



Sustainable Development Research Network

## **SDRN Health and Environment Workshop**

### **Final Workshop Report**

Wednesday 20 - Thursday 21<sup>st</sup> February 2008  
Edinburgh, Scotland

Increasing awareness of the rates, and likely consequences, of environmental change in recent years has stimulated a renewed focus on the links between environment and human health. There is evidence to suggest that natural environments and green space can play a fundamental role in the prevention of disease and promotion of human health and wellbeing; a role which is increasingly being compromised by an alarming breakdown in human-environment relations.

Generously supported by both the Scottish Government and the Scottish Environment Protection Agency (SEPA), the SDRN Review Scoping Workshop aimed to provide a forum in which the complex interactions between the environment and human health could be discussed and explored, and to identify the most appropriate areas for future SDRN work within the broad area of health and the environment.

This report serves as a 'stand-alone' summary of the workshop discussions and presentations, both for participants and for those who were unable to attend. Further information about the workshop, including all three presentations, is available from the SDRN website: <http://www.sd-research.org.uk/post.php?p=698>

Eight broad discussion themes from the workshop have been highlighted, together with the agreed list of candidate SDRN review topics and preliminary next steps. These themes are: multi-causality and complex systems; implications of evidence uncertainties for policy-makers; types of evidence deemed valuable by science and policy; turning action into evidence; sensitive groups; connecting environment and human health through planning tools; turning valid evidence into appropriate action; and economic valuation of the natural environment.

## 1 - Multi-causality and complex systems

Through history there has been an evolution of paradigms concerning the creation and deterioration of health, which may be linked to eras of epidemiology and policy responses:

- a) 'MIASMA': Era of Sanitary Statistics - based on the belief that disease was caused by pollution, policy responses focused on statistical analyses, improved sanitation and environmental actions.
- b) 'GERM THEORY': Era of Infectious Disease - people stopped regarding health and disease as characteristics of populations and instead considered them properties of individuals. Policy responses stressed the need for improved sanitation and vaccination.
- c) 'BLACK BOX': Era of Chronic Disease - poor health was linked to behavioural traits, with a lack of consideration of the physical and social contextual factors that shape these behaviours.
- d) 'IT ALL MATTERS': Era of Ecological Public Health - people began to realise that the state of public health depends on complex interactions between social, behavioural and physical factors.

The NHS has traditionally adopted a fairly narrow, compartmentalised and hazard-based approach to health, more focused upon treating disease than trying to prevent its onset. Whilst this approach has increased our national life expectancy, it has failed to address widening health inequalities across the country. Efforts have tended to concentrate on finding the right molecules and drugs to treat individual illness, rather than addressing the multiple contextual factors - elements of the environment, culture, community and lifestyle - that can promote good health or trigger health deterioration. Pharmaceutical companies are increasingly struggling to find the drugs required to treat more complex diseases, such as obesity and mental illness, perhaps because their onset is driven by the interaction of multiple direct and indirect factors. Efforts to address these factors, and thereby reduce the incidence of complex diseases, will require a more integrated, holistic approach to healthcare.

Perhaps one of the most striking differences between past eras and the present time is that, during all other eras, policy-makers at least *thought* they were doing the right thing, given the evidence and best-available knowledge of the time. It can be argued that what stands out about the current era is that policy-makers are increasingly aware that they are *not* necessarily doing the right thing: the problem is not that we don't know what we should be doing; it's that we're not doing it.

Appropriate policy responses are now being considered to assist the delivery of a more integrated health service. Policy-makers need to:

- *Understand the underlying mechanisms of good/poor health.* The onset of disease is not necessarily the result of a linear causal chain; illnesses can result from one or more chains of events, linked together by interdependent, causal risk factors. This means that a single factor (for example, the timing of exposure) can actually prove to be the link on which a whole chain of causality depends. In addition, factors that seem like 'co-founders' can actually be 'co-causal factors'. The challenges lie in understanding and measuring the impact of individual events in complex systems, as this impact is influenced by so many additional co-causal factors.

- *Recognise convergence across numerous cross-cutting agendas* e.g. climate change, obesity, biodiversity, sustainability and environmental justice.
- *Identify synergies and antagonisms in policy responses*
- *Embrace complexity*; as our scientific knowledge base expands, we are becoming increasingly aware of the myriad interconnections between, and resulting complexity of, ecological and biological systems. Experience has taught us that ignoring this complexity and addressing only one or two causative factors will likely produce unwelcome surprises further down the line.

## Lessons from Scotland

According to the Scottish Government, the environmental health agenda of the 21<sup>st</sup> Century needs to nurture:

- a) Positive health, well-being and resilience
- b) Healthy behaviour
- c) Social capital
- d) Greater equity in health

The Scottish Government adapted the World Health Organisation's DPSEEA Model<sup>1</sup> to frame the environment and health challenges in Scotland, introducing the idea of higher level drivers of environmental state and exposure (Figure 1). Any environmental state will only translate into an exposure or effect if the environment is amenable to that transition. They therefore added a set of contextual factors which can lubricate or impede the transition through the model. Policy actions could then be targeted at any point along the model, including the contextual factors. This simple model became the basis for their environment and health strategic framework.

It is possible to deliver better, more equitable health care and meet four of the Government's five key themes to make society: wealthier and fairer, healthier, safer and stronger, and smarter. But it is only when better, more equal healthcare is delivered through better *places* that it is also possible to address the fifth theme - to make society 'greener'. Without focusing on place and recognising the ways in which environmental inequality can contribute to health inequalities, interventions may improve health but may not meet wider sustainability objectives.

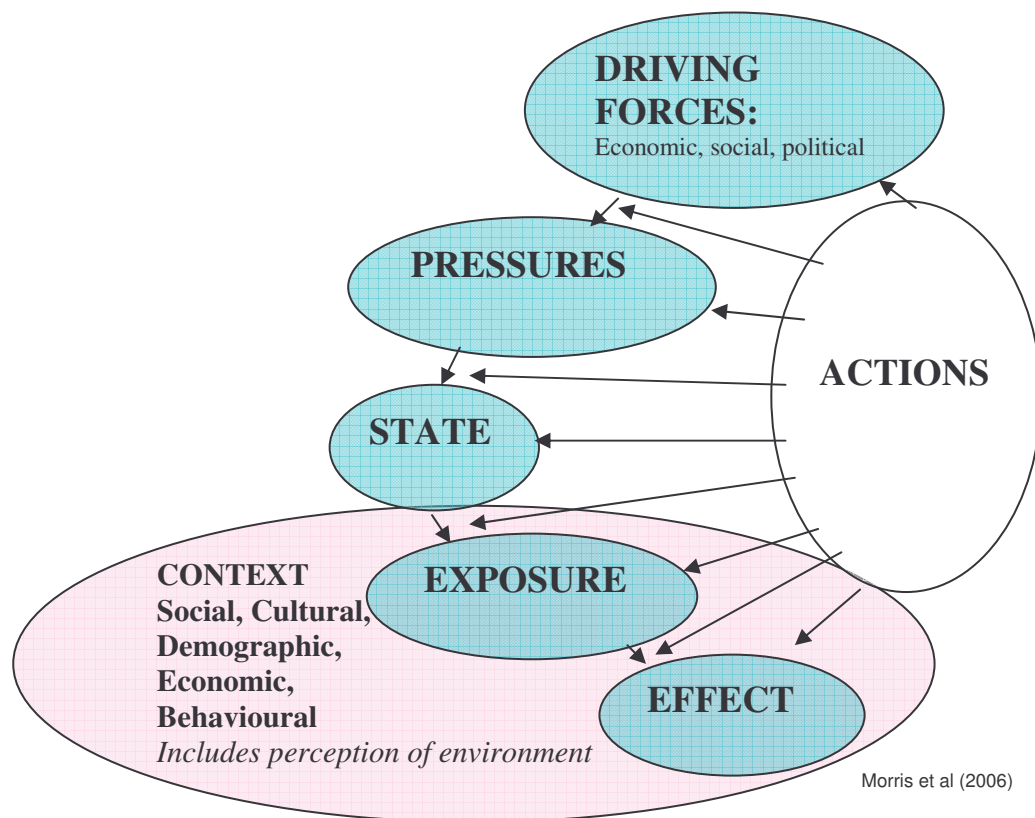
Three core systems constitute the strategic framework:

- **Intelligence system:** gathering the products of research, data and evidence of what works when policy is applied at a local level. Are we capturing the context in its entirety?
- **Evaluation system:** what is happening at ground-level? Where should further work be concentrated - research, evaluation or policy stages?
- **Levers of change system:** are the policy arrows sharp and suitably targeted? If not, why don't they work?

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<sup>1</sup> DPSEEA is an acronym for Driving Forces, Pressures, State, Exposure, Effect, Actions. See [http://www.euro.who.int/EHindicators/Indicators/20030527\\_2](http://www.euro.who.int/EHindicators/Indicators/20030527_2) for further details.

Figure 1: The Adapted DPSEEA Model



Evaluation systems are particularly important in the context of multi-causal problems like environmental health, when evaluating the effectiveness of any given intervention can be difficult. If a problem may be caused by a number of different factors, how can it be proved that any given intervention was responsible for observed or recorded changes or improvements? Establishing better guidance on evaluating the effectiveness of policy remains a key challenge for Government.

Stakeholder involvement was encouraged at each stage of the policy response. Workshops were held with key scientists, policy-makers and practitioners in order to identify:

- a general consensus on health outcomes
- types of exposure (opportunity for use of the environment) that will likely lead to these outcomes
- environmental states consistent with these exposures
- higher level drivers and pressures that determine the environmental state
- existing policy responses
- future policy responses

This information was cross-checked with the literature and discussions with wider constituency and used to complete the model ('map out the environmental health territory'). Territory maps could be produced for different aspects of policy and then compared to identify cross-cutting policy responses that would address multiple causal factors.

## 2 - Implications of evidence uncertainty for policy-makers

Multi-causality and limited understanding of complex systems raise several challenges for the design and implementation of policy. In particular, a key challenge faced by policy-makers is the determination of exactly what constitutes 'evidence' and the treatment of certainty and uncertainty in this context. In theory, in situations where there is scientific complexity, uncertainty and ignorance and where potentially serious or irreversible threats to health or the environment may occur, policy-makers are often advised to adopt the precautionary principle, whereby the tendency is to err on the side of caution. However, the principle can be very difficult to apply and - as a result - it is infrequently put into practice.

The key difficulty faced when attempting to apply the principle stems, at least to some extent, from various definitions and interpretations of the twinned concepts of 'certainty' and 'uncertainty'. If, as in complex systems, the influence of any one factor is hard to deduce, how certain can we ever be that a given factor is impacting sufficiently on health to require a policy response? What are the costs and benefits of policy action if the evidence for a particular effect is later proven wrong?

These questions raise a key issue to be addressed at the science-policy interface - communication between scientists and policy-makers. A scientific report concluding 'reasonable certainty' that driver 'A' will have 'x' impact on the health of a community will mean little to policy-makers with no background in science - what does 'reasonable certainty' mean? There is a general lack of consistency in the terminology used to define strengths of scientific evidence and a lack of effort to ensure these certainty categories are meaningful to policy-makers and the general public.

Scientists need to be more explicit about why the evidence gathered provides the stated level of certainty/uncertainty and why this is sufficient for policy action/inaction. Policy-makers need to fully understand the implications of any uncertainty in results. Conversely, policy-makers need to be more explicit regarding the critical areas of research they need to justify a policy response.

While the IPCC have developed a very clear, consistent terminology to describe 'likelihood' in the context of climate change, environmental health lacks a similarly consistent, transparent set of terminology and 'rules' when translating knowledge into evidence. Suggestions were made to place research 'translators' into institutions such as universities, hospitals and government in order to translate scientific language into a numerical or comparative language that will enable policy-makers to convert the science into relevant action.

A second question raised in relation to the precautionary principle was whether it is able to allow for actions to promote factors that are having a significantly *positive* impact on health as well as actions to address those with negative impacts?

## 3 - Types of evidence deemed valuable by science and policy

There was much discussion regarding the types of evidence that would be required to convince policy-makers to act. Emphasis was placed on the need to engage the medical, social and biological sciences to provide a sufficient evidence base.

### 3.1 - Engagement with medical science

The medical sciences prefer to act on conclusions drawn from randomised controlled studies, but these are not always possible when assessing multiple environmental influences on health. Lord Rutter has recently produced a set of best practice guidelines for producing robust evidence from studies where randomised controlled studies are not feasible. This is available from: [www.acmedsci.ac.uk/p99.html](http://www.acmedsci.ac.uk/p99.html).

### 3.2 - Engagement with social science

Qualitative research and lay knowledge tend to be undervalued by policy-makers but could make a valuable contribution to policy efficacy:

- a) There are a variety of 'non-experts' who, in some instances, are likely to pick up on emerging health issues in their surrounding area before scientific researchers. While this can be local community members, it can also include important 'intermediaries' - for example, tradesmen (who may work closely with high-risk materials / pollutants, or in polluted environments - a documented example being asbestos-fitters) or local health practitioners, and community development practitioners who witness first-hand the positive and negative effects of access to greenspace. Mechanisms for accessing this 'lay knowledge', which could be used to inform future research prioritisation and may also help to introduce innovation into policy-making, need to be developed.
- b) Public behaviour change is central to addressing the contextual factors that promote human health e.g. life-style choices and use of green spaces. Coercion by policy-makers is unlikely to successfully induce such behavioural change, particularly where behaviour has become habitual or where few alternatives exist. Although much work is already going on, more research is needed into how green spaces actually make people think and feel, in order to provide further insight into why people behave in the ways that they do. Conducting qualitative social research into public attitudes, perceptions and favoured alternatives may enable policy-makers to change behaviours through:
  - i. Providing sensible alternative behavioural choices. How do we widen choice to enable people to live healthy lives?
  - ii. Relating the outcomes of behaviour change to benefits valued by the public.

Local people working with the public in natural environments, such as park rangers and wildlife educators, could provide useful information about public attitudes towards health and the environment, which may help to ensure the provision of healthy green environments that the public will actually enjoy and use.

- c) The trust of the general public is central to the success of public policy. A high level of scientific certainty is not always sufficient to instil public confidence in a particular policy action. Qualitative research could be utilised to detect areas of public concern or confusion regarding the environment and health arena, which may subsequently be better addressed by policy-makers.

Despite the proven value of multi-method, social science strategies - particularly when researching complex, multi-causal systems - the relationship between qualitative and quantitative research strategies continues to be contested. While it is clear that an antagonistic or oppositional stance between the two is unproductive and often unjustified, the way forward is not through simple attempts to aggregate findings across the two. Equally, solutions do not lie in rendering one approach subordinate to the other,

for example by treating qualitative research as suitable only for 'pilot' or 'sensitising' phases within larger research and evaluation strategies to inform evidence-based policy-making. Given the complexity of the inter-relations between social, behavioural and physical systems, there needs to be continuing dialogue on the integration of all the qualitative research strategies already identified (ethnographic, social-anthropological, spatial, discourse, narrative, etc) with quantitative information in the creation of data sets and analyses that are truly 'complex' and reflect the complexity of social and cultural forms.

An example of the role of social research techniques in exploring health and the environment is the Welsh Assembly Government (WAG) funded Sustainable Health Action Research Project (SHARP), which assists community members with the identification of, and participation in addressing, their health and well-being issues. The University of Bath also has a unit devoted to studying environmental education - The Centre for Research in Environment and Education (CREE).

### *3.3 - Engagement with biological and physical science*

In the past there has been a tendency for policy-makers to wait for the outcomes of rigorous scientific quantitative studies before initiating the development of policy responses to an issue. There is, however, a mismatch in time-scales between the time-taken to conduct such research and the window within which policy-makers must act to gain the full benefits of action and mitigate adverse impacts of inaction. Whilst policy-makers aim to avoid false negatives (i.e. falsely attributing safety when harm is the reality) in the interest of public safety, scientists aim to avoid publishing false positives to minimise harm to their reputation. Efforts need to be made to redress this mismatch, perhaps through introducing more effective evaluation processes of existing grassroots-level health and environment projects.

## **4 - Turning action into evidence**

There is a lack of thorough evidence concerning green space, well-being, mental health, quality of life and health inequalities. The natural environment provides a vast research laboratory via which we could gain this evidence. Numerous disparate grassroots activities have provided soft evidence of the benefits of green space for human health but these have not been conducted or evaluated in a way that can provide the scientifically rigorous evidence required by policy-makers. There is a need to capture this grassroots enthusiasm and turn it into a valid evidence base. What are people doing at the ground level? Are there examples from a range of scales - local, regional, national? What are the motivational drivers of these actions? How are they being evaluated? Have they been successful? What can we learn from them? How can they be modified to provide a valuable and respected evidence base? How can best-practice information be disseminated? (Reference was made to the television series - 'Our Backyard'.)

Examples of ground-level projects may be available from outdoor agencies, local authorities, and organisations such as the Greenspace Trust, Greenspace Scotland, Walking the Way to Health, the Scottish National Programme for Health and Well-being, and the National Institute for Health and Clinical Excellence (NICE). A range of examples were mentioned during discussions:

- A GP in Bow, East London, was given a local park by the council in which to set up his GP practice. Through donating this park to the community, the GP transformed the park from a focus for drugs/crime in the area to a centre of

positive community activity. Community members volunteer in the GP practice, running green-gyms, walks and gardening sessions, together with regular festivals and markets. This has increased community cohesion and created a sense of ownership of the park area. The confidence of medics has been eroded in recent years, but this case study highlights the need for greater engagement with their local communities in order to provide a more integrated, holistic healthcare service.

- The Pioneer Health Centre (the 'Peckham Experiment') was set up by a husband and wife team of doctors, George Scott Williamson and Innes Pearse, in 1926, in an attempt to investigate the role of the environment in promoting good health. With funding from the Nuffield Foundation, the centre moved to a new purpose-built building in 1935, designed with large windows, high ceilings, cork floors and other features that would foster a sense of space and well-being amongst community members. The centre incorporated a swimming pool, gym, nursery and cafeteria, supplied with organic farm produce from a farm rented by the Centre. Families were charged just two shillings per week to use the centre for workshops, leisure and social activities and contact with medically-trained staff, on the condition of participating in yearly health audits, or 'overhauls'. After 15 years, these audits showed numerous community health improvements, together with no marital breakdowns or bullying and only one accidental injury. The centre was closed down in 1950, primarily because its ethos did not sit with the aims of the NHS, but the Pioneer Health Foundation continues to promote these integrated healthcare approaches. More information is available from: [www.thephf.org](http://www.thephf.org)
- The provision of green space in the regeneration of Moss Side, Manchester, during the 1960s failed to stimulate any of these community health benefits and is still one of the most degraded environments in Manchester. This could have been an ideal natural investigation into the extent to which green space can promote good health. What other drivers are required to promote good health? What factors were missing in Moss Side? Several such natural experiments could be set up with current developments e.g. stretches of Liverpool are being levelled and communities rebuilt, and significant redevelopment is occurring on the floodplain in Ashford, Kent. How could valuable evidence be collected regarding the impacts of these environmental changes on the health of local communities? Perhaps more longitudinal studies of people in these areas are required?
- CABE is contributing to a Wellcome Trust funded piece of research evaluating the health impacts/outcomes of new housing developments, focusing on those that have won a Building for Life (BfL) award. The project is testing the hypothesis that schemes which have won a BfL award are more walkable / healthy than those which haven't.

The results from such analyses could be translated into a tangible best-practice guide or toolkit to illustrate ways in which different community practitioners could assist in establishing local environment and human health initiatives that will provide a valuable evidence base for influencing national policy. This could form the basis of a bottom-up regional push to address cross-cutting issues such as human health and the environment, and could work through established Community Planning Partnerships and Local Strategic Partnerships. These partnerships may include representatives from schools, police, planners, rangers, transport etc, each of whom would be able to use the toolkit

to better understand and execute their roles in the partnership. Evidence from the resulting initiatives may then be captured and presented as a set of recommended actions to bring together the ten central government departments in addressing these cross-cutting issues at the national level.

## **5 - 'Sensitive' Groups**

Policy decisions have frequently been based on population-based statistics but these often fail to detect disproportionate impacts felt by more sensitive groups within the population. These groups are important because they are the most susceptible to environmental pollution and risk, or can benefit most from the positive impacts of the natural environment. However, this susceptibility - in turn - means that the impacts of new policy interventions are likely to be most evident within these groups. If one of the problems within health and the environment research is that it is difficult to measure the effectiveness of interventions, there is a strong argument for focusing policy on those most likely to provide strong, measurable responses. Four key groups were identified as potentially sensitive during discussions:

- a) **Children:** there is some evidence to suggest that children who fail to engage with the environment before the age of 11 are unlikely to form strong affiliations with the environment later in life. Furthermore, whilst those individuals who engage or are introduced to the environment as children often temporarily lose this interest during their teenage years, they tend to regain it in their twenties. Efforts are needed to acquire more evidence to explain this short-term disengagement. Greater understanding of the drivers of environmental engagement as children may help to ensure the propagation of environmental values amongst the citizens of the future.
- b) **Elderly:** the quality of life of elderly people can be adversely affected through their limited mobility and diminished environmental range. With our increasingly ageing population, action is needed to facilitate their access to green spaces and to ensure these spaces provide opportunities for activities that they value e.g. gardening, gentle walks. Research suggests greater interaction with green space can reduce the onset of dementia, other mental illness and poor physical fitness amongst elderly individuals but greater work is needed to determine the features of green spaces that are conducive to these benefits. The EPSRC EQUAL (Extend QUALity of Life) and GO (Growing Older) Programmes may provide useful evidence for review.
- c) **Immigrants:** research may be required to highlight ways in which green spaces could best promote the interaction of people within their communities. Greater interaction may contribute to social cohesion and well-being, which is sometimes lacking within communities with high immigrant populations.
- d) **Obesity:** the onset of obesity renders sufferers more vulnerable to numerous additional diseases later in life, including heart disease, osteoporosis, stroke and complications in pregnancy. Obesity onset can be prevented through lifestyle changes, which may be encouraged or discouraged by the environments in which they live. The Foresight Future Choices Project provides useful information regarding the environmental drivers of obesity.

There can also be areas or regions of particularly poor human health. Evidence could be collated to identify and map out these areas and to identify the extent to which environmental factors are driving regional trends. Mapping of obesity hotspots in Manchester has, for example, helped to target policy responses and actions to the appropriate regions. Horizon scanning may be a useful tool when considering policy responses to these sensitive groups or areas.

## **6 - Connecting environment and human health through planning tools**

With an increasing proportion of the UK - and the world's - population living in cities and urban areas, a focus on urban greenspace and design is vital. Urban design and development may influence the distribution of human health across different groups or areas, through determining the exposure of these groups to environments of different quality. Tall vegetation in urban areas, for example, is thought to reduce the incidence of crime and thereby encourage increased outdoor activity and reduce stress and anxiety-related illnesses. Urban infrastructure may be designed to minimise the need for car-use, or the number of people at risk from flooding. A recent issue of Science magazine advocates the development of more imaginative approaches to urban design, including the development of fractal cities with accessible urban parks and ecological corridors.

As evidenced by Ebenezer Howard's *Garden Cities of To-morrow* (1898), awareness of the benefits of green infrastructure is not new. The CIBA Foundation, for example, was established in 1947 by Sir Henry Dale to bring together scientists, health professionals and chemists to discuss emerging issues in human health. In 1956 they discussed the role of the environment and green infrastructure in promoting human health and applauded the insightful construct around Regent's Park near Marylebone. There remains a need to explore which types of infrastructure will promote good health and to identify where investment is required in the urban environment.

Similarly, the European Landscape Convention<sup>2</sup> stresses the need to broaden efforts beyond the maintenance of high quality 'special' landscapes, towards the 'everyday' landscapes that are all around us, as these play a more significant role in determining our sense of identity and well-being. This may be best achieved through better integration of health issues into environmental assessments for planning, particularly at the local scale. Efforts are needed to develop techniques for gathering health evidence suitable for use in SEAs and EIAs. This may be difficult given the differences in EIA and HIA methodologies but work could focus on examining the approaches used in existing SEAs/EIAs and identifying where and how they could be improved, scoping a range of sectors e.g. transport, spatial planning. This should be an ongoing process to ensure approaches are consistently reviewed, evaluated and improved.

The Royal Commission on Environmental Pollution (RCEP)'s study on The Urban Environment, calls for the development of a coherent framework for 'urban policy', to ensure urban areas are developed and used in a way that will improve the well-being and quality of life of its inhabitants.

## **7 - Turning valid evidence into appropriate action**

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<sup>2</sup> The European Landscape Convention was adopted on 20 October 2000 in Florence (Italy) and came into force on 1 March 2004 (Council of Europe Treaty Series no. 176). It is open for signature by member states of the Council of Europe and for accession by the European Community and European non-member states.

A convincing and rigorous evidence base does not always translate into *effective* policy making, particularly where complex systems are involved. Just as multi-causality can complicate the development of an appropriate policy response, so too can it affect policy evaluation processes. Beneficial or detrimental impacts of a particular policy may be attributed to a range of different causal factors, some related to that particular policy, some arising through indirect impacts of other policies. It can be difficult to decipher which causal factors carry the most weight, particularly where impacts only become apparent several years down the line.

Furthermore, policy-makers sometimes fail to initiate *any* response to valid evidence of an emerging (or 'emerged') health/environment issue. In 1980, for example, Douglas Black disseminated clear evidence of urban environmental inequalities and the UK health divide in the Black Report<sup>3</sup>, yet it was several years before policy-makers paid heed to the contents of this report. Various reasons for this were suggested during the workshop discussions:

- Poor communication between government departments; one department may acquire key information or evidence but fail to liaise with and communicate this information to other relevant departments.
- Alternative agendas of, and interference by, other parts of the government machinery, as displayed by the passive smoking issue. The potential value of submitting evidence to party political analysts at the time of party manifesto development was highlighted.

Science-policy partnerships should be based on an iterative process to ensure that the scientific evidence presented is policy-relevant and that policy responses are appropriate, evidence-based and subject to regular evaluation and improvement.

## **8 - Economic Valuation of the natural environment**

Put simply, the decision-making in politics often comes down to short-term popularity and economics. The Stern Review, for example, was a key trigger for the increased political action relating to climate change. The NHS is only likely to allocate finances to environment and health initiatives if they can put a monetary value to the costs and benefits of doing so. Perhaps we therefore need to develop better economic valuation techniques of the natural environment. This entails the consideration of various factors:

- The likely reduction in spending on the *treatment* of diseases that may be *prevented* through addressing contextual causal factors e.g. obesity, diabetes, mental illness.
- Techniques for valuing those aspects of environmental health that may not be measured in usual terms e.g. the contribution of ecosystem services to human health, the existence values of ecosystems, and willingness to pay for the maintenance of these ecosystems. Do we value the quality of the ecosystems themselves or the quality of an individual's experience of these ecosystems?
- Time frames - will environmental features and services that are valued today carry the same value in the future? Has their value changed over time? How can this variation be accounted for in valuation processes?

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<sup>3</sup> The Black Report was a 1980 document published by the Department of Health and Social Security (now the Department of Health) in the United Kingdom, which was the report of the expert committee into health inequality chaired by Sir Douglas Black

- Tipping points - is there a point where green space no longer has significant value for human health? Is this a linear response? Does this depend on other contextual factors, such as surrounding development or social influences? How could these indirect factors be incorporated into the valuation process?
- How do we consider altruism? Under the current paradigm, valuation processes would consider only the sum an individual is willing to pay to maintain their *own* good health and well-being in the future. How would monetary values be different if we considered how much an individual is willing to pay to maintain the health of *others*?
- How can we move beyond the 'defensive' economic valuation of greenspace, which is used to argue for the protection of greenspace and relies on the derived economic benefits of the greenspace outweighing the benefits its development, to a more positive valuation, that can be used to justify the creation of more greenspace or to improve access to such space?

The National Audit Office conducts a range of 'value for money' investigations across different government departments and may have some useful comparative information regarding existing health and environment spending.

### The subject of the SDRN Review

The SDRN Rapid Review Series aims to work with policy-makers across government, to understand where policy domains are going, and to provide evidence to policy-makers in a clear, digestible format which will help create new policy opportunities and catalyse further action. The subject matter of prior SDRN reviews has been based on five key criteria:

- a) Issues should cut across policy departments, research agendas and disciplines and incorporate the three pillars of sustainable development.
- b) Policy relevance - issues in line with government priorities and objectives.
- c) Existence of a sound, wide-ranging evidence base to review, which has not yet been brought to wider attention.
- d) Creation of opportunities for engagement with policy-makers.
- e) Additionality - brings together new information or revisits previously collated information from a new and useful angle.

Subsequent discussions suggested an additional criterion to be considered; ease of dissemination to a wide range of audiences.

Discussion resulted in broad agreement on one topic for the review to focus on and three areas in which further work could be usefully facilitated either by SDRN or other organisations at the workshop.

A possible title for the SDRN review is suggested as '*A review of evidence on local community actions and green space: its contribution to the health and wellbeing of vulnerable groups*'.

The aim of the review would be to pull together and build on the extensive body of existing literature on the role of the environment and greenspace in promoting good health and should focus, more specifically, on 'case studies of local action' - drawing together evidence from local-level projects and schemes that are successfully improving health through the use of the natural environment and greenspace. The thinking behind this was that considerable work is already underway 'on the ground' which recognises the

value of the natural environment and the extent to which it can improve lives, but that the results of this work are not captured in literature and are not being translated into evidence to support the links between health and the environment. One suggested option may be to develop a shared 'database' of case studies, to improve the availability of good quality grey literature.

The review would focus specifically on vulnerable or susceptible groups. While the exact nature of these groups is still to be determined, it is likely the review will focus specifically on children and the elderly. However, other suggestions include a focus on the obese, ethnic minorities and immigrants. The work would bring together a broad range of case studies to illustrate the role of the environment in health promotion. The aim of the review will be to investigate the motivational drivers behind the development of these projects, the barriers and constraints faced when initiating such work, and the evaluative frameworks used to monitor success - if and when they exist. The review will also seek to explore the ways in which evaluation could be improved in order to establish a more robust health and the environment evidence base. The review might result in the conversion of grass roots activities into an evidence base which could lead to the subsequent production of a practitioners' tool kit in the context of Community Planning Partnerships (Scotland) and Local Strategic Partnerships (England and Wales).

The three further topics in which interest was expressed for SDRN or others to facilitate further action were:

1. Economic Valuation - the value of wellbeing/health benefits derived from the natural environment in economic valuation processes. This would not focus on critiquing or reviewing valuation and appraisal techniques, of which there is a wide literature - including a previous SDRN review<sup>4</sup> - but firstly, collecting evidence on the economic value attributed to environment-created health benefits in economic valuation and secondly, trying to do this valuation more effectively.
2. Connection of human health and the environment through EIA/SEA planning tools
3. Evaluation of evidence and consideration of how to overcome the issues associated with dealing with evidence of complex interaction into policy.

### **A Working Environment and Health Map of Activities**

A further suggestion arising from the workshop was the development of a working Map of Activities in the area of environment and health. Although there have been a number of reviews of the evidence linking access to the natural environment with the promotion of human health (for example, the ongoing work of CEBC<sup>5</sup>), few people have undertaken a systematic mapping exercise capturing the range of activities in policy, research and practice from the local level up to the national level. Such a mapping exercise would be intended to inform understanding of the range of work currently being undertaken in this area and could be used to identify the gaps in our knowledge, focus funding and targets for future research efforts and provide up-to-date information to decision makers. This would be an ongoing process, perhaps being updated on a yearly basis to ensure an informed approach to future action in this area.

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<sup>4</sup> SDRN Rapid Research and Evidence Review *4 Methods for Sustainability Valuation and Appraisal* available from <http://www.sdrn-research.org.uk/post.php?p=129>

<sup>5</sup> The Centre for Evidence-Based Conservation at the University of Bangor has already undertaken much work in this area and has developed a protocol for systematic reviews, which may be accessed via their website: <http://www.cebc.bangor.ac.uk/>

**Annex 1: SDRN Review Scoping Workshop on Health and the Environment  
20/21 February 2008, Edinburgh**

**Participants**

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Paula Charleson	Policy Advisor, Human Health, SEPA
Adam Crook	Policy Advisor, Natural Environment Strategy Unit, Defra
Michael Depledge	Chair of Environment and Human Health, Peninsula Medical School
Margaret Douglas	Consultant in Public Health, Lothian NHS Board
Simon Dyer	Policy Co-ordination Manager - Radiation, Chemical & Environmental Hazards, DH
Susan Gallacher	Scientific Advisor, RERAD, Scottish Government
David Gee	Head of Science, Policy and Innovation Group, European Environment Agency
Nuala Gormley	Principal Research Officer, Environment Social Research, Scottish Government
Peter Higgins	Professor of Outdoor and Environmental Education, Edinburgh University
Stephen Holgate	MRC Clinical Professor of Immunopharmacology, University of Southampton
Fintan Hurley	Scientific Director, IOM, Edinburgh
Joanna Inchley	Assistant Director, Child and Adolescent Health Research Centre, Edinburgh University
Chinny Iroegbu	Specialist Senior Scientist (Human Health), SEPA
Teri Knight	CEBC, University of Bangor
Kevin Lafferty	Access, Health & Recreation Policy Advisor, Forestry Commission Scotland
Larissa Lockwood	Policy Advisor, SDC Scotland
Hermione Lovel	Senior Public Health Manager, Department of Health
Brian McGarry	Team Leader, Greener Scotland Directorate, Scottish Government
Kate McGeevor	Co-ordinator, SDRN
Clive Mitchell	Strategy & Communications Manager, Strategic Direction, Scottish Natural Heritage
George Morris	Scientific Policy Advisor, CMO Directorate, Scottish Government
Nina Morris	Lecturer in Human Geography, Edinburgh University
Priscilla Netto	Evidence & Research Co-ordination Branch, Welsh Assembly Government
Julie Newton	Research Associate, Sustainable Communities, BRASS, Cardiff University
Jon Rathjen	Greener Scotland Directorate, Scottish Government
Marcus Sangster	Land Use and Social Research, Forestry Commission
Ben Shaw	Co-ordinator, SDRN
Lorraine Tulloch	Project Manager, Strategic Framework for Environmental Health, Scottish Government
Polly Turton	Senior Public Affairs Advisor, CABE
Catherine Ward Thompson	Research Professor in Landscape Architecture and Director of OPENspace, Edinburgh College of Art
Sarah Wooller	Policy Consultant, Defra

## *Annex 2: Workshop agenda*

**'Health, the Environment and Sustainable Development - Where next for research and policy?'**

**SDRN Rapid Research and Evidence Review Scoping Workshop on Health and the Environment**

**Wednesday 20<sup>th</sup> - Thursday 21<sup>st</sup> February 2008  
Macdonald Roxburghe Hotel, 38 Charlotte Square, Edinburgh, EH2 4HQ.**

*Chair:* Professor Michael Depledge,  
Chair in Environmental & Human Health, Peninsula Medical School

This workshop has been convened by the Sustainable Development Research Network to explore the current, emerging and future challenges for research and policy in the area of health, environment and sustainable development. Generously supported by both the Scottish Government and the Scottish Environment Protection Agency (SEPA), the workshop's main aim is to identify topics that would benefit from the process of research and evidence review as a means of raising the profile and understanding of these issues in the research and policy-making communities.

By assembling a set of high-level and multi-disciplinary speakers and participants we hope the workshop will promote understanding and exchange of information and perspectives between the groups represented, which will both be of value to the participants and also shape a genuinely inter-disciplinary SDRN Research and Evidence Review.

The briefing paper for this workshop gives some brief background to the issues under discussion and details of SDRN, and its rapid research and evidence reviews.

### Agenda

**Day 1, Wednesday 20<sup>th</sup> February 2008**

#### **Health and the environment - the current state of research and policy**

The first day of the workshop is intended to open up the debate and explore:

- The existing and developing understandings of the linkages between health and environment,
- The challenges of translating research on health and the environment into policy, and
- Lessons from the successful or failed translation of research on health and the environment into policy.

<b>12.00</b>	<b>Lunch</b>
<b>12.45</b>	Welcome to workshop, Ben Shaw, SDRN/Policy Studies Institute
<b>12.50</b>	Introduction from workshop chair, Professor Michael Depledge
<b>13.00</b>	Prof. Stephen Holgate: Emerging areas for research and policy in health and the environment
<b>13.25</b>	Questions, responses and discussion
<b>13.40</b>	David Gee: 'Late Lessons from Early Warnings': the use and evaluation of evidence in health and the environment policy-making
<b>14.05</b>	Questions, responses and discussion
<b>14:20</b>	George Morris: Policy needs and lessons from Scotland
<b>15.00</b>	Questions, responses and discussion
<b>15.00</b>	<b>Tea and coffee</b>

- 15.30 Roundtable discussion**  
The direction of the discussion will, to a certain degree, be led by the above presentations and responses to them. However, the broad aim of the discussion will be to identify and, if appropriate develop consensus, on the:
- Research challenges in the area of health and environment
  - Policy challenges in the area of health and environment
  - Lessons from addressing past health and environment problems and solutions.
- 16.45** Closing remarks, structure and objectives for Day 2 and issues to explore further from Day 1.
- 17.00** Close of Day 1
- 7 for 7.30** Informal evening meal at ‘Howies’, 1a Alva Street, Edinburgh.

## Day 2, Thursday 21st February 2008

### Priorities for action in research and policy on health and the environment

The second day of the workshop is intended to ‘narrow the focus’ of the workshop discussion and:

- Discuss the criteria that are important in establishing future priorities for research and policy on health and the environment,
- Identify some priorities for research and policy on health and the environment
- Identify areas that would usefully benefit from the process of a research and evidence review by SDRN (or other organisations).

- 09.00** Coffee
- 09.30** Chair’s reflections on Day 1
- Some initial suggestions for topics for research and evidence review
- 9.45** Roundtable discussion
- Setting priorities - what criteria are important?
  - What sort of strategic policy response is required?
  - What evidence is needed to support policy?
- 10.30** Tea/coffee
- 10.45** Roundtable discussion (cont):
- Options for SDRN Rapid Research and Evidence Review
- 11.45** Next steps and closing remarks
- 12.30** Close of workshop

### Further information

For further information about the content of the Scoping Workshop, or SDRN more widely, please contact:

**Kate McGeevor**, SDRN/Policy Studies Institute, [k.mcgeevor@psi.org.uk](mailto:k.mcgeevor@psi.org.uk); 020 7911 7545, or on day of workshop 07779 081 287, or

**Ben Shaw**, SDRN/Policy Studies Institute, [b.shaw@psi.org.uk](mailto:b.shaw@psi.org.uk), 020 7911 7544 or on day of workshop 07845 470 330).

For enquiries related to organisational aspects of the workshop, such as venue, accommodation or reimbursement of attendance costs, please contact Hilary Salter [h.salter@psi.org.uk](mailto:h.salter@psi.org.uk), 020 7911 7543.