social engagement and health, health and self-esteem. This implies that all the wellbeing measures show the same improvement trends over the course of the programme with all variables increasing together. All correlation results for the main variables are shown in Table 8.

Table 8. Correlation matrix for main variable measures (based on percentage changes from Time 1 to Time 2)

	WEMWBS	RSES	Social engagement and support	Connection to Nature	Health	Environmentally friendly behaviour
WEMWBS	1.0					
RSES	.633**	1.0				
Social engagement and support	.348**	.572**	1.0			
Connection to Nature	.312*	.287*	.275*	1.0		
Health	.337*	.323*	.133	.345**	1.0	
Environmentally friendly behaviour	.010	-.082	-.038	.061	.353**	1.0



5.11 What participants enjoyed about the Ecominds sessions

There were many different aspects about being involved in an Ecominds project that participants said they enjoyed the most. Out of the 113 comments received, three major themes emerged i) the social contact - being with other people as part of a group; ii) being outside in nature - the fresh air, the scenery and the beauty; and iii) the activities – learning new skills, enjoying the activities. Many other comments expressed how people felt calm and safe outside, had fun, liked being active and felt a sense of achievement. The majority of comments from participants about the various elements of their Ecominds projects they enjoyed the most are included under the five themes of the evaluation, however comments relating to the activities and the ‘learning’ experiences together with any other miscellaneous comments are shown below.

What participants enjoyed most – The activities, learning etc

Working on my plot.
Planting seeds, cutting grass.
Enjoyed raking the vegetation and pulling weeds out.
Learning how to prepare the soil and what seeds to put in.
Meeting people, cup of tea and cake, painting the seat, watering.
Learning a new thing that I have never done before. I really enjoy doing it.
Had some giggles. Learned a few things about machinery and crops.
The wreath making, it was very enjoyable and I would like to do it again.
Something new that I am good at – apparently a natural!

Doing something I haven't tried before.
Painting.
Weaving and learning new skills.
Learning to etch and engrave. Something new that I am good at- apparently a natural.
BBQ at the other end. Canoeing was fun too.
I enjoyed the whole experience.
Picking a packing task.
I really enjoy the activities, they are stretching me, though I can sometimes get frustrated – it's all good practice for going back to work.
Sense of satisfaction upon completion of this long project (we've been working on this wall for many weeks).
Talking and learning about farm to fork.
Sense of satisfaction.

6. General discussion

6.1 Discussion and key successes

The Ecominds evaluation focused on three main themes: i) Wellbeing, ii) Social inclusion and iii) Connection to nature and significant improvements were observed in all three parameters, all of which have implications for not only the mental wellbeing and resilience of individuals but also for public health and the management of natural environments.

Mental wellbeing parameters of positivity in the 'All projects' evaluation and of self-esteem, wellbeing and mood in the 'In-depth' evaluation all improved significantly for the majority of participants over the course of the Ecominds scheme (and very often after just a single Ecominds session). At the start of the programme for many Ecominds participants, wellbeing scores were lower than average but by the end of the programme, participant scores had risen to a level in line with population norms suggesting the Ecominds scheme can be effective in raising mental wellbeing to 'normal' levels .

For social inclusion, again both studies showed statistically significant improvements, with social engagement and support levels increasing by at least 10 per cent for most participants. Whilst the increases in the other social parameters were not always so profound, there were some interesting trends with the majority of participants feeling that they now belonged to their immediate community (the opposite from how the majority felt at the start of the programme) and with 81 per cent of participants getting involved in community activities more frequently, after taking part in the Ecominds scheme. Participants also reflect this trend in their own words with the preponderance of comments relating to the social benefits of attending the Ecominds projects. Overall these findings suggest that ecotherapy can enhance social inclusion, helping people to broaden their personal networks, learn new skills and improve their employment chances; vital to the recovery of those suffering with mental health problems.

Similarly in terms of connection with nature, statistically significant increases in connection to nature (of 40 per cent on average) were found between the beginning and end of taking part in Ecominds, for the majority of participants, and this

was true in both studies. Connection to nature has been proved to enhance mental wellbeing and this, together with the worry that we as a society are becoming disconnected with nature, shows that ecotherapy can be successful in both increasing contact with and connection to nature, enabling participants to benefit further from the associated health and wellbeing benefits.

Interestingly, the presence of a weak positive correlation between age and connection to nature in this study shows that connection to nature increased slightly with participant age. This finding could imply either that people may become more connected to nature as they get older or that perhaps younger people now are not as connected to nature as previous generations.

Other important findings concern the effect of the Ecominds projects on participant behaviours. Results from both studies showed statistically significant increases in participant self-perceived 'health' status over the duration of the Ecominds scheme and often after taking part in one session. Smaller improvements were also observed in healthy eating and exercise parameters. In addition, regarding environmentally friendly behaviour, a statistically significant increase in overall scores was found from the start to the end of the Ecominds scheme for 60 per cent of beneficiaries, showing an increase in environmentally friendly practices (particularly in recycling). Therefore not only does involvement in an ecotherapy intervention improve wellbeing and social inclusion and equip participants with useful coping skills, but it can also help the development of healthier lifestyles and environmentally friendly living.

What is particularly revealing in the evaluation of Ecominds is that in both studies, these improvements to wellbeing, social inclusion and connection to nature happen right across the range of ecotherapy interventions involved in the Ecominds scheme. Within the programme, projects from five different ecotherapy approaches (STH, care farming, green exercise therapy, environmental conservation and nature arts and crafts) provided a mix of different activities and interventions in a variety of different contexts, for different lengths of time and in various natural environments. In addition there was a mix of projects

that are 'therapeutic' interventions and those which also offer more formal treatment options - 'therapy' - such as CBT, counselling or psycho-education sessions. No statistically significant differences were found in any of these variables suggesting similar benefits to participant wellbeing, social inclusion, nature connection, healthy lifestyles and environmental behaviour can result from all types of ecotherapy.

Whilst both men and women experienced a significant increase in health scores after taking part in Ecominds, women had significantly lower health scores²¹⁴ than men, implying that they felt less healthy than men overall. In terms of mood, significant differences in mood scores between the genders were also observed, where even though improvements occurred for both genders, women had significantly better overall mood than men. The other trend relating to participant demographics was that a relationship between connection to nature

and age emerged²¹⁵; suggesting that connection to nature may increase as we get older. However, even though these slight differences in parameters due to participant gender and age were observed, in relation to the overall beneficial effects on participant health and wellbeing, similar trends were found across all demographics in this research. The implications are therefore, that ecotherapy can generate health and wellbeing benefits regardless of participant age, gender or ethnic origin.

Another interesting aspect of the Ecominds scheme that has emerged is that more men were involved in the Ecominds projects than women. Historically it has been notoriously difficult to encourage men in particular, to engage with mental health interventions, possibly due in part to the reluctance to admit a having a 'problem' and from the perceived stigma of accessing treatment. For certain types of ecotherapy, some activities can be physically demanding and



214 In the 'All projects' study, no differences emerged in the 'In-depth' study
215 In both studies

may possibly be viewed by some as being more traditionally male-oriented. For men who are worried about how their mental health intervention may be perceived by others, activities such as environmental conservation tasks, farming, woodland management and gardening may be easier to talk about or admit to than a counselling session for example. In addition, both participants and staff have said that often in ecotherapy, projects tend to adopt the 'leave the diagnosis at the gate' strategy which also contributes to reducing stigma and prejudice of attending.

There are two further related aspects of ecotherapy that appear to contribute to the relatively high adherence levels experienced at nature-based interventions. Firstly most ecotherapy approaches cater for several groups of people or individuals at the same time and will sometimes also involve participants who are 'well' and may also involve volunteers, all carrying out activities together as a team. This makes it difficult to tell at a glance who is unwell and who is healthy; who may be feeling 'vulnerable' and who is not, and because it is hard to distinguish between people in this way, it can further break down barriers and encourage social inclusion. Secondly, the comments received from participants in this study suggest that they found taking part in these ecotherapy interventions enjoyable, even when the weather was bad; many found a sense of achievement and belonging and appreciated being outside in the fresh air. All of these elements are likely to affect attendance. Therefore, although involvement in Ecominds has been shown to be equally beneficial for both men and women, could ecotherapy be considered as a successful way of encouraging more men to access mental health treatment services?

Analysis of the data and comments from participants themselves have shown that through ecotherapy the recommended Five Ways to Wellbeing can be addressed. Participants involved in Ecominds have:

- been more **Active** by taking part in exercise and activities in natural environments – gaining physical and mental health benefits;
- **Connected** both with other people, the wider community and with nature, thus increasing social inclusion;
- started to **Take Notice** of nature and the green environment around them – gaining the associated mental health benefits and increasing connectedness to nature;
- managed to **Keep Learning** – both developing new skills and learning about themselves; and
- been able to **Give** – through sharing and supporting each other and working as a team and also by giving back to nature through shaping and restoring natural environments.

In addition, throughout this study, involvement in Ecominds has been shown to promote wellbeing, foster social inclusion and help people to cope with poor mental health, all of which are considered crucial for building up an individual's resilience. Ecotherapy uses nature and nature-based activities not only to help participants bounce back from adversity but also to adapt in the face of challenging circumstances that they may face in future. Ecotherapy should therefore be encouraged not only for use as a treatment option for people with mental health problems but also as a preventative approach to future stresses. Ecotherapy could therefore be used for groups that have an elevated risk of developing a mental health problem (for example; older people, the unemployed, people with long term physical disabilities or health conditions).

Although the three main parameters of wellbeing, social inclusion and connection to nature are considered separately in the results sections of this report, and improvements to all three have been seen over the course of the Ecominds scheme, it is perhaps the combined effect of the three elements together that has the most powerful synergistic consequence. The significance of the 'combination effect' is also reflected in comments from participants themselves, who when asked which of the main elements of the Ecominds project they felt had been most important to them (being with other people, being outside in nature and taking part in exercise or activities) in both studies they rated them as of equal importance, implying that participants value the combination of the three aspects of the Ecominds projects, rather than one particular feature. Given that ecotherapy approaches are characterised by this blend of meaningful activities whilst in nature and with other people, this is perhaps the key to its success. The fact that this blend results in improvements to several different parameters at the same time also suggests an efficient process. The potential of gaining multiple positive health and wellbeing outcomes from one approach - ecotherapy – must therefore be considered more beneficial and cost effective than approaches focusing on single outcomes.

216 Correct at time of writing – likely to be more
217 Mind 2007;

Through the funding of 130 ecotherapy projects and the 12,071²¹⁶ people that have been involved with and helped by the programme, Ecominds can be considered to have had a major impact, both in terms of supporting people suffering from mental ill-health and in sustaining the provision of ecotherapy services across England.

The aim of the Ecominds scheme was to help people living with mental health problems to get involved in nature-based initiatives in order to improve their confidence, self-esteem, and their physical and mental health. In this regard, given the statistically significant rise for the majority of participants in mental wellbeing parameters such as wellbeing, positivity, self-esteem and mood over the course of the programme, Ecominds can be seen as having been a success. These findings suggest that ecotherapy could be beneficial for a range of mental health conditions and could be used as a treatment option in the same way as antidepressants and talking therapies.

In addition, the need had been recognised for more robust, scientific evaluation to be carried out on the benefits of ecotherapy projects for people suffering with mental health problems²¹⁷, in addressing this, the Ecominds scheme has also been successful. The Ecominds wellbeing evaluation involved over 800 participants from 61 different projects, and the findings from this study (derived from outcome measures which are standardised, widely used and recognised by health and social care professionals) add convincing evidence that a wide range of different ecotherapy projects can provide a range of mental wellbeing benefits for participants.

6.2 Limitations and future research

6.2.1 Limitations of research

As with any study, there are a number of limitations which may have affected the results of this research.

- Firstly, evaluating 130 diverse projects is always challenging. Although all of the projects were working in nature, with a view to increasing wellbeing and social inclusion for people with mental health problems, they all predictably have their own individual aims, objectives and structures, delivery methods, timescales and focus. In addition each project varies in the staff skills, resources, motivation and time needed to be involved in an evaluation process. Designing an appropriate evaluation methodology suitable for the majority of projects is therefore not easy and without doubt some projects and staff engage more with the process than others.
- Secondly, due to both logistics and available resources, all methods in the University of Essex evaluation were questionnaire based, which unfortunately inevitably tends to exclude involvement of some participants. Although every step was taken to ensure that questionnaires were as simple as possible, not too lengthy or too onerous to complete; and it was made clear that those who couldn't access questionnaires could be helped by project staff or carers if they wished; there were still some groups or individuals for whom the questionnaires were not appropriate and whose voices were not heard.
- As with any research of this type, the ideal approach to collection of data is by independent evaluators, able to administer questionnaires, conduct interviews and carry out participant observation on a representative sample of participants. This approach is quite costly, in terms of time, resources and money, especially given that Ecominds consisted of 130 projects all over England, and was therefore not possible for this evaluation. All questionnaires were therefore administered by project staff, with guidance and support from University of Essex staff, which may have introduced the possibility of representation bias.
- Overall numbers of people taking part in the Ecominds evaluation were good, and sufficient to enable statistical analysis. However, although representative of the programme as a whole, some groups had smaller numbers and so precluded any meaningful statistical analysis. For example in this study over 89 per cent of participants were classified as 'white British' and there were not enough people in any of the other categories to determine if the beneficial effects of ecotherapy were similar or different for all ethnic groups.
- Although the significant improvements to wellbeing, social inclusion and nature connection are considerable through direct comparisons made for participants 'before' and 'after' their involvement with the Ecominds scheme, there was no control condition in this study. That is, no comparison to other options for participants, for example a comparison between attending an ecotherapy



intervention; and taking part in either alternative treatment options or interventions in other settings (either inside or outside).

- Similarly, there were changes in wellbeing, social inclusion and connection parameters from the beginning compared to the end of participant involvement with Ecominds, and it is likely that these improvements were a direct result of participating in the programme. However what is not known is exactly how much of this change is directly related to Ecominds. Although all participants in the programme were experiencing mental health problems, some may have been referred to other support and others may have been on medication at the same time, both of which may have affected the outcomes (either positively or negatively) and thus makes it harder to establish a direct causal link.

6.2.2 Future research

In future research it would therefore be beneficial to:

- Include a comparison study between interventions based in a clinical setting versus the natural ecotherapy setting (in terms of clinical outcomes, adherence levels and in reduction of the use of more expensive subsequent mental health services for example) – this would be useful in order to inform the NHS debate on good practice in the treatment of mental ill-health;
- Implement a follow-up study in the future. The long term monitoring of these Ecominds interventions has undoubtedly provided evidence of the health, wellbeing and social benefits to participants, but a follow-up study would provide indicators and statistics of any further or continuing treatment; further social, community and employment achievements; as well as implications for future resilience. When compared to a similar group not receiving ecotherapy interventions, this will provide a valid comparison of the effects of these programmes.
- Include a cost-benefit comparison study between participation in an ecotherapy programme and individual therapy in a clinical setting and treatment with anti-depressants.
- Commission further research to provide evidence to determine the most advantageous duration of ecotherapy programmes, in terms of changes in



mental health parameters. We know that relatively short exposures to nature can be beneficial but we do not know the optimum duration of intervention and the most favourable frequency of attendance but further research in this area would greatly inform this debate.

- Explore further the case for the inclusion of more formal psychological therapies within ecotherapy settings as to whether this would make interventions more or less successful. Given that ecotherapy may be more effective precisely because it does not generally include a formal therapy element and usually leaves participant diagnoses at the gate, this would be interesting to ascertain.
- There are calls for further research into this field by clinicians, commissioners and ecotherapy practitioners, however many organisations are referring clients to ecotherapy services, suggesting that they are already persuaded by its efficacy. The evidence base is continually growing and is considered 'convincing but not yet complete', so is the priority to fill in the research gaps with cost benefit analysis, optimum duration studies and follow-up research or is there a also case for collation the evidence and packaging it in an accessible way (or variety of formats) for commissioners?

6.3 Key issues and implications for policy

Since the call for “a green agenda for mental health” from Mind in 2007 there has undoubtedly been progress in raising awareness of the relationship between nature and health. Land managers and environmental conservation organisations have seized the opportunity to promote another reason to conserve our natural places. The realisation that ecosystem services can also include health and wellbeing benefits, whilst considered a little progressive ten years ago, is now widely accepted. However even though there has been an increasing recognition that nature can be a valuable health resource, this has not yet fully translated into health and social care. Undoubtedly the term green exercise has become more popular, with several NHS organisations generally advocating green exercise for health to many different groups of people in society. The potential of ecotherapy as a mainstream mental health treatment option however has still to be realised.

This study adds to the growing evidence base which highlights the effectiveness of ecotherapy interventions such as those involved in the Ecominds scheme. This evidence is now considered by many as being convincing, if not yet complete. Ecotherapy therefore has important policy implications for a wide range of sectors.

The health and social care sector needs to consider the contribution that ecotherapy makes to both individual mental health and public wellbeing, as a happier more resilient population has the potential to save money for the National Health Service. The impacts of ecotherapy on social inclusion also have implications for social care and employment policy and resulting knock-on effects can potentially lead to cost savings to society, an important consideration in times of diminishing public budgets.

6.3.1 Clinical provision of mental health services

- Ecotherapy initiatives have been proved not only to be successful at increasing mental wellbeing and building resilience but also to simultaneously produce other positive life outcomes. However there remains a lack of knowledge and acceptance among GPs (and other care providers) of the benefits to patients gained from using ecotherapy as an additional or alternative treatment for mental health issues such as depression. Commissioners of health and social care services need to be encouraged to take the idea of ecotherapy more seriously and more GPs should be supported to consider and recognise the value of such green care.
- With this in mind, NICE should also be called upon to consider the evidence in order to recommend the use of ecotherapy interventions alongside other current treatment options for depression, such as antidepressants and CBT. A recommendation from NICE will help to raise the perceived legitimacy of such nature-based interventions and make it easier both for GPs to prescribe and patients to receive this treatment.
- The debate for ecotherapy as a clinical treatment option, is not whether ecotherapy is more (or less) effective than treatment with antidepressants or CBT, but rather that it represents another treatment choice for GPs and service users. As with any condition, certain treatments suit different people and what works for one individual may not necessarily work for another, highlighting the need for a range of options available in order to offer a choice of treatments. Similarly patients often have been found to benefit most from a combination of approaches and ecotherapy could be combined with CBT or antidepressants to maximise patient recovery. The addition of another tool in the toolbox to tackle mental health problems is especially pertinent given the long waiting lists for CBT and the increasing costs of antidepressants.
- Good health and wellbeing is generally recognised as being multifaceted and not merely the absence of disease. Ecotherapy has been shown to provide participants with multiple wellbeing outcomes, but the broad definition of health has not been converted into either the measures of success or funding streams. Ecotherapy can improve multiple factors simultaneously but 'traditional' measures of success within healthcare do not adequately recognise this. Establishment of the effectiveness of a treatment option is still focussed on discrete treatments (medicines as tablets etc.) and do not yet consider: i) multiple outcomes of treatment (wider than the clinical health context); ii) or the holistic effect of multifaceted interventions; iii) benefits to public health; or iv) benefits and cost savings to the wider society.
- There is a need for referral to ecotherapy initiatives to be incorporated into health and social care referral systems, particularly in light of the recent changes with clinical commissioning groups and health and wellbeing boards. Implications for personal budgets should also be recognised and those in receipt of direct payments supported to access ecotherapy treatments.
- Mental health commissioning services should be encouraged to consider that ecotherapy represents an enjoyable, socially acceptable treatment option for depression, and the resultant observed effect on attendance and adherence levels could prove to be effective in encouraging uptake of treatment and especially successful in re-engaging men with mental health services.
- There is also a need to raise awareness amongst patients that ecotherapy can be a valid and an effective treatment option for mental health problems, such as mild to moderate depression. A major concern in encouraging more 'green prescriptions' for nature-based initiatives, is to overcome the patient's perception of whether or not ecotherapy is as an effective treatment response. Patients often subconsciously believe that taking a tablet will automatically make them feel better, and some perceive that a prescription for medication is a sign that they have been taken seriously by their doctor. Leaving the doctor's surgery with a prescription

for green exercise therapy, a recommendation to take part in STH or a prescription to attend a care farm may not be deemed as effective or even a satisfactory treatment. Education is also needed for GPs and patients alike to highlight the additional social and wellbeing benefits that an ecotherapy intervention can provide that anti-depressants, for example, do not.

6.3.2 Public health

- Contact with and connection to nature is continually being proven to improve mental wellbeing and to have a therapeutic effect even after short exposures. Encouraging people to incorporate more green exercise activities into daily routines and lifestyles and supporting more ecotherapy opportunities has the potential to increase wellbeing not only for those already living with a mental health problem but for health promotion and illness prevention at the population level, particularly for those groups with an elevated risk of developing a mental health problem.
- Increasing support for and access to a wide range of ecotherapy and green exercise activities for all sectors of society is (in addition to the personal wellbeing benefits) also likely to produce substantial public health benefits and economic savings, and therefore should be promoted. Healthy, active and happy people, feeling connected to nature whilst living in local communities rich with social capital, will ultimately lead to a better overall health for the nation and reduced costs for both the NHS and for public health bodies.

6.3.3 Social inclusion

- Agencies responsible for providing social care services and promoting social inclusion would also benefit from recognising the potential of ecotherapy activities to increase the health and mental well-being of their communities, patients and clients. Ecotherapy has been shown to reduce social exclusion, increase social capital and to help people to re-integrate into society after a period of ill-health, something that is particularly relevant to local authorities, government departments (e.g. Department for Communities and Local Government) and third sector organisations alike.
- Ecotherapy programmes and green exercise initiatives could also be recommended for

marginalised groups such as those in care and special education institutions, long-stay hospitals and prisons for example. Ecotherapy initiatives could be more widely used by probation services and residential care providers in the UK for increased mental health. In times with increasing prison populations, a prevalence of prisoners with mental health problems and concerns over the effectiveness of current probation services, there is great potential for ecotherapy to be used as an additional option in the rehabilitation of offenders into society. In addition with an emphasis of devolving more social care into the community setting, ecotherapy could also help marginalised people become more involved in society and with their local community.

6.3.4 Employment

- Ecotherapy has been shown to lead to wellbeing and social inclusion benefits as participants develop new skills and learn to re-engage with their communities and the wider society. Ecotherapy interventions often lead to employment dividends, which have implications for the government's drive to encourage people recovering from poor health to return to work. Ecotherapy has the potential therefore to be used alongside existing strategies for helping people to get back into employment.

6.3.5 Management and conservation of green spaces

- The achievements of ecotherapy interventions have implications for those responsible for managing and promoting our natural green spaces. Although land managers have been successful in promoting the health and wellbeing benefits of contact with nature through visiting their sites, the importance of green spaces to the nation's health is still largely underestimated by policy-makers and the general public. Findings from this study have highlighted the multiple outcomes from ecotherapy and recent research²¹⁸ has shown that lower mental distress and higher wellbeing is linked with living in urban areas with more green space, highlighting further the importance of policies to protect and promote urban green spaces for community wellbeing. If we are all to have this access to nature, there is need both for i) more quality green spaces, (especially in urbanised areas); and ii) to actively protect and conserve our existing green spaces in both rural and urban locations.

- Unfortunately there appears to be a distinct incongruity between the proven positive wellbeing outcomes of green exercise and ecotherapy and the existing drivers of economic development. With current worries over the shrinking economy, rising unemployment and an increase in numbers of people living in poverty there has been a call to 'kick-start' the building industry, to employ more construction workers and craftsmen, to build more houses and thus to revive the economy. There is a danger that in the rush to pull us out of economic depression, that a valuable health resource for us all, accessible green space, is sacrificed in the process. Historically in the regeneration of urban areas, green spaces have often been removed either to build more houses or to keep down maintenance costs, and there is often a perception that parks and community gardens offer more opportunities for criminals to hide. In rural areas, modern agricultural development and the need for new housing continue to put pressure on green spaces.
- This also has serious implications for health and social inequalities, we know that a lack of green spaces in residential areas corresponds with mental-ill health, lower wellbeing²¹⁹, lower physical activity, more obesity, graffiti and litter²²⁰ and often goes hand in hand with low socio-economic status.



219 White et al 2013

220 Ellaway et al 2005

Therefore providing additional green spaces in these areas where people suffer the most may be particularly beneficial for the poorest members of society²²¹.

- Under the National Planning Policy Framework²²² local planning authorities have a duty to take account of and support local strategies to improve health, social and cultural wellbeing for all. Directors of Public Health should use their roles to work with departments across the local authority to ensure health considerations are at the heart of planning decisions, particularly those regarding green spaces.
- Local Nature Partnerships should be encouraged to recognise the health and wellbeing benefits of contact with nature and work to ensure that our urban and rural green spaces are preserved for the benefit of the nation's health, that planners and developers enhance and not destroy green infrastructure and to encourage public access to countryside and urban green spaces.

6.4 Concluding comment

Participating in the 130 ecotherapy projects in the Ecominds scheme has provided a myriad of mental wellbeing benefits for those involved. The majority of Ecominds participants will leave the programme with better wellbeing and self-esteem; feel more socially included; will have gained new skills and developed healthier lifestyles; have enhanced psychological health and wellbeing; and an increased connection to nature. These significant improvements as a result of the Ecominds scheme all have implications for not only the mental wellbeing and resilience of individuals but also for public health and the management of natural environments.

Those responsible for the provision of health and social care for those suffering with mental health problems should therefore consider the multiple health, mental wellbeing and social benefits to participants in ecotherapy initiatives (such as those supported by Ecominds), when commissioning and funding mental health and public health services.

221 Mitchell and Popham 2008

222 Department for Communities and Local Government 2012



7. The projects in the 'In-depth' evaluation

7.1 Grow It

Lead organisation: Amber Trust

Location: Swanwick, Derbyshire

Contact Details: Tracy Litchfield

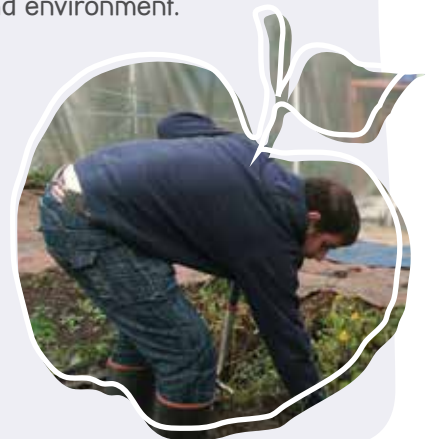
Email: tracyl@ambertrust.co.uk

Website: www.ambertrust.co.uk/index.asp?id=29

The Grow It project is an allotment project that provides a supportive learning environment to enable volunteers to improve both their mental and physical wellbeing and their self-confidence. Participants get involved in gardening at all levels from choosing the types of plants to grow, through to the harvesting of crops. Many volunteers also take the produce from the allotment home for consumption. The allotment is open to volunteers two days per week and there are also visits to other allotments and gardens for volunteers to take part in. Since the start of the

project approximately 150 volunteers have attended the allotment. The Amber Trust highlights the benefits of working on the allotment as: i) improved mental well-being and physical health; ii) reduced social isolation; iii) working, learning and educational opportunities; iv) community cohesion; v) promotion of mental health and reducing stigma and; vi) helping the wildlife and environment.

I leave the allotment with a sense of satisfaction and contentment; I have such a relaxing night after being on the allotment. I have made friends that I can talk to, that helps my worries go away and I don't feel so isolated



7.2 Grow2Grow

Lead organisation: Commonwork

Location: Edenbridge, Kent

Contact Details: Paula Conway

Email: PaulaC@commonwork.org

Website: www.commonwork.org/projects/grow2grow

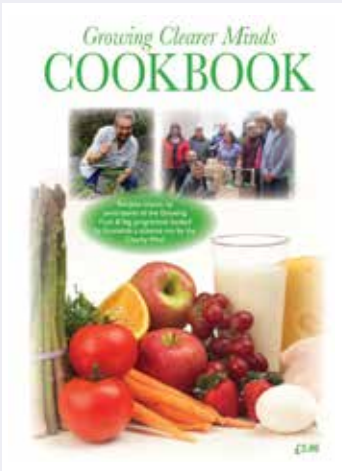
Grow2Grow provides therapeutically supported placements for vulnerable young people, aged between 16 and 25 years, who are in transition, excluded or recovering from mental health problems and in or leaving care. The project takes place on an organic dairy farm in Kent, where young people grow organic fruit and vegetables and provide produce for Commonwork education centre and public events. Young people also work with the dairy herd, learning milking

and stock work. Through the project young people therefore learn new skills in horticulture, agriculture, farming, catering, independent living skills, building maintenance and woodwork, with some young people obtaining an accreditation in horticulture and land based studies through a partnership with a local school. Young people are referred to the project by GPs, Community Mental Health services, leaving care services, children and young people's services and Connexions. Young people receive a six week introduction to the programme and are then offered up to 3 days per week for a maximum of 2 years. Grow2Grow is managed by a Consultant Clinical Psychologist with 20 years' experience working with people with mental health problems in the NHS and in fostering and adoption services. There are currently 5 young people who regularly attend the farm.



7.3 Growing Clearer Minds

Lead organisation: Mind in Mid Herts
 Location: Stevenage and Hitchin
 Contact Details: Rosie
 Email: growingclearerminds@hotmail.com
 Website: www.mindinmidherts.org.uk/page65.html



The Growing Clearer Minds project is designed to encourage people with mental health difficulties to enjoy and benefit from nature and green spaces by being involved within their local community. The funding received for Growing Clearer

Minds enabled them to run three 12-week projects where participants attend environmental and art workshops and visits, listen to talks from guest speakers and take part in research and demonstrations, together with opportunities to get involved in environmental projects and local societies. The experiences gained through attending environmental and art projects helps to raise self-esteem and reduce stress, contributing to overall improvements in mental and physical health. During their time on the project there is much opportunity for learning, with some participants learning how to grow fruit and vegetables and care for plants; and for others how to make mosaics and sculptures. Since the start of the Growing Clearer Minds project a total of 69 participants have taken part and the project has produced a cookbook.

One participant told us what they enjoyed most: **The overall meeting up of people; Helpful and friendly staff, teamwork**

7.4 Growing Well

Lead organisation: Growing Well
 Location: Low Sizergh Farm, Kendal, Cumbria
 Email: info@growingwell.co.uk
 Website: www.growingwell.co.uk

Growing Well is an organic growing enterprise which has provided support through organic horticulture to people recovering from mental health issues for the last 4 years (although the Growing Well has been running since 2004). The aim of Growing Well's Ecominds project is to offer opportunities for people recovering from mental health problems to build their confidence and skills. The project operates an organic growing company on 10 acres of Dairy Farm at the edge of the Lake District. All produce from the farm is sold directly to local people through a successful Community Support Agriculture scheme, as well as to local retailers. The project aims to provide opportunities for participants to be involved in the business at all levels, from seed

sowing up to the board of directors. The project offers the traditional growing activities alongside horticulture courses and educational farm visits. Since the start of the project approximately 130 participants have been involved.

I would never have gone to the AGM twelve months ago. I am seeing changes – I wouldn't have gone to the Open Day twelve months ago. – I am really seeing how ill I was over the last five years. I do feel things have changed, Growing Well was fundamental to it.



7.5 Seed to Succeed

Lead organisation: Crisis
Location: Spitalfields, Tower Hamlets, London
Contact Details: Paula Lonergan
Tel: 020 7426 3834
Website: N/A



Crisis (a national charity for single homeless people) runs an Ecominds funded food growing project called Seed to Succeed. Seed to Succeed works in partnership with the Attlee Youth and Community Centre and uses food growing as a tool to improve the mental health, physical well-being and knowledge and skills of homeless and vulnerably-housed people. The project has transformed neglected plots of land into thriving green spaces for growing (and selling) healthy organic produce. Led by the Crisis Skylight Garden Tutor, project activities run during four ten-week terms per year, on Monday afternoons and have to date involved 14 participants. Seed to Succeed utilises the help of up to three volunteers in workshops and aims to document the lifespan of the project photographically. The produce is grown for use at the Crisis Skylight Café, a social enterprise providing free training and accredited qualifications homeless members pursuing catering as a career.

7.6 Spring to Life

Lead organisation: Sharpham Outdoor Project, The Sharpham Trust
Location: Sharpham Estate, Devon
Contact Details: Sharpham Outdoors Project Manager
Email: outdoors@sharphamtrust.org
Website: www.sharphamtrust.org/Outdoors-Project/Mental-Health/Spring-to-Life

The Spring to Life project is a mental health recovery project for young people suffering mental health trauma. The project aims to connect volunteers and participants whose lives have been affected by mental health problems, to help recovery through time spent outdoors. The project takes place on the Sharpham Estate, which consists of 550 acres of woodland, rivers, gardens and farmland. The estate offers opportunities for conservation activities, woodland craft, bush craft and survival skills, outdoor sports, horticulture, health and well-being workshops and team-building and trust development workshops.

Programmes last for approximately 10 weeks, with two groups attending on one day each week. Participants are involved in a programme of activities

which improves their physical and mental health, and takes them on a journey of personal discovery with the natural world. The Spring to Life programme allows participants to start their personal recovery, at their own pace and in consultation with mental health specialists. Mentors, who themselves have had experience of mental distress are involved in the delivery of the programme and are well-placed to support the young people on their journey to recovery. Since the start of the Spring to Life project approximately 148 participants and 11 mentors have been directly involved.



7.7 The Outdoor Club

Lead organisation: The Outdoor Club

Location: Bude, North Devon

Contact Details: Pete Adams

Email: pete.adams@theoutdoorclub.co.uk

Website: www.theoutdoorclub.co.uk

The Outdoor Club provides adults with experience of mental health problems with opportunities to participate in a programme of bush craft activities operated from a rustic log cabin on the edge of free access woods. Through being outdoors and

engaging in activities such as fire building, green craft and flora and fauna identification participants are supported in connecting with themselves, other people and the natural environment. Nature is a core part of the therapeutic relationship which is developed throughout the project and often acts as a catalyst to understanding. Participants are typically enrolled on the project for 11 weeks, however in addition to this, therapy days, weekends and longer therapeutic sessions are all available. Since the start of the project 31 people have been involved in the Outdoor Club sessions.

I've been a lot calmer in the last few weeks.

7.8 Wellbeing Comes Naturally (WCN)

Lead organisation: The Conservation Volunteers (TCV)

Location: Nationwide, but Bedford and Sheffield WCN involved in evaluation

Contact Details: Dominic Higgins (TCV National Programmes Manager)

Email: d.higgins@tcv.org.uk

Website: www.tcv.org.uk

The WCN programme was launched by BTCV²²³ in 2009 to encourage people experiencing mental health problems to become environmental volunteers, and through this volunteering improve their mental health. TCV aims to help people to connect with the natural world, through WCN, to get involved in more meaningful volunteering activities, to develop their skills and take on more responsibility. The programme also aims to reduce the social exclusion of those with poor mental health.

The WCN programme is a nationwide initiative, with 28 projects running throughout England. Each group welcomes new volunteers with mental health problems and engages them in sessions of nature conservation such as: food growing as part of an allotment group; preserving habitats through biodiversity action teams; and heritage preservation activities. Volunteers can be referred through mental health agencies or they can self-refer. Through the programme it is hoped that participants will reconnect with nature, become more confident and happy, build skills and social networks and become an

integral part of a group, helping to lead and organize. Projects aim to support individuals and help them to take on extra responsibilities where appropriate. Initially the programme hoped to involve 450 volunteers with experience of mental health problems overall, however since it started, WCN has involved many more people at 1311 volunteers involved to date.

Just two of the WCN projects were involved in the University of Essex Ecominds evaluation (Bedford and Sheffield), as in addition TCV are carrying out an overall evaluation of all 28 projects. For more information on this evaluation, contact Dominic Higgins (see above).



223 BTCV changed to TCV over the course of Ecominds

7.9 The Wildwoods Ecominds Project

Lead organisation: The Wildwood trust

Location: Herne Bay, Kent

Contact Details: Peter Collard

Email: ecomind@wildwoodtrust.org

Website: www.wildwoodtrust.org

The Wildwood Trust is a wildlife charity and visitor attraction set up in 2002 to support native wildlife against the natural backdrop of ancient coppiced woodland. The Wildwood Trust's Ecominds volunteer project is providing volunteering opportunities for people with direct experience of mental health

problems. Volunteers work with the ranger team, and have help with a huge range of projects around the park, from improving the woodlands for the new bison enclosure, to setting up the pumps in the new beaver pond filtration system, and building dead-hedging by the pathways around the wood. Participants have support and guidance from the Ecominds Volunteer Coordinator, gaining environmental skills, and building confidence and experience. Currently have six Ecominds volunteers come per day from all walks of life, with different levels of skill, with all having some experience of mental health problems. Since the project started, 50 people have been involved in the programme.



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Appendix A - All projects



University of Essex

Ecominds evaluation

Ecominds



The University of Essex has been commissioned by Mind to evaluate the Ecominds scheme. We will be asking participants to complete questionnaires both at the beginning and at the end of their involvement with the project. We value your comments and would be most grateful if you could spare the time to complete our short questionnaire. All the information given to us will be treated as anonymous and will not be passed on to a third party. More information about this evaluation can be found at the end of this questionnaire.

You do not have to answer the questions if you do not want to. If you can't answer a question just leave it and go onto the next question. When you have completed the questionnaire please hand it back to the person who gave it to you or post it to the freepost address at the end of the questionnaire. Thank you!

1. I agree to completing this questionnaire (please tick).....

2. Name of project 3. Date

4. Are you completing this questionnaire: (please tick relevant box)

At the beginning of your involvement with the project?.....

During your involvement with the project?.....

At the end of your involvement with the project?.....

5. Approximately how long have you been coming to the project?

6. Please read the following statements and tick the one that applies to you:

I am filling in the questionnaire about myself.....

I am a project worker or helper reading out the questions to the participant and filling in their responses.....

I am a carer/ guardian completing the questionnaire on behalf of someone else.....

7. Your gender Male Female Transgender

8. Your age?.....

9. What is your ethnic group? (please tick only one box)

White	Black or Black British
British	Caribbean
Irish	African
Other White (please specify below)	Other Black (please specify below)
Asian or Asian British Mixed	Mixed
Indian	White and Black Caribbean
Pakistani	White and Black African
Bangladeshi	White and Asian
Other Asian (please specify below)	Other Mixed (please specify below)
Chinese	Any other (please specify below)
I do not wish an ethnic background to be recorded	

10. So that we can match up your responses before and after the activity, please write the first part of your postcode and the initials of your first name and surname in the boxes below:

Postcode First name initial Surname initial

The next few questions are about how you feel about your health, your happiness, other people and nature.

11. On a scale of 1 – 10, how healthy do you feel at the moment? (please circle one number only)

Not very healthy 1 2 3 4 5 6 7 8 9 10 Very healthy

12. On a scale of 1 – 10, how connected to the natural world do you feel at the moment? (please circle one number only)

Not very connected to nature 1 2 3 4 5 6 7 8 9 10 Very connected to nature

13. On a scale of 1 – 10, how positive do you feel at the moment? (please circle one number only)

Not very happy 1 2 3 4 5 6 7 8 9 10 Very happy

14. How strongly do you feel you belong to your immediate neighbourhood or community?

Very strongly Not very strongly Fairly strongly Not at all strongly

15. Below is our importance scale. Please put a cross somewhere on each line to tell us how important each of the following is to you at the moment:

	Not very important	Very important
Being outside in nature	<input type="text"/>	
Being with other people	<input type="text"/>	
Taking part in exercise or activities	<input type="text"/>	
Eating healthy food	<input type="text"/>	

Thank you very much for sparing the time to complete our questionnaire

Please hand the questionnaire back to the person that gave it to you or send it freepost to
 Rachel Hine,
 Centre for Environment and Society,
 University of Essex,
 Freepost NATE1541,
 Colchester CO4 3SBR

If you have any questions about this research please contact the key researcher Rachel Hine, either by post at the address above, by phone: 01206 872219 or by email: rehine@essex.ac.uk

Appendix B1 - In depth start



Ecominds evaluation



The University of Essex has been commissioned by Mind to evaluate the Ecominds scheme. We will be asking participants in various Ecominds projects to complete questionnaires at the beginning, during and at the end of their involvement in the project to see if there have been any changes over time.

We value your comments and would be most grateful if you could spare the time to complete our questionnaire. All the information given to us will be treated as anonymous and will not be passed on to a third party. More information about this evaluation can be found in the accompanying information sheet.

You do not have to answer the questions if you do not want to. If you can't answer a question just leave it and go onto the next question. When you have completed the questionnaire please hand it back to the person who gave it to you or post it to the freepost address at the end of the questionnaire. Thank you!

1. Name of project 2. Date

3. Are you completing this questionnaire: (please tick relevant box)

At the beginning of your involvement with the project?.....

During your involvement with the project?.....

At the end of your involvement with the project?.....

4. Please read the following statements and tick the one that applies to you:

I am filling in the questionnaire about myself.....

I am a project worker or helper reading out the questions to the participant and filling in their responses.....

I am a carer/ guardian completing the questionnaire on behalf of someone else.....

5. Your gender Male Female Transgender

6. Your age?.....

7. What is your ethnic group? (please tick only one box)

White	Black or Black British
British	Caribbean
Irish	African
Other White (please specify below)	Other Black (please specify below)
Asian or Asian British Mixed	Mixed
Indian	White and Black Caribbean
Pakistani	White and Black African
Bangladeshi	White and Asian
Other Asian (please specify below)	Other Mixed (please specify below)
Chinese	Any other (please specify below)
I do not wish an ethnic background to be recorded	

8. So that we can match up your responses before and after the activity, please write the first part of your postcode and the initials of your first name and surname in the boxes below:

Postcode First name initial Surname initial

The following sections of the questionnaire contain questions about how you feel about yourself, your community and nature. They are made up of standardised questions so some of the words and phrases are written in different styles. Please ask if you need any help. There are no right or wrong answers, so please just answer honestly by ticking the relevant box for each question.

9. Please answer each of these questions in terms of the way you feel at the present moment, by ticking the relevant box in the following scale.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am part of nature and nature is part of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humans are more important than plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I fully understand how my actions affect the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Just like a tree is part of a forest, I feel like a part of the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I recognise and value the importance of other living things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often feel disconnected from plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am just a tiny part of the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Adapted from Meyer and Frantz 2005

10. On a scale of 1 – 10, how healthy do you feel at the moment? (please circle one number only)

Not very healthy 1 2 3 4 5 6 7 8 9 10 Very healthy

11. Here is a list of statements dealing with your general feelings and thoughts about yourself. (Please tick the relevant box to answer the questions)

	Strongly disagree	Disagree	Agree	Strongly agree
On the whole, I am satisfied with myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At times I think I am no good at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I have a number of good qualities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to do things as well as most other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel I do not have much to be proud of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I certainly feel useless at times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I'm a person of worth, at least on an equal plane with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wish I could have more respect for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All in all, I am inclined to feel that I am a failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I take a positive attitude toward myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

© Rosenberg, 1965.

12. Please tell us how much you agree with the following statements by ticking the appropriate box

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
There are people in my life who really care about me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I regularly meet socially with friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find it difficult to meet with people who share my hobbies or interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People in my local area help one another	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. How often in the last year have you helped with or attended activities organised in your local area?

At least once a week	<input type="checkbox"/>	Less often	<input type="checkbox"/>
At least once a month	<input type="checkbox"/>	Never	<input type="checkbox"/>
At least once every 3 months	<input type="checkbox"/>	Don't know	<input type="checkbox"/>
At least once every 6 months	<input type="checkbox"/>		

14. Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks

Statements:	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling interested in other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've had energy to spare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been dealing with problems well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been thinking clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling good about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling close to other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling confident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been able to make up my own mind about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling loved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been interested in new things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling cheerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. How strongly do you feel you belong to your immediate neighbourhood or community?

Very strongly Not very strongly Fairly strongly Not at all strongly

16. Overall, how satisfied or dissatisfied are you with your neighbourhood as a place to live?
(please circle one number only)

Extremely dissatisfied	1	2	3	4	5	Extremely satisfied
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17. How often do you do the following?

	Always	Often	Sometimes	Rarely	Never
Recycle glass, paper and metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use energy saving light bulbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turn off power at the plug on appliances when not in use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turn off the tap whilst brushing your teeth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buy organic or local food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat a meal that has been cooked by yourself or someone else from basic ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Put out food for birds or other wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Please tell us how much you agree with the following statements by ticking the appropriate box

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I enjoy putting effort and care into the food that I eat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Healthy food often tastes nicer than unhealthy food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Thank you very much for sparing the time to complete our questionnaire

Please hand the questionnaire back to the person that gave it to you or send it freepost to
 Rachel Hine,
 Centre for Environment and Society,
 University of Essex,
 Freepost NATE1541,
 Colchester CO4 3SBR

If you have any questions about this research please contact the key researcher Rachel Hine,
 either by post at the address above, by phone: 01206 872219 or by email: rehine@essex.ac.uk

Appendix B2 - In depth end



University of Essex

Ecominds evaluation

Ecominds



The University of Essex has been commissioned by Mind to evaluate the Ecominds scheme. We have been asking participants in various Ecominds projects to complete questionnaires at the beginning, during and at the end of their involvement in the project to see if there have been any changes over time.

We value your comments and would be most grateful if you could spare the time to complete our questionnaire. All the information given to us will be treated as anonymous and will not be passed on to a third party. More information about this evaluation can be found in the accompanying information sheet.

You do not have to answer the questions if you do not want to. If you can't answer a question just leave it and go onto the next question. When you have completed the questionnaire please hand it back to the person who gave it to you or post it to the freepost address at the end of the questionnaire. Thank you!

1. Name of project 2. Date

3. Are you completing this questionnaire: (please tick relevant box)

At the beginning of your involvement with the project?.....

During your involvement with the project?.....

At the end of your involvement with the project?.....

4. Please read the following statements and tick the one that applies to you:

I am filling in the questionnaire about myself.....

I am a project worker or helper reading out the questions to the participant and filling in their responses.....

I am a carer/ guardian completing the questionnaire on behalf of someone else.....

5. Your gender Male Female Transgender

6. Your age?.....

7. What is your ethnic group? (please tick only one box)

White	Black or Black British
British	Caribbean
Irish	African
Other White (please specify below)	Other Black (please specify below)
Asian or Asian British Mixed	Mixed
Indian	White and Black Caribbean
Pakistani	White and Black African
Bangladeshi	White and Asian
Other Asian (please specify below)	Other Mixed (please specify below)
Chinese	Any other (please specify below)
I do not wish an ethnic background to be recorded	

8. So that we can match up your responses before and after the activity, please write the first part of your postcode and the initials of your first name and surname in the boxes below:

Postcode First name initial Surname initial

The following sections of the questionnaire contain questions about how you feel about yourself, your community and nature. They are made up of standardised questions so some of the words and phrases are written in different styles. Please ask if you need any help. There are no right or wrong answers, so please just answer honestly by ticking the relevant box for each question.

9. Please answer each of these questions in terms of the way you feel at the present moment, by ticking the relevant box in the following scale.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am part of nature and nature is part of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humans are more important than plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I fully understand how my actions affect the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Just like a tree is part of a forest, I feel like a part of the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I recognise and value the importance of other living things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often feel disconnected from plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am just a tiny part of the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Adapted from Meyer and Frantz 2005

10. On a scale of 1 – 10, how healthy do you feel at the moment? (please circle one number only)

Not very healthy 1 2 3 4 5 6 7 8 9 10 Very healthy

11. Here is a list of statements dealing with your general feelings and thoughts about yourself. (Please tick the relevant box to answer the questions)

	Strongly disagree	Disagree	Agree	Strongly agree
On the whole, I am satisfied with myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At times I think I am no good at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I have a number of good qualities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to do things as well as most other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel I do not have much to be proud of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I certainly feel useless at times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I'm a person of worth, at least on an equal plane with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wish I could have more respect for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All in all, I am inclined to feel that I am a failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I take a positive attitude toward myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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12. Please tell us how much you agree with the following statements by ticking the appropriate box

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
There are people in my life who really care about me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I regularly meet socially with friends and relatives	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find it difficult to meet with people who share my hobbies or interests	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
People in my local area help one another	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

13. How often in the last year have you helped with or attended activities organised in your local area?

At least once a week	<input type="checkbox"/>	Less often	<input type="checkbox"/>
At least once a month	<input type="checkbox"/>	Never	<input type="checkbox"/>
At least once every 3 months	<input type="checkbox"/>	Don't know	<input type="checkbox"/>
At least once every 6 months	<input type="checkbox"/>		

14. Below are some statements about feelings and thoughts. Please tick the box that best describes your experience of each over the last 2 weeks

Statements:	None of the time	Rarely	Some of the time	Often	All of the time
I've been feeling optimistic about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling useful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling relaxed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling interested in other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've had energy to spare	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been dealing with problems well	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been thinking clearly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling good about myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling close to other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling confident	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been able to make up my own mind about things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling loved	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been interested in new things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I've been feeling cheerful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

15. How strongly do you feel you belong to your immediate neighbourhood or community?

Very strongly Not very strongly Fairly strongly Not at all strongly

16. Overall, how satisfied or dissatisfied are you with your neighbourhood as a place to live?
(please circle one number only)

Extremely dissatisfied 1 2 3 4 5 Extremely satisfied

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17. How often do you do the following?

	Always	Often	Sometimes	Rarely	Never
Recycle glass, paper and metal	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Use energy saving light bulbs	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turn off power at the plug on appliances when not in use	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Turn off the tap whilst brushing your teeth	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Buy organic or local food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Eat a meal that has been cooked by yourself or someone else from basic ingredients	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Put out food for birds or other wildlife	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. Please tell us how much you agree with the following statements by ticking the appropriate box

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I enjoy putting effort and care into the food that I eat	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Healthy food often tastes nicer than unhealthy food	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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19. Below is our importance scale. Please put a cross somewhere on each line to tell us how important you have found each of the following during the project:

	Not very important	Very important
Being outside in nature	<input type="checkbox"/>	<input type="checkbox"/>
Being with other people	<input type="checkbox"/>	<input type="checkbox"/>
Taking part in exercise or activities	<input type="checkbox"/>	<input type="checkbox"/>
Eating healthy food	<input type="checkbox"/>	<input type="checkbox"/>

Thank you very much for sparing the time to complete our questionnaire

Please hand the questionnaire back to the person that gave it to you or send it freepost to Rachel Hine, Centre for Environment and Society, University of Essex, Freepost NATE1541, Colchester CO4 3SBR

For more information about this research then please contact Rachel Hine rehine@essex.ac.uk

Appendix C1 - In depth pre



University of Essex

Ecominds evaluation

Ecominds



The University of Essex has been commissioned by Mind to evaluate the Ecominds scheme. We will be asking you to complete questionnaires both before and after you have taken part in an environmental activity.

We value your comments and would be most grateful if you could spare the time to complete our questionnaire. All the information given to us will be treated as anonymous and will not be passed on to a third party. More information about this evaluation can be found at the end of this questionnaire

You do not have to answer the questions if you do not want to. If you can't answer a question just leave it and go onto the next question. When you have completed the questionnaire please hand it back to the person who gave it to you or post it to the freepost address at the end of the questionnaire.

Thank you!

1. Name of project

2. Date

3. Please read the following statements and tick the one that applies to you:

I am filling in the questionnaire about myself

I am a project worker or helper reading out the questions to the participant and filling in their responses

I am a carer/ guardian completing the questionnaire on behalf of someone else

4. Your gender Male Female Transgender

5. Your age?.....

6. What is your ethnic group? (please tick only one box)

White		Black or Black British	
British	<input type="checkbox"/>	Caribbean	<input type="checkbox"/>
Irish	<input type="checkbox"/>	African	<input type="checkbox"/>
Other White (please specify below)	<input type="checkbox"/>	Other Black (please specify below)	<input type="checkbox"/>
Asian or Asian British Mixed		Mixed	
Indian	<input type="checkbox"/>	White and Black Caribbean	<input type="checkbox"/>
Pakistani	<input type="checkbox"/>	White and Black African	<input type="checkbox"/>
Bangladeshi	<input type="checkbox"/>	White and Asian	<input type="checkbox"/>
Other Asian (please specify below)	<input type="checkbox"/>	Other Mixed (please specify below)	<input type="checkbox"/>
Chinese		Any other (please specify below)	
<input type="checkbox"/>		<input type="checkbox"/>	
I do not wish an ethnic background to be recorded <input type="checkbox"/>			

7. So that we can match up your responses before and after the activity, please write the first part of your postcode and the initials of your first name and surname in the boxes below:

Postcode First name initial Surname initial

8. How long have you been coming to this project or initiative?

9. How often do you come here?

3-4 times a week or more	<input type="checkbox"/>	Twice a week	<input type="checkbox"/>
Once a week	<input type="checkbox"/>	Once a fortnight	<input type="checkbox"/>
Once a month	<input type="checkbox"/>	Once every 6 months	<input type="checkbox"/>
Once a year or less	<input type="checkbox"/>		

The following sections of the questionnaire contain questions about how you feel about yourself and nature. They are made up of standardised questions so some of the words and phrases are written in different styles. Please ask if you need any help. There are no right or wrong answers, so please just answer honestly by ticking the relevant box for each question.

10. Please answer each of these questions in terms of the way you feel at the present moment, by ticking the relevant box in the following scale.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am part of nature and nature is part of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humans are more important than plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I fully understand how my actions affect the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Just like a tree is part of a forest, I feel like a part of the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I recognise and value the importance of other living things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often feel disconnected from plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am just a tiny part of the natural world <small>Adapted from Meyer and Frantz 2005</small>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

11. On a scale of 1 – 10, how healthy do you feel at the moment? (please circle one number only)

Not very healthy 1 2 3 4 5 6 7 8 9 10 Very healthy

12. Below is a list of words that describe feelings people have. Please read each one carefully. Then tick ONE box under the answer to the right which best describes how you feel right now.

Statements:	Not at all	A little	Moderately	Quite a bit	Extremely
Tense	1	2	3	4	5
Angry	1	2	3	4	5
Worn out	1	2	3	4	5
Lively	1	2	3	4	5
Confused	1	2	3	4	5
Shaky	1	2	3	4	5
Sad	1	2	3	4	5
Active	1	2	3	4	5
Grouchy	1	2	3	4	5
Energetic	1	2	3	4	5
Unworthy	1	2	3	4	5
Uneasy	1	2	3	4	5
Fatigued	1	2	3	4	5
Annoyed	1	2	3	4	5
Discouraged	1	2	3	4	5
Nervous	1	2	3	4	5
Loney	1	2	3	4	5
Muddled	1	2	3	4	5
Exhausted	1	2	3	4	5
Anxious	1	2	3	4	5
Gloomy	1	2	3	4	5
Sluggish	1	2	3	4	5
Weary	1	2	3	4	5
Bewildered	1	2	3	4	5
Furious	1	2	3	4	5
Efficient	1	2	3	4	5
Full of pep (energy)	1	2	3	4	5
Bad-tempered	1	2	3	4	5
Forgetful	1	2	3	4	5
Vigorous	1	2	3	4	5

13. Here is a list of statements dealing with your general feelings and thoughts about yourself.
 (Please tick the relevant box to answer the questions)

	Strongly agree	Agree	Disagree	Strongly disagree
On the whole, I am satisfied with myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At times I think I am no good at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I have a number of good qualities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to do things as well as most other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel I do not have much to be proud of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I certainly feel useless at times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I'm a person of worth, at least on an equal plane with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wish I could have more respect for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All in all, I am inclined to feel that I am a failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I take a positive attitude toward myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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That's all for now!

Thank you very much for sparing the time to complete the first part of our questionnaire

Please hand the questionnaire back to the person that gave it to you or send it freepost to Rachel Hine, Centre for Environment and Society, University of Essex, Freepost NATE1541, Colchester CO4 3SBR

If you have any questions about this research please contact the key researcher Rachel Hine, either by post at the address above, by phone: 01206 872219 or by email: rehine@essex.ac.uk

Appendix C2 - In depth after



University of Essex

Ecominds evaluation

Ecominds



Now that you have finished your environmental activity we would be most grateful if you could spare the time to complete the second part of our questionnaire. Again, all the information given to us will be treated as anonymous and will not be passed on to a third party.

You do not have to answer the questions if you do not want to. If you can't answer a question just leave it and go onto the next question. When you have completed the questionnaire please hand it back to the person who gave it to you or post it to the freepost address at the end of the questionnaire.

Thank you!

1. Please read the following statements and tick the one that applies to you:

I am filling in the questionnaire about myself

I am a project worker or helper reading out the questions to the participant and filling in their responses

I am a carer/ guardian completing the questionnaire on behalf of someone else

2. So that we can match up your responses before and after the activity, please write the first part of your postcode and the initials of your first name and surname in the boxes below:

Postcode First name initial Surname initial

3. Please tell us what activities you did today?

4. How long did you spend at the project or initiative today?

5. What did you enjoy the most about today?

The following sections of the questionnaire contain questions about how you feel about yourself and nature. They are made up of standardised questions so some of the words and phrases are written in different styles. Please ask if you need any help. There are no right or wrong answers, so please just answer honestly by ticking the relevant box for each question.

6. Please answer each of these questions in terms of the way you feel at the present moment, by ticking the relevant box in the following scale.

	Strongly disagree	Disagree	Neutral	Agree	Strongly agree
I am part of nature and nature is part of me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Humans are more important than plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I fully understand how my actions affect the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Just like a tree is part of a forest, I feel like a part of the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I recognise and value the importance of other living things	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I often feel disconnected from plants and animals	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am just a tiny part of the natural world	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Adapted from Meyer and Frantz 2005

7. On a scale of 1 – 10, how healthy do you feel at the moment? (please circle one number only)

Not very healthy 1 2 3 4 5 6 7 8 9 10 Very healthy

8. Below is our importance scale. Please put a cross somewhere on each line to tell us how important you have found each of the following during the project:

	Not very important	Very important
Being outside in nature	<input type="text"/>	
Being with other people	<input type="text"/>	
The exercise or activity	<input type="text"/>	

12. Below is a list of words that describe feelings people have. Please read each one carefully. Then tick ONE box under the answer to the right which best describes how you feel right now.

Statements:	Not at all	A little	Moderately	Quite a bit	Extremely
Tense	1	2	3	4	5
Angry	1	2	3	4	5
Worn out	1	2	3	4	5
Lively	1	2	3	4	5
Confused	1	2	3	4	5
Shaky	1	2	3	4	5
Sad	1	2	3	4	5
Active	1	2	3	4	5
Grouchy	1	2	3	4	5
Energetic	1	2	3	4	5
Unworthy	1	2	3	4	5
Uneasy	1	2	3	4	5
Fatigued	1	2	3	4	5
Annoyed	1	2	3	4	5
Discouraged	1	2	3	4	5
Nervous	1	2	3	4	5
Loney	1	2	3	4	5
Muddled	1	2	3	4	5
Exhausted	1	2	3	4	5
Anxious	1	2	3	4	5
Gloomy	1	2	3	4	5
Sluggish	1	2	3	4	5
Weary	1	2	3	4	5
Bewildered	1	2	3	4	5
Furious	1	2	3	4	5
Efficient	1	2	3	4	5
Full of pep (energy)	1	2	3	4	5
Bad-tempered	1	2	3	4	5
Forgetful	1	2	3	4	5
Vigorous	1	2	3	4	5

13. Here is a list of statements dealing with your general feelings and thoughts about yourself.
 (Please tick the relevant box to answer the questions)

	Strongly agree	Agree	Disagree	Strongly disagree
On the whole, I am satisfied with myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
At times I think I am no good at all	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I have a number of good qualities	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I am able to do things as well as most other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel I do not have much to be proud of	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I certainly feel useless at times	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I feel that I'm a person of worth, at least on an equal plane with others	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I wish I could have more respect for myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
All in all, I am inclined to feel that I am a failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I take a positive attitude toward myself	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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That's all for now!

Thank you very much for sparing the time to complete the first part of our questionnaire

Please hand the questionnaire back to the person that gave it to you or send it freepost to Rachel Hine, Centre for Environment and Society, University of Essex, Freepost NATE1541, Colchester CO4 3SBR

If you have any questions about this research please contact the key researcher Rachel Hine, either by post at the address above, by phone: 01206 872219 or by email: rehine@essex.ac.uk

Appendix D - Part info sheet



University of Essex

Ecominds



Evaluation of the Ecominds initiative - Information for Participants

Here are more details about this research for you to keep and details of who to contact if you would like to know more.

The Big Lottery Fund's Changing Spaces programme has granted Mind a financial award to manage an open grant scheme, called Ecominds, which aims to fund environmentally-orientated projects. The funded projects will involve people with direct experience of mental distress and help integrate them into the community using projects conducive to good mental and physical health. The University of Essex has been commissioned by Mind to evaluate this Ecominds project.

Taking part in the research is on a purely voluntary basis and participants are free to withdraw at any time without prejudice and without providing a reason. All data collected will be anonymous and will be held by the University of Essex in hard copy for the duration of the Ecominds scheme and electronically for up to 2 years after this. The data will only be accessible to the researchers Rachel Hine and Jo Barton at the University of Essex, and will not be passed on to any third party.

If you have any questions or if you would like to withdraw your data from the research then please contact the key researcher Rachel Hine, either by post: [ICES - Interdisciplinary Centre for Environment and Society, Department of Biological Sciences, University of Essex, Wivenhoe Park, Colchester CO4 3SQ](#) or by phone: 01206 872219 or email: rehine@essex.ac.uk

Please fill out the consent form below, then tear or cut it off and hand it back to project staff.



University of Essex

Consent Form

Ecominds



If you wish to participate please read and tick the first four boxes.
If you do not wish to participate please tick only the fourth box.

I have read and understood the project information above

I understand that my participation in the research is voluntary and that I am free to withdraw from the study at any time without giving a reason

I understand that all of the non-anonymous information I provide (my date of birth and initials collected for identification purposes) will be kept confidential, as described above

I agree to take part in the study. Taking part in the study may include completing questionnaires or taking part in interactive workshops.....

I do not agree to take part in the study

Name of Participant Signature Date

Please tear off this consent form and hand back to project staff – Thank you

Appendix E - Pre-post coversheet



University of Essex

Ecominds



Activity Coversheet F

Activity Coversheet F is to be completed by the project officer for every Before/after session evaluation and is to be included with the completed questionnaires C and D when returned to University of Essex.

Please can you complete the following information...

1. Approximately how long did the group spend doing activities outside during today's session?

2. What types of activities were they participating in?

3. What was the weather like today?

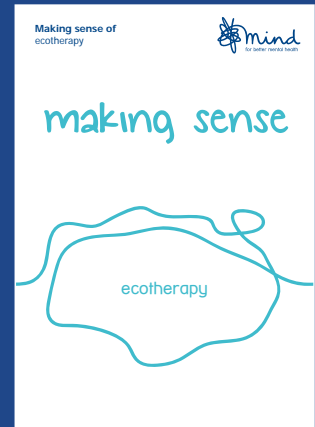
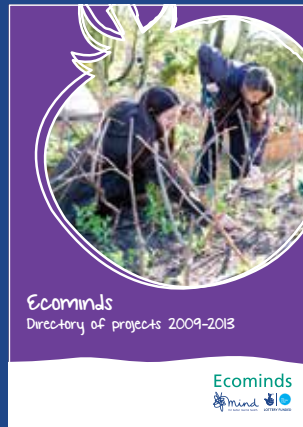
4. Any other comments relevant to the research?

Thank you very much for completing the coversheet for this session.

Please put this coversheet with the questionnaires and return to in the reply-paid envelopes or just send by Freepost to:

Rachel Hine,
Centre for Environment and Society,
University of Essex,
Freepost NATE1541,
Colchester CO4 3SBR.

Any queries please contact Rachel Hine on 01206 872219, 07789 541175 or email: rehine@essex.ac.uk



These documents are downloadable at
mind.org.uk/ecotherapy

To find your local Mind, visit
mind.org.uk/mind_in_your_area

Mind
15-19 Broadway
London E15 4BQ

contact@mind.org.uk

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