Acting for Sustainability and Health

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The Sustainability and Health Project aims to improve the understanding of what ‘sustainability of the environment’ and the ‘health of the community’ means for public health practitioners who want to be active participants in working towards a sustainable society. We explore the changing role of environmental health practitioners in this context. To be active participants we need to understand the principles of sustainability and the processes and protocols to design for sustainability and health. To design for sustainability and health, first, we need an understanding of the complexity of and interrelationship between, environmental and social systems. Second, we need to acknowledge and respect the diversity of viewpoints and differing interpretations of these systems. Third, we need to understand the principles of the change process and develop our skills as change agents in order to build community capacity in working towards sustainability and health. This paper provides a succinct overview of a number of key principles of change, of change action, and issues in working with the community as innovators and change agents.

Key words: Environmental Health Practitioners; Structural Change; Systems Thinking

There is increasing evidence linking local and global ecological integrity to health. Global ecological integrity is now identified as a paramount determinant of health. The World Health Organization estimates that poor environmental quality contributes to 25% of all preventable diseases in the world today (Towards Earth Summit 2002). There is an urgent need for us all to respond to huge global transformations created by human activity. Some of this activity is posing risks to the health of humans now, and even greater risks are predicted for the future if we do not heed the principles of sustainable development. In Grootjans et al. (2002), the authors reported on the Sustainability and Health project. We will not repeat here either the rationale for, or the processes of, the project. Rather, we will focus on key themes in two of the chapters (Verrinder, Nicholson & Pickett in press) of the resource book Sustainability and Health: Working Towards Global Integrity (Brown et al. in press) that has been developed as part of that project.

Sustainability is described in the resource book as a form of “short-hand for the long-term changes required to re-establish global environmental integrity ... and so also the health of the human population” (Brown et al. in press, p. 15). The public health practice advocated by the authors of the book is broad and collaborative in nature. Practitioners at all levels from the local to the global are urged to listen to multiple perspectives, acknowledge multiple forms of evidence and adopt innovative action to manage the sustainability of the environment for human health. In this article we argue the need for action in defining a parallel path to be incorporated within the future development of environmental health practice.

Globally, there has, over recent years, been a call for change in the way we think about the health of the environment and of human health (AtKisson 1999; Brown 2002;
McMichael 2001; Suzuki 2002; Wilson 2002). In keeping with this groundswell of opinion, Australia’s National Environmental Health Strategy calls for a new, much broader, cooperative and collaborative approach to environmental health practice (enHealth Council 1999).

The question of the century is: “How best can we shift into a culture of permanence, both for ourselves and for the biosphere that sustains us?” (Wilson 2002). It is not surprising though that many of us feel overwhelmed by the fact that despite the knowledge we have about the importance of our relationship with the world around us, we continue to hurtle headlong towards the destruction of civilisation as we know it. We know that what we are doing is not sustainable but feel powerless to do anything about it.

How do we need to think, what do we need to know and what skills do we need in order to act individually and collectively, locally and globally, now and for the future, to achieve an environmentally sustainable, socially equitable, spiritually rich world? First, we need to understand the complexity of the environmental systems and the social systems and the interdependence between them. Therefore, systems thinking is required. Second, there are multiple perspectives on what these systems and their connections look like, why they exist and how they are experienced (Wheeler & Perraca Bijur 2000). These perspectives include the different ways in which individuals construct their knowledge.

The five sectors whose collaboration is routinely listed as essential to sustainability decision making are individuals, community, specialists, organisational strategists, and holistic thinkers (Brown et al. in press). Since these sectors together make up the sustainability decision making system, it is essential that each perspective is taken into account in planning for any one issue. It is important when viewed from the perspective of engaging with community stakeholders that we understand how different people from different cultures see sustainability at different times and in different places. Each will have different opinions about the problems, the causes and the solutions. We need to recognise and respect these multiple perspectives. Only then will we begin to identify the opportunities to optimise the health status of members of the global community and the more localised communities within which we live. Third, we need to understand the dynamics of change. We need to understand how environmental health practitioners might create and embrace innovation, become change facilitators and work with individuals, groups, organisations and communities to build community capacity to work towards ecological sustainability and health.

The Precautionary Principle
The precautionary principle is one of the key principles of planning for sustainability and health. The principle holds that once there is reasonable evidence that a practice might be harmful, then preventive or ameliorative action should be taken. There is no need to wait for absolute proof (Australian Local Government Association [ALGA] 1992). There is ample evidence that environmental pollution and the unsustainable use of natural resources for example, are threatening the integrity of the natural systems. The World Health Organization (WHO 1997, p. 4) cautioned that “if this continues unabated the trend will lead to major impacts on health in developed and developing countries alike”. On global warming for example, McMichael et al. (1996) predicted the exacerbation of existing problems with population displacement and impoverishment if the current trends with the enhanced greenhouse effect were to continue. Precaution is a principle of justice. It arises from values that support the notion that we should not have to live with the fear of harm to our health or environment. Further, as practitioners working for sustainability, we
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have a responsibility to introduce the concept of precaution to other citizens and to develop techniques for its inclusion in research and practice. This inclusion promotes change and supports other principles of sustainability and health. The precautionary principle can inform every strategy launched by public or environmental health practitioners. It sits well with the familiar strategies of environmental management and health promotion - acting before the damage is done.

Systems thinking

Implementing the precautionary principle often means tackling problems one at a time, but addressing problems in isolation or on a situation - response basis has its limitations. For example, potential hazards such as those associated with the handling and application of pesticides in agriculture are frequently addressed individually by separate government agencies. There is a strong argument for a broader approach. Intersectoral collaboration that includes the environment, agricultural and health sectors for example, would work together to promote ecological integrity, sustainable agriculture and health. Implementing the precautionary principle in this context may mean thinking outside the traditional square.

The world is a complex system, which contains complex subsystems. Change in one system will affect changes in another. Decisions made in one will affect decisions in another. “General systems theory provides a unifying framework where explanatory and analytical tools will help toward good decisions” (Wheeler & Perraca Bijur 2000, p. 114). Incorporating the principles of systems thinking into the decision making practice for sustainability involves elements of acquired knowledge, action and experience, and review and reflection as a pathway towards learning and managing the complexities of the system as a whole. In short, a system is much more than the sum of its parts. This notion is fundamental to our recognising that every system is characterised by the intimate connections between these different parts, their interactions with one another and the interactions between the system as a whole and its surrounding physical, social and economic environments. As systemic thinkers we therefore have little interest in “snapshots” of each component part. We seek instead further to develop our understanding of the interrelatedness of the world in which we live in order to enable us to solve complex problems.

In order to counter our human potential to destroy civilisation and wreak havoc on our less powerful partners on the planet, we need to broaden our perspective and carefully consider the human-planetary system and the inter-relationship between the subsystems. Linking systems thinking to decision making means to link knowledge and action in a learning cycle that takes account of dynamic change and which builds on its own learning.

Linking the Precautionary Principle and Systems Thinking

The ecological, or new public health view of health as “the pattern that connects” (Kickbusch 1989), is a current example of systems thinking, and one that is core to acting on the precautionary principle. Kickbusch (1989, p. 50) described the systemic nature of contemporary public health in terms of:

• disease patterns that are linked to social inequities and ways of life in industrialised societies;

• health problems that are social and environmental rather than medical in nature; and

• health problems and environmental disruptions that tend to be cumulative, long term, chronic and not amenable to curative and treatment measures.
The National Public Health Partnership’s Planning Framework for Public Health Partnership (NPHP 2000) is based on just such an approach. The framework is designed to ensure the continued effectiveness of public health practice, in the context of complexity and change, through a process of ongoing review and redefinition. The framework is modelled on a combination of systems thinking, integrated action and the development of a common intersectoral and trans-disciplinary language.

Multiple perspectives
The importance of social justice in promoting health is well established. The importance of social justice in planning for ecologically sustainable environments is still emerging. There are a number of value positions arising from the relationship between the ecological and the social justice perspectives. As professionals working for sustainability and health we need to be aware of these value positions in that they will influence action. Ife (2002) provides a succinct discussion on perspectives of ecological and social justice and the relationship between the two. Ife advocates an integration of these two principles in order to bring about a sustainable society. He stresses that the ecological perspective does not, of itself, imply social justice principles. A major focus for environmental health practitioners working for social justice is to challenge structural disadvantage. Without social justice principles an ecological perspective may reinforce structural disadvantage. On the other hand, Ife argues that, because of the conventional economic prescription for many social problems brought about through economic growth, a social justice perspective is inadequate without an accompanying ecological perspective. Environmental health practitioners working for sustainability may need to challenge both the feasibility and desirability of continued growth. The more contemporary approach to current principles of governance for sustainability and health recognises that better health is not an automatic outcome of economic growth (WHO 1997) and that there is a need to apply equal and simultaneous attention to improvement across all environmental, social and economic sectors. The United Nations Development Programme (UNDP 1996) reported that although many countries in the developing world were experiencing economic growth, for many of these countries the inequity in the distribution of the wealth has resulted in little impact on poverty alleviation. This example highlights the importance of the principle of equitable distribution in planning and governance for sustainability and health. Growth is seen as contributing to the current ecological crisis. Population growth and economic growth that does not account for natural resources and the carrying capacity of the natural systems are fundamentally antithetical to the sustainability and health principles.

Cleveland et al. (2001) contrast the “mechanistic individualism” of conventional, or “neoclassical” western-style economics with a more enlightened “ecological” economics, an approach that embraces the interdependence of materials, energy and living organisms. Whereas conventional environmental and resource economics are predicated on sustained economic growth based on the principles of compensation and substitution, the ecological paradigm emphasises the inherent difficulties of substituting for loss of, for example, biodiversity, or of compensating future generations for today’s causes of environmental degradation. Environmental economists actively challenge the underlying cause of our current environmental and social problems, the dominant economic belief in the virtues of material progress and society’s corresponding failure to acknowledge the finite limits of our natural resources. Unlike the neoclassical variety, environmental economics values equity over efficiency and,
as such, focuses on biophysical measures of human use of natural resources. Further, it recognises explicitly the inherent value of traditional, indigenous and local knowledge.

### Professional praxis

All professionals come with a set of personal values which influences how they work. In order to incorporate the principles of ecological sustainability and health into our practice, we must first examine our own value positions arising from these perspectives. For practitioners, examining our values comes through the process of critical reflection. The Marxist tradition uses the word “praxis” as a way of describing a cycle of doing, learning and critically reflecting. Through this process we achieve a deeper understanding from which we can inform practice and build theory. This in turn creates further understanding of practice, society, and social change, and of our own personal values. Ife (2002, p. 229) refers to Marx to show how: “it is through trying to change society that we come to understand it”.

To gain further insight into the multiple perspectives influencing action towards sustainability and health, environmental health practitioners need to consider:

- the relationship between personal, community, and global visions for a sustainable future;
- the co-operative international, national and local efforts being made to solve global issues, and examples of successful strategies for achieving a more sustainable future;
- the implications of the political, economic, and socio-cultural changes that are needed to assure a more sustainable future;
- the impacts of current government policies on environmental health issues;
- the processes of planning, policy-making and action for sustainability by governments, businesses, non-governments organisations, and the public, as reflected in an integrated decision making framework, such as the D4P4 protocol presented by Grootjans et al. (2002).

### Agents for Change

Despite numerous attempts to reshape action for sustainability, evidence of action to halt human-induced environmental harm and so human health, is relatively scarce. Environmental health practitioners need to work with communities (however defined) to build capacity to optimise the health of that community. Challenging the norms when needed, embracing innovation and becoming change facilitators form part of that role (Brown et al. 2001; enHealth Council 1999; Nicholson 2001). In the words of AtKisson (1999, p. 182): “Change agents are people who actively and effectively promote new ideas”. In working towards ecological sustainability and health we need to increase our collective capacity to bring about structural change and to overcome societal and institutional barriers to change.

### Structural change

Progress towards acting for sustainability has been slow. This has been attributed to fundamental flaws in human nature: selfishness, greed, intolerance, complacency and ignorance (Burrows, Mayne & Newbury 1991). There may be structural causes such as the dominance of the global economy by high-income countries and ineffective or inadequate governance and governing systems (Rapport 2001). Other causes include: sustenance needs, little connection to the land, ignorance, resistance to change and low critical mass (Costanza & Jorgensen 2002, p. 207). Traditional education styles tend to reinforce the current inequitable and unsustainable worldview. Our education system serves to emphasise the separation of humans from nature through
compartmentalised learning and individual specialisation.

Structural change requires that we act both individually and collectively. We know that the concept of empowerment is particularly important in order for individuals to act positively for their health. To feel empowered is to feel in control of one’s life and participating in decision making about the things that affect us is critical to this state. To act collectively, there must be “networks between people that lead to cooperation and beneficial outcomes”. Trust is therefore seen as central (Baum 2002, p. 343), and “social capital” is a prerequisite that facilitates change within the community. Barriers at the community level can be assessed with these prerequisites in mind.

In order to identify where problems are occurring, who is affected, and what factors are contributing to them we can use models such as PRECEDE (Predisposing, Reinforcing, Enabling Causes in Educational Diagnosis and Evaluation) from the field of health promotion for a situation analysis before we act. This provides us with a causal pathway of factors that contribute to a particular problem. Understanding this helps us to plan for and to take action in a comprehensive, systemic way. There are three levels in the causal pathway: risk markers, risk factors and contributing factors. The contributing factors can be divided into predisposing, enabling and reinforcing factors (Green & Kreuter 1999).

If, for example, our problem is that the total burden of humans and their activities is overpowering the earth and its life-supporting capacity, risk markers signal where the problem is occurring and to whom, or to what environmental system. The risk markers identify the existence and at times quantify the extent of the risk but do not necessarily contribute to it. Risk factors account for why and how the problem is occurring. So, a risk factor prevailing within a commercial, community or governance sector might be that we are too anthropocentric to adopt an ecocentric, or environmental perspective. For example, acknowledging the impact of land salinisation that is now a major environmental and social problem for Australia. The third category is the contributing risk factors. These are the things that contribute to our blinkered anthropocentrism. Predisposing factors can include such things as our lack of knowledge about the extent of salinisation in Australia and the impact that this is having on local communities or a belief that an easy solution can be developed by humans before it is too late. Enabling factors might be that we lack the resources locally to address the problem of salinisation. The re-enforcement might be the dominance of economic rationalism and our social admiration for conspicuous consumption, and therefore we maximise available land for agriculture in order to turn more profits regardless of the salinisation risk.

The key message throughout this paper is that environmental health practitioners need, first and foremost, to be innovators and change agents. We need to develop our understanding both of how change occurs and of the nature of resistance to change. The diffusion of innovation theory provides us with an analytical tool for diagnosing a population with whom we may be working. It enables practitioners to ensure that planned activities are well informed by the ways in which new ideas are taken up (or not), that is, how change takes place in a community. Diffusion is defined as “the process by which an innovation is communicated through certain channels over time among members of a social system”. A new innovation is defined as “an idea, practice or object perceived as new by an individual” (Rogers 1995, pp. 10-11). Diffusion of innovation occurs within a population group initially as clarity to a few, followed by a gradual uptake by the remainder of the group. Five general factors that influence the speed and success with
which new ideas are taken up have been identified. The factors are the characteristics of the adopters, the rate of adoption, the nature of the social system, the characteristics of the innovation and the characteristics of the change agents (Rogers 1995). Alan AtKisson has used the theory extensively and devotes a chapter to it in Believing Cassandra: A n Optimists Look at a Pessimists World (1999). There are nine classifications of adopters, namely: Innovators, Change Agents, Transformers, Mainstreamers, Laggards, Reactionaries, Curmudgeons, Iconoclasts and Spiritual Recluses (AtKisson 1999). The innovators are the progenitor of new ideas. They may be considered “fringe” or eccentric or unpredictable by the rest of the community and so may not be trusted. The change agents are the “ideas brokers” for the innovator. The transformers or early adopters in the mainstream are open to new ideas and want to promote change. The mainstreamers can be persuaded that the innovation is a good idea and will change when they see the majority changing. The unwilling laggards, who constitute about the same number as the mainstreamers, are the sceptics who need to be convinced of the benefits before they adopt the change. The reactionaries have a vested interest in keeping things as they are. The iconoclasts highlight problems but do not generate ideas, and are often the silent partners of the innovator. The spiritual recluses might proffer the philosophical underpinning and influence the atmosphere for change. The curmudgeons, however, see change efforts as useless. AtKisson (1999) suggests that we each play all of those roles in different contexts.

In theory, the success or otherwise of innovation depends on how it is seen by the various groups, or stakeholders, within the affected population, on whether the innovation is seen as compatible with the established culture, for example, or the perceived relative advantage of the innovation to them. The simplicity and flexibility of a particular innovation together with its reversibility and the perceived risk of the adoption will impact on the extent to which it is taken up by the community. Finally, the observability of the results will influence whether or not others take up the change (Rogers 1995). These are some of the essential issues we need to consider in working with communities as agents for change. The important thing for the environmental health practitioner is to develop a clear understanding of community and what is likely to influence its response before planning for action and also while the action is underway.

Practitioner roles in change

In “walking the talk” there are a number of roles that practitioners, whether employed at the international, national, state or local level, might take on in working towards change for sustainability and health. The role of practitioners who work within ecological and social justice perspectives will be necessarily broad. It might include everything from decision making, planning and the use of appropriate technologies to consciousness raising, social animation, imagining, networking, learning, advocating, teaching and researching. Practitioners might need to develop new skills in areas such as communication, negotiation and conflict management.

Ife (2002, pp. 226-8) provides a critique of the “cookbook approach” to working in communities. We commend this critique to environmental health practitioners working in any setting. The cookbook approach suggests the process of working in a community is well ordered and linear. The reality, as is well known to all environmental health practitioners who have ever worked at the community level, is very different. To some extent each approach needs to be different. The culture, resource availability, and the reason for the community’s very existence need to be considered. Communities change over time. No two communities are the same, no two
settings are the same, and of course no two practitioners are the same. We all bring to our work our own accumulated lived and professional experiences and our own personal values and worldviews. At the same time we have to learn to work within the context of the values and worldviews of others, and to respect and draw on their knowledge and experience in order to strengthen our collaborative action towards ecological sustainability for health.

Conclusion

The practitioners of environmental health are recognised by enHealth (1999) as representing a multidisciplinary group of professionals. The individual environmental health practitioner or professional groups within environmental health practice cannot afford to work in isolation from other professions, from the different government agencies, or indeed from the communities whose health and wellbeing is at stake. In working towards sustainability we must work collaboratively with other stakeholders. This means opening up channels of communication. It means breaking down traditional professional and cultural barriers to communication and collaboration. But most important it means respecting and valuing the different knowledge constructs that together provide a holistic and systemic view of an increasingly complex array of new and emerging 21st century issues of public health and ecological sustainability. The task is also to increase awareness that the total burden of humans and their activities is overpowering the earth and its life-supporting capacity and thus has an immediate and long-term impact on the health of humans.

Globally we have some major tasks ahead of us if we are to control population size, develop a new economic paradigm, reduce consumption, lessen the economic gap between rich and poor, develop sustainable agricultural practices, control pollution, apply new technology for renewable energy resources and conserve natural resources. We cannot hope to achieve any of these goals without changing the way we currently live, and practice our professions.

This leaves every environmental health practitioner in the role of change agent, wherever and in whatever role they may be working. The strategies presented here are but a few of those available once that role is adopted. Change needs to occur at every level from the international to the local. The Australian Charter of Environmental Health Rights and Responsibilities calls upon all of us to contribute to that change as representatives of government, business and industry or as community members. The National Environmental Health Strategy emphasises the need to develop a new environmental health practice based on the principles of the new public health and ecological sustainability (enHealth Council 1999). We may feel overpowered by the enormity of the problems that face us. We may feel there is little we can do, but as environmental health practitioners we have a responsibility to develop a key role in influencing change. As Paul Kelly (1992) reminds us, “from little things big things grow” (Kelly & Carmody 1992).

Acknowledgments

Thanks to Dr Adrian Verrinder and Professor Valerie Brown for their helpful comments. Sustainability and Health Project: Advancing the Adoption of the Principles of Sustainable Development into Public Health Teaching and Research Programs is a PHERP Innovations Project. The Project Management Team members are Emeritus Professor Valerie A. Brown, University of Western Sydney and Australian National University; Dr John Grootjans, Griffith University; Associate Professor Jan Ritchie, University of New South Wales; Dr Mardie Townsend, Deakin University and Ms Glenda Verrinder, La Trobe University, Bendigo.
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NATIONAL STANDARD FOR SEAFOOD SAFETY TAKES SHAPE

New food safety regulations being developed for the seafood industry by Food Standards Australia New Zealand will help to maintain Australia’s reputation as a producer of high-quality, safe seafood.

Food-borne illnesses are generally on the rise around the world. The revised seafood safety laws, designed to address critical points in the production and processing of the food, will provide consumers with added measures of safety against these illnesses.

FSANZ’s General Manager Food Safety, Greg Roche, said a new national seafood standard would draw on the best of existing State by State approaches and industry initiatives aimed at producing national uniformity for the sector.

“We are working with the seafood industry and the jurisdictions to design regulations which will achieve our safety goals while not imposing an undue compliance burden on the industry” Mr Roche said.

“The new seafood standard will be based on international risk management principles which will enable Australia to provide levels of seafood safety equal to the best in the world.”

“The standard will be mandatory in all states and territories and will apply to the harvesting, processing, handling and storage of seafood, including aquaculture production. It will also apply to imported seafood.”

Mr Roche said FSANZ had established a Standards Development Committee to assist it in its work, with representatives from consumer groups, peak seafood industry associations and from Commonwealth and state agencies that have an interest in the new regulations.

He believed that the involvement of industry and the jurisdictions in the planning stages of the seafood standard would result in a smooth transition to the new standard, which is likely to pass into law in mid-2004 and become effective a year later.

“The next milestone in the process will be the release of a Draft Assessment in December, including a draft standard, and a second opportunity for interested parties to comment on the proposed regulations.” Mr Roche said.

“The new national seafood standard will be an important step in enhancing Australia’s growing reputation as a source of seafood that is safe and healthy.”

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