

## Introduction

This briefing summarises the key messages from *Environment and Social Justice*, the second in an ongoing series of rapid research and evidence reviews undertaken by the Sustainable Development Research Network (SDRN) in order to improve the use of research and evidence in policymaking.

The review was commissioned by Defra to support the development of the evidence base for *Securing the Future*, the new UK Sustainable Development Strategy (HM Government, 2005). Addressing environmental inequalities forms an important crosscutting theme within that strategy.

The SDRN review was undertaken by a multi-disciplinary team of researchers over the summer of 2004 led by Dr Karen Lucas, University of Westminster, Professor Gordon Walker, Lancaster University and Dr Malcolm Eames of the Policy Studies Institute. It draws together the emerging evidence of environmental inequalities and injustice in the UK and their causes, costs and impacts.

The review examined the research evidence in relation to twenty one diverse topic areas, ranging from the geographical and social distribution of poor air quality and potentially polluting activities such as large industrial and waste sites: to access to transport, fresh healthy food and environmental information and legal services; and to a range of 'front door' local environmental issues such as litter, graffiti, fly-tipping and the quality of urban green space.



It shows how complex and varied patterns of environmental inequality are, and demonstrates that it is a real problem within the UK, affecting many of our most deprived communities and vulnerable groups. As such the review not only highlighted the need for further research, but also more effective policy interventions on the part of government.

## SDRN briefing two

## Environment and Social Justice

## Overview

The relationship between the environment and social justice is a relatively new and poorly explored area of research in the UK. However, there is a growing body of both quantitative and qualitative studies addressing issues of environmental inequality and injustice, which taken together make it possible to draw some important inferences and overarching conclusions. It is clear that **patterns of environmental injustice are varied and complex**. There is, therefore, a need to be wary of over-generalisation and for some caution in making claims of inequality. That said, there is mounting evidence that:

- Environmental injustice is a real and substantive problem within the UK
- Problems of environmental injustice afflict many of our most deprived communities and socially excluded groups
- Both poor local environmental quality and differential access to environmental goods and services have a detrimental effect on the quality of life experienced by members of those communities and groups
- In some cases, not only are deprived and excluded communities disproportionately exposed to environmental risk, they are also disproportionately vulnerable to its effects
- Whilst more needs to be known about both the causes and impacts of environmental injustice, research is also needed to support the development and effective implementation of policy measures to address and ameliorate the impacts of environmental injustice

## What is environmental inequality?

Researchers and policymakers in the UK are increasingly recognising that poor local environmental quality and differential access to environmental goods and services have a detrimental effect on the quality of life experienced by deprived communities, vulnerable individuals (the very young, very old and those experiencing chronic ill health) and socially excluded groups.

Environmental inequality refers to the unequal social distribution of environmental risks and hazards and access to environmental goods and services, and is closely related to the concept of environmental justice.

There is no definitive definition of environmental justice. It means different things to different people. The term originally came to prominence in the USA, where it was used to embrace notions of discrimination, equity, denial of benefits, and adverse effects, initially to people of colour and other minority populations, but more recently to low-income populations.

In the UK context, the Scottish Executive (2004) defines environmental justice along two dimensions:

*"The first is that deprived communities, which may be more vulnerable to the pressures of poor environmental conditions, should not bear a disproportionate burden of negative environmental impacts...The second is that all communities should have access to the information and to the means to participate in decisions which affect the quality of their local environment."*

In her review for the Joseph Rowntree Foundation, Adebowale (2003) takes a broader approach defining environmental justice as:

- A fair share to natural resources
- The right not to suffer disproportionately from environmental policies, regulations or laws.
- The right to environmental information, participation, and decision-making.

The remit for the SDRN *Environment and Social Justice* review was broader still, as it also encompassed issues such as access to local transport services, fresh healthy food and environmentally-sound consumer products, as well as the problems of fuel poverty and vulnerability to flooding.

## The Nature of the Evidence Base

The review examined quantitative and qualitative research drawing upon a range of disciplinary perspectives, including the social, political and environmental sciences, economics, epidemiology, human geography, and transport and land use planning.

The quantitative evidence base largely comprises of studies that have taken existing, spatially disaggregated, environmental data sets (such as those for air quality, flooding, location of industrial and waste sites, etc) and re-analysed them against particular social variables, usually deprivation. Although research examining vulnerability to harm and patterns of use/access of environmental resources (green space, food etc) in particular has tended to be more inclusive, looking not just at correlations with deprivation but also other demographic and social parameters, such as gender, ethnicity, age and disability. There are methodological issues in such studies which limit the strength of conclusions that can be drawn, including questions of spatial scale, data quality and impact assessment, but broad patterns of relationship between environmental and social data have at least been established.

The qualitative evidence base principally comprises case study research with vulnerable groups and communities, some of which has used participatory techniques in order to explore the attitudes and perceptions of 'at risk' communities and the front-line professionals working with them. By their nature, such studies are not intended to be statistically representative, but rather to investigate and give voice to the first hand experiences of particular communities.

## 'Front Door' Issues

*Litter and Cleansing, Fly Tipping, Graffiti and Vandalism, Condition of Parks and Open Spaces, Access to Urban Green Space, Neighbourhood Noise*

All of the topics listed under this heading have been raised as concerns by people living in deprived areas. Most often these are raised together, rather than separately. Generally the evidence base is qualitative and suggests that, overall, poorer urban neighbourhoods are more likely to suffer these environmental problems. Moreover, it is clear from the population make-up of these areas that older people, ethnic minority communities, and lone parent families

and their children are all more likely to suffer from the impacts of these environmental ills. So for example:

- Local authorities with high levels of deprivation have poorer performance standards than average for refuse collection, public parks and street cleaning (Duffy, 2000)
- Households experiencing most dissatisfaction with problems of litter and rubbish are those living in: social housing in London; high rise housing; deprived industrial areas; and, low amenity housing in deprived areas (Burrows and Rhodes, 1998)
- Vandalism is experienced by 30% households in deprived areas, compared to 7% in other districts (Oxford Brookes/DTLR, 2001)

There is relatively little research addressing the causes or costs of these local environmental inequalities. However, relevant factors appear to include: a past failure to understand the importance of these issues to local residents resulting in a lack of measures to address them; reduced spending in deprived neighbourhoods, compared to more affluent areas; and, the concentration of deprivation in urban areas, which structurally links to the urban character of most of these 'front door' issues.

Fly tipping may have particular causative factors associated with the side effects of recent waste management legislation and associated costs. Other suggested contributory causative factors include aspects of social and cultural change (for example, linked to the anti-social behaviour of young people), the poor quality and density of housing in deprived areas (relevant for neighbour noise) and some constraints on the powers available for local authorities to intervene and take action.



Both national and local government has become increasingly aware of the need to address 'front door' environmental concerns. Numerous policies have been put in place in recent years, but most have been developed in a way which addresses each problem reactively on an issue-by-issue basis. They also do not specifically tackle disproportionate impacts on vulnerable groups or see them as the linked outcome of past service delivery failures and under-funding in deprived areas. Some legislative change introducing new broader powers to intervene, such as the 2003 Anti-Social Behaviour Act, is too recent for its impact to be fully evaluated.

## Access to Wider Services

*Access to Environmental Services, Local Transport Services, Access to Fresh Healthy Food, Fuel Poverty, Community Legal Services for Environmental Issues, Local Environmental Information, Access to Environmentally Sound Consumer Products and Options*

The research evidence reviewed under this section is both qualitative and quantitative, with distributional patterns being generally less well researched than quality of life issues. It would appear from an overview of the data that the strength of the evidence of injustice is variable in different parts of the country. Where quantitative analysis has been undertaken this has generally shown that deprived communities are being less well served and have poorer access to environmental goods.

Studies have shown that, for example:

- Less well off households have poorer access to kerbside recycling (Brook Lyndhurst/MORI, 2002)
- Unequal access to transport, and access to many everyday activities, is widely demonstrated for those living on low incomes, older people, young people, women, ethnic minorities, and lone parents (SEU, 2003)
- Food 'deserts' are most experienced by low income groups without access to a car, and the elderly and disabled (Dowler *et al* 1995, 1999, 2001)
- Relying upon the internet to provide environmental information may exclude low income households, 80% of whom lack access and skills

- There is a large body of qualitative and quantitative evidence showing that fuel poverty is concentrated in low-income households. Fuel poverty is recognised as leading to serious health and quality of life impacts

The evidence base is much stronger for some of these topic areas than for others, e.g. transport and fuel poverty. For some topics analysis also shows that sub-categories of people within deprived areas have additional, compounding access constraints. For example, the poor elderly population are identified as having particular problems in respect of fuel poverty, access to fresh and healthy food, local transport and access to urban green space.

Much of the research on the impact of lack of access to goods and services is located in the transport and social exclusion arena. Of particular note, has been the work of the Social Exclusion Unit (SEU). It is now widely accepted across a number of government departments (most notably DfT, ODPM, DH, DfES and DWP) that a lack of access to goods and services reduces people's life chances and helps to reinforce and, in some instances, create social exclusion and reduced quality of life.

Constraints on access to information and legal services may contribute to inequalities in other areas, such as site-based risks including landfill and Integrated Pollution Control (IPC) sites, although the evidence base here is very limited.

Evidence of the externalised cost of poor access to goods and services is largely un-researched in the UK context. However, the health costs associated with poor diets and with fuel poverty have been estimated in terms of costs to the NHS and are substantial. For local transport services there is a wide range of costs involved in intervening to address access issues, depending on the measures adopted.

*"As well as tackling the pressures on the environment today, we need to address the negative effects... as a result of human activities dating as far back as the beginning of the industrial revolution. This inheritance of degraded resources has led to social and economic deprivation, as well as a poorer environment and ill health"*

*- Securing the Future, UK Sustainable Development Strategy (2005: 110)*

There is general consensus across the research literature that unequal access to goods and services is a product of a number of linked and mutually reinforcing phenomena. These have arisen from quite complex interactions over time, between planning policy decisions about the location of key services and activities, the timing and organisation of these services, the personal circumstances of the individuals needing to use them and the long-term effects of a car-dominated transport system.

## Planning and Infrastructural Issues

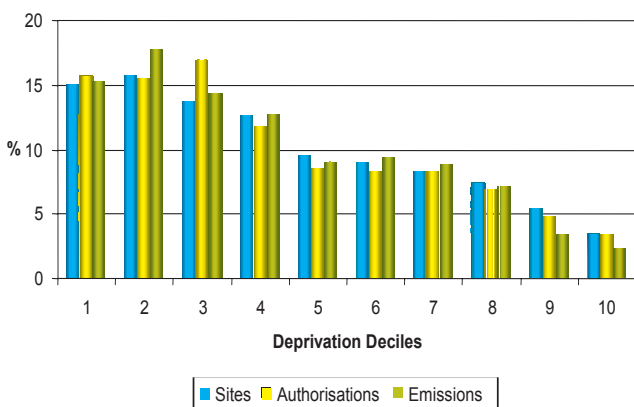
*Air Quality, Environmental Noise, Flooding, Road Traffic Accidents, Integrated Pollution Control sites, Landfill, Water Quality, Access to Countryside and Woodland.*

The research into environmental inequalities with respect to these topics ranges from an almost complete absence in the case of environmental noise; to incomplete or uncertain analyses in the case of flooding or the location of landfill sites; through to air quality where multiple studies at different scales provide an increasingly robust evidence base.

For air quality, the balance of evidence suggests that deprived communities are exposed to an above average burden of poor air quality. For example,

- Across Britain neighbourhoods with younger populations, more deprived populations and those with lower rates of car ownership are exposed to higher levels of local air pollution (e.g. nitrogen dioxide) (Mitchell and Dorling, 2003)

**Fig. 1: Sites, Authorisations and Emissions, England (using 'site in ward' counting method)**



Wards in the most deprived decile provide the location for 5 times as many IPC sites and authorisations, and 7 times as many emission sources, as wards in the least deprived decile (1 = most deprived; 10 = least)

(Walker *et al*, 2003)



- Examining patterns of five pollutants for England, Walker *et al* (2003) found the most deprived wards are those with highest pollutant concentrations. The relationship between poor air quality and deprivation was found to be particularly strong for peak pollutant values, including exceedences of air quality standards

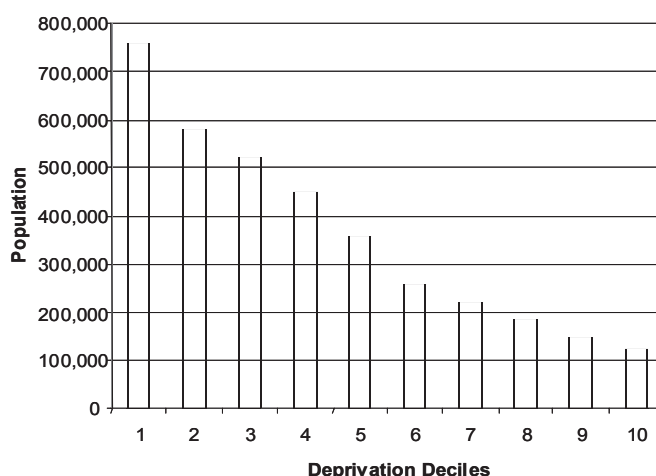
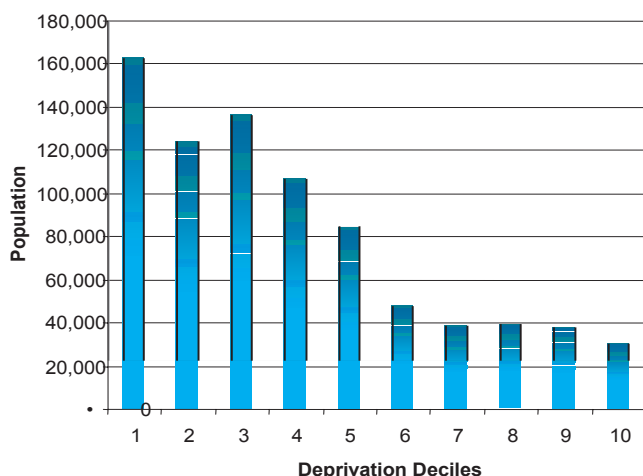
In general where research has addressed the social distribution of impacts from these planning and infrastructural issues, patterns of inequality against deprivation are being found. For example:

- Research for Friends of the Earth found that 662 of the industrial sites regulated under the Integrated Pollution Control (IPC) system in England and Wales were located in areas with household income of less than £15,000/yr. Only 5 were in areas where average household income is above £30,000/yr
- In London over 90% of IPC factories were located in areas with below average household income (FOE, 1999; 2001)

But this is not always the case for all geographical areas or for all topics. For example when Walker *et al* undertook a separate analysis of air pollution in Wales they found both the most and least deprived wards experienced above average pollutant concentrations, with the highest concentrations in the *least* deprived wards.

In some cases, analysis shows that not only are deprived communities disproportionately potentially exposed to an environmental risk, but also they are disproportionately vulnerable to its effects (e.g. flooding and, arguably, air quality).

Fig. 2 and 3: Estimated populations living within 500m, and 1 km of an IPC site



(Walker *et al*, 2003)

Whilst much of the evidence from empirical studies relates to deprivation, for some topics there is a wider evidence base of environmental inequality. In a cross Britain study Mitchell and Dorling (2004) found that levels of exposure to NO<sub>2</sub> vary markedly with age. For countryside recreation, there is strong evidence of under-participation in countryside recreation by young adults, low-income groups, people from minority ethnic and black groups, women, older people and people with disabilities (OPENspace 2003).

In the case of road accidents, disproportionate risks to children have been shown to be particularly significant, e.g.:

- Children in the lowest socio-economic group are five times more likely to die in a road accident than those from higher socio-economic groups.
- There is a disproportionately high rate of pedestrian accidents amongst minority ethnic children, over and above the effect of social class.
- Of the 25 local highway authorities with the worst child pedestrian casualty rates, 23 are in the Neighbourhood Renewal Unit's list of the 88 most deprived authorities.
- More than 25 per cent of child pedestrian injuries happen in the most deprived 10 per cent of wards (Christie, 1995; White *et al*, 2000).

Neighbourhood Renewal Fund Areas

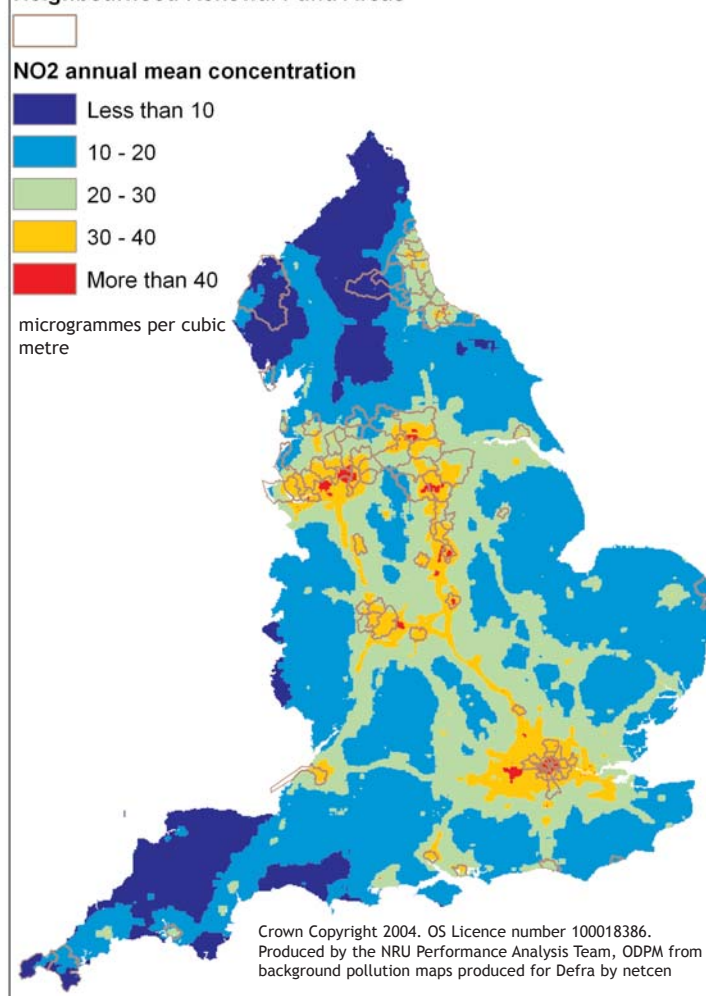


Fig. 4: NO<sub>2</sub> concentration and Neighbourhood Renewal Fund Areas

For some topics the relationships with people's wellbeing can be complex, multifaceted and often poorly understood. Negative impacts tend to focus predominantly on health concerns, although other forms of impact such as aesthetics, quality of life, sense of place and economic impacts on housing markets can also be important. Whilst for some environmental features there may also be positive impacts (e.g. employment at IPC sites), these may not be locally focused to the same degree.

The evidence base is weakest on causation. In most cases the processes that have been suggested are only hypothesised or indirectly related to other surrogate evidence. Common suggested causative factors include the operation of the housing market, the norms of land-use planning, NIMBY protests by middle-class articulate and politically-connected communities, lack of distributional concerns in policy/plan appraisal and the urban concentration of environmental problems and deprived areas.

## Multiple Environmental Deprivation

### *Cumulative Impacts*

The review found that there was relatively little research specifically addressing multiple and cumulative environmental impacts. However, it did identify a number of:

- Unrelated quantitative research projects which have focused on different aspects of the environment but the same geographical area(s) or using the same spatial index (e.g. the IMD); or
- Qualitative studies which have asked the same general questions about 'problems with your local environment' and have, thus, identified multiple environmental problems in the same neighbourhood or area.

These suggest environmental problems may accumulate in four ways, namely through: i) spatial concentrations (over time) at particular geographical scales and localities; ii) multiple health impacts; iii) the impact on particularly vulnerable groups (e.g. the very poor, the very young and very old); and, iv) as a result of 'knock-on' effects.

Taken together, these studies suggest that:

- Where a neighbourhood or area experiences one environmental problem, this is rarely in isolation

- Ill health and reduced quality of life is usually the result of an accumulation of these problems over an individual's lifetime or even over a number of generations
- Some sectors of the population are consistently more adversely affected than others and these are almost always those that are already recognised as the most vulnerable
- Environmental ills may not only self-perpetuate, but also lead to other environmental, economic and social problems if left unaddressed

## Addressing Environmental Inequalities

Building on the evidence base identified by this review, *Securing the Future*, the UK Sustainable Development Strategy recognised that:

*"Poor local environmental quality and differing ease of access to environmental goods and services have a detrimental effect on the quality of life experienced by deprived communities and socially excluded groups and can reinforce deprivation if not tackled alongside access to employment, health and tackling crime."*  
(2005: 133)

Moreover, as the Strategy also recognises, if ongoing policy initiatives are to more effectively address environmental inequality, then more needs to be known not just about the patterns of distribution and impacts of environmental inequalities, but also the causes and the effectiveness of measures to address these issues in communities.

The SDRN is working with the Environment Agency, Defra and a range of other government departments and funding bodies, to develop a detailed agenda and priorities for future UK research addressing environmental inequalities.

Copies of the full review:

Lucas, K. Walker, G. Eames, M. Fay, H. and Poustie, M. (2004) *Environment and Social Justice: Rapid Research and Evidence Review*  
Policy Studies Institute.

are available online at  
[http://www.sd-research.org.uk/researchreviews/documents/ESJ\\_final\\_report.pdf](http://www.sd-research.org.uk/researchreviews/documents/ESJ_final_report.pdf)

## Notes

Adebowale, M. (2003) Environmental Justice Review working paper (unpublished)

Burrows, R. and Rhodes, D. (1998) *Unpopular places: area disadvantage and the geography of misery in England* Joseph Rowntree Foundation/York Publishing Ltd.

Brook Lyndhurst & MORI for the Resource Recovery Forum (2002) *Household Waste Behaviour in London*, Resource Recovery Forum, Skipton

Christie, N. (1995) *Social, economic and environmental factors in child pedestrian accidents: a research review*, Project report 116, Transport Research Laboratory

Dowler, E. and Calvert, C. (1995) *Nutrition and Diet in Lone-Parent Families in London*, Family Policy Studies Centre.

Donkin, A., Dowler, E., Stevenson, S. and Turner, S. (1999) Mapping access to food at a local level. *British Food Journal*, Vol.101, No.7, pp.554-564.

Dowler, E., Turner, S. and Dobson, B. (2001) *Poverty bites: food, health and poor families*. London: Child Poverty Action Group.

Duffy, B. (2000) *Satisfaction and Expectations: Attitudes to public services in deprived areas*, CASE Paper 45, London: Centre for Analysis of Social Exclusion

FoE (2000) *Pollution Injustice*. [www.foe.co.uk/pollution-injustice/](http://www.foe.co.uk/pollution-injustice/) (Friends of the Earth). FoE (2001)

HM Government (2005) *Securing the Future*, Defra: [http://www.sustainable-development.gov.uk/documents/publications/strategy/SecFut\\_complete.pdf](http://www.sustainable-development.gov.uk/documents/publications/strategy/SecFut_complete.pdf)

Mitchell, G. and Dorling, D. (2003) An Environmental Justice Analysis of British Air Quality, *Environment and Planning A*, 35, 909-929

OPENSspace (2003) *Diversity Review: Options for implementation*. Final report. The Countryside Agency

*Literature Review of Public Space and Local Environments*, Oxford Brookes University/DTLR 2001 cited in Brook Lyndhurst (2004) Environmental Exclusion Review for the Neighbourhood Renewal Unit

Scottish Executive (2004) <http://www.scotland.gov.uk/about/ERADEN/SCU/00017108/environtjust.aspx>, 24 July 2004

Social Exclusion Unit (2003) *Making the Connections: final report on transport and social exclusion* [www.socialexclusionunit.gov.uk](http://www.socialexclusionunit.gov.uk)

Walker, G.P., Mitchell, G., Fairburn, J. and Smith, G. (2003) *Environmental Quality and Social Deprivation. Phase II: National Analysis of Flood Hazard, IPC Industries and Air Quality* R & D Project Record E2-067/1/PR1, The Environment Agency, Bristol.

White, D., Raeside, R. and Barker, D. (2000) *Road accidents and children living in disadvantaged areas: a literature review*. Scottish Executive

**Special thanks to Encams and the Recycle Now campaign for permission to reproduce the pictures in this briefing**

## Sustainable Development Research Network

**...contributing to sustainable development in the United Kingdom by facilitating the better use of evidence and research in policymaking.**

The SDRN is a Defra funded initiative, coordinated by the Policy Studies Institute (PSI) in London. Membership of the SDRN is free, and open to all those with a professional interest in sustainable development research and policy issues. To find out more about the SDRN or to join the Network, visit:

<http://www.sd-research.org.uk/>