Proceedings

Nordic research conference in Green Care and Nature-based interventions

Scandic Sørlandet, Kristiansand, Norway

31st October – 1st November 2017

First Nordic research conference in Green Care and Nature-based interventions

Nature-based interventions and Green Care are inclusive terms for a wide range of complex interventions, e.g. care farming, animal-assisted therapy, and therapeutic horticulture. The services differ in the level of care, and whereas some operate as structured therapy programs with clearly defined patient-oriented goals, e.g. animal-assisted therapy and therapeutic horticulture while others aim to have more wide-ranging benefits. What is the state of the art and how can we collaborate with different professionals to optimize study designs and speed up high quality research for different vulnerable client groups?

The main goals for this Nordic conference are to focus on the research quality and how researchers and professionals from different disciplines and practitioners offering a variety of services must collaborate to speed up high quality research in both health promotion and rehabilitation for different vulnerable client groups. There will be a special focus on dropouts from school, different marginalized groups and persons with dementia. There will be lectures from international researchers representing several disciplines within health, social sciences, education, ethology and agriculture.

A Nordic Green Care Research network was established 2015 with the aim to organize a research collaboration and exchange knowledge between Nordic countries (Sweden, Norway, Denmark, Finland and Iceland). The research network has received funding from NordForsk for the years 2016-2018, and the project manager is the Swedish University of Agricultural Sciences.

Researchers working in the areas of Nature-based interventions and Green Care come from different fields and a multidisciplinary approach is taken to involve PhD-students, postdocs and other researchers in the five Nordic countries. The goal of this network is to build bridges between academia and different stakeholders and develop new research areas.

This conference will conclude the two years' network meetings, seminars and conferences. The aim is that this established network will now continue and that there will be new conferences and workshops involving our five countries. Anyone interested is welcome to join our network with valuable new ideas to promote these fields of research.

The network has consisted of the following researchers:

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We thank the following sponsors of the conference:

- Nord Forsk
- University of Agder
- County Governer of Agder
- Swedish University of Agricultural Sciences

For more information, please visit the following web pages:

Green Care for the health and welfare of animals and humans – development of a Nordic network

https://www.slu.se/en/departments/animal-environment-health/greencarenetwork/

Nordic research conference in Green Care and Nature-based interventions

https://www.uia.no/en/conferences-and-seminars/nordic-research-conference-in-green-care-and-nature-based-interventions

SLU Future Animals, Nature and Health (SLU Framtidens djur, natur och hälsa)

https://www.slu.se/centrumbildningar-och-projekt/slu-framtidens-djur-natur-och-halsa/

Program

09.30	Coffee
10.15	Opening of Conference by Tore Haugum, Agricultural manager of Agder county
10.30	Plenary talk, Chair Bente Berget *Research in Green Care in Europe-how can we collaborate to speed up high quality research?* Dr. Jan Hassink, Wageningen University
Parallel session 1: Research Methodology - Challenges and Possibilities, Chair: Lena Lidfors	
11.15	*How research studies can provide knowledge to optimize Green Care interventions* Dr. Karen Thodberg, Aarhus Universitet
11.45	*Theoretical framework in Green Care* Ph.d. student Lina Ellingsen-Dalskau, NMBU
12.15	*Methodological challenges within Nature-based interventions* Adjunct Dorthe Varning Poulsen, Københavns Universitet
13.00	Lunch
Parallel session 2: Special session for County Governor (Fylkesmannen i Agder)	
14.00	Plenary talk, Chair: Bente Berget *Nature-based interventions- State of the art and future research* Prof. Patrik Grahn, SLU
14.45	Coffee break with posters and exhibition
Nature-based interventions for children and young persons, Chair: Ingela Wikman	
15.15	*Care farming for young people adults at risk of marginalization* Ph.d. student Anne Mari Steigen, Høgskolen i Hedmark
15.45	*The Girl and the Horse, Stall Frossarbo, a Therapeutic Mode* Psychologist Sven Forsling
16.15	*Blue Care- what and for whom?* Research Scientist Pia Smeds, Natural Resources, Finland

16.45	*The pedagogy of reading dog interventions* Sara Karlberg, Svenske Terapihundskolan and Dr. Andreas Reier Jensen, UiA
17.45	*Care farming activities- can it facilitate integration?* Associated prof. Bente Berget, UiA and Agderforskning
18.00	Summary and End of Programme day 1
19.30	Dinner

Programme 1st November

08.30	Opening by Anne Halvorsen, Dean of Faculty of Social Sciences, University of Agder
08.35	Plenary talk, Chair: Bente Berget *Animal Assisted Interventions in the light of the therapy animal* Prof. Bjarne Braastad, NMBU
09.15	Coffee break with posters, an exhibition and book presentation (by Associate professor Anne Brita Thorød and Accociate professor Elsebeth Krøger, both UiA)
Nature- and animal based interventions for elderly persons, Chair: Karen Thodberg There will also be a parallel session by the County Governor.	
10.00	*Care farming for people with dementia* Associate Professor Grete Patil, NMBU
10.30	*Animal-assisted intervention for persons with dementia* Dr. Christine Olsen, Antrozoologisenteret
11.00	*Dog visits to home dwellings of elderly people suffering from loneliness* Associate Professor Berit Johannessen, Universitetet i Agder (UiA)
11.30	*Break*
11.45	Panel Discussion, Chair: Anna Maria Palsdottir Anne Marie Støkken (N), Carsten Ørting (DK), Martta Ylilauri (FI), Lena Lidfors (S)
12.30	Summary and End of Conference
13.00	Lunch

Mini Post-Conference on Blue Care, Nov. 1st

There is increasing interest among the practitioners, entrepreneurs, policy-makers and researchers in water - lakes, sea, rivers - as source for well-being and care. This issue will be discussed also during the Nordic Conference on Nature-based interventions and Green Care in Kristiansand by Pia Smeds. Given that this topic is now strongly emerging in different ways and channels, we got an opportunity to organize a small workshop on this topic after the official Nature based interventions and Green Care conference in Kristiansand.

During the workshop we will explore the state of the art of blue well-being and care activities and its relations to other nature-based activities, and identify ongoing or possible collaboration across Nordic and Baltic countries. This workshop is related to a Nordic Project "Nordic Road Map for Blue Bioeconomy" (see: http://bluenordic.fi).

The workshop is on Thursday 1st of November at 14-17, Scandic Hotel (same as conference) open and free for everyone to participate.

Organizers pia.smeds@luke.fi and katriina.soini@luke.fi by 23th

Research in Green Care in Europe - how can we collaborate to speed up high quality research

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Green Care is the use of nature and nature environments to provide health and social and educational benefits for various groups of vulnerable or socially excluded persons (Sempik 2010). There is a large diversity of interventions and practices ranging from structured therapy programmes with clearly defined patient-oriented goals (for example animal-assisted therapy and therapeutic horticulture), to multi-factor programs like green care farms, offering a diverse green context for a diversity of participants.

It is challenging to find ways to collaborate internationally and speed up high quality research. Green care has the risk of being a research topic for "believers" mainly from the agricultural and green domains. It is important to involve "critical outsiders" who are willing to constructively participate in the green care movement.

The good news is that interest for green care and the number of "green care" publications is increasing, as well as the diversity of topics of green care research. The bad news that we are not successful in getting funding for international collaboration.

To strengthen European collaboration we need to connect green care with topics at European level and establish strategic coalitions. Interesting topics are e.g. healthy cities, social innovation, ecosystem services and citizen initiatives. Coalitions can be made with national organisations of green care farmers, nature and landscape organisations, network of healthy cities or research networks in health promotion.

Research should incorporate the needs of practitioners and involve them in collecting data and starting longitudinal/long term studies. Research should involve diverse objectives, methods and outcomes. Examples are new participative methods to determine the diverse impact for participants, monitoring impact and process, comparing data from different contexts and interventions, understanding mechanisms, secondary analysis of data or use of green care to enrich theories in health care and innovation. The establishment of a European platform of researchers, practitioners and (support) organisations can be helpful to develop a joint vision, commitment, research and innovation program and funding for concrete projects.

How research studies can provide knowledge to optimize Green Care interventions

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The use of green care and nature-based interventions to help vulnerable client groups is getting more widespread in some countries, but not all, and the interest from both potential practitioners and purchasers of these interventions varies between countries.

Even though the subject is subject to research activities, the area needs a boost, with regard to the size of projects, study quality, and funds invested. As these types of interventions are often in competition with other types of treatments for groups of vulnerable patient groups, more evidence-based knowledge is needed, in order to give the authorities, which are the typical buyers of such treatments, a change to choose the most effective treatments for different target groups.

To lift the research in green care and nature-based interventions, we need to conduct multi-disciplinary research projects of a high standard, with randomized allocation of participants to treatment groups, of which one should be a control treatment. We need resources to conduct basic research in order to develop robust quantitative measures, which will enable us to test specific hypotheses about the effect of the interventions. Only this way we can move forward and specify which elements in the interventions are effective and whether different patient groups need different activities or not. In this presentation I will give some suggestions as to how we can move forward.

In combination with an ongoing focus on quality control of different treatments options and institutions, these initiatives will ensure the development of effective interventions, and give the practitioners a useful tool in communicating about the benefits of their interventions and target groups.

Theoretical frameworks in Green Care - How to use theoretical frameworks for understanding health promotion in care farming services

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Care farms

The main focus of our research has been on care farms which is part of the Green care concept, focusing on nature to promote human mental and physical health. Care farms may be viewed as complex community-based services with many variations in relation to level of care provided, with a range of activities being offered to many different client groups. However, a unifying aspect is the focus on supporting health promoting processes for clients within the farm context.

Health promotion

Care farming therefore, has a main purpose of promoting health. The world health organization defines health promotion as "… the process of enabling people to increase control over, and to improve their health" (WHO, 2017). In relation to health promotion, health is understood less as a state and more as the resources that allow people to lead individually, socially and economically productive lives. Health promotion can be considered a process directed at strengthening basic life skills and capacities of individuals, as well as influencing underlying political, social, environmental and economic conditions that influence our health. Understanding the comprehensive process of health promotion within the care farm context can therefore be challenging, which also means that the use of theoretical frameworks in this research could be beneficial.

Theoretical frameworks

A theory is a fact-based framework for describing a phenomenon that is based upon a hypothesis and supported through scientific evidence. There are several benefits of using a theoretical framework. First, it can guide our research. It can tell us what we should look for and also how we should find it. Further, theories may help us organize complexity, making it possible for us to bind together our observations and ideas to make sense of them. Last, theories also make it possible to generalize concepts and relationships to many different phenomena.

Some theories, concepts and approaches to consider

The overview presented here is based on the overview provided by Sempic and colleagues (2010), and includes both theories as well as approaches and concepts that may be relevant to consider when conducting research on health promoting processes on care farms. The approaches and concepts include empowerment (e.g. Rappaport, 1991), person-centered care (Rogers & Sanford, 1985), model of human occupation (Kielhofner, 2002) and person environment occupation (Christiansen, 2005), social support (e.g. Cobb, 1976, Cohen et al., 1985), and quality of life (e.g. Sirgy, 1986). Further, the list of theories include Stress recovery theory (Ulrich, 1983; Ulrich et al., 1991), Attention restoration theory (Kaplan & Kaplan,

1989), Sense of coherence (Antonovsky, 1987), Social cognitive theory (Bandura, 1989), Self-efficacy theory (Bandura, 1977), Recovery model (Deegan, 1988), and Self-determination theory (Deci & Ryan, 2000).

An example of research in Green care that utilise a theoretical framework

The project "Prevocational training on care farms for people out of work – the self-determination theory perspective" wanted to gain a better understanding of clients in prevocational training on care farms and of the possible health promoting elements in the care farm context by using the self-determination theory.

Background: Many care farms in Norway offer prevocational training. Prevocational training is a type of work rehabilitation that specifically aims to help people who have been outside the work force for a long time. This rehabilitation offers a temporary work environment and intends to improve vocational and social skills that enable the individual to move on to competitive employment at a later stage.

The self-determination theory is a framework explaining the psychological processes that lead to motivation, function and well-being, which may reflect resources that could enabled individuals to take more control over their own health. This theory may therefore be relevant for understanding how elements in the care farm context may promote health for the clients. The theory claims that all humans need to feel competent, related to others and autonomous in their actions. Self-determination theory considers these three basic psychological needs to be innate and fundamental, comparable to biological needs. Just like a plant that needs sun and water to grow, these needs must be supported by the social context for optimal human function and well-being to be facilitated.

Methods and materials: Data was collected with a pen and paper self-reported questionnaire and by semi-structured interviews. A total of 201 clients from 65 care farms offering prevocational training answered the questionnaire. In addition, 10 participants from four care farms offering prevocational training in Southern Norway, were recruited in the interview study.

Results and discussion: First, results indicate that clients in prevocational training on care farms constitute a vulnerable group of individuals. They were relatively young, most were unmarried, reported low levels of education, and had been out of work for a long time. In addition, their high level of subjective health complaints and low satisfaction with life indicate that they may have a potentially challenging and long-lasting return to work process ahead of them.

Further, several elements within the care farm context were found to be positive for experiencing basic psychological need satisfaction for the clients. The five main themes from the interview study labelled "everyday structure and flexibility", "understanding and acknowledgement", "guidance and positive feedback", "nature and animals" and "personal functioning and the future" corroborated and extended on these findings. Data from the questionnaire showed that feeling like a useful colleague was positive for feeling competent, while belonging to a client group was positive for feeling related to others and autonomous. Support from the farmer was positive for all the three basic needs for the clients. Therefore, feeling useful, and having a close and supportive social community on the farm are elements

that may be positive for basic psychological need satisfaction for clients on care farms. An interesting finding was that particularly the farmer seems to have a unique role in supporting the needs for the clients on the farm. Last, working with animals and experiencing nature was not associated with basic psychological needs, but results showed that these activities were both popular and highly appreciated and that clients described them as stress reducing, offering a sense of peace.

Conclusion: Strengthening elements in the care farm context that are positive for basic psychological needs, including feeling useful, and being part of a close social community with a supportive farmer, could lead to function and well-being. In addition, activities related to animals and nature may have important stress reducing qualities. All these elements therefore, may be important for supporting health promoting processes for clients on care farms.

Some concluding remarks

This research is only one example where a theoretical framework has been utilized to gain a better understanding of health promotion in the care farm context. However, a range of different theoretical frameworks can be used when conducting research within the Green care field. I have provided an overview of some approaches, concepts and theories that may be relevant for understanding how care farming can be health promoting for the clients. It is important to remember that no theory can explain everything. This means that research within the field would benefit from the use of multiple theories, models and frameworks.

Methodic challenges within nature-based interventions.

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Research within nature-based therapy is a relatively new field forming its foundation.

Within the biomedical field, focus is on studies that can assess the impact of a specific treatment. Consequently, there is an overall wish to make quantitative studies within nature-based treatment, because of the aim to document nature-based intervention as a treatment that can be compared with other treatments. Studies dealing with more general health initiatives including access to nature for various population groups has shown possible to set up in a proper way. However, it is more difficult when we work with groups of people with complex mental, physical and social problems. Here, it is harder to explain the causal relationships: Nature-based therapy is more than just a pill. Both the nature environment, selected therapeutic activities, social intercourse with other participants as well as the supporting role of the therapist have an influence on the outcome that the participants will get from the intervention.

Qualitative studies are a necessary part of the research, so that important elements in the interventions can be identified. In this way, we make sure that actual changes in the participants' overall condition are measurable.

Subsequently, quantitative studies can be arranged and an impact of the interventions, in the proper sense of the word, assessed.

Clear descriptions of all elements included in the interventions may not be that ordinary in scientific publications. On the other hand, however, they are quite important for practitioners to work evidence-based on various target groups. Consequently, evidence based nature-based therapy is also an important part of the process.

Nature-based interventions- State of the art and future research

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State of the art

Research on nature-based interventions (NBI) increases significantly. In recent years, a number of systematic research reviews have been implemented. To get an overview of the state of the art, a summary of eleven recent research reviews is presented below. All eleven reviews have a clear inclusion and exclusion criteria, based on Cochrane guidelines for systematic research reviews of interventions, or equivalent. This means that the studies must be clearly described in order to be repeated, for example in terms of aim, methodology, intervention and intervention group. Highest ranked are meta-analyses, followed by systematic research reviews, RCT, cohort studies, natural experiments and case-control studies. No qualitative studies are included. However, a well-described and completed cohort study or natural experiment may be ranked higher than a poorly described or implemented RCT.

Which interventions do work?

The literature searches in databases in these reviews show that many research studies regarding NBI have been carried out since the late 1990s; well over ten thousand. After examination, however, most of the studies have been excluded and only a fraction has been included in the research reviews. Jang et al (2010), who also included studies written in Japanese and Korean, have reviewed most research articles, over 100, and included a meta-analysis in the article. All the other research reviews have examined less than 40 studies, and because of that, there was not enough basis for carrying out any meta-analysis. Some of the reviews are broad, and include most categories of nature-based interventions (Annerstedt & Währborg, 2011; Jang et al 2010). Annerstedt and Währborg (2011) had a very broad aim of their systematic research review: "Does any kind of NBI have any effect on any health outcome?" Other researchers include certain categories of NBI, such as horticultural therapy (eg Cipriani et al 2017) or care farms (eg Iancu et al 2015).

In summary, the systematic research reviews show that NBI is a well-functioning intervention in certain contexts. Although expressed in cautious terms, they all point in one direction: the most convincing evidence relates to ***mental disorders***, especially depression and anxiety. Many studies show that nature-based interventions lead to a significant reduction in depression and anxiety. These results refer to many categories of NBI, such as HT and AAI. Studies show that symptoms of depression and anxiety decreased in intervention groups in horticultural therapy, but not in the control groups. In addition, the research reviews present several studies showing positive outcomes regarding other mental disorders after nature-based interventions. In turn: schizophrenia, bipolar disorder, PTSD and ADHD. Moreover, the reviews report a number of studies indicating that NBI leads to better psychological well-being, lower stress levels, higher

coping capacity and better sleep quality. In some cases, the reviewers mentioned that the outcome depended on professionalism of therapists.

There are almost as convincing evidence regarding NBI for ***children and the elderly***; especially concerning special needs. For children, it may be about ADHD, behavioural problems and cognitive problems; for the elderly it applies in particular to dementia. As for the elderly: several studies indicate that NBI promotes overall health, quality of life, physical capacity (in particular gross motor capacity), cognitive ability, language skills, socialization and ADL functions. In addition, the research reviews report that nature based interventions seem to lower the elderly people's levels of stress hormones and symptoms of depression. According to several systematic research reviews, many studies report positive outcomes regarding nature-based interventions for people with dementia: They reach a higher level of perceived self-identity and emotional health, triggering their emotions; getting them involved and engaged in their surrounding environment.

The third group in order (regarding levels of evidence) is about ***behavioural and social problems*** (abuse, anti-social behaviour). Several research studies report less agitation and alcohol/drug addiction; and in addition, better social behaviour, increased attention and self-esteem after NBI. The fourth group concerns somatic diseases, primarily cardiovascular diseases and stroke, where systematic research reviews present results, suggesting that nature-based interventions affect patients in a positive direction.

Which interventions give clear effects?

In summary, the state of evidence is quite good as regards the question if nature-based interventions have a positive impact on people with mental disorders, especially depression and anxiety. The state of evidence is a bit lower regarding children and elderly with special needs, as well as for people with behavioural and social problems. Animal assisted therapy may be an effective treatment for mental and behavioural disorders such as depression, schizophrenia, and alcohol/drug addictions. However, there are favourable effects on clinical status (such as for symptoms relating to depression), but conflicting effects regarding rehabilitative effects; that is, functioning and quality of life.

However, it is not enough to prove that something works. It is also important to show that the effect is noticeable or even large. The most widely used measure of effect size is Cohen's d. It is considered to be noticeable when it is greater than 0.2; moderate when it is greater than 0.5 and large when it is greater than 0.8. A meta-analysis by Jang et al (2010) showed that the overall effect size of the studies included in their research review was 0.71. It was higher for NBI targeted at children (especially when it came to children with special needs) and elderly (especially in the case of dementia). The effect size was higher for a group of approximately 5-7 participants. With more participants, the effect size decreased sharply. It was also higher for an NBI program with 21-30 sessions or (slightly lower) with more than 31 sessions. The effect size was higher for the following target groups: mental disorders, low cognitive ability and social problems.

Future research

Nature-based interventions work and provide clear effects. That's the good news. The bad news is that reviewers give serious criticism about the quality of the studies. Hardly any studies get high grades. Many are on the verge of even being included in the studies. The hardest criticism concerned the intervention as such; called by one of the reviewers - the "black box". It was often incredibly poorly described: it was about the therapists / leaders and their knowledge; the activities that were carried out; the environment in which the activities were carried out and, where applicable, the companion animals used. Therefore, the reviewers wonder: what is it actually described and discussed? There are many gaps to fill for translational research: from basic research to praxis.

Some suggestions for the future

1. What are we talking about? What is the name of the intervention? What is included and what is not included? Make a good definition of the intervention, and it must have a distinct name: maybe nature-based intervention? Maybe something else. This is important, not least because we are able to demonstrate research successes and evidence through systematic research reviews. Other researchers must be able to identify our research and find the studies in databases.

2. There must be a good description of the intervention, and the aim of the intervention; a clear hypothesis. The hypothesis must be based on the intervention quality, including the place and its characteristics, the therapists/leaders, the activities and - in some cases - companion animals.

What is "*nature*" in the nature-based intervention? A primeval forest, a smaller wood, an urban park, a big garden, a small garden, or a rose in a flowerpot? And which *animals* are best? The types of animal intervention in the research reviews differed a lot; from horses, to cows, dolphins, dogs, cats, rabbits, ferrets, birds, and guinea pigs. Which *activities* are associated with the certain NBI which will be implemented in the study? Which *leaders or therapists* are necessary? Should there be professional therapists or not? Occupational therapists, physiotherapists, psychologists? Or special NBI-therapists? Or any therapists at all? Who are the *participants*, the target group?

Which necessary characteristics of the companion animal, the garden or the natural environment are needed, in order for a therapeutic activity to take place, carried through by certain therapists / leaders, for a particular target group of patients?

3. Description of the intervention dose. If there is a special NBI medicine, then it may be assumed that it takes a certain amount of time before it affects the participant.

4. Description, in great detail, of research methodology (RCT, cohort study, qualitative interview): participants included and excluded (e.g. ICD diagnosis), randomization (if used), outcomes (validated protocols), cohort studies, registers, ethics.

5. Description of adverse effects (e.g., allergy, infection, dog bites) and withdrawals

6. Description of the economy: costs and benefits; health economics as well as business economics

7. Transferring the method to regular use

8. When possible - relate background, hypotheses, aim, methods as well as outcomes to theories. Some of the following theories are often used, others are less often used, but may of course be used:

Attention Restoration Theory, about the best settings for restoring cognitive capacity (Kaplan, 2001).

Psycho-Evoutionary Theory, about recovery from high levels of stress: Biophobia – biophilia (Ulrich, 1993).

Physical activity, reward system, dopamine (eg Huppertz et al 2014).

Daylight, cortisol and melatonin, vitamin D (eg Selmaoui & Touitoua, 2003).

Shinrin yoku – forest bathing, aromatherapy, forest air with phytoncides, activating NK cells (Natural Killer cells) (Li, 2012, Li et al 2016).

Subliminal perception and priming facilitation; parallel thinking in multi-tasking (planning, routines, reflexes etc.) (eg. Stenner et al 2013).

Enriched environments, affecting all fifteen senses, muscles, hormones, heart, stomach etc.; and restoring people's physical as well as mental energy and resources (eg. Sale et al 2014)

And theories connected to occupational therapy (eg Model of Human Occupation, Sense of Coherence, Empowerment, Salutogenesis, Locus of Control)

All of the above theories are about - *supportive environments*: physical environments (eg natural environments), social environments (eg fellow patients, therapists, companion animals), and cultural environments (eg activities, values, languages). We are developing this theory in SLU Alnarp, (including many theories mentioned above) and we are happy to develop it further in a broader network. (eg. Grahn et al 2010; Palsdottir 2014).

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Care farming and young adults at risk of marginalization

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Young adults at risk of marginalization from school or work represent one of the main welfare challenges in Norway. Several welfare services intended for this group of young adults are established, care farming is one of them. More knowledge about the participants at care farms can give us indications on who these participants are and what care farms may contribute with for this group in a broader health and welfare system.

A quantitative cross-sectional study among participants (16-30 years old) enrolled at care farms in all parts of Norway were performed.

Results from the quantitative study (N=93) gives information on characteristics of young adults at risk of marginalization participating at care farms. The mean age of the participants was 22.66 (SD=3.84) and there was a somewhat larger proportion of females (56 %) than males (44%) in the sample. Duration of participation at the time of data collection varied from 1 week to more than 12 months. We do not have information about the total length of the stay for the individual participants. The majority of the participants were at the service 4 days a week or more. Analysis show that just above half of the respondents according to Hopkins symptom checklist 10 (HSCL-10) have symptoms of anxiety and depression. There are no significant differences related to symptoms of anxiety and depression between the ones recruited from The Norwegian Labour and Welfare Administration (NAV) and the ones recruited from the local mental health services. The ones recruited from school have significantly lower scores of anxiety and depression symptoms than the two before mentioned groups. Among the participants 23 years and older, 50% have not completed upper secondary school. Participants are overall very satisfied with the services, regardless of symptoms of anxiety and depression, and negative or mixed expectations before start. The participants report the social elements at the care farm as important, both related to the animals, the other participants and the service leader. The analysis may indicate that the service leader is of most importance for the participants.

The Girl and the Horse, Stall Frossarbo, a Therapeutic Model

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In the 1980s a Swedish study, *"444 Stockholm Youth in Crisis"* identified the special institutional needs and challenges of young females aged 16 – 21 years. It pointed to the need for change in the prevailing high cost, staff intensive closed unit system with its poor therapeutic outcomes. In response the Frossarbo Therapeutic Model (FTM), based on a psychodynamic therapeutic approach and Milieu Therapy, was carried out between 1987 to 1997. This model went against existing practice and focused on the strengths of the girls (6 at a time) that came to Frossarbo Stables for an alternative therapy which involved learning about, caring for and training trotting horses in preparation for racing. FTM was evaluated against standard variables established by The General Board of Compulsory Treatment, Stockholm Metropolitan Council. It received top ratings in all variables. This year, 20017, a study was presented in *European Journal of Psychotherapy & Counselling, " A healing relationship: Clients experiences of the long-term relational significance of the horse in horse assisted therapy"* where five Frossarbo girls were subjected to a deep intervieu more than 15 years after they had gone through FTM. For the first time ever it has been scientifically shown that a relation to a horse can have the same therapeutic qualities as that of a therapist, that of remaining as an important "person" through the years.

Sven Forsling är psykolog och forskare. Han har varit chefspsykolog för den tyngre institutionsvården inom Stockholms läns landsting, medlem av SiS vetenskapliga råd och institutionschef för Stall Frossarbo. 1998 tilldelades han Allmänna Barnhusets Stora Pris för sina insatser för socialt utsatta ungdomar och 2014 blev han hedersmedlem i OHI för betydelsefullt arbete inom hästunderstödd terapi.

Blue care

Pia Smeds

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Green nature environments have been found to support health and wellbeing, e.g. through activities as Green care. Research on the positive health effects of activities in nature are increasing. New concepts are also emerging, e.g. Blue care that focus on blue nature environments, water. Common for both Green and Blue care service products is that they do directly or indirectly aim at increasing health, health factors or quality of daily life.

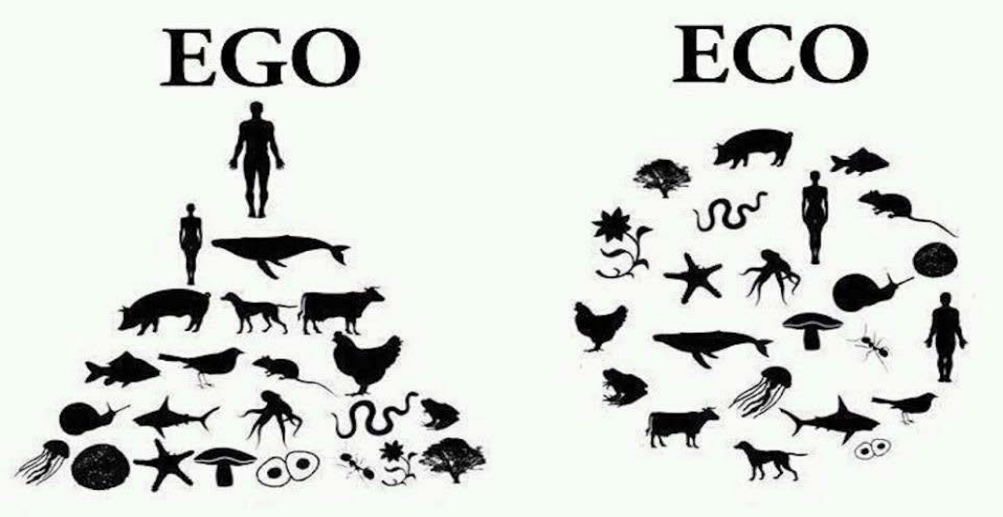
Blue care origin. Blue care is derived from the concept of Green care. Green care has long traditions within the care sector in Europe and is now a renowned concept in many areas. Green care has been actively developed and researched within Luke and in Finland for the last ten years. The Green care concept in Finland includes health and wellbeing services, educational services as well as tourism. A Green care quality certificate has been developed for enterprises that want to sell Green care products and entrepreneurs are educated to be able to provide customers with high quality Green care service products.

Bioeconomy is a political strategy that is divided into different colours depending on what natural resource it is referring to (green = forest, yellow = agriculture, red = energy in general, blue = water resources). Green care inspired the artists of Bioeconomy to mint the concept of Blue care, as a new form of entrepreneurships. Where Green care is referring to green spaces in forests and gardens, Blue care is referring to blue spaces as water environments, the coast and archipelago. Blue care is therefore a new politically inspired concept that may give the fisheries and health and wellbeing sector new possibilities.

Other concepts. Concepts as *blue wellbeing, blue welfare, blue space* and *blue health* are confusing both researchers and the public. A fast scan on research within blue wellbeing does not give any hits, and blue welfare is seen within articles on economy and taxes. Blue space is a concept used especially within geography and landscape studies, to indicate that the studied area has water elements within it or that the study is connected to areas with water resources. Blue health, again, often indicates health insurance or health policies.

From this short review on these concepts, we can conclude that research on the health, recreational and wellbeing effects of water resources should be described as studies of these effects within blue spaces. Blue spaces do include inland water, as lakes and rivers, as well as coastal waters. Blue spaces did in some cases also indicate water elements, as fountains, in cities. When referring to effects water elements, research should avoid using concepts as *blue wellbeing, blue welfare or blue health.* From this point of view, Blue space is the correct concept to be used within research.

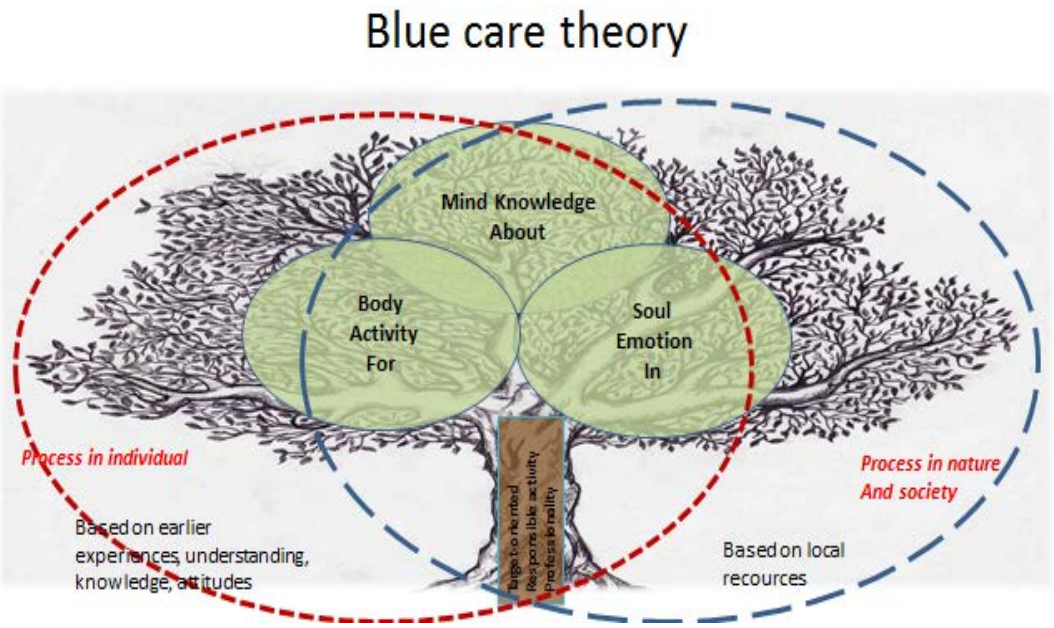
Paradigms. One view to look at service products in natural environment is to study its connection to environmental values. Blue care can theoretically be seen to be part of the ecocentric paradigm. The egocentric paradigm indicates that man can and should utilize nature to complete his needs. Ecocentric paradigm sees man as part of nature and responsible for his actions and how these affect nature and the balance within nature. The ecocentric paradigm strives for balance and is based on awareness and responsibility for a common nature and sustainable future. The ecocentric thought is common in traditional coastal communities, e.g. in Ostrobothnia. Nature provides the community with resources, protection and food, and the community takes care of nature to be able to gain same benefits the next year. Such caretaking may include building nests for birds and protecting the birds from predators. In return the community gets eggs and down to use for pillows and mattresses. The relationship between man and nature was such that both gained from each other.



Blue care. Blue care can be seen as a target oriented, salutogenic, responsible and professional activity in a nature surrounding. Blue care is a healing and learning process within man, as well as within the surrounding society and nature. The process in man is based on earlier experiences, understanding, knowledge and attitudes. The processes include cognitive processes, as learning new knowledge about oneself and nature, and understanding the relationship between man and nature. The processes include a deeper connection to oneself and ones belonging to nature. These processes are linked to emotions and how emotions affect us (wellbeing, health, values, and attitudes towards ourselves, our lives and nature). The processes are mediated through activities in nature surroundings that may vary from sitting on a rock at the seaside, school excursion to reshaping cultural landscapes, depending on the participants needs (physical or psychological).

The process in nature and society are place-based and based on local resources. As man changes as a result of his processes, also the nature and society change. This starts a process within nature and society, where nature is respected and the health and wellbeing of nature is central.

"Take care of Ocean[1], and Ocean will take care of you"



Blue care service products and focus groups. As in Green care, Blue cares main focus is on the welfare and health sector. This indicates that main focus of service products is for clients that are in need of rehabilitation. Blue care can also be seen to include service products that focus on preventive care and integration, e.g. integration service products for refugees or service products that focus on learning disabilities or social issues amongst children and youngsters to prevent marginalization.

There is also an active discussion on blue tourism service products for private customers. Are these Blue care or not? Is it a Blue care service product if it increases a healthy customer's health by preventing possible future ill health? Is recreation at the coast Blue care? What is the theoretical frame work to study Blue care?

[1] Ocean or Oceanus is an ancient Greek god of the sea within the Greek mythology. Later Ocean was seen to represent the sea in general (http://www.greekmythology.com/Titans/Oceanus/oceanus.html)

The pedagogy of reading dog interventions

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The Reading Education Assistance Dogs® (R.E.A.D.) program started in 1999 and it has spread all over the world rapidly since then. The R.E.A.D program improves children's reading and communication skills by reading to a dog. It is a non-judgmental, relaxed and comfortable motivating environment:

When a R.E.A.D. dog is listening, the environment is transformed, a child's dread is replaced by eager anticipation, and learning occurs. The handler is a skilled facilitator, too—shifting performance pressure off the child and providing support, while the child gets the supervised reading practice necessary to build vocabulary, increase understanding of the material, and gain fluency as a reader. The Results are Significant. Participating kids make enormous strides in reading and communication skills while, along the way, building self-esteem, confidence, and social skills.

In the Nordic countries, pet teams are trained for approximately 1.5 years to work as a R.E.A.D team. The suitability is the most important tool in a qualityassured process of working with a readdog. The pet team work either as a resource to the teacher or the dog are trained by the teacher themselves and work in classroom directly with the teacher. All pet teams participate in the children's individual development plan. They also work for a salary, unlike for example the United States where many work voluntarily. It is no problem to work in schools or libraries. The only thing we need to do is to provide guidelines regarding animal welfare, safety for the students, hygiene guidelines to the school.

Andreas Reier Jensen is an Associate Professor (Ph.d.) at the University of Agder, Department of Education. Jensen's research focuses on classroom contexts and issues of educational equity, as well as teacher practicum and mentoring relationships.

What is it about the use of *reading dogs* in primary school that actually helps children with reading difficulties to break the reading code? A dog alone can obviously not teach a child to read. Neither does the dog have an alphabet, nor do they have a language to guide the child when reading incorrectly or when reading correctly. Reviewing the literature on the use of specially trained dogs in reading interventions nonetheless indicates positive learning outcomes. Initial findings from an on-going research project will be presented. Among the central questions of interest is: How can we obtain more research-based knowledge about the processes of interaction, learning processes and on the effects on learning outcomes when *reading dogs* are used in pedagogical interventions?

Care farming activities- can it facilitate integration?

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Immigrants and refugees are often residents in municipals were agriculture is fundamental, and The Action plan for Green Care in Norway (2013-2017) highlight research on the farm as an integrating arena for immigrants.

The aim of the pilot project was to get knowledge on how immigrants and farmers experienced care farming. The study was performed on three farms in the Agder region.

Semi-structured interviews showed that typically, the participants participated in sowing, driving tractor making food and handling the animals. For the majority, the only job experiences they had were activities and work on the farm. They expressed that the stay at the farm facilitated the Norwegian language and Norwegian culture, and that the farmer and other participants were nice and supportive.

The providers were positive to use the farm as an integrating arena, and they experienced positive support and collaboration with the buyers. The providers expressed that the most important feedback to the users were to give them hope for the future and self-esteem and self-efficacy. Furthermore, they expressed that the project had facilitated the network with the other farmers and actors outside the farm milieu. All the farmers wanted to have more documentation and research on care farming for these user groups.

Animal-Assisted Interventions – in light of the animals

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In Animal-Assisted Interventions (AAI) it is important to ensure that people with skills on the ethology (behaviour) and welfare of the particular animal species are involved. This is necessary partly with regard to the efficacy of the intervention and partly with regard to the animal's own welfare, as required by the animal welfare legislation. Animal welfare is a multi-disciplinary topic, defined as an individual's subjective experience of its mental and physical state as regards its attempt to cope with its environment. AAI animals must be able to cope with challenges and live in an environment with high predictability and controllability. The needs of the animals must be fulfilled. If not, frustration may lead to behavioural problems for the owners or users, or behavioural disturbances or mental suffering in the animal. Users should learn to read behavioural signals in the animal to assess its emotions and respond adequately to strengthen their bond. Animal owners or responsible health personnel must be able to assess behavioural indicators of both poor and good animal welfare, like signals of stress, fear, frustration, aggression, pain, play, joy and positive expectation. Environmental enrichment must be considered to counteract problems.

Animal species, breeds and individuals must be selected to fit the needs or challenges of the users. AAI animals must be reliable, predictable, controllable, suitable for the purpose, and able to inspire confidence among the users. Dogs are widely used, but cats, horses and farm animals may be equally applicable for certain users and their challenges. All AAI animals must belong to a domesticated species if they are to be in close contact with the users.

Health personnel should cooperate with ethologists or animal behaviour counsellors on AAI to ensure adequate competence in light of both users and animals. NMBU offer several continuing courses on AAI and a large number of people in Norway has taken these courses during the last 10 years. Health institutions should access these people as employees or collaborators.

Farm based day care activities for people with dementia

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The research project «Farm based day care services for people with dementia–quality development through interdisciplinary collaboration» aims to provide knowledge for quality development of farm based day care services. The interest in day care services on farms for people with dementia is increasing. National strategic documents (Demensplan 2020, Action Plan for "Inn på tunet" 2013-2017) point to care farming as a complementary service. Such ecosystem services may also contribute to a sustainable use of farm resources and provide additional income for the farmer. The project is supported by the Research Council of Norway with 23.7 mill NOK for 2016-2019.

The project focuses on quality development of the services for the users and their next of kin, and on elucidating factors that are of key importance for collaboration between the farmer as the private partner and the health care services in the municipalities as the public partner. The project has four work pages (WP). WPA investigate the user perspective, and explores both the characteristics, benefits and experiences among the users and their relatives through qualitative interviews and observation studies, as well as cross sectional and longitudinal quantitative designs. WPB studies the farm context and the possible unique contribution of the farm to day care services for people with dementia and includes quantitative and qualitative methods. WPC studies the social, institutional and economic aspects of formation, implementation and operation of day care services, and makes use of case studies of farms, surveys among farmers and municipalities and economic analysis. WPD will produce user targeted information about the project for the groups of interest, and we invites to innovation forums to exchange information on the services among different groups of people with an interest in farm based day care.

Currently, data collection is ongoing in at WPs. The oral presentation will give a brief overview of the identified services in Norway. Further, preliminary results from the pilot using Concept mapping to retrieve information from the innovation forums in WPD will be present. These data indicate key components of high quality day care services for people with dementia as viewed by the group of informants.

The project is led by NMBU and carried out by an interdisciplinary research group counting 16 researchers. Researcher Siren Eriksen lads the group at the Norwegian National Advisory Unit on Ageing and Health (WPA and D), researcher Ingeborg Pedersen, NMBU, has the responsibility for WPB, researcher Brit Logstein at the Center for Rural Research has the responsibility for WPC along with Anne Strøm Prestvik and colleagues at Norwegian Institute of Bioeconomy Research.

Read more about the project: www.demensomsorgpagard.no , www.facebook.com/demensomsorgpagard/?fref=ts

Animal-assisted activity as a non-pharmacological intervention for patients with dementia

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Introduction: As population ages, health and social care face increased demands to provide services for older people with dementia. Medication is frequently used, but most of them have major side effects. Therefore, it has been suggested that non-pharmacological interventions should be implemented at a larger scale. In this study, possible effects of a 12-week intervention with animal-assisted activities (AAA) in nursing homes and at day-care centres was studied. Primary outcomes were depression, agitation, balance and quality of life (QoL).

Method: A prospective, cluster randomized multicentre trial. Data collection was carried out at baseline, after 12 weeks (post-test), and three months after end of intervention (follow-up).

Sample: Ten nursing homes and 16 adapted day-care centers were randomized to either AAA with a certified dog or control groups with treatment as usual. The institutions recruited respectively 28 and 42 participants for the intervention groups, and 30 and 38 for the control groups. The intervention consisted of 30 min sessions with AAA led by a qualified dog handler twice a week for 12 weeks in groups of 3–7 participants. Inclusion criteria were men and women aged 65 years or older, with a diagnosis of dementia or cognitive impairment. The intervention consisted of a 30 minutes session with AAA twice a week for 12 weeks in groups of 5-7 participants, led by a qualified dog handler.

Results: Mixed model was used to investigate changes over time and differences between the intervention group and the control group. No effect on agitation, which in general was very low, was found. Significant effect on both depression and QoL was found for participants in nursing homes with severe dementia. For depression, the effect was found at follow-up ($p = .001$) ($p = .054$ post-test). Furthermore, the effect of depression was found to have clinical significance ($p = .03$). A significant effect of AAA was found at post-test ($p = .035$) as well as at follow-up for QoL ($p = .003$). There was a significant positive effect of the AAA on balance from baseline to post-test ($p = 0.03$). The positive effect on balance also showed clinical significance. In addition, the average increase in balance in the animal-assisted activity group suggests a c.20% reduction in fall risk. The significant positive effect on balance indicates that AAA might work

as a multifactorial intervention in dementia care and have useful clinical implication by affecting risk of fall.

Conclusions: AAA may have a positive effect on balance, QoL and symptoms of depression in elderly people with dementia. Animal-assisted intervention with dogs should be considered for use as a health promoting activity in the future; however, screening and certification of dogs and handler might be crucial for the activity to be effective.

Sponsor: The project is funded by grant nr. 217516 from the Oslofjordfondet and RFF Hovedstaden, NMBU, and Cooperating partners (The Norwegian Centre of Anthrozoology, Buskerud and Vestfold University College, Centre for Development of Institutional and Home Care Services in Vestfold, Nøtterøy municipality). Cooperating partners supported the project with internal funding.

Dog visits to home dwelling elderly people suffering from loneliness- presentation of a study in progress

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Background

- In 2016 we conducted a study with visiting dogs at nursing homes. The results from this study showed positive effects both among patients, dog handlers and employees. A follow up among home dwelling elderly suffering from loneliness is planned.
- The prevalence of loneliness among adults decreases across adulthood, but increases in very old age (i.e. >80 years). Loneliness is an important area of study because it may increase human mortality.
- Pets can play a positive role in both the physical and psychological health of older adults, and pet attachment support can act as a coping resource between loneliness and depressed mood.

A planned study

- Aim: To gain knowledge about how home dwelling elderly experience dog visits in relation to feelings of loneliness and general quality of health.
- The target group for the project is 10-15 elderly who are users of the municipal home services.
- Community health nurses in the region will map their patients to reveal potential patients suffering from loneliness who are interested in sharing time with an equipage (dog and dog handler).
- Certified equipages to do the visits will be recruited from Red Cross.
- Research: Qualitative design inspired by action research.
- Mixed methods: Individual interviews with the elderly (and their next of kin), 2-4 focus group interviews with the involved nurses and participant observations of dog visits.

Green Care Organization and Certification in Finland

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In Finland, the broadest possible selection of nature-based activities has been gathered together under the umbrella of Green Care concept.

The association, Green Care Finland, was established in 2010 for coordination and development of overall professions that are using nature in the field of social-, health-, education- and recreation services. The national association contributes to the interdisciplinary networking of professionals, spreads information and leads the Green Care quality management work. Currently, the association has a diverse network of actors both nationally and professionally with over 250 members (e.g. entrepreneurs and other service producers, developers, researchers and educators), and it is growing steadily as the interest for nature-based activities is increasing.

Green Care Finland contributes to arranging the annual national Green Care Conference in Finland and is upholding the national websites (www.gcfinland.fi), which both have a significant role in networking and distribution of information. The development of Finnish Green Care concept and activities is also promoted via national and regional projects. There are presently over 30 regional Green Care projects, as well as several project initiatives in regional, national and international level. The National Green Care coordination project (2015–2017) has been established to contribute the co- operation of these projects in a national level by sharing information, arranging networking and theme events, as well as to create a Green Care web portal and contribute to the Green Care quality management process.

Recently, a large consortium of Finnish universities of applied sciences has developed a complementary multidisciplinary Green Care education module. This has been essential, as the nature-based methodologies and approaches are mostly missing in current degrees of social and health care. In the same time a corresponding education module in Swedish Ostrobothnia, *"Utbildningsmodul inom naturbaserad vård och pedagogik"*, has been developed by a regional project consortium.

Finnish Green Care quality management work was launched in 2012 when the Green Care Code of Ethics was established. Quality management work continued with designing the quality models in a cooperation with Green Care Finland, National Institute for Health and Welfare (THL) and Natural Resources Institute Finland (Luke). The Finnish Green Care concept got divided in two sections: NatureCare services (*LuontoHoiva, GrönOmsorg*) and NatureEmpowerment services (*LuontoVoima, GrönKraft*), which differs from each other by criteria, directional legislation and clients´ position.

NatureCare resides with the social and health care services in which the public sector has the responsibility of providing the services. NatureCare services are primarily intended for people in a vulnerable position, who need care or external support with physical or mental health issues, long- term unemployment, substance abuse or similar challenges. NatureCare service provider must have an education in social services or health care or cooperation with social or health care professionals. The activities must comply with any relevant social service and health care legislation and regulations.
A safety plan as well as a self-monitoring plan is required for all NatureCare services.

NatureEmpowerment services include goal-oriented services in nature-assisted well-being, education and recreation services. These services are available to the public and aim to promote the overall well- being and health of the participants. The service provider does not need qualifications in social or health care, but the operations must comply with any valid recommendations and regulations in the field of the service provider. The expertise is required by the services and the Green Care operating method and each service must be provided in a professional, goal-oriented and responsible manner. A safety plan that covers all safety issues pertaining to the service is always required.

Green Care Quality Certificate was published in January 2017 and several applications have already been processed. The Green Care Quality Manual serves as one of the main documents when applying for Green Care quality label, but it can also be used as a quality management tool even without applying for a certificate.

In conclusion, creating a multidisciplinary and –professional concept of Finnish Green Care have contributed to the creation of innovation-oriented discussion forum, that is likely to provide refreshing and empowering viewpoints for plenty of professionals. However, this kind of broadness can also be seen as confusing and frustrating. Therefore, it is also essential to develop specific methodologies as well as the quality models that guides the practical actions of a professional.

References:

Green Care Finland´s homepage: www.gcfinland.fi
Green Care Quality Manual:
http://www.gcfinland.fi/in-english/green-care-quality-manual/

Green Care Netværket in Denmark

Carsten Ørting Andersen, Formand

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Green Care Netværket (The Green Care Network) is a Danish non-profit private organisation. We aim at developing and supporting professionals, networks and social initiatives.

The central idea of our work is the fact that being in contact with nature and taking care of plants and animals is an effective way to obtain wellbeing, inner peace and growth – for all human beings – in all stages of life.

Green Care Netværket works for the support, development and communication of methods and practical experiences, together with findings in national and international research, which are of relevance to members of the organisation.

We wish to provide professionally relevant knowledge to our members, e.g. advice and guidance to the practitioner or to the municipality seeking to qualify their choice of aid to citizens.

We wish to draw the attention of the public and the politicians to the fact that there is a real need for research in Green Care – for the benefit of a much larger group of citizens as well as municipalities seeking powerful strategies for dealing with vulnerable citizens.

Green Care Netværket was founded in Horsens, Denmark on March 24, 2017.

www.greencarenetvaerk.dk