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This paper examines sustainability from an ERM context. It identifies and discusses the relationship between current ERM concepts and principles and society's requirements regarding sustainability and the sustainable development of our society as a whole. The paper examines some examples of current ERM practices that relate to sustainability and also identifies some areas of weakness that can be enhanced to ensure that our ERM programs are sustainable and within our future communities' capacities. Identifying and examining the place of ERM within sustainable development will ensure that our society will continue to be protected from the effects of emergencies and disasters and that our ERM practices will continue to develop into the 21st Century.

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# Sustainability: The Emergency Risk Management Context

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## SUMMARY

What is sustainability and what is the link between sustainability and emergency risk management (ERM)? Answering these questions and discussing the issues that arise will provide emergency risk managers with a better understanding of the relationship between current emergency risk management concepts, principles and practices, sustainability and future requirements that will enhance sustainability in an ERM context.

This paper examines sustainability from an ERM context. It identifies and discusses the relationship between current ERM concepts and principles and society's requirements regarding sustainability and the sustainable development of our society as a whole. The paper examines some examples of current ERM practices that relate to sustainability and also identifies some areas of weakness that can be enhanced to ensure that our ERM programs are sustainable and within our future communities' capacities. Identifying and examining the place of ERM within sustainable development will ensure that our society will continue to be protected from the effects of emergencies and disasters and that our ERM practices will continue to develop into the 21<sup>st</sup> Century.

## WHAT IS SUSTAINABILITY?

In 1987, the World Commission on Environment and Development (WECD) defined sustainable development as "development which meets the needs of the present without compromising the ability of future generations to meet their own needs." (WECD 1987 cited in Harris et al (1)). Elliott (2) provides a number of definitions and interpretations of sustainable development, including the WECD one quoted above and also an interpretation by Barbier, (1987 as cited in Elliott, (2)): "It is indistinguishable from the total development of society." I personally like this interpretation as it is short, sharp to the point and encompasses all those things that we should be doing, ie. improving, growing, modernizing and evolving whilst maintaining and improving our ability to exist. All these things to me embody development and point to a positive outcome rather than a negative one.

In 1992 the United Nations Conference on Environment and Development (UNCED) was held in Rio de Janeiro. At the time it was the largest conference of its type and the main aim was "*to identify principles of action towards 'sustainable development' in the future.*" (Elliott, (2)). In the early 1990s, sustainable development was a concept that was being driven in the main by environmental organisations. However, the late 1990s saw an expansion of the concepts of sustainability and sustainable development to involve a diverse range of organisations and contexts outside the original environmental scope. These have included ecological, economic and industrial contexts. In line with this expansion, over the past 5 years there has also been an increasing link between sustainability and emergency/ disaster risk management.

## WHAT IS EMERGENCY RISK MANAGEMENT?

Up until the mid to late 1990s, we referred to the "range of measures to manage risks to the community and environment" as Emergency/ Disaster Management (EMA, (3)). In the past five years however, this term has been slowly replaced by the concept of Emergency Risk Management (ERM). EMA (4) defines Emergency Risk Management as "a systematic

process that produces a range of measures which contribute to the well-being of communities and the environment".

Following on from the development of the Australian/ New Zealand Standard on Risk Management in 1995 and its further review in 1999 (Standards Australia, (5)), ERM has emerged, resulting from the combination of traditional emergency management concepts and principles with those of the risk management framework. The resultant ERM framework essentially enables communities to identify, analyse, evaluate and treat the risks that they face. Linked to this risk management approach has been the increased focus on community participation in the ERM process and the expansion of the previous response focussed emergency management approach to include enhanced preventative, mitigatory and recovery oriented strategies, the comprehensive approach.

## **WHAT IS THE LINK BETWEEN ERM AND SUSTAINABILITY?**

Since the UNCED in 1992, there have been numerous instances both here in Australia and internationally of serious environmental disturbances that have impacted upon communities resulting in major emergency/ disaster events. The forest fires that occurred in Indonesia during 1997 are a good example of this type of event. The fires not only caused widespread destruction of forests but also produced widespread air pollution that had serious health related impact on numerous communities in the Asian region. Another example is the drought that occurred here in Australia during 2002 - 2003. The drought affected a number of States and Territories, with over 90% of New South Wales seriously affected, requiring massive National and State Government and community aid packages.

Following the 1992 UNCED, Australia implemented a number of initiatives that reflected the increase in public interest towards environmental protection and sustainable development. These included the creation of the National Heritage Trust and the establishment of the National Strategy for Ecologically Sustainable Development (NSES). Since 1992 the main focus of Australian action in the area of sustainability has been in the area of ecological and environmental sustainability (Papadakis, (6)).

There is however a link between these ecologically sustainable development activities and ERM. In recent years, issues related to climate change, population growth, agriculture and the structure of our "resource-based" economy have grown in importance. For example, it has been estimated that Australia's population will experience a high rate of growth (29.6%) between 1990 and 2020. This figure is huge compared to the estimated growth within the European Union for the same period (1.9%) (Papadakis, (6)). It therefore becomes very important for any government agency or instrumentality (including ERM agencies) that have interdependencies with our communities and society in general, to ensure that their ongoing strategies take into consideration these issues.

Lafferty and Meadowcroft (7) have suggested that sustainable development could be related to a wide variety of governmental activities at national, regional and local levels. Although the focus in the past has been on environmental type aspects of sustainability, the consequences of interaction between our communities, our environment and our resource based economies should highlight the need for ERM practitioners to ensure that ERM practices, strategies and activities are sustainable within the communities they serve.

Britton (8), when examining new emergency management practices for the new millenium, discusses a range of strategies and activities that communities can implement and undertake with the goal of creating a sustainable and resilient community. These include strategies to protect the environment and economic growth. He also identifies that a sustainable approach in the context of emergency management "should ensure that decisions about economic and social development do not inadvertently increase the risks from social harms to current or future generations". It would therefore seem appropriate that our ERM practices should not

only take into consideration the needs of emergency management agencies, but also community needs with regard to increasing economic, social, environmental and ecological sustainability.

## **CURRENT ERM PRACTICES THAT SUPPORT SUSTAINABILITY**

When we examine the wide variety of activities and strategies that exist within our ERM programs today, we can identify many that are closely aligned with the concept of sustainability. To list and discuss all of them would be a never ending task, however some examples from within Australia that demonstrate the wide variety of application are briefly discussed below:

### **Use of Risk Management and community participation in ERM in Victoria**

For the past seven years the Victorian State Emergency Service (SES) has been working in close association with local communities and Local Government to develop and improve the emergency management strategies at local levels utilising the concepts of risk management. This co-operation has resulted in previous emergency response planning now being overtaken by comprehensive risk management strategies that dove-tail into other community based ERM programs, eg. Community Fireguard.

### **Lifelines risk management programs**

Over the past seven years a number of essential service/ lifeline risk management programs have been undertaken around Australia. The initial programs were based upon engineering lifeline studies conducted in New Zealand in the early 1990s. These Australian studies have resulted in an increased awareness of risks associated with our essential services and the identification and implementation of strategies to ensure that risks are reduced and service continuation for the community is enhanced. Such programs have examined current and future community needs and capacities to provide for those needs.

### **Australian Safer Sustainable Communities Program**

The Australian Federal Government, through Emergency Management Australia (EMA), fund an annual program of awards that recognise best practice and innovation by organisations and individuals that are helping to build safer communities across Australia. Awards are given at State/ Territory and National levels in a number of focus areas. Recent award recipients have included a community centered emergency management strategy in Halls Creek, Western Australia. This strategy combined individual emergency service units into one combined Fire and Emergency Services Authority unit. This reduced the local resource requirements and improved the manageability and co-operation of local volunteer members within this new multi-functional unit.

### **Community Fire Guard and Community Fire Units**

The Victorian Country Fire Authority and more recently the NSW Fire Brigades have, in co-operation with local communities, established a large number of small community based groups of volunteers with the aim dealing with bush fire threats and reduce the impact of bushfires on communities. These community groups are provided with basic training and equipment to assist in dealing with bushfires threatening their community. In Victoria there are 938 Community Fireguard groups whilst in NSW there are 127 Community Fire Units. These groups are additional to the standard Fire Brigades managed by the two agencies, and are made up of either individual neighborhood members or existing groups such as Landcare or conservation groups. The use of these community groups has enabled members of the local community to be actively involved in protecting their own communities from the effects of bushfire.

### **Bushfire Co-operative Research Centre**

In 2002, the Australian Federal Government approved funding for the development of a National Bushfire Cooperative Research Centre (CRC) by a conglomerate of agencies and

research organisations coordinated by the Australasian Fire Authorities Council. The objective of the Bushfire CRC is to manage bushfire risk to the community in an economically and ecologically sustainable manner. Its research will develop predictive tools to help fire managers to prevent or suppress fires in the most resource-efficient, cost-effective and sustainable manner. It will also aim to help produce safer work environment for firefighters and will develop community education programs to help the community better prepare and deal with fires. The Bushfire CRC will provide a much needed link between industry practitioners the community and research organisations.

### **"Fired Up" Forum**

In early 2003, the University of Western Sydney (UWS) in association with NSW fire agencies and a number of NSW universities established a research forum that will bring together researchers and fire-fighting agencies with the aim of improving the State's resistance to emergency events. The forum will help promote better connections between the outstanding fire safety, mitigation and emergency management research that is occurring within NSW and the end users ie. fire-fighting agencies, industry and the community.

## **WEAKNESSES IN CURRENT ERM PRACTICES WITH REGARD TO SUSTAINABILITY AND THE FUTURE OF ERM IN AN ENVIRONMENT OF SUSTAINABLE DEVELOPMENT**

Although we are gradually seeing improvements in the relationship between ERM practices and sustainability, there are still areas of practice that require enhancement. This will ensure that our ERM strategies meet the needs of the present without compromising the ability of future generations to meet their own needs. I have identified a number of examples below where enhancements can be made to improve the sustainability of that area of ERM. These are by no means all of the areas that can be improved upon, but as with the examples in the previous section, they demonstrate the wide variety of potential enhancement that exists within our ERM programs.

### **EM Legislation**

In the past, emergency management legislation has generally been focussed on preparedness and response measures. Recently we have seen development and review of some legislation to include prevention, mitigation and recovery measures. Future legislation development and review should include reference to comprehensive emergency risk management, multi-agency co-operation and association and increased community participation. Such enhancements will assist in ensuring that ERM programs are capable of being sustained and take into consideration the changing capacities of our future communities.

### **Emergency Service agencies**

The current culture of emergency service agencies within each of Australia's States and Territories is to maintain their own independent administrative, resource and personnel/ volunteer management systems. Within some States and Territories, steps have been taken to rationalise the overall management of some of these agencies under a single organisation. This has been relatively successful in some cases (Western Australia - FESA, Australian Capital Territory - BES and Queensland- DES) and not so successful in others (Tasmania - DOPES). There is still however wide spread duplication of administrative functions, resource management, personnel/ volunteer management and roles and responsibilities between emergency service agencies. There is a need for these duplicated aspects of emergency management to be rationalised. Such rationalisation would reduce the duplication that currently exists, improve the economic sustainability of the emergency services and reduce the cost to the Government and community.

### **Reliance on volunteers**

Linked to the discussion above is the reliance that we in Australia have on volunteers supporting our emergency service agencies. Eg. in NSW the Rural Fire Service have 69,000 volunteers whilst in Victoria, the CFA have 58,000 volunteers supported by 1,130 career staff. This reliance on volunteer support is mirrored in the other States and Territories, with some volunteers belonging to more than one emergency service agency. This can lead to a small community, for example, having to sustain three volunteer units (Fire, Ambulance and SES) each requiring separate (but duplicated in some instances) buildings, equipment, vehicles and of course personnel. In these circumstances it would seem far more appropriate for these local units to be combined, thereby reducing the cost to individual services, the local community and the State/ Territory Government and improving the sustainability of the local emergency service response. The previous Safer Sustainable Communities Award example from Halls Creek, WA is an example of this type of innovative change aimed at improving the community's ability to maintain its resources.

In some local areas the number of volunteers are falling due to a number of reasons including lack of young people becoming involved, population movement from rural to urban areas and job pressures taking priority over voluntary commitments. Unless we implement better volunteer management, training and retention strategies we will see some local areas losing the emergency service response they once had. The development of initiatives such as Community Fireguard and Community Fire Units as previously discussed is an example of the different ways we can address this problem. Developing improved relationships with existing community groups, NGOs and service organisations might also be another means of addressing this problem.

### **Funding**

Funding for emergency management and emergency service agencies currently comes from a variety of sources including Federal, State and Local Government, taxation, levies, industry support and voluntary contributions. To sustain our emergency services financially is becoming more and more difficult, often with agencies and local groups competing with each other for the meager funds available. We therefore need to review the means by which we fund these agencies and their activities to ensure that once again, duplication is reduced or eliminated and the funds that are available are utilised in the most economically sustainable manner.

### **Multi-agency and community participation in ERM**

In the past, the majority of Emergency Management activities have revolved around response oriented strategies, being developed by emergency service agencies and being imposed upon the community. Recently we have seen a gradual expansion of ERM to encompass the comprehensive approach, including increased focus on prevention, mitigation and recovery. In addition, Local Government are now taking an increased role in the ERM process together with added input and involvement from other traditional "non-ERM" agencies, including Environmental Protection agencies, National Park authorities, Forestry agencies, community groups and research institutions.

There is still a need for this comprehensive, multi-agency approach and community participation to be extended and increased, ensuring that the ERM strategies developed for the present and the future take into consideration our communities' varying needs, capacities for involvement and resourcing capabilities. This will ensure that the strategies developed will not only be sustainable from a community's perspective, but that such strategies will also ultimately enhance and improve overall community resilience and reduce its susceptibility to risks well into the future.

## CONCLUSION

Today, considerations relating to sustainability play a major role in the determination of activities and strategies relating to the development of our communities in wide range of areas, including ERM. The ability for our communities to effectively manage the risks that they face, whilst maintaining continual improvement and development should be a major goal within our ERM programs. Such programs need to encompass not only the current needs and capabilities of our communities, but should also be developed in a way that addresses potential future needs without adversely affecting our communities' capacity to meet those needs. Issues including current and future funding, resourcing and interdependency need to be considered when developing and implementing ERM activities within our communities. We need to ensure that we continue to manage the risks that we face in a smarter more effective manner thereby ensuring that future generations are provided with the foundations to continually improve and develop their ERM programs.

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