

**CAPACITY DEVELOPMENT OPPORTUNITIES  
FOR ENVIRONMENTAL EDUCATION:  
MANALI, INDIA.**

By

Maire M<sup>c</sup>Dermott

A Thesis Submitted to the Faculty of Graduate  
Studies in Partial fulfilment of the Requirements for  
the Degree of

*Master of Natural Resources Management*

Natural Resources Institute  
University of Manitoba  
Winnipeg, Manitoba

© August 2002



National Library  
of Canada

Acquisitions and  
Bibliographic Services

395 Wellington Street  
Ottawa ON K1A 0N4  
Canada

Bibliothèque nationale  
du Canada

Acquisitions et  
services bibliographiques

395, rue Wellington  
Ottawa ON K1A 0N4  
Canada

*Your file Votre référence*

*Our file Notre référence*

The author has granted a non-exclusive licence allowing the National Library of Canada to reproduce, loan, distribute or sell copies of this thesis in microform, paper or electronic formats.

The author retains ownership of the copyright in this thesis. Neither the thesis nor substantial extracts from it may be printed or otherwise reproduced without the author's permission.

L'auteur a accordé une licence non exclusive permettant à la Bibliothèque nationale du Canada de reproduire, prêter, distribuer ou vendre des copies de cette thèse sous la forme de microfiche/film, de reproduction sur papier ou sur format électronique.

L'auteur conserve la propriété du droit d'auteur qui protège cette thèse. Ni la thèse ni des extraits substantiels de celle-ci ne doivent être imprimés ou autrement reproduits sans son autorisation.

0-612-76804-X

**THE UNIVERSITY OF MANITOBA**

**FACULTY OF GRADUATE STUDIES**

**\*\*\*\*\***

**COPYRIGHT PERMISSION**

**Capacity Development Opportunities for  
Environmental Education: Manali, India**

**BY**

**Maire M<sup>c</sup>Dermott**

**A Thesis/Practicum submitted to the Faculty of Graduate Studies of The University of**

**Manitoba in partial fulfillment of the requirement of the degree**

**of**

**MASTER OF NATURAL RESOURCES MANAGEMENT**

**Maire M<sup>c</sup>Dermott © 2002**

**Permission has been granted to the Library of the University of Manitoba to lend or sell copies of this thesis/practicum, to the National Library of Canada to microfilm this thesis and to lend or sell copies of the film, and to University Microfilms Inc. to publish an abstract of this thesis/practicum.**

**This reproduction or copy of this thesis has been made available by authority of the copyright owner solely for the purpose of private study and research, and may only be reproduced and copied as permitted by copyright laws or with express written authorization from the copyright owner.**

## **Abstract**

This thesis presents the results of research initiated in June 2000 to address the need for environmental education (EE) efforts in the town of Manali, India. Within the last 20 years, the small town of approximately 4000 residents has been exposed to immense population pressures, mostly related to tourism development. As a result, the town is suffering from a significant increase in solid waste and water pollution, uncontrolled building, traffic congestion and declining air quality. Past research in the area indicates that few attempts have been made to educate residents and tourists of these environmental problems. With mounting problems and no apparent decline in tourism development, EE efforts are a necessity.

The goal of this research was to identify opportunities to develop capacity for EE in Manali. The objectives of the research were five-fold: a) identify relevant organisations involved in EE, and the stakeholders and groups that support them; b) document the contextual factors that impact EE within these organisations; c) determine the human, financial and information resources of those organisations; d) assess the organisations' capacity based on criteria identified in literature; and, e) develop recommendations and resources to enhance existing capacity.

The research was conducted through a literature review of the key concepts, primary and secondary data review, key informant and semi-structured interviews, participant observation and participation. The analysis of the data used a linear model of EE developed by Hungerford and Volk (1990) to determine Manali's current EE status and to facilitate the identification of EE capacity development opportunities.

Research results demonstrate a serious lack of resources in the area and that a variety of positive and negative contextual factors influencing the EE capacity of Manali's organisations. However, EE capacity is not altogether lacking within Manali and Manali's organisations have been innovative and tenacious in their past approaches to EE given their inadequate resource base and hindering contextual influences. Specific gaps in EE capacity include: 1. a lack of a network between Manali's organisations involved in EE; 2. a limited and somewhat unfruitful attempt to educate students, residents and tourists of alternatives to environmentally harmful activities; and, 3. the lucrative tourism industry is luring students away from their studies towards more immediate economically rewarding activities.

Some recommendations include fostering a network amongst Manali's organisations through an information brochure that describes non-governmental organisations in the area and their expertise and through posting congratulatory signs to Manali's residents for their pro-environmental efforts. In addition, students' information resource base could be increased through private Internet company sponsorship and imposing an environmental levee on tourists to fund future EE efforts.

## Acknowledgements

This thesis is a testimony to the patience and support of numerous individuals. A statement to which John Sinclair, my advisor and friend, could attest without hesitation. Thank you John for your subtle (and sometimes not so subtle) guidance in helping to make this undertaking achievable.

I am also grateful for the invaluable and perceptive advice of my committee members. Jan Westlund's enthusiasm and thoroughness gave me a much-needed second wind while Dr. Berkes' unparalleled experience and astute observations kept me on track. Dr. Gardner's interest and obvious respect for India and the Kullu valley encouraged me to incorporate these qualities into the final product and his approachability and sincerity are characteristics for which I strive. If any of you ever need a job reference, let me know!

Marta, Patrick, Sherri, Susie, J.P., Dede, Jenny and Mikey - Thank you for being sisters and brothers who have heard me talk incessantly about this undertaking and somehow understood. And, thank you to Moon and Connor who made me want to finish so that I could visit without distractions. A truly heartfelt thank you to my Mom and Dad who have supported me in whatever I do regardless of its unconventionality. Thanks for your 'craic' when I came out from the cave.

Gillian, Laura, Eric and Kristin carried me through some trying times while in the field. They helped me appreciate my good fortune of being able to conduct research in Manali and shared some good laughs with me at the same time. Eric, I'll come to a stag of yours any time! Laura/Tata, thank you for your common sense when Gillian's lack of it pulled me in the other direction. But, I also thank you for throwing your good sense to the wind and showing me the best 30<sup>th</sup> birthday anyone could possibly experience. Thank you to Kristin - your presence in spirit undoubtedly provided me with helpful guidance. And, thank you to GilliOn, GiWan, Miss Gillian and O-Gi-Wan-Kenobi for Ki and the Kalachakra, Henna and Haikus, Vashisht and Varanasi. I hope 'Mhendi-Shanti' lives on!

Joe, thank you for telling me that this was "just more school". Somehow, I think you knew it was more than that but you had confidence in my abilities. Thank you for that confidence in the beginning of this process and for your patience and encouragement at the end, it meant so much.

I am also grateful to the Canadian Bureau for International Education, the Canadian International Development Agency and the Shastri Indo-Canadian Institute for financially supporting this academic endeavour.

Finally, thank you to the people of Manali, and especially Mehar Chand Thakur, for showing me unconditional hospitality and generosity. Inviting a naïve student into your town to ask questions as though she knew better must be both amusing and frustrating. Thank you for your respect – I hope that I offered the same in return.

Namaste-ji.

## Table of Contents

|                                                                                                 |             |
|-------------------------------------------------------------------------------------------------|-------------|
| <b>ABSTRACT .....</b>                                                                           | <b>I</b>    |
| <b>ACKNOWLEDGEMENTS.....</b>                                                                    | <b>II</b>   |
| <b>TABLE OF CONTENTS.....</b>                                                                   | <b>III</b>  |
| <b>LIST OF TABLES .....</b>                                                                     | <b>VI</b>   |
| <b>LIST OF FIGURES .....</b>                                                                    | <b>VII</b>  |
| <b>LIST OF ACRONYMS.....</b>                                                                    | <b>VIII</b> |
| <b>CHAPTER 1: INTRODUCTION .....</b>                                                            | <b>1</b>    |
| 1.1 BACKGROUND.....                                                                             | 1           |
| 1.2 PURPOSE AND OBJECTIVES: .....                                                               | 2           |
| 1.3 DEFINITIONS .....                                                                           | 3           |
| 1.4 STUDY AREA .....                                                                            | 3           |
| 1.5 SUMMARY OF METHODS .....                                                                    | 4           |
| 1.6 ORGANISATION OF THESIS .....                                                                | 6           |
| <b>CHAPTER 2: RELEVANT CONCEPTS: ENVIRONMENTAL EDUCATION<br/>AND CAPACITY DEVELOPMENT .....</b> | <b>7</b>    |
| 2.1 INTRODUCTION .....                                                                          | 7           |
| 2.2 CAPACITY DEVELOPMENT .....                                                                  | 7           |
| 2.2.1 <i>Core Issues</i> .....                                                                  | 11          |
| 2.3 ENVIRONMENTAL EDUCATION.....                                                                | 13          |
| 2.3.1 <i>Core Issues</i> .....                                                                  | 15          |
| 2.4 SUMMARY: LINKING THE CONCEPTS .....                                                         | 23          |
| <b>CHAPTER 3: METHODS.....</b>                                                                  | <b>25</b>   |
| 3.1 METHODOLOGICAL BACKGROUND .....                                                             | 25          |
| 3.2 METHODS .....                                                                               | 26          |
| 3.2.1 <i>Field Research</i> .....                                                               | 26          |
| 3.3 ANALYSIS: .....                                                                             | 32          |
| 3.3.1 <i>Assessing the Variables</i> .....                                                      | 33          |
| 3.4 ACTION ORIENTED ACTIVITIES.....                                                             | 36          |

|                                                                                                                                           |           |
|-------------------------------------------------------------------------------------------------------------------------------------------|-----------|
| <b>CHAPTER 4: CONTEXTUAL OVERVIEW.....</b>                                                                                                | <b>37</b> |
| 4.1 MANALI'S ECONOMIC CONTEXT: TOURISM'S INFLUENCE ON EE .....                                                                            | 37        |
| 4.2 THE REGULATORY CONTEXT: LEGAL INCENTIVES AND DISINCENTIVES FOR<br>EE IN MANALI.....                                                   | 40        |
| 4.2.1 <i>EE in the Indian Regulatory Context</i> .....                                                                                    | 41        |
| 4.3 SUMMARY .....                                                                                                                         | 44        |
| <b>CHAPTER 5: THE PARTICIPANTS .....</b>                                                                                                  | <b>45</b> |
| 5.1 THE FORMAL EDUCATION SECTOR CONTEXT: ENVIRONMENTAL<br>EDUCATION IN THE FORMAL EDUCATION SYSTEM IN INDIA AND HIMACHAL<br>PRADESH ..... | 45        |
| 5.1.1 <i>The Evolution of EE in India's Educational Policies</i> .....                                                                    | 45        |
| 5.1.2 <i>Local Implications</i> .....                                                                                                     | 48        |
| 5.2 DAY STAR SCHOOL.....                                                                                                                  | 49        |
| 5.2.1 <i>Description</i> .....                                                                                                            | 49        |
| 5.2.2 <i>Resources</i> .....                                                                                                              | 50        |
| 5.3 CENTRAL SCHOOL FOR TIBETANS .....                                                                                                     | 54        |
| 5.3.1 <i>Description</i> .....                                                                                                            | 54        |
| 5.3.2 <i>Resources</i> .....                                                                                                              | 54        |
| 5.4 STATE GOVERNMENT SCHOOL.....                                                                                                          | 58        |
| 5.4.1 <i>Description</i> .....                                                                                                            | 58        |
| 5.4.2 <i>Resources</i> .....                                                                                                              | 58        |
| 5.5 NON-GOVERNMENT ORGANISATIONS.....                                                                                                     | 60        |
| 5.5.1 <i>Contextual Factors affecting Manali's NGOs and their Future<br/>Development</i> .....                                            | 60        |
| 5.5.2 <i>Resources</i> .....                                                                                                              | 62        |
| 5.6 THE NAGAR PANCHAYAT .....                                                                                                             | 66        |
| 5.6.1 <i>Contextual Implications of the Regulatory Abilities of Manali's NP</i> .....                                                     | 66        |
| 5.6.2 <i>Resources</i> .....                                                                                                              | 67        |
| 5.7 SUMMARY .....                                                                                                                         | 69        |
| <b>CHAPTER 6: CAPACITY ASSESSMENT OF ORGANISATIONS' ABILITY<br/>TO FOSTER PRO-ENVIRONMENTAL BEHAVIOUR.....</b>                            | <b>71</b> |
| 6.1 APPLYING THE FRAMEWORK .....                                                                                                          | 71        |
| 6.2 SCHOOLS .....                                                                                                                         | 71        |
| 6.2.1 <i>Entry-level Variables</i> .....                                                                                                  | 71        |
| 6.2.2 <i>Ownership Variables</i> .....                                                                                                    | 74        |
| 6.2.3 <i>Empowerment Variables</i> .....                                                                                                  | 76        |
| 6.3 NGOS .....                                                                                                                            | 78        |
| 6.3.1 <i>Entry-level Variables</i> .....                                                                                                  | 78        |

|                                                                                                |                                           |            |
|------------------------------------------------------------------------------------------------|-------------------------------------------|------------|
| 6.3.2                                                                                          | <i>Ownership Variables</i>                | 81         |
| 6.3.3                                                                                          | <i>Empowerment Variables</i>              | 84         |
| 6.4                                                                                            | NAGAR PANCHAYAT                           | 86         |
| 6.4.1                                                                                          | <i>Entry-level Variables</i>              | 86         |
| 6.4.2                                                                                          | <i>Ownership Variables</i>                | 87         |
| 6.4.3                                                                                          | <i>Empowerment Variables</i>              | 89         |
| 6.5                                                                                            | CONTEXTUAL ISSUES AFFECTING EE VARIABLES  | 92         |
| 6.6                                                                                            | SUMMARY                                   | 94         |
| <b>CHAPTER 7: CONCLUSIONS AND RECOMMENDATIONS</b>                                              |                                           | <b>99</b>  |
| 7.1                                                                                            | CONCLUSIONS                               | 99         |
| 7.1.1                                                                                          | <i>The Formal Education System</i>        | 99         |
| 7.1.2                                                                                          | <i>The NGOs and NP of Manali</i>          | 102        |
| 7.2                                                                                            | RECOMMENDATIONS                           | 104        |
| 7.2.1                                                                                          | <i>Networks</i>                           | 104        |
| 7.2.2                                                                                          | <i>Exploring Local Resource Potential</i> | 105        |
| 7.2.3                                                                                          | <i>Incentives</i>                         | 108        |
| 7.3                                                                                            | FUTURE RESEARCH                           | 110        |
| <b>REFERENCES</b>                                                                              |                                           | <b>113</b> |
| <b>APPENDIX I: NGO BROCHURE</b>                                                                |                                           | <b>121</b> |
| <b>APPENDIX II: MANALI TOWN WALKING MAP</b>                                                    |                                           | <b>122</b> |
| <b>APPENDIX III: PROJECT QUESTIONNAIRE ON ENVIRONMENTAL<br/>EDUCATION IN SCHOOL PROGRAMMES</b> |                                           | <b>123</b> |
| <b>APPENDIX IV: INTERVIEW QUESTIONS</b>                                                        |                                           | <b>126</b> |

## List of Tables

|                                                                                                                                                                    |    |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------|----|
| Table 2-1: Definitions of Capacity Development .....                                                                                                               | 7  |
| Table 2-2: Conceptual Predecessors of Capacity Development .....                                                                                                   | 9  |
| Table 2-3: The Tbilisi Goals of Environmental Education.....                                                                                                       | 14 |
| Table 2-4: Key Trends in Environmental Education .....                                                                                                             | 15 |
| Table 5-1: Subjects and Literature Related to the Environment Available at Day<br>Star School Library.....                                                         | 51 |
| Table 5-2: Environmentally Relevant Journals Available at Day Star School .....                                                                                    | 52 |
| Table 5-3: Details of the Fee/Tuition Structure for Day Star School .....                                                                                          | 54 |
| Table 5-4: Social Science Syllabus of the CST for Std. VIII .....                                                                                                  | 56 |
| Table 5-5: Natural Science Syllabus of the CST for Std. VIII .....                                                                                                 | 56 |
| Table 5-6: Social Science Syllabus of the State Government School for Std. IX .....                                                                                | 59 |
| Table 5-7: Natural Science Syllabus of the State Government School for Std. IX .....                                                                               | 59 |
| Table 5-8: Cost estimates for Building Awareness in the SWM Project for Kullu<br>and Manali Towns (Rs in Lakhs) .....                                              | 68 |
| Table 6-1: Assessment of the Organisations' Capacity and their EE Impact on<br>Respective Target Audiences using Hungerford and Volk's (1990) EE<br>Variables..... | 95 |

## **List of Figures**

|                                                                                                                 |     |
|-----------------------------------------------------------------------------------------------------------------|-----|
| Figure 1-1: Study Area.....                                                                                     | 3   |
| Figure 2-1: Hines et al's (1987) Proposed Model of Responsible Environmental Behaviour .....                    | 19  |
| Figure 2-2: Hungerford and Volk's (1990) Model of Responsible Environmental Behaviour.....                      | 20  |
| Figure 3-1: Modified version of Hungerford and Volk's (1990) model of Responsible Environmental Behaviour ..... | 33  |
| Figure 4-1: Hadimba Fun Park - Manali India.....                                                                | 38  |
| Figure 6-1: Poly Bag Ban Sign .....                                                                             | 88  |
| Figure 7-1: Waste Audit Project.....                                                                            | 108 |

---

## List of Acronyms

---

|        |                                                                          |
|--------|--------------------------------------------------------------------------|
| AENC   | Arohi Environmental and Nature Conservation                              |
| BVP    | Bharat Vikas Parishad                                                    |
| CA     | Capacity Assessment                                                      |
| CD     | Capacity Development                                                     |
| CEE    | Centre for Environmental Education                                       |
| CIDA   | Canadian International Development Agency                                |
| CST    | Central School for Tibetans                                              |
| CTA    | Central Tibetan Administration                                           |
| EE     | Environmental Education                                                  |
| ES     | Environmental Studies                                                    |
| GBS    | Gian Bigan Samiti                                                        |
| GOI    | Government of India                                                      |
| HPTDC  | Himachal Pradesh Tourist Development Corporation                         |
| ICSE   | Indian Certificate of Secondary Education                                |
| IUCN   | International Union for the Conservation of Nature and Natural Resources |
| MEF    | Ministry of Environment and Forests                                      |
| MM     | Mahila Mandal                                                            |
| NAC    | Notified Area Committee                                                  |
| NCERT  | National Certificate for Education Research and Training                 |
| NGO    | Non-Governmental Organisation                                            |
| NP     | Nagar Panchayat                                                          |
| SCERT  | State Certificate for Education, Research and Training                   |
| SHARE  | Society for Holistic Action and Rehabilitation Ecology                   |
| STE    | Science, Technology and Environment                                      |
| UNESCO | United Nations Educational, Scientific and Cultural Organisation         |

---

---

## Chapter 1: Introduction

---

---

### *1.1 Background*

---

Since the 1960s, the world's population has doubled to 6.1 billion people; a number that population experts claim will rise to 9.3 billion by 2050 (UNFPA 2001). Fifty percent of that growth is attributed to six developing countries: India, China, Pakistan, Nigeria, Bangladesh and Indonesia (UNFPA 2001). India accounts for twenty-one percent of the total increase. India's population is thus expected to reach approximately 1.4 billion by 2050 (Chandna 1998).

Many warn that this exponential growth rate is unsustainable and that the necessary resources to support it are beyond the capacity of the earth. Millions of hectares of forest are being cleared for agricultural production, there is rampant air pollution from ever-increasing vehicular traffic and industrialisation and the ability of the earth to absorb human waste is rapidly declining. India alone, with its population of nearly one billion, has lost 25 billion tons of topsoil in the last five years. The air quality in most of India's 28 major cities is toxic and 90% of the country's water resources are polluted (Mayur 2001). Efforts to curb the environmental damage from population pressures are therefore critical.

In the latter half of the twentieth century, the field of environmental education (EE) emerged as a means to improve the understanding of the relationship between environment and development issues (Wei and Ji-yu 2000; Stapp et al. 1969). Key EE principles include advancing knowledge of ecological and environmental issues and shaping positive environmental attitudes and values. EE's ultimate goal, however, is to foster a citizenry that is motivated to engage in pro-environmental behaviour (Stapp et al. 1969; Sia et al. 1986; Hungerford and Volk 1990; Leeming et al. 1993; Palmer & Suggate 1996; Zelezny 1999). Environmental behaviour aimed at solving environmental problems is understood by EE practitioners as an essential factor in the prevention of and solution to environmental degradation (UNESCO 1978a, 1988 as cited in Hsu and Roth 1998).

India has recognised the important role of EE since the mid-1960s (UNESCO 1985). From 1964-66, India's Education Commission made numerous recommendations

concerning the incorporation of EE into the academic curriculum (Ministry of Education 1971 as cited in UNESCO 1985). The recommendations of the commission were adopted in a Policy Resolution in 1968, and curriculum guides were prepared accordingly (UNESCO 1985).

In 1987, India's Ministry of Human Resource Development and the Department of Education announced the "Environmental Orientation to School Education" plan, which was designed to support innovative work in the field of EE (Pande 2001). Concerning the non-formal education sector, the Government of India (GOI) incorporates provisions within environmental legislation that require the central, state and local governments to create environmental awareness among citizens. This includes issues such as air quality, water quality and solid waste management.

However, within the town of Manali, in the Kullu Valley of Himachal Pradesh, India (the focus of this study), past research indicated a scarcity of EE efforts (Cole 1999; Sinclair and Diduck 2000). Despite the fact that tens of thousands of tourists and migrant labourers arrive in this small town of approximately 4000 residents each year, information regarding Manali's environment and its pressing environmental problems is scarce. Consequently, tourists and residents find that information on alternatives to current environmentally damaging practices is limited or entirely absent.

However, without an understanding of why such efforts are lacking, recommendations to improve the current situation would be uninformed and potentially inappropriate. Considering Manali's situation and setting, there are likely numerous reasons for this shortcoming. A lack of time due to busy seasonal periods, a serious shortage of resources, varying sets of values and attitudes from the diversity of tourists and conflicting contextual influences may all contribute to a weak EE presence. These factors must be taken into account when considering strategies to develop Manali's ability to effectively educate those whose actions affect them.

---

## ***1.2 Purpose and Objectives:***

---

The purpose of the research was to assess the EE capacity of organisations in Manali and identify opportunities to develop that capacity. The following five objectives were established to address the purpose of the project:

1. *Identify relevant organisations involved in EE, and the stakeholders and groups that support them.*
2. *Document the contextual factors that impact EE within these organisations.*
3. *Determine the human, financial and information resources of those organisations.*
4. *Assess the organisations' EE capacity based on criteria identified in literature.*
5. *Develop recommendations and resources to enhance existing capacity.*

---

### 1.3 Definitions

---

In the study, capacity refers to the availability and effective application of human, information and financial resources, in a given context, to solve problems sustainably. EE refers to the process of fostering an environmentally active citizenry. Accordingly, capacity development (CD) for EE refers to improving the availability of resources or strengthening the application of existing resources, in a given context, to foster an environmentally active citizenry.

---

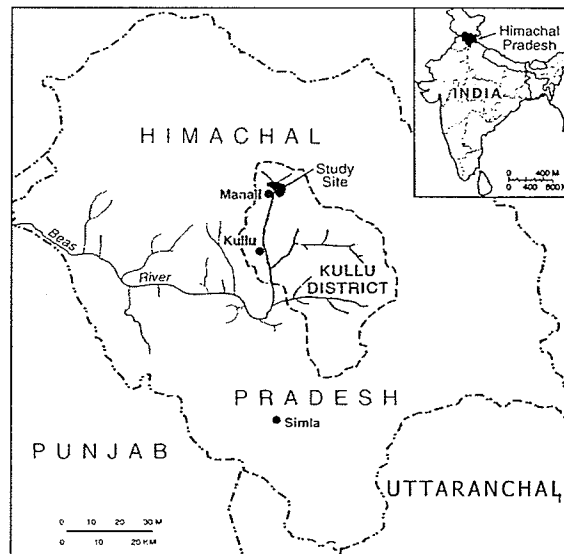
### 1.4 Study Area

---

Manali is located in India's most popular and most accessible hill state, Himachal Pradesh (Batta 2000). Situated within the Pir Panjal Range of the Western Himalayas (see figure 1-1), Manali lies at the north end of the Kullu Valley and is located within the watershed of the Upper Beas River (Berkes et al. 1998; Berkes & Gardner 1997; Chetwode 1972; Pandey, Singh & Singh 1998).

Historically, Manali was the last place where travellers could get fodder for their mules before crossing Rohtang Pass (Chetwode 1972; Pandey, Singh & Singh 1998; Gardner as cited in Cole 1999;).

**Figure 1-1: STUDY AREA**



Manali's purpose as a small service centre continued until 1958 when the Prime Minister of the newly independent India, Jawaharlal Nehru, visited the region. The Prime Minister was overwhelmed by the beauty of Manali and announced his full support in developing the tourism potential of the area. Using the momentum of Nehru, the Himachal government capitalised on the media publicity and began a programme to develop the regional tourism infrastructure.

Nineteen-seventy was a pivotal decade for Manali. Small guesthouses began to be replaced by a myriad of hotels ranging from economy to luxury accommodations. The Himachal Pradesh Tourist Development Corporation (HPTDC) established four of its own hotel operations in Manali and, along with other tour operators, began to develop and market package tours for domestic and foreign tourists (Gardner as cited in Cole 1999).

The tourist influx and the related urban development and population growth have caused Manali to change its municipal designation three times since 1981. In 1981, although still a predominantly rural area, Manali was officially designated a town. This designation soon changed to that of a Notified Area Committee (NAC) which gave Manali all the responsibilities of a Municipal Council or Nagar Panchayat although its members were appointed by the state and not elected by its residents. Manali changed to an elected form of government in 1997 and became an elected Nagar Panchayat, a designation that is reserved for urban centres "in transition from a rural area to an urban area" (Pandey, Singh and Singh 1998).

---

### ***1.5 Summary of Methods***

---

The study used participatory methods drawn from Chambers' (1983) Rapid Rural Appraisal techniques and from past research conducted in the region. Participatory techniques are fundamental to research that involves eliciting behavioural change (Ibikunle-Johnson 1989). EE and CD, both important elements in the research, involve long-term behavioural change. A participatory approach to the research is therefore particularly appropriate.

The objectives of the study that involved field research and analysis were approached systematically. First, an extensive literature review on essential components of the study, CD and EE, was conducted. Secondly, the field research portion used a case

study approach. Consequently, the research identified local organisations involved in EE, the stakeholders and groups that support them and their role in the communities through primary and secondary data review and through semi-structured interviews.

A review of previous research had established key informants within the Manali area. Key informants were contacted and presented the with premise of the research, which subsequently led to the identification of organisations that could also contribute to the research. The last step in identifying stakeholders was determining whether the organisations held an interest in the research and whether there was a willingness to participate. Consequently, the following three sectors were identified:

- The Formal Education Sector (secondary level);
- Active Non-Governmental Organisations; and
- The Nagar Panchayat

Once participating organisations were identified, the second and third objectives were addressed through the collection of information concerning the organisations' resources and their operating context. Data on the organisations' human, financial and information resources were gathered through semi-structured interviews with representatives of the organisations. To obtain data, school principals, vice principals and teaching staff were interviewed. Members of the municipal government, specifically the president and the secretary were also interviewed. Lead persons of the participating non-governmental organisations (NGOs) were also interviewed to obtain information on the NGO sector of Manali. Additional data on information resources were obtained through a document review of schools' libraries and through NGO reports and newsletters. Information on the context was obtained through a review of previous research in the area, semi-structured interviews and participant observation.

The fourth objective was to assess the organisations' EE capacity based on criteria identified in Hungerford and Volk's (1990) study on changing learner behaviour through EE. Data collected related to the second and third objectives were applied to Hungerford and Volk's (1990) linear model of pro-environmental behaviour to determine the impact of resources and contextual factors on the EE capacity of Manali's organisations. Recommendations were identified based on where Manali's organisations were situated within the model.

---

## ***1.6 Organisation of Thesis***

---

The study is organised into seven chapters. Chapter two of the study outlines the relevant concepts to the study, capacity development and environmental education, by providing background on the evolution of the concepts and their current definitions and roles. The chapter concludes with an explanation of how the terms' relate to this study. Chapter three explains the methodological background, field research methods and the framework for analysis. Chapter four highlights broad contextual issues relevant to EE in Manali while chapter five describes the participants of the study, the sub-contexts unique to each sector and the available resources that enable them to facilitate EE. Chapter six applies the data to Hungerford and Volk's (1990) EE framework and assesses the current EE capacity situation amongst Manali's organisations. The study concludes with chapter seven, which offers a summary of the research and provides recommendations based on the findings in chapter six. Action-oriented projects that are related to EE capacity, which the researcher undertook near the end of the research, are also detailed in this chapter.

---

## **Chapter 2: Relevant Concepts: Environmental Education and Capacity Development**

---

---

### **2.1 Introduction**

---

This chapter examines two key concepts, EE and CD, and provides an overview of key elements that are relevant to each. Both concepts are individually addressed with respective historical and conceptual overviews and definitions. The chapter continues with an outline of the concepts' status in their individual fields and any debate that currently surrounds them. Finally, the chapter concludes with an explanation of the linkages between the concepts and their relationship to the research problem.

---

### **2.2 Capacity Development**

---

Defining concepts within the environment and development arena has historically been a challenging and complex task. Sustainable development is perhaps the most noteworthy of environment/development term that suffered significant criticism for its ambiguous, overly vague and unsubstantive meaning. CD runs the risk of the same fate. Some argue that CD is an updated term for institutional development while others argue that CD builds on and strengthens past development strategies (Lusthaus et al. 1999). Academic discussion also argues over whether CD is a process or a product or both (Morgan 1997; Lusthaus et al. 1999; Bolger 2000; Lavergne and Saxby 2001). Consequently, despite its relatively recent appearance within development discussion, CD has acquired an impressive number of definitions (see Table 2-1).

---

#### **Table 2-1: Definitions of Capacity Development**

---

"Capacity building includes institutional support in the form of finances for office space, salaries and vehicles" (Makumbe 1998 as cited in Capacity.org 2000).

"Capacity building is not defined through the instruments used, both through its goal to enhance the capability of people and institutions sustainably to improve their competence and problem-solving capacities" (GTZ 1999 as cited in Capacity.org 2000).

"Capacity building interventions must address the unique needs of an organisation in its particular stage of development at that specific time. There is no single way to build organisational capacity" (Kaplan and Soals 1995 as cited in Capacity.org 2000).

Capacity development is the "process by which individuals, groups, organisations and institutions and societies increase their abilities to: 1) perform core functions, solve problems, define and achieve objectives; and 2) understand and deal with their development needs in a broad context and in a sustainable manner" (UNDP 1997 as cited in Capacity.org 2000).

"Capacity building refers to investment in people, institutions, and practices that will, together, enable countries in the region to achieve their development objectives" (World Bank 1997 as cited in Capacity.org 2000).

"Capacity development is the process by which individuals, groups, organisations, institutions and societies increase their abilities to understand and deal with their development needs in a broad context and in a sustainable manner" (Taschereau 1997 as cited in Capacity.org 2000).

"Capacity building is an approach to development not something separate from it. It is a response to the multi-dimensional processes of change, not a set of discrete or pre-packaged technical interventions intended to bring about a pre-defined outcome. In supporting organisations working for social justice, it is also necessary to support the various capacities they require to do this: intellectual, organisational, social, political, cultural, material, practical, or financial" (Eade 1997 as cited in Capacity.org 2000).

"Capacity building is a process by which individuals, groups, institutions, organisations and societies enhance their abilities to identify and meet development challenges in a sustainable manner" (CIDA 1996 as cited in Lusthaus et al. 1999).

"Capacity development is a process by which individuals, groups, organisations and societies enhance their abilities to identify and meet development challenges on a sustainable basis" (Qualman and Bolger 1996)

---

Source: Capacity.org (2000); Lusthaus et al. (1999); Qualman and Bolger 1996

Schacter (2000) warns that so many definitions make the term too all encompassing, and therefore it runs the risk of becoming meaningless. Lusthaus et al. (1999, p. 8) state that CD has the potential to become "a slogan rather than a meaningful concept", and Moore (1995, p.93) writes that the term capacity building is "analytically and practically useless". However, CD continues to be widely used and accepted by international development agencies such as the World Bank, the Canadian International Development Agency, the International Institute for Sustainable Development and United Nations Children's Fund, to name only a few. What, then, makes CD so notable?

CD was conceptualised in the late 1980s and early 1990s primarily in response to a lack of confidence in past approaches (Morgan 1997; Lusthaus et al. 1999; Schacter

2000; Bolger 2000). CD's popularity is based on the opinion that development needed to take a holistic, long-term approach to development. International development agencies, NGOs and bilateral donor agencies, among others, were unsatisfied with past development approaches. These organisations found current development approaches to focus too narrowly on one aspect of a development issue without considering the interconnected whole (Pomerleau and Greene 1996). Moreover, they believed that a transfer of large amounts of resources, particularly financial, was all that was needed to improve the current situation (Schacter 2000). Development was becoming more about how it made development agencies appear on paper rather than actual beneficial and sustainable changes for the recipient. Donor agencies wanted quick results with accompanying technical reports that demonstrated their aid was effective (Wakely 2000).

Unfortunately, short-term fixes were reflected in the short-term changes. As Brinkerhoff (as cited in Qualman and Bolger 1996, p. 4) observed, external assistance can temporarily overcome capacity weaknesses, but sustainable, self-sufficient "capacity for development cannot be bought, it must be built". Consequently, long-term, sustainable changes were not forthcoming and donor agencies were forced to review their development policies and programmes.

However, development practitioners did not invalidate past approaches. Past development paradigms have made legitimate and worthwhile contributions to the evolution of development (see table 2-2). In effect, CD is most often described in literature as an amalgamation of various past approaches (Schacter 2000; Bolger 2000; Wakely 2000; Lusthaus et al. 1999; UNDP 1997b). For example, Morgan (1997) refers to CD as an "umbrella concept" that links previously isolated development approaches to one coherent strategy. Ironically, the all-encompassing nature of CD is what makes the concept unique from past development paradigms.

**Table 2-2: Conceptual Predecessors of Capacity Development**

| TERM                 | RELATED TIME PERIOD | ASSOCIATED MEANING                                                                                                                                               |
|----------------------|---------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Institution Building | 1950s and 60s       | Objective was to equip developing countries with the basic inventory of public sector institutions that are required to manage a programme of public investment. |

---

|                                          |                      |                                                                                                                                                                                                                                                                                                                         |
|------------------------------------------|----------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                          |                      | Focus was on the design and functioning of individual organisations, not broader environment or sector.                                                                                                                                                                                                                 |
|                                          |                      | Imported or transplanted models from developed countries were often used.                                                                                                                                                                                                                                               |
| Institutional Strengthening/ Development | 1960s and 70s        | Shift from <b>establishing</b> to <b>strengthening</b> institutions.<br><br>Focus was still on individual institutions and not a broader perspective.<br><br>Tools were expected to help improve performance.<br><br>Objective was to reach special public or target groups previously neglected.                       |
| Development Management/ Administration   | 1970s                | Focus was on delivery systems of public programmes and capacity of government to reach target groups.                                                                                                                                                                                                                   |
| Human resource Development               | 1970s, 80s           | Development is about people.<br><br>Stresses importance of education, health, population...<br><br>Emergence of people-centered development.                                                                                                                                                                            |
| New Institutionalism                     | 1980s, 90s           | Focus was broadened to sector level (government, NGO, private) including networks and external environment.<br><br>Attention to shaping national economic behavior.<br><br>Emergence of issue of sustainability and move away from focus on projects.<br><br>Emerged in 1970s through field of institutional economics. |
| Capacity Development                     | Late 1980s And 1990s | Emerged in the 1990s as an aggregate of many other development approaches.<br><br>Re-assessed the notion of technical cooperation (TC).<br><br>Stresses importance of ownership and process.<br><br>Has become "the way" to do development.                                                                             |

---

Source: Lusthaus et al. (1999)

### 2.2.1 Core Issues

Drawing from and building on these past approaches inevitably means that CD is not a completely new vision of development. Despite CD's status as 'the way to do development' (Lusthaus et al. 1999), its central thesis has permeated the agendas of development agencies for the past fifty years. The terms have changed and the meanings have been rewritten to reflect the current atmosphere, but the core objective remains constant. That is, development is ultimately about development for beneficial change (Sessions 1993; Morgan 1997; Lusthaus et al. 1999; Bolger 2000).

Although CD shares a common goal of beneficial change with past development approaches (Bolger 2000; Pomerleau and Greene 1996), it is the process of eliciting that change and the emphasis on sustaining change that makes CD notable. Firstly, the process emphasises investigating the 'macro' perspective (Morgan 1997) or the overall context in which development takes place (UNDP 1998; UNDP 1997a; UNDP 1997b; Morgan 1997). The United Nations Development Programme (UNDP 1994) describes this as an emphasis on the overall system, environment or context within which individuals, organisations and societies operate and interact. Bolger (2000) refers to the 'enabling environment' (Bolger 2000) and Pomerleau and Greene (1996) refer to the 'systemic perspective'. The hypothesis is that development does not take place in a vacuum and influences at the macro level may have impacts on CD initiatives that focus on specific functions at the micro level. Although these broader level influences may be outside the immediate CD scope, it is important that the potential they have to impact CD is not minimised, invalidated or ignored.

Legal and policy frameworks, lack of organisational credibility, economic incentives or disincentives and cultural rules are some examples of contextual influences that may impact CD initiatives (UNDP 1994; UNDP 1997b). Consider the Manali study for example, policies or legal mechanisms that support EE's inclusion into school curricula serve to facilitate the development of that function. Conversely, policies that promote top-down development initiatives that seemingly degrade the environment do not reinforce the educational initiatives brought to the schools.

A context perspective also contributes to identifying networks or relationships, or a lack thereof, amongst participants. Networks allow resources to be used more

effectively through decreased overlap, which contributes to plausible, effective capacity strategies. Conversely, poor networks lead to overlapped efforts and waste valuable time and resources. Thus, approaching CD from a context perspective identifies important networks and relationships and consequently contributes to efficient, effective capacity strategies (Bolger 2000; Qualman and Bolger 1996).

CD is also about resources, in terms of both accessibility and availability. Development initiatives, from the past have all highlighted the need for human, financial and information resources in order to encourage beneficial change (UNDP 1997b; UNDP 1998). However, CD emphasises the strengthening or reorienting of existing resources as opposed to the introduction of new resources (Bolger 2000; Dia as cited in Lusthaus et al. 1999). CD recognises that priority needs to be placed on existing resources to contribute to the sustainability of the capacity in question.

Finally, CD emphasises a participatory process (Bolger 2000; UNDP 1997b; Qualman and Bolger 1996). Donors have come to recognise that they cannot 'donate' capacity (Lavergne and Saxby 2001; Bolger 2000; Schacter 2000; Pomerleau and Greene 1996). Capacity, as described by the United Nations Development Programme (UNDP), is "the ability of individuals and organisations or organisational units to perform functions effectively, efficiently and sustainably" (UNDP 1998). Capacity is not, therefore, the ability of international development agencies to perform functions – it is about individuals and other stakeholders performing functions. Consequently, the process needs to ensure that individuals are part of the initiative from the beginning. Participating in the process from the outset contributes to the ownership and empowerment of individuals (Mukherjee 1993; Ibikunle-Johnson 1989; Chambers 1983), which are also key to successful CD initiatives (Pomerleau and Greene 1996; Lusthaus et al. 1999; Fowler 1997; Morgan 1997; UNDP 1997b; Qualman and Morgan 1996).

A participatory process also contributes to change (Bolger 2000; UNDP 1997b; Qualman and Bolger 1996), which is critical to any CD initiative. As Bolger (2000, p.2) explains, "CD is fundamentally about change and transformation – individual, organisational and societal". To solicit change, processes need to focus on the attitudes, values, motivations and behaviours (Bolger 2000; Morgan 1997). These 'core capacities' (Bolger 2000; Lavergne & Saxby 2001) are at the centre of CD strategies and give CD

the potential for long-term success. If the process is not participatory, attitudes, values and motivations will be imposed upon participants, and sustained change will not result. As Morgan (1997, p.13) describes, "(...) people support what they create".

Thus, CD as a development paradigm differentiates itself from past approaches through its emphasis on overall contextual issues, use of existing resources and because of the importance placed on relationships and participation. In other words, the process of CD has four main ingredients: 1. Emphasis on the overall context; 2. Effective use of resources, with an emphasis on existing resources; 3. Networks or relationships among actors; and 4. Participation to foster ownership and empowerment. This process contributes to a change in a particular function, in this case EE, that is supported and sustained by those who have participated in its creation.

---

### ***2.3 Environmental Education***

---

The advent of EE is argued to have surfaced in 18th century. However, it was not until a 1948 meeting of the International Union for the Conservation of Nature and Natural Resources (IUCN) that Thomas Pritchard used the two words together (Palmer 1998). Quickly recognised as an important concept, by the mid-1960s governments were requested to implement, in co-operation with the IUCN, "(...) environmental education in schools, in higher education, and in training for the land-linked professions" (Wheeler as cited in Palmer 1998, p.23). A 1968 biosphere conference organised by United Nations Educational, Scientific and Cultural Organisation (UNESCO) echoed IUCN's proposal. Consequently, the conference called for the development of curriculum materials relating to the study of the environment, the promotion of technical training and the stimulation of global awareness of environmental problems.

However, 1970 was perhaps the year of the most significant benchmark in the history of EE. This was the year of a jointly hosted IUCN and UNESCO meeting that spawned the 'classic' definition of EE:

"Environmental education is the process of recognising values and clarifying concepts in order to develop skills and attitudes necessary to understand and appreciate the inter-relatedness among man, his culture and his biophysical surroundings. Environmental education also entails practice in decision-making and self-formulation of a code of behaviour about issues concerning environmental quality" (IUCN, 1970 as cited in Palmer and Neal 1994, p.7).

Consequently, EE continued to gain momentum throughout the 1970s but achieved international prominence with an UNESCO conference in Tbilisi, USSR. It was at this conference that the international objectives and goals of EE that are still in use today were formulated (see table 2.3).

**Table 2-3: The Tbilisi Goals of Environmental Education**

- 1) To foster clear awareness of, and concern about, economic, social, political and ecological inter-dependence in urban and rural areas.
- 2) To provide every person with opportunities to acquire the knowledge, values, attitudes, commitment and skills needed to protect and improve the environment.
- 3) To create new patterns of behaviour of individuals, groups and society as a whole, towards the environment.

Source: UNESCO 1977 as cited in Palmer 1998.

The World Conference on Environment and Development in 1987, which produced the Brundtland Report, and the Earth Summit in Rio in 1992, which produced Agenda 21, were two of the major events that further supported EE. The Brundtland Report stated that changes in attitudes and awareness were necessary to achieve the objective of integrating environmental and economic concerns in decision-making (WCED as cited in Diduck 1999). Chapter 36 of Agenda 21 (Education, Public Awareness and Training) was proposed as a necessary part of the solution to the current environmental crises. The introduction of chapter 36 states, "Education, raising of public awareness and training are linked to virtually all areas in Agenda 21, and even more closely to the ones on meeting basic needs, capacity-building, data and information, science, and the role of major groups" (Agenda 21, Chapter 36).

Thus, the evolution of EE has moved from a biological, nature study-oriented movement in the 1960s (Arnstein 1971) to the holistic perspective of today. The current EE is integrated with capacity building strategies and incorporates humans as essential in the environmental process (see table 2-4). To achieve this, the 21st century calls for a co-operative approach that enlists governments, NGOs and individuals to promote and perpetuate EE in order to develop solutions to environmental problems.

**Table 2-4: Key Trends in Environmental Education**

---

|       |                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1960s | Nature Study<br>Learning about plants and animals, and the physical systems that support them<br><br>Fieldwork<br>Led by 'experts' within a particular academic focus - biology, geography, etc.                                                                                                                                                                                                                       |
| 1970s | Outdoor/Adventure education<br>Increasing use of the natural environment for first-hand experiences<br><br>Field studies centres<br>Growth of field and environmental/outdoor education centres - centres for developing awareness through practical activity and investigation<br><br>Conservation Education<br>Teaching about conservation issues<br><br>Urban Studies<br>Study of the built environment, streetwork |
| 1980s | Global Education<br>A wider vision of environmental issues<br><br>Development Education<br>Environmental education has a political dimension<br><br>Values Education<br>The clarifying of values through personal experience<br><br>Action Research<br>Community problem-solving. Pupil-led problem-solving, involving fieldwork                                                                                       |
| 1990s | Empowerment<br>Communication, capacity-building, problem-solving and action, aimed at the resolution of socio-environmental problems<br><br>Education for sustainable future<br>Participatory action. Relevant approaches to changing behaviours and resolving ecological problems                                                                                                                                     |
| 2000s | Community of partners?<br>Pupils, students, teachers, NGOs, politicians - working together to identify and resolve socio-ecological problems?                                                                                                                                                                                                                                                                          |

---

Source: Palmer 1998

---

### 2.3.1 Core Issues

---

Recent debate on the subject of EE has focused on translating education into behaviour. Although EE's ultimate goal is to elicit environmentally responsible

behaviour (Stapp et al. 1969; Sia et al. 1986; Hungerford and Volk 1990; Palmer & Suggate 1996; Zelezny, L. 1999), recent studies have criticised the field for the inability to operationalise this goal (Gigliotti 1990; Hungerford and Volk 1990). Consequently, recent research has placed considerable focus on how environmental educators can bring about the elusive behavioural changes (Sivek and Hungerford 1989).

A review of numerous studies provides insight into the various causal relationships hypothesised to elicit pro-environmental behaviour (see Stapp et al. 1969; Arbuthnot 1977; Borden and Schettino 1979; Ramsey and Rickson 1977; Hines et al. 1986; Sia et al. 1986; Sivek and Hungerford 1989; Gigliotti 1990; Hungerford and Volk 1990; Finger 1993; Ballantyne and Packer 1996; Rishi 1998; Hwang et al. 2000). Early EE literature, such as Stapp et al.'s (1969) seminal work on the topic, inferred a linear transition from knowledge to pro-environmental attitudes and eventually to pro-environmental behaviour. However, later research rejected Stapp et al.'s (1969) overly simplistic linear model (Ramsey and Rickson 1977; Hungerford and Volk 1990) and suggested that soliciting pro-environmental behaviour was more complex and dynamic than had been originally considered (McKenzie-Mohr 2000).

For example, in their study on predictors of responsible environmental behaviour, Sivek and Hungerford (1989) determined three critical variables that influence pro-environmental behaviour. Their study investigated the members of three conservation organisations and determined that perceived knowledge of action strategies, environmental sensitivity and an internal locus of control were strong predictors of environmental behaviour (Sivek and Hungerford 1989). However, the researchers did not make recommendations on how to operationalise their findings.

Sia et al.'s (1986) study proposed environmental behaviour predictors similar to those suggested by Sivek and Hungerford (1989). Sia et al. (1986) found that perceived skill in using environmental action strategies, level of environmental sensitivity and perceived knowledge in action strategies were the three variables out of eight that proved the strongest correlation. Suggestions on how to operationalise their results were also not forthcoming.

A study similar in method to Sivek and Hungerford's 1989 study was a study conducted by Palmer (1993). In her study that examined the autobiographical

submissions of members of the National Association of Environmental Education in the United Kingdom, Palmer (1993) determined three significant contributors to environmental sensitivity, which is a variable closely linked to environmental behaviour (Hungerford and Volk 1990; Hwang et al. 2000). 'Childhood experiences of the outdoors' was the single most important factor in developing concern for the environment. The role of parents and other adults was the second most important factor. Finally, the effect from negative environmental events such as environmental disasters, experiences with pollution and ill health attributed to environmental conditions was also a significant contributor to environmental sensitivity.

Gigliotti (1990) and Ballantyne and Packer (1996) argue that cognitive contributors to EE, such as knowledge of ecological processes, have lost precedence to values-oriented, affective contributors such as personal responsibility. Although they recognise the importance that affective variables play in environmental behaviour, both studies agree that current decision-making and environmental behaviour may be premised on poor ecological and environmental knowledge. The authors suggest a more balanced approach, but, again, do not suggest how to operationalize their findings.

Finger's 1993 study investigated the apparent paradox between environmental knowledge and concern and the lack of environmental behaviour. The research explains that, despite evidence of an increasingly environmentally aware and concerned citizenry, individuals are not displaying the corresponding environmental behaviour. Consequently, instead of traditional models that link environmental behaviour to information, knowledge, concern and value orientations, Finger (1993) attributes individuals' environmental behaviour to a 'life-world' approach. This approach "sees the individual primarily as being embedded in his or her life-world, as opposed to seeing the individuals as a more or less autonomous actor constantly negotiating his or her relationship with the (natural and social) environment" (Finger 1993, p.144).

Finger's (1993) research illustrates that an individual's behaviour will depend on the way in which they derive meaning (mainly through socio-cultural factors) and from the interplay between an individual's life-experience and through their worldview. Consequently, not all individuals will display the same degree of environmental behaviour, despite having relatively the same access to environmental information. The

study concludes with attributing environmental behaviour to experiences of environmental activism, nature experiences and experiences of environmental catastrophes.

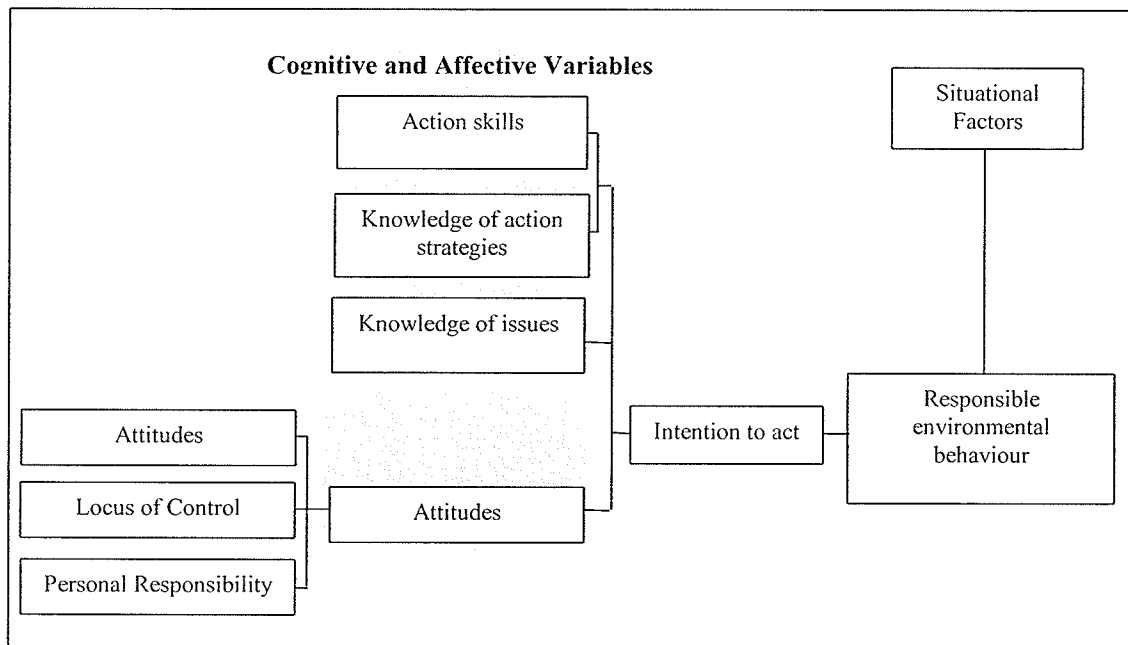
Hwang et al. (2000) explored causal relationships of antecedents to responsible environmental behaviour. Hwang et al.'s (2000) study supported many past studies' findings that investigated contributors to environmentally responsible behaviour. Variables that had a strong positive correlation with pro-environmental behaviour included knowledge<sup>1</sup> and attitude. They found a relatively poor correlation between personal responsibility and pro-environmental behaviour. The most significant relationship to environmentally responsible behaviour was an internal locus of control. However, Hwang et al.'s (2000) research does not infer any type of systematic operationalisation of the variables.

The model of responsible environmental behaviour proposed by Hines et al. (1986) (see figure 2-1) is a synthesis of 128 studies since 1971. Their research demonstrated that individuals who have knowledge of environmental issues, knowledge of how to take action on those same issues, a positive attitude towards the environment, an internal locus of control, verbal commitments to environmental behaviour and who take personal responsibility for the environment, demonstrated pro-environmental behaviour characteristics. Economic orientation and demographic variables such as income, education levels, age and gender showed comparatively small correlation coefficients and were determined to have little influence on pro-environmental behaviour.

While the Hines et al. (1986) model presents elements of a stepwise transition to pro-environmental behaviour, a detailed look demonstrates that it does not systematically outline the affective and cognitive variables. That is, action skills, knowledge of action strategies, knowledge of issues and attitudes are presented as if to act simultaneously on one's intention to act and which eventual translates to pro-environmental behaviour.

---

<sup>1</sup> Knowledge is defined by Hwang et al. (2000) as general ecological knowledge, knowledge of action strategies and action skills.

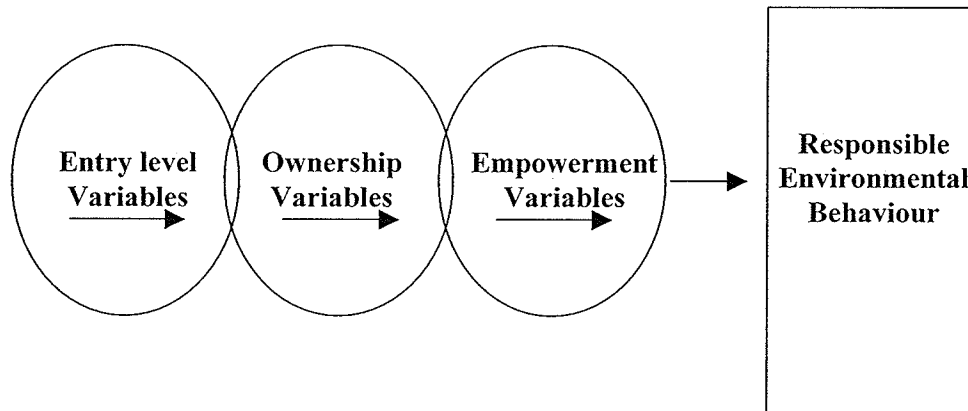


**Figure 2-1: Hines et al's (1987) Proposed Model of Responsible Environmental Behaviour**

With exception of the Hines et al. (1986) model, the aforementioned studies have proposed variables that contribute to environmental behaviour with no pragmatic recommendations on how to operationalise EE. Despite the fact that these causative relationships contribute to an understanding of the influences of EE, they do little to help educators or EE facilitators develop approaches to achieving the ultimate goal. Thus, the original problem of operationalising EE remains.

A linear model of how to elicit responsible environmental behaviour offers recommendations toward operationalisation. A linear model of EE can facilitate an organisation's ability to develop programmes or projects that address EE on a systematic basis. If researchers focus their efforts on developing programmes that have a systematic approach to EE, long-term approaches to EE are plausible. For example, a phased curricular approach where elementary, junior and senior levels are presented EE material based on the corresponding EE phase could be adopted. Similarly, an environmental organisation could design an EE campaign on a specific topic in a phased manner. A project could therefore be designed by incorporating the initial variables at the outset, following through until all the variables have been addressed.

Based on the literature review, Hungerford and Volk's study (1990) on changing learner behaviour through EE proposed a unique model of EE that operates in "more or



**Figure 2-2: Hungerford and Volk's (1990) Model of Responsible Environmental Behaviour**

less" of a linear fashion (see figure 2-2). Their model also incorporates past approaches to EE, including the recognition that the variables within the categories work synergistically which was implied in the Hines et al. model (1986). Consequently, Hungerford and Volk's model incorporates past research on environmental behaviour variables into their model but advances the field by suggesting a linear relationship between the variables.

Hungerford and Volk's (1990) model includes 3 successive categories of variables that contribute to responsible environmental behaviour. They are 1. entry-level variables, 2. ownership variables and, 3. empowerment variables. The variables are described by Hungerford and Volk (1990) as major and minor.

The major variable within the entry-level category is environmental sensitivity. Environmental sensitivity is defined as an empathetic perspective toward the environment. Hungerford and Volk's (1990) concept of environmental sensitivity corresponds with the Tbilisi objective of environmental attitude which is described as a set of values and feelings of concern for the environment<sup>2</sup> (as cited in Palmer 1998). The concept also correlates with Hwang et al.'s (2000) concept of attitude, which is described

<sup>2</sup> The Tbilisi Conference also established an environmental sensitivity objective, but this objective corresponds more closely with knowledge of the environment and its associated problems.

as an individual's favourable or unfavourable feelings concerning a particular aspect of the environment.

Knowledge of ecology is a variable that within the model as a minor variable and is the only minor variable discussed in this research. While the majority of literature agrees that there is no direct connection between knowledge of ecology and environmental behaviour, there is a consensus that knowledge of ecology is almost always a prerequisite to sound environmental decisions (see Hines et al. 1996; Sia et al. 1996; Deikmann & Preisendorfer 1998; Rishi 1998; Hwang et al. 2000). Disinger (1990) and Gigliotti (1990) agree that basic ecological knowledge is lacking within the current EE framework and, consequently, decisions can be uninformed and inappropriate.

Ownership variables make environmental issues very personal (Hungerford and Volk 1990). The major variables within the ownership category include in-depth knowledge of environmental issues and a personal investment in the environment. In-depth knowledge about issues means an understanding of the nature of a particular issue and its ecological and human implications (Hungerford and Volk 1990). Personal investment suggests that individuals strongly identify with an issue when they have a proprietary interest. Hines et al. (1986), Sia et al. (1986), Rishi (1998) and Hwang et al. (2000) support make the same correlations to environmental behaviour.

According to Hungerford and Volk (1990), empowerment variables are the final stage in producing an environmentally active citizenry. Empowerment variables "give human beings a sense that they can make changes and help resolve important environmental issues. 'Empowerment' seems to be the cornerstone of training in environmental education" (Hungerford and Volk 1990, p.12). Major empowerment variables include knowledge of and skill in using environmental action strategies, an internal locus of control, and intention to act.

Knowledge of action strategies includes any type of learning that involves practical solutions to an environmental problem. Sia et al. (1986) and Hines et al. (1986) confirm this variable. Perceived skill in using action strategies works synergistically with the former variable and implies that human beings who believe they have the ability to employ strategies to help resolve issues are more likely to exhibit pro-environmental

behaviour. Sivek and Hungerford (1989), Sia et al. (1986) and Hines et al. (1986) have also positively correlated this variable with environmental behaviour.

Similar to Sivek and Hungerford's (1989), Rishi's (1998) and Hwang et al.'s (2000) conclusions, an internal locus of control is important in the third category of the model. Internal locus of control refers to an individual's belief that they will be reinforced or compensated for, in this case, pro-environmental behaviour (Hwang et al. 2000; Rishi 1998). In his seminal work on locus of control, Rotter (as cited in Hawkes 1991, p. 477) describes locus of control as: "The degree to which (an) individual perceives that (a) reward follows from, or is contingent upon, his own behavior or attributes versus the degree to which he feels the reward is controlled by forces outside himself and may occur independently of his own actions". Rotter sub-divides the construct into two categories: external and internal locus of control. If an individual believes that an event/reward is contingent upon his/her own behaviour, he/she is said to exhibit an internal locus of control. Conversely, an individual is said to exhibit an external locus of control when he/she believes that the event/reward is typically the result of luck, chance, fate, powerful others or unpredictable due to the great complexity of forces surrounding him/her (Fiske and Taylor, 1984 as cited in Hawkes 1991).

The intention to act variable suggests that if an individual intends to act, it is more likely that they will act. However, this variable has had diverse reaction within EE literature. Hines et al. (1986) state that an intention to act is a precursor to environmental behaviour but is first influenced by numerous other variables. Rishi (1998) equates verbal commitments to intention to act and finds a poor correlation to pro-environmental behaviour, whereas Hwang et al. (2000) use intention to act as a substitute for actual behaviour, consequently implying a strong correlation.

The categories of the Hungerford and Volk (1990) model incorporate variables that have been proposed and proven to influence environmental behaviour. However, Hungerford and Volk's (1990) model has the unique claim of sequence or linearity and, as explained earlier, a linear model has several advantages in eliciting pro-environmental behaviour. An advantage of a linear model that has not been mentioned is the possibility of applying the model to a current EE situation in order to determine where there are

strengths and weaknesses. This is the approach taken to assess the current capacity situation for EE in Manali.

---

#### **2.4 Summary: Linking the Concepts**

---

"Strengthening the capacity of people to respond to their environment and development problems is a matter of education."

(Bayon and Ricardo 1993, p.13)

"Capacity building is primarily about strengthening human and institutional capacities, and a good part of the activities for capacity building can therefore be brought under the general umbrella of education and training in the wide sense."

(Giovannini 1993, p.3)

The statements above demonstrate the close connection between CD and EE. In fact, a detailed look demonstrates that the concepts seem almost synonymous with one another. For example, Morgan (1997, p.6) describes CD as focusing "on inducing different patterns of behaviour and instilling new attitudes and values, skills and relationships that lead to improved abilities of groups and organisations to carry out functions and to achieve desired outcomes over time". Pomerleau and Greene (1996, p.8) explain that "A capacity development programme aimed at producing lasting results must necessarily adopt a long-term perspective so that it can generate and accompany evolving fundamental changes in values, attitudes or behaviours". Moreover, words such as ownership and empowerment are used regularly to define CD (see Pomerleau and Greene 1996; Lusthaus et al. 1999; Fowler 1997; Morgan 1997; UNDP 1997b; Qualman and Morgan 1996). Concerning EE, Meadows (as cited in Tilbury 1995, p.199) claims that EE is "(...) learning to see the whole picture surrounding a separate problem like air-pollution – the history, the values, perceptions, emotions techniques, traditional processes that cause the problem and suggest action to cure it". EE also places considerable emphasis on sustainability (Tilbury 1995; Disinger 1990; Ibikunle-Johnson 1989).

However, perhaps EE's and CD's most important similarity is their ultimate goal of change. EE focuses on changing the behaviour of individuals to act in a pro-environmental fashion, while CD focuses on the resources and the surrounding context that facilitate change. CD is a process of change that is applied to a function or problem,

while EE is a function of environmental behaviour. Thus, CD is the process to change the function of EE.

The two concepts are, thus, critical to this study. Of particular importance to this work are the fundamental concepts of: 1. Capacity, which is the resources and contextual factors that outline the organisations' baseline situation; 2. Capacity Development, which looks to strengthen or develop that capacity, and, 3. The elements of EE: environmental sensitivity, knowledge of ecology, in-depth knowledge of issues, personal investment, knowledge of and perceived skill in action strategies and locus of control, which are used as criteria for a more specific measure of the participating organisations' EE capacity and the EE impact they have on their target audience.

---

## Chapter 3: Methods

---

---

### 3.1 *Methodological Background*

---

Participatory research methods allow consultation with local people so that development strategies will be appropriate and meaningful (Mukherjee 1993). Participatory research is also regarded as an exercise that devolves planning and decision-making to the target group or community itself (Townesley 1996). Participatory techniques draw from Rapid Rural Appraisal's (Chambers 1983) foundation but encourage local participation and emphasise the need for the community itself to respond to and resolve environmental management problems.

Participatory research methods are particularly useful for developing and/or strengthening the capacity of local communities. Ibikunle-Johnson (1989) believes that participatory research processes will encourage the local grassroots communities to identify their own community problems, steer research and project development in community-appropriate directions and encourage participation in the development of the education and training involved. Similarly, Pomerleau and Greene (1996) in their document on CD for environmental management assert that close and active participation by local partners is a determining factor in the success of any CD programme.

Agenda 21 makes the following recommendations with respect to capacity and local participation:

“As an important part of overall planning, each country should seek internal consensus at all levels of society on policies and programmes needed for short- and long-term capacity building to implement its Agenda 21 programme. This consensus should result from a participatory dialogue of relevant interest groups and lead to an identification of skill gaps, capacities and capabilities, technological and scientific requirements and resource needs to enhance environmental knowledge and administration to enhance environment and development”

(as cited in Bayon and Rodriguez 1993).

Since 1995, India's Capacity 21 programme has increasingly incorporated contributions from local communities, NGOs and grassroots organisations into the decision and policy-making process. India's Capacity 21 summary report for 1999

continues to support local level involvement and recognises its contribution as fundamental to making appropriate and sensitive decisions (Cullough et al. 2000). Furthermore, India recognises the need for community participation in a paper submitted for the “2<sup>nd</sup> Meeting of the National Councils for Sustainable Development”. In the section entitled ‘Community Participation’ the paper states that “It is realised [within India] that developmental activities undertaken with people’s active participation have a greater chance of success and can be more cost effective” (Government of India 1996).

Particular tools have been developed to facilitate participatory research, encourage community involvement and to help community members communicate resource problems, assess conditions and identify solutions (Chambers 1983; Mukherjee 1993). These participatory research tools were consequently used throughout the course of the project. They are:

1. Primary and Secondary data collection and review;
2. Semi-structured Interviews;
3. Key Informant Interviews;
4. Participant observation

---

## **3.2 Methods**

---

---

### **3.2.1 Field Research**

---

The research required a systematic and qualitative approach to addressing the objectives. The first step was the identification of local organisations involved in EE, the stakeholders and groups that support them and their role in the community through primary and secondary data review and through semi-structured interviews. Selection of participants began with ensuring that a diversity of sectors was represented in order to represent a balance of interests and perspectives. As such, the following organisational sectors were identified and participated in the study:

1. **The formal education system**
2. **Active non-governmental organisations**
3. **Manali Nagar Panchayat (NP) - municipal government**

The formal education system was identified as a stakeholder due to the importance it plays in building the capacity of younger generations to manage environmental concerns (UNESCO 1985). The following three schools participated in the research:

1. Day Star School
2. The Central School for Tibetans (CST) - Manali
3. The State Government Secondary School

Schools were identified based on several criteria. For example, the schools willingness to participate was considered to be of primary importance. The fact that all three schools followed separate curricula also served as an important, though subsequently identified, criterion. In most states in India, there exist three potential academic curricula: 1. The curriculum developed by the National Council for Education, Research and Training, (NCERT) with administration of secondary schools by the Central Board of Secondary Education (CBSE); 2. The curriculum of the State Council on Education, Research and Training's (SCERT); and, 3. The Indian Certificate of Secondary Education (ICSE) curriculum.

Each school varied in the number of students and staff, schools were either privately or publicly administered and represented an apparent economic stratification among schools. For example, Day Star School is privately funded, demanded a relatively high tuition compared to students at the CST and the State Government School. The students from the State Government School and the CST paid minimal enrolment fees. Therefore, this diversity amongst students provided an ideal opportunity for a small comparative study.

Day Star School's administrative decision to incorporate Environmental Studies into standard IX and X contributed to the decision of focusing on these grade levels. Students from other participating educational institutions were therefore of a similar age and grade level. Accordingly, students from the State Government School were also in Std. IX and X. However, the research was limited in this respect at the CST because Std. VIII was the highest grade level.

Twenty-one (21) students from Day Star School, Thirteen (13) students from the CST and seventy-five (75) students from the State Government School participated in the

research. However, students were addressed on a classroom basis and not interviewed individually. This process elicited an estimated 72 recorded comments.

The science and social science courses of the CST and the State Government School held the majority of environmental material, and thus the corresponding teachers from each school were interviewed. Two teachers from Day Star School, four teachers from the CST and six teachers from the State Government School were interviewed. In addition, nine teachers from Day Star School, chosen by Day Star School's administration, also returned a short questionnaire. Although teachers from the CST were also asked to complete the questionnaire, they were never returned.<sup>3</sup>

There were also criteria associated with the decision to include certain NGOs in the research. It was important that the NGOs were based in Manali. Although two of the NGOs were national organisations, they had a local chapter in Manali. It was also important that the NGOs were active. A list of NGOs in the Kullu area was provided to the researcher prior to the field research and listed many NGOs that were no longer active. However, other NGOs were active in the area but were not represented on the list. NGOs that participated in the study were consequently identified through interviews with residents and with other stakeholders, such as the NP.

Although involvement in environmental issues was not a necessary criterion, once the nature of the research was outlined, key informants primarily identified NGOs that had been active in that respect. Thus, five active NGOs in the Manali area participated in the research. One representative of each organisation was interviewed for the research, with the exception of Bharat Vikas Parishad where two representatives were interviewed.

- The President of Mahila Mandal (Women's Organisation) of Manali
- The Member Secretary of Gian Bigan Samiti (Committee for Science Literacy)
- The president and former-president of Bharat Vikas Parishad (Indian Development Organisation)
- The president of Arohi Environmental and Nature Conservation (AENC)
- The Chairman of the Society for Holistic Action in Rehabilitation and Ecology

---

<sup>3</sup> This survey was originally developed by the Education Department at HP University to assess teachers' perspectives on EE (see Appendix III). Surveys were distributed to Day Star School and to the CST. However, only Day Star School returned the questionnaires. After four attempts to retrieve the surveys from the CST, they were not recovered. The State Government School did not receive the survey because of language barriers.

The NP was identified as an important participant because of the enabling role it plays in Manali's environmental management initiatives. For example, the poly-bag ban, implemented in 1995 by the Himachal State Government, was strongly enforced and facilitated by the municipal government.<sup>4</sup> The NP's dominant presence and assistance during the implementation of the ban contributed considerably to the success of the campaign. In fact, during the course of the research, a municipal council in the neighbouring state of Uttranchal solicited Manali's Secretary's advice on how to implement a its own poly-bag ban programme (Gupta pers. comm. 2000).

The NP's regulatory abilities also served as an important criterion. For example, the two most identified environmental problems, according to Manali's residents and tourists, were solid waste and traffic. These areas of regulation fall under the jurisdiction of the Manali NP.<sup>5</sup> Consequently, the NP was important to include in the study primarily for its regulatory abilities. Members of the NP that were interviewed for the research included the president, the secretary and the Sub-Divisional Magistrate.

Tourists have a significant impact on the environment of Manali. Consequently, their contribution to the research was important. Domestic and foreign tourists were randomly selected, either by the researcher (in the case of foreign tourists) or by the researcher's local contact and translator. Tourists were approached as they joined in the activities of Manali's market. There were no specific criteria related to the selection of tourists to participate in the research. Twenty-five tourists were interviewed.

The residents that were interviewed were also selected at the discretion of the researcher's local contact and translator and were approached while they were working in Manali's market. The primary criterion for residents' participation in the research was their residency in Manali. Many individuals travel to Manali during the peak tourist season to benefit from tourism's economic benefits. However, they do not have the same long-term investment in the environment of Manali compared to Manali's permanent residents. Consequently, 12 residents were interviewed.

---

<sup>4</sup> Although the ban has legally been in effect since 1995, it was not until 1998 that any results or effective actions were taken on behalf of the state and most notably the NP of Manali.

<sup>5</sup> From 1997 until July 2000, approximately 32% of the environmentally related comments and suggestions in the Manali HP tourism office suggestion logbook related to rubbish and keeping Manali clean and approximately 43% of the comments and suggestions were related to traffic and road conditions.

Information regarding tourists' attitudes and concerns was also obtained from the HPTDC's local office tourist registry. There were approximately 169 environmentally related comments recorded from the registry out of 6662 total comments. The comments from the registry dated from 1997 (no month was recorded in the registry) to July 12<sup>th</sup>, 2000.

Once participating organisations were identified, the second objective of the study sought information concerning the organisations' resources. To reiterate, CD is defined as developing the ability of organisations to effectively and sustainably perform a function and solve problems in a given context, with ability meaning the availability and effective application of human, information and financial resources. Consequently, data on the organisations' human, financial and information resources were gathered through semi- structured interviews with representatives from each of the organisations.

Interview questions with respect to human resources sought information that related to the member recruitment processes. Questions included: Where does the organisation draw its membership?; How many members belong to the organisation?; and, What is the general profile of its members? Further questions examined the organisations' satisfaction with the number and quality of members and whether the organisations thought more members were required to improve the effectiveness of the organisation's services.

Financial resource questions related to the current financial situation of the organisations. Questions included: From whom does the organisation receive funding?; and, Does the organisation view their funding to be sufficient for their current and future needs? Further questions examined whether the organisations explored other potential funding sources and whether the organisations faced any constraints when trying to obtain funding.

Questions with respect to information resources focused on how participating organisations and their members received their information. Question included: Are libraries available to the organisations?; and, How and from where does the organisation receive their information on environmental issues in Manali? Additional questions investigated whether any members had ever been invited to attend a workshop or seminar related to environmental issues and did they find the seminars, meetings or information to

be useful. Questions also attempted to determine whether, in their opinion, the workshops or seminars could have been improved and in what way? Additional data on information resources were obtained through document reviews of the schools' libraries and through NGO reports and newsletters.

To determine if and how these organisations had affected their target group, students, residents and tourists were also asked to answer several questions and to comment on several pertinent issues. Students were asked if they believed Manali was facing any environmental problems; how these problems might affect them or their families personally; whether they contributed to helping Manali's environmental problems; and, in what ways they thought they should help. Moreover, students undertook a waste audit project with the researcher, which provided additional insight in to their knowledge of ecological and environmental issues.

Residents were asked what their perception was of Manali's current environmental situation, whether they perceived any problems and whether they thought these problems affected them personally. Residents were also asked what they thought was an appropriate way to deal with the situation and who was responsible for remedying the situation. Moreover, residents were asked if they acted in environmentally responsible ways and why they did or did not. Finally, residents were asked to comment on the effectiveness of three different methods of creating awareness: 1. The "Poly-bags are Banned in Manali" sticker; 2. Painted signs with environmental messages; and, 3. A government subsidised jute bag initiative.

Tourists were asked why they had decided to visit Manali, what their initial impressions were and whether they felt Manali faced any environmental problems. In addition, tourists were questioned on past EE initiatives. For example, tourists were questioned on their awareness of the poly-bag ban in the town and from whom or where had they learned about the ban. Questions also investigated whether tourists felt there was a more effective method of informing people of the ban. Finally, tourists were questioned on whether they felt they had any responsibility to the environmental situation in Manali.

Information on contextual issues was also obtained throughout the field research. Primarily, data were collected on influential policy frameworks, economic pressures,

cultural and social norms and regulatory incentives. Methods used to gather the data included: 1. A review of previous research in the area; Semi-structured interviews; 3. Participant observation; and, Primary and secondary data review.

---

### **3.3 Analysis:**

---

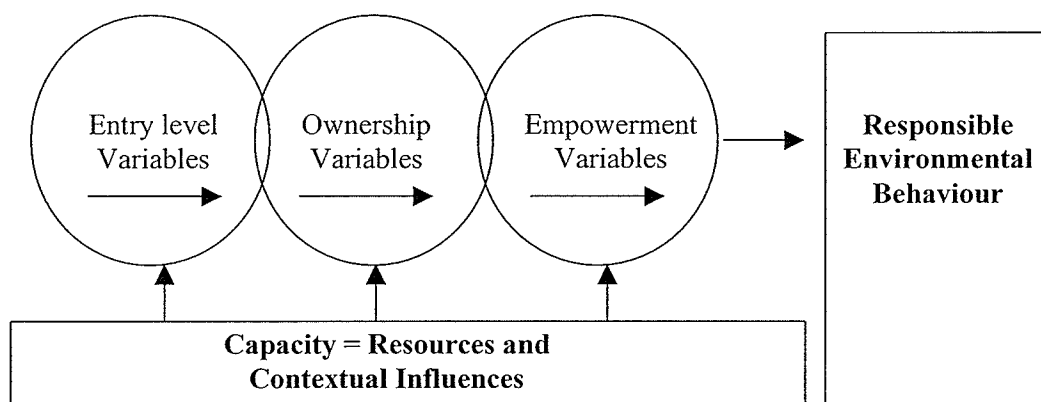
Assessing the capacity situation is a necessary first step prior to recommending strategies to improve the situation. Capacity assessment (CA) is a method that determines the current state of capacity for a specific function or service and facilitates the identification of CD opportunities. The UNDP (1994, p.2) describes CAs as:

”(...) a vital initial stage in formulating a capacity development strategy and lays the basis for understanding capacity problems [in a country], why they have emerged, what approaches to capacity development have been taken in the past, and what have been the effects. On the basis of the capacity assessment, a range of options for capacity development can be identified”.

Petts (1999; p.36) writes, “Capacity assessment is essential in the formulation of coherent and effective strategies for capacity development”. Pomerleau and Greene (1996) refer to a CA as a baseline study and state that the background research is paramount to an efficient and successful CD strategy. Finally, the UNDP (1997b) describes CA as “a process whereby the various dimensions of capacity are assessed within the broader systems context, as well as evaluated for specific entities and individuals within the system”.

However, CAs are a dynamic process and should be approached according to the function or problem in question (UNDP 1997b; UNDP 1998). In this case, the function or problem in question is EE. Accordingly, to assess EE capacity, the current EE capacity situation should be outlined to compare it with the desired situation. This process highlights the capacity gaps. The transition from the current situation to the desired situation is the subsequent CD strategy. Hungerford and Volk's (1990) linear model of responsible EE behaviour is, therefore, a particularly relevant measuring tool in this respect. That is, a linear model of EE helps to determine the stage at which Manali's organisations find themselves and identifies gaps in order to reach pro-environmental behaviour.

However, Hungerford and Volk's (1990) model does not include the factors that influence the variables. A modified version of their model, used in this research, demonstrates how these variables are supported - through the application of available resources and through positive contextual influences. Moreover, the modified version demonstrates that a lack of resources or negative contextual influences can have a negative effect on pro-environmental behaviour. Figure 3-1 demonstrates the modified version of Hungerford and Volk's (1990) linear model that is adopted in the research.



**Figure 3-1: Modified Version of Hungerford and Volk's (1990) Model of Responsible Environmental Behaviour**

The effectiveness of the participating organisations' capacity was therefore measured by the stage at which the organisations and the organisations' target audience find themselves within Hungerford and Volk's (1990) EE model. That is, to what degree have the contextual influences and the available resources influenced the Manali organisations' EE capacity and, to what degree have these influences and resources enabled Manali's organisations to foster the entry-level, ownership-level and empowerment-level variables within their target audience. A sector-approach to the research identifies the strengths and weaknesses of each sector, which facilitates the identification of networking opportunities for more effective use of resources and avoids the duplication of efforts.

### 3.3.1 Assessing the Variables

Hungerford and Volk's (1990) model outlines three phases to environmentally responsible behaviour. The first phase is the entry-level category, which contains prerequisite variables or variables that enhance individuals' decision-making. Variables

in the second category (ownership variables) personalise environmental issues. Variables within the last category (empowerment variables), indicate a sense of being able to foster change and help resolve important environmental issues. An explanation of how the variables were assessed for the study is provided below.

Literature that has cited Hungerford and Volk's (1990) model has concentrated on the major variables of each category (Glover and Deckert 1998; Negra and Manning 1997). This research takes the same approach, with two exceptions. Knowledge of ecology is considered a minor variable within the model but its importance is frequently referenced in EE literature (see Gigliotti 1990; Rishi 1998; Glover and Deckert 1998; Hwang et al. 2000). This variable was consequently included. Conversely, a review of the literature highlighted an inconsistency in confidence with respect to the major empowerment variable of intention to act (see Rishi 1998; Hwang et al 2000). Therefore, the intention to act variable is excluded from the study.

Variables were assessed in a two-staged manner. First, it was important to determine how the organisations' resources affected their own EE capacity. If the organisations were not initiated, to any degree, to the EE variables, it is not likely that they could foster environmentally responsible behaviour. For example, if a teacher is not environmentally sensitive or has no knowledge of ecological processes, it is not likely that they can foster these particular values within their students.

The second stage of assessment highlighted how the organisations applied their available resources to foster those same variables amongst their target audience. For example, although teachers could be experienced or knowledgeable in all the variables in Hungerford and Volk's (1990) EE model, this does not necessarily mean that they will successfully foster these same variables within their students. Thus, the second stage assesses students' (target audience of school administrations and teachers) and residents' and tourists' (target audience of NGOs and the NP) position in Hungerford and Volk's (1990) model of environmentally responsible behaviour.

### **3.3.1.1 Entry Level Variables**

---

Knowledge of ecology was essentially assessed in terms of what information resources were available to the organisations and to the organisations' target audiences. Fully assessing participants' actual knowledge of ecology was beyond the scope of the

project. However, comments that indicated interviewees' knowledge of ecological processes were included in the assessment of this variable. Assessing environmental sensitivity included indications of: voluntary involvement in environmental issues, demonstrated enthusiasm, practical experiences in outdoor settings<sup>6</sup>, inquisitiveness, initiative and inquiring on how to help were used as indicators.

#### **3.3.1.2 Ownership Variables**

---

Experiences of disseminating information about environmental issues, including projects that involve knowledge of the issue and understanding the human and ecological consequences of specific environmental problems were used as criteria when determining organisations in-depth knowledge variable. An indication of in-depth knowledge of issues also included whether organisations and their target audiences had accessibility to information regarding specific environmental issues. Students, residents and tourists were also interviewed to determine their knowledge of pertinent environmental issues in Manali. Questions enquired as to whether students, residents and tourists felt Manali had any environmental problems and, if so, what was their knowledge of these problems.

Although a financial investment may be the first inclination concerning personal investment, other investments are also documented. For example, health, individual's future or the future of Manali also depends on a healthy environment and therefore a personal investment might be perceived. Consequently, assessing the personal investment variable examined whether the organisations felt that they had an investment in the environment, whether personally or organisationally, and whether they felt it was important to communicate this idea of investment to their audience. Questions to students, residents and tourists concentrated on whether and how the environmental problems of Manali impacted them on a personal level.

#### **3.3.1.3 Empowerment Variables**

---

Knowledge of and perceived skill in action strategies were the first two variables assessed within the empowerment category. Teaching and/or information dissemination by the organisations and any indications of learning that involved practical solutions to an environmental problem by the organisations, or their audience, were included as

---

<sup>6</sup> Palmer (1993) demonstrates a correlation between outdoor experiences and environmental sensitivity.

indications of knowledge of action strategies. Perceived skill in using action strategies works synergistically with the former variable and was thus, assessed similarly.

The third variable of locus of control refers to an individual's belief in being reinforced for certain behaviour. As Hungerford and Volk (1990, p. 12) explain:

“An individual with an internal locus of control expects that he/she will experience success or somehow be reinforced for doing something. Success, in turn, appears to strengthen his/her internal locus of control. On the other hand, a person with an ‘external locus of control’ does not believe that he/she will be reinforced for doing something and, therefore, probably not do it”.

The locus of control variable was documented through organisations' and their audiences' indications of who they felt was responsible for Manali's environmental problems and, more specifically, who they felt was responsible and/or capable of remedial action. Questions that investigated individuals' thoughts on how to improve Manali's environmental problems also offered some indication of participants' locus of control. For example, if participants offered solutions that pointed to regulatory control, it was concluded that residents felt they had little influence on the improvement of Manali's environment. In other words, an external locus of control was demonstrated.

---

### ***3.4 Action Oriented Activities***

---

To address the fourth objective of the study, preliminary analysis of the data was done while in the field to determine possible opportunities or actions to develop EE capacity. The tangible products to come from this preliminary analysis were in response to important issues that were identified by both the residents and the visitors to Manali. Firstly, a workshop was designed and carried out with the participating schools to foster awareness of waste and waste management issues. Secondly, Global Positioning System and Geographic Information System technologies were employed to create a walking map in response to traffic problems in Manali. Finally, a brochure describing each NGO and its area of expertise was compiled and distributed amongst the NGO community and schools to encourage networking and co-operative efforts among the two organisations.

---

## Chapter 4: Contextual Overview

---

CD distinguishes itself from past development paradigms in that it considers contextual influences before attempting to identify CD opportunities. This section offers an understanding of some of the broad contextual factors that might influence any initiative related to the development of EE capacity in Manali. Two broad contextual factors were identified: 1. The economic context, specifically the economic impact of tourism, and; 2. The broad legal and/or regulatory context that influences EE the capacity of Manali's organisations.

However, each sector involved in the research must also work within its own specific context. That is, each sector has contextual influences particular to itself that do not affect the other sectors. For example, formal education policies that focus on EE do not affect how the NP would develop an EE initiative, and though the education policies may affect future generations, they do not immediately affect the community as a whole. These specific contextual influences will be outlined in chapter five. The broad contextual influences outlined below generally affect all sectors as well as the general population of Manali.

---

### 4.1 *Manali's Economic Context: Tourism's Influence on EE*

---

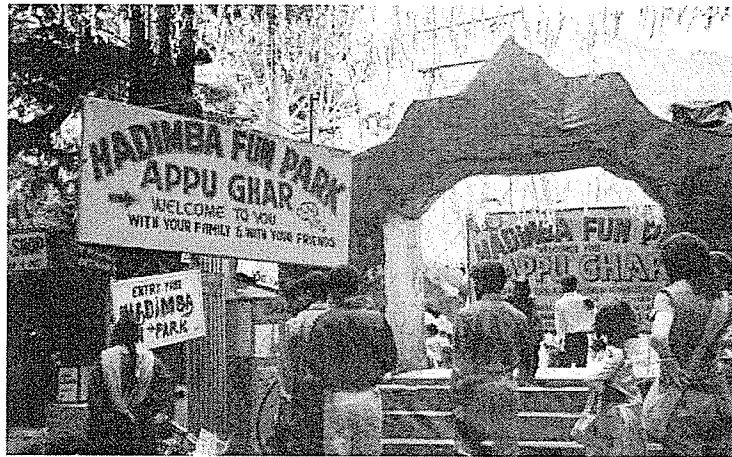
Factors that stimulate the economy of an area inevitably influence people's attitudes and behaviours. This is particularly the case when the area has had limited opportunities for economic growth in the past. Consequently, communities that experience rapid economic growth may pursue development initiatives that are based on short-term planning and that seek to maximise profits (UNESCO 1980). However, these initiatives may do little to preserve or protect the natural environment.

Tourism has been Manali's means to rapid economic growth in recent decades. Since the middle of the 1970s, the increase in Manali's annual tourist influx has gone from approximately 25000 to almost 400000 in the mid-1990s (Batta 2000). Manali has become the most popular resort and holiday destination in the Kullu Valley (Batta 2000). Together with horticulture, forestry and hydro development, tourism is a major economic activity for the state and creates numerous income and employment opportunities (Batta 2000). However, while tourism has led to the over-riding environmental protection of

some highly visited destinations, and has even contributed to the preservation of some of Manali's cultural sites, it continues to add to the town's serious solid waste problems, uncontrolled development, traffic congestion and air pollution.

Few could argue that the economic rewards that tourism has brought to Manali have been negative. However, the economic rewards have also brought disadvantages, including the difficulties and problems related to providing basic amenities to tourists. Tourism requires roads, accommodation, plumbing, waste disposal and food for tourists' basic needs. Indirect activities (that are nonetheless driven by tourism) also require significant resources, such as taxis or auto-rickshaws to popular tourist spots and hydro energy for 'fun-parks' (see figure 4-1) also burden Manali's infrastructure and resource base.

**Figure 4-1: Hadimba Fun Park - Manali, India**



Past research has documented the advantages and disadvantages that tourism has brought to Manali and the Kullu district in detail (see Cole 2000; Batta 2000; Sandhu 1998). The discussion in this report will therefore be relatively cursory. The issues mentioned below are highlighted because of the way in which they influence the capacity of the community to educate, influence attitudes, change behaviours and foster ownership and empowerment amongst the town's residents.

One of the most pressing issues to arise out of tourism in Manali has been the impacts on the education of its young people. With the rise in tourist numbers, there has been a diversion from education to the market as a result of the promise of greater revenue obtained within the town through private shops, hotels and trekking and touring operations (Chetwode 1972; Pandey, Singh and Singh 1998; Sandhu 1998; Pirazizy as cited in Cole 2000; Batta 2000). The lure of earning an income from the visitors who bring their tourist rupees has influenced many of Manali's young people to abandon their education.

However, capitalising on the momentum of rapid economic growth has not been an attractive opportunity for the youth and residents of Manali alone. The state government has also sought to increase revenue through Manali's tourism potential. However, while the tourism potential of the area has been the focus of governments since the time of Nehru, it appears that little attention has been paid to the sustainability of its progress (Sandhu 1998). Sandhu (1998), in her study on tourism and sustainability of the trekking industry in the Kully valley, explains that the Department of Tourism provides a subsidy of up to one lakh<sup>7</sup> specifically for the construction of a restaurant. Moreover, Sandhu (1998), explains that the exploitation of the valley's tourism potential is supported by the HP Finance Corporation through financial subsidies of up to one crore<sup>8</sup> by scheduled banks, for hotel building. Optimistically, there was a moratorium implemented at the time of the research that restricted any further construction of buildings more than three storeys high. However, some residents explained that the fines for contravening the moratorium were nominal and did not act as much of a deterrent.

These development incentives have had a profound impact on the growth of the Kullu Valley. However, there are few indications that tourism development will decrease. Recent evidence of the state government's desire to continue to exploit the Kullu Valley's tourism potential appeared in a July 29, 2000 Hindustani Times article describing the state's new tourism policy. The article's most notable paragraph states that the HPTDC's role will be to "continue to play a pioneering role to develop and open virgin destinations for tourists and provide healthy competition to the private sector".

However, perhaps the least apparent yet most challenging consequence of tourism and its influence in the context of EE is the individual sets of values and attitudes that each tourist brings with them. Manali and the surrounding areas are renowned throughout India as a pleasant holiday destination where one can enjoy the "Himalayan beauty". Moreover, HPTDC's tourist ledger dating back to 1997 and responses to interviews indicate that most domestic tourists come to Manali for the pristine environment (HPTDC tourist ledger 1997 – 2000). While foreign tourists from western European countries and North America may not necessarily have the same opinion,

---

<sup>7</sup> One lakh is Rs 10 000.

<sup>8</sup> One crore is Rs 10 000 000.

relative to domestic tourists' native cities of Delhi, Calcutta and Mumbai, Manali is pristine.

Paradoxically, the majority of domestic tourists want better services and improved infrastructure. The HPTDC's (1997-2000) ledger demonstrates that out of all the environmentally related comments made from 1997 to the spring of 2000, 53% (90) of domestic tourists want improved hotel services, improved roads or more lighting. In contrast, 33% (56) of those who made comments related to the protection or conservation of Manali's environment. It is difficult for community organisations to foster an environmentally aware and sensitive citizenry when one of the major sources of revenue for the community demands development that is not necessarily in harmony with the goals of EE.

However, since the introduction of tourism to Manali's economy the community has become increasingly dependent on the industry as a main source of employment and income. As Dr. Sharma (pers. comm. 2000) of the state department of Science, Technology and Environment (STE) states, "Manali has been dictated that tourism is a major source of revenue and thus alternatives are not considered". He contends that any alternatives that are introduced in the future need to be top-down with strict regulatory measures to support their development (Sharma pers. comm. 2000).

---

#### ***4.2 The Regulatory Context: Legal Incentives and Disincentives for EE in Manali***

---

"Capacity development frequently targets government because capable governments are central for development, and 'governments are ultimately responsible for creating the framework for development'. The onus rests on government to create the 'enabling environment' for organisational and institutional development. Factors such as government policies, legislation and enforcement are critical elements in this enabling environment" (UNDP 1994).

Governments from the local to the national level significantly contribute to enabling EE. Government's most important role consists of implementing laws, regulations and policies that encourage EE. Ensuring enforcement of these legal instruments is part of that same process. Encouraging EE through financial assistance programmes for NGOs, schools and other groups whose purpose is to engender an

environmentally aware and sensitive citizenry is also a function of government. Without either of these political facilitators in place, fostering EE would be impossible.

Specific regulatory abilities of Manali's NP will be addressed in chapter 5. These abilities have a very direct, immediate impact on EE initiatives within the community. However, legal instruments and incentives at the national and state levels also influence EE at the local level. Identifying opportunities to develop the capacity of these levels of government is beyond the scope of this study. However, the contribution of these legal instruments to the regulatory context of EE and the incentives and disincentives they create are important to mention and are discussed within the following section.

#### ----- **4.2.1 EE in the Indian Regulatory Context** -----

The GOI recognises the connection between education and a healthy environment. The Report of National Development Council Committee on Literacy Planning Commission 1993 states:

“The question of environment is also closely connected with education. It has been observed that environmental awareness and achievement in environmental conservation and preservation increase in direct proportion to the increase in the literacy level of a country. In the National Environmental Awareness Campaigns organised by the Ministry of Environment and Forest, Government of India, it has been observed that the maximum number of proposals for organising environmental activities are received from the States where the literacy rate is quite high.”

Source: GOI 2000 Department of Education Internet site

At a legal and at a policy level, the GOI demonstrates its concern for environmental issues through various pieces of legislation and policy frameworks. The Indian Constitution provides an excellent example. Constitutional Amendment 51A: Fundamental Duties, provides ten responsibilities that shall be the duty of every citizen in India. The eighth responsibility, 51A (g), states:

“It shall be the fundamental duty of every citizen in India: to protect and improve the natural environment including forests, lakes, rivers and wild life, and to have compassion for living creatures” (Indian Constitution).

Without the knowledge and behavioural changes, however, protecting and improving the natural environment and all its components is unrealistic. EE needs to be a legal requirement and incorporated into the country's legislation for it to be effective and

enforceable. A brief review of India's main environmental Acts, namely the Environment (Protection) Act (1986), the Water (Prevention and Control of Pollution) Act (1981) and the Air (Prevention and Control of Pollution) Act (1974), demonstrates that EE has made its way into India's legal framework.

India's Environment (Protection) Act (1986), Chapter 2, Section 3(2)(xii) states:

3. (2) In particular, and without prejudice to the generality of provisions of sub-section (1), such measures may include measures with respect to all or any of the following matters, namely: -

- (xii) collection and dissemination of information in respect of matters relating to environmental pollution.

India's Air (Prevention and Control of Pollution) Act, Section 16 (2)(f) and (i) and, with respect to the State Pollution Control Boards, Section 17(1)(c) and (d) state:

16. Functions of the Central Board (Pollution Control Board):

- (2) In particular and without prejudice to the generality of the foregoing functions, the Central Board may -

- (f) organise through mass media a comprehensive programme regarding the prevention, control or abatement of air pollution;

- (g) collect and disseminate information in respect of matters relating to air pollution.

17. Functions of the State Boards (Pollution Control Board):

- (1) subject to the provisions of this Act, and without prejudice to the performance of its functions, if any, under the Water (Prevention and Control of Pollution) Act, 1974 (Act 6 of 1974), the functions of the State Board shall be -

- (c) to collect and disseminate information relating to air pollution;

- (d) to collaborate with the Central Board in organising the training of persons, engaged or to be engaged in programmes relating to prevention, control or abatement of air pollution and to organise mass-education programme relating thereto.

However, legislation is only one type of incentive for enabling EE within India. Government departments can promote EE through means other than through regulatory

pressures and the subsequent enforcement. Co-operation and discussion with NGOs and the development of programmes that financially assist groups interested in promoting environmental issues is also an important contribution from the various levels of government. In India, two organisations and one governmental programme are only an example of the environmental NGOs and programmes to which the GOI has lent its support. They also provide some insight as to the mandate and objectives of these organisations.

The C.P.R. Environmental Education Centre is an autonomous agency of the Centre of Excellence of the Ministry of Environment and Forests (MEF). The C.P.R. EE Centre was jointly established by the MEF and the C.P. Ramaswami Aiyar Foundation. The mandate of the centre is to increase consciousness and knowledge about the environment and the major environmental problems facing the country today. The organisation conducts a variety of programmes to spread awareness and interest among the public, particularly among NGOs, women, youth and children. Programmes include teachings on all aspects of the environment and ecology, with the purpose of promoting conservation of nature and natural resources. The centre emphasises EE, teacher and NGO training, conservation and restoration of the ecological heritage, land and water management, awareness of environmental legislation and encourages the use of eco-friendly technologies for sustainable development (C.P.R. Environmental Education Centre Internet site 2002).

The Centre for Environment Education (CEE) is also a national institute with a focus on EE. Established in 1984, the CEE is financially supported by the MEF, and is associated with the Nehru Foundation for Development. The CEE's primary objective is to improve public awareness and understanding of environmental issues with a view to promote the conservation and wise use of nature and natural resources (CEE Internet site 2002). Consequently, the CEE not only creates expertise in the field of EE, but also develops innovative programmes and educational materials while testing their validity and effectiveness (CEE Internet site 2002).

Finally, the GOI also supports programmes that allow NGOs, voluntary organisations, educational institutions and State government departments to foster environmental awareness. One such programme supported by the MEF and administered

by HP's State department of STE is the National Environment Awareness Campaign (NEAC). The 2000-2001 theme was "Keep Our Environment Clean and Green". The programme offers from Rs 5000 to Rs 20000<sup>9</sup> to the aforementioned groups in order to conduct various activities such as seminars, workshops, camps, rallies, competitions or festivals to foster environmental awareness.

---

### 4.3 *Summary*

---

This brief review of some of the national and state mechanisms that enable EE within India is not considered comprehensive. It is a demonstration of some of the steps that India has taken to educate its citizens regarding the environment, relevant environmental concerns and on means to act. CD initiatives, no matter what the focus, require an enabling environment to be able to succeed. India has implemented legal and policy instruments with respect to EE, in combination with the support and co-operation of NGOs. These mechanisms contribute to a positive context or 'enabling environment' that is necessary for EE. The following chapter highlights specific contextual issues that influence the organisation's EE capacity and documents the participating organisations' resources.

---

<sup>9</sup> One Canadian Dollar is approximate Rs. 29.

---

## Chapter 5: The Participants

---

This chapter provides a description of the participating organisations and outlines the local contextual influences that are unique to each sector. Details about the available human, financial and information resources for each organisation are also provided.

---

### ***5.1 The Formal Education Sector Context: Environmental Education in the Formal Education System in India and Himachal Pradesh***

---

The Supreme Court case of M. L. Mehta vs. The Union of India provides an understanding of the legal context for EE in the formal education sector of India. The landmark case made it mandatory for educational institutions to create awareness of the environment through the medium of education (Koul 1997). However, since the presence of EE in India's school curriculum, its implementation has been the subject of numerous debates and discussions. This section provides a brief overview of how EE has been introduced into India's formal education sector. This section also discusses other contextual influences that affect the success of EE in the classrooms of India, including past and current educational policies, the financing of education as well as teacher education. The contextual overview concludes by discussing the specific implications of EE's incorporation into the curricula of the schools participating in this research.

---

#### **5.1.1 The Evolution of EE in India's Educational Policies**

---

From 1964-66, India's Education Commission recommended the following with respect to EE and its incorporation into curricula:

“The aims of teaching science in the primary school should be to develop proper understanding of the main facts, concepts, principles and processes in the physical and biological environment. In the lower primary classes, the focus should be on the child's environment - social, physical and biological... The child may also be introduced to formal areas of science such as the plants and animals in his surroundings, the air he breathes, the water he drinks, the earth he lives on...

At the higher primary classes, environmental activities will lead to the study of natural and physical sciences, history, geography and physics...”.

(Ministry of Education 1971 as cited in UNESCO 1985)

These recommendations of the Committee concerning EE were adopted in a Policy Resolution in 1968, and curriculum guides were subsequently prepared (UNESCO 1985).

Since 1968 the discussion on the inclusion of EE into India's education policies and curricula has continued until 1986 when a new National Policy on Education (NPE) was developed (see Pandey 2000; Saxena 2000; Aggarwal 1999; Sharma 1999; Raina 1999). The NPE of 1986 stated that the National System of Education was to be based on a National Curricular System framework, which would contain a set of common core components along with other components that would remain flexible (Sharma 1999). The National Curricular Framework was developed accordingly in 1988 and contains the following core components (as cited in Rajput 1999):

- (a) The history of India's freedom movement
- (b) Constitutional Obligation
- (c) Content essential to nurture national identity
- (d) India's common cultural heritage
- (e) Egalitarianism, democracy and secularism
- (f) *Protection of the environment*
- (g) Removal of social barriers
- (h) Observance of small family norms
- (i) Inculcation of the scientific temper

However, incorporating environmental issues into the core components of India's academic curricula does guarantee that students throughout the nation will receive the benefits of EE. Despite the legislative and administrative support, several barriers to fostering an environmentally conscious citizenry continue to challenge educators and policy developers. Financing education in the country is one example. In 1968, the year of the first national policy, the allocation of 6% of the national income for education was made a priority. Unfortunately, as of 1994/95 the percentage of the GNP allocated to education remained at 3.3%, approximately half of the amount set in 1968 (Ministry of Education Internet site 2002).

Without teachers educated in environmentally related aspects, legal instruments and/or related efforts to incorporate EE into the academic curriculum are futile. Despite all other supports in place, without educated and enthusiastic teachers it is impossible to cultivate a new generation of environmentally aware and active young people (Aggarwal 1999; UNESCO 1980). However, teacher training is perhaps the greatest hurdle to the effective implementation of EE in India (UNESCO 1985). A UNESCO (1985) document on the incorporation of EE into India's school curriculum suggests three reasons for the shortcoming. They include:

1. The total number of teachers to be oriented is too large;
2. To bring about a change of attitudes in teachers to develop a sort of commitment for the environment is a Herculean task. Unless teachers are committed to environmental education goals/objectives they cannot motivate their pupils; and,
3. With advancing age it is difficult to bring in attitudinal changes.

Some difficulties experienced by teachers include:

- 
- the classroom teacher faces a problem in getting proper guidance to carry out some of the activities planned;
  - supplementary and reference materials are not easily available;
  - the teacher does not get administrative support unless fellow teachers, headmasters and supervisory staff are also properly oriented for the environmental programme;
  - the teachers get little time for proper planning of activities;
  - the teacher loses interest in the new approach in the absence of regular follow-up action;
  - the insistence of completion of the syllabus places several constraints on teachers to be innovative.
- 

Source: UNESCO 1985

Pre-service training through university education and in-service training, including workshops and correspondence courses, are perhaps the two apparent remedial steps to address this problem. An international comparative review on the introduction of EE into India's school curriculum describes that teacher education programmes in India had, up until 1985, been limited to in-service courses (UNESCO 1985). However, there has been a growing trend towards the inclusion of EE into the curricula of the Bachelor's of Education programmes. A cursory review of twelve Indian university Internet sites

indicates that three of the universities had a component of EE within their faculty of education syllabi, including HP University.<sup>10</sup> Evidently, India has recognised the lack of pre-service training and is taking remedial action.

EE is therefore not a subject that is ignored or undervalued within India's education policies and efforts. Although challenges remain concerning its implementation, the GOI supports the introduction of EE in the formal education system at all levels. In this respect, efforts towards fostering an enabling environment have been positive.

---

### 5.1.2 Local Implications

---

The schools of Manali are not exempt from the legal obligations that require India's educational institutions to provide EE to their students. Accordingly, the academic institutions of Manali are required to incorporate EE into their curricula. However, like numerous other educational institutions across the country, approaches to this legal obligation differ amongst schools. The participating schools in this study offer an interesting comparative review of how EE can and has been incorporated into the secondary school curricula in Manali.

Some of the discussion surrounding the inclusion of EE into the classroom focuses on whether an infusion (across subjects) approach should be taken or whether EE should be a stand-alone course (UNESCO 1985; UNESCO 1980; Thaplyal 2001, pers. comm.). The NCERT and the HP SCERT, the curricula that the CST and the State school follow respectively, have maintained that EE should be infused within the Science and Social Science courses, including History, Geography, Civics and Economics. Priority within the Social Science course is placed on History and Geography, at 35% and 35% respectively.

The ICSE curriculum followed at Day Star School, includes dimensions of EE in its Science and Social Science Courses and it offers schools the choice of including a stand-alone subject, Environmental Studies (ES), in their curriculum. However, the decision to include an ES course in the curriculum is at the discretion of the school

---

<sup>10</sup> Of the twelve, four had no description of the course content and five had no education department.

administration. That is, not all schools that follow the ICSE curriculum would necessarily choose to include ES in their course syllabus. The vice-principal of Day Star School (Elias 2000, pers. comm.) claims that Day Star and one other ISCE school has incorporated ES in their curriculum. Manali's educational institutions are thus fulfilling the legal obligation of incorporating EE into the curricula. Although each school within the study has approached EE in a different fashion, they are nonetheless complying with the legal obligation.

Contextual barriers to including EE into the educational curriculum also challenge Manali's teachers. Barriers identified by a sample of Day Star School's teachers include:

- limited time in the day<sup>11</sup>
- limited planning to date
- lack of understanding within the community
- lack of motivation among students and teachers
- resources to sustain the programme
- lack of awareness among teachers and administrators
- indifference and improper follow-up
- limited resources and material
- limited financial resources

---

## 5.2 *Day Star School*

---

### 5.2.1 Description

---

In the words of the Day Star School prospectus:

"The School seeks to have a close relationship with the home of the child to help the overall growth and nurture of the child. As a school belonging to the Manali community Day Star believes the curriculum must be designed to help students gain skills, knowledge and insight necessary to live full, fruitful, and responsible lives. The School also believes that education must foster an awareness of the challenges of a changing world, helping members of the community to make the right choices based on the principles of peace and justice".

(Day Star School Prospectus - no date)

---

<sup>11</sup> Limited time was the response that had the highest incidence.

Since Day Star School opened in 1985, it has been described as a community-based school. It is located in the centre of Manali town, easily accessible by most Manali residents including the students and staff of the school. The organisational structure of the school is conventional in that there is a Principal, a Vice-Principal, administrative staff as well as support and maintenance staff. Day Star School begins at nursery school and continues until standard X<sup>12</sup>.

The Secondary level of the school follows the ICSE curriculum. The ICSE is structured as a set of core compulsory subjects established by the National Council for Education Research and Training (NCERT), in addition to a second and third group of non-compulsory subjects. Day Star School's curriculum therefore consists of three compulsory subjects: English, a second language (either an Indian language or a modern foreign language) and social studies, combined with an additional three subjects - math, science and environmental studies.

---

## **5.2.2 Resources**

---

### **5.2.2.1 Human Resources**

---

The working staff encompasses approximately 25 employees, 18 to 19 of which are teachers. The remaining employees are support and maintenance staff. Permanent teachers are on contracts of two years renewable upon completion and have a minimum of a bachelor's degree. However, unlike the CST and the State Government School, the government does not appoint teachers to Day Star School. Teachers are hired by Day Star School's administration. Day Star School also employs the services of volunteer teachers from abroad throughout the teaching season usually organised by the Mission's contacts overseas. The school has approximately 430 students with an average class size of 23 to 25.

### **5.2.2.2 Information Resources**

---

Several information resources are available to the students and staff of Day Star school, including workshops, curriculum courses (namely the ES course), library resources, television and the Internet. Information that is most widely available to all

---

<sup>12</sup> Std. X is the equivalent of Senior 2 in Canada.

students and teachers is housed in the library of the school. Compared to the other schools involved in the study, Day Star School's library is relatively comprehensive and has a considerable quantity of environmentally related material. A library audit was conducted focusing on the environmental studies section as well as related disciplines.

Approximately 70 books were documented ranging in dates from 1982 to 1999 not including magazines and journals. The CEE was the publisher of most the books within the environmental section of the library. The majority of the books were written in English with a small proportion written in Hindi or other native Indian languages. The language of instruction at Day Star School is English, therefore this fact is not particularly significant.

The majority of the books had some relation to India and were written by Indian authors. However, few were specific to the mountain context. In essence, the selection of books and other literature that could be categorised into 2 broad areas: forests and general ecological processes. Table 5-1 lists the subject areas and literature related to environmental issues that are housed in Day Star School's library.

**Table 5-1: Subjects and Literature Related to the Environment Available at Day Star School Library**

|                                                                           |
|---------------------------------------------------------------------------|
| 1. Tourism and Resource Conservation                                      |
| 2. Ecological History of India - Gadgil and Guha                          |
| 3. Sustainable Development in Fragile Environments                        |
| 4. State of Environment (Reports 1 to 5)                                  |
| 5. Monocultures of the Mind - Vandana Shiva                               |
| 6. Forests of the Amazon                                                  |
| 7. Global Warming                                                         |
| 8. Backyard Composting                                                    |
| 9. Organic Farming                                                        |
| 10. Medicinal Plants                                                      |
| 11. Environment Canada's Green Plan: "What we can do for our Environment" |
| 12. Numerous teaching and reference books                                 |

The library also housed file folders containing newspaper clippings, journal articles and past student projects. The file folders were divided into the following categories: Air Pollution; People; Biodiversity; Land; and Agriculture. The vice-

principal, who is also the school's ES teacher, supplements and maintains the files. Table 5-2 describes the journals, periodicals and other similar material that are available to students and staff of Day Star School.

**Table 5-2: Environmentally Relevant Journals Available at Day Star School**

|                                                                                                           |
|-----------------------------------------------------------------------------------------------------------|
| 1. Down to Earth (several issues available with the most current being from 2000)                         |
| 2. Green Teacher - one issue available from February/March 1993                                           |
| 3. World Wildlife Fund (WWF): India Network Newsletter- one issue from 1999                               |
| 4. National Geographic - several current issues up to 1997 with additional issues from 1940/1963 and 1973 |
| 5. Science Reporter - several copies with latest issue from June 2000                                     |
| 6. Two Daily Newspapers - The Times of India and The Indian Express - Daily                               |
| 7. Time Magazine- several sporadically dated issues                                                       |
| 8. Current issues of India Today Magazine                                                                 |

Further information related to environmental issues is taught to the standard IX (Std. IX) and standard X (Std. X) classes in the ES course. Within the first year (Std. IX), students are educated on the causes and problems of environmental degradation. The ES syllabus for Std. IX is broken down into the following sections:

1. Atmosphere at Risk;
2. Ecosystem Under Threat;
3. People Under Threat;
4. Land Under Threat;
5. Agriculture Under Threat; and
6. Public Health

Std. X follows a solutions-based curriculum based on problems that were outlined in Std. IX. Subjects include:

1. Action on the Atmosphere;
2. Conservation of the Ecosystem;
3. Population Management;
4. Managing the Land; and
5. Managing Agriculture

Together with the textbook learning, Day Star School's administration incorporates environmentally related outdoor activities into the ES syllabus. The ES teacher at Day Star School makes substantial efforts to broaden students' learning environment and consequently designs projects that often require outdoor experience. For example, one project focused on the medicinal plants of Manali and required students to collect samples as a group project. The teacher also organises yearly field trips to the Great Himalayan National Park, which also extends the classroom beyond its four walls and allows the students to experience their environment first hand.

Teachers have had the opportunity to attend professional development workshops, but few workshops have focused on environmental issues. Examples of workshops (either in the form of in-services or otherwise) include: How to test children"; and, How to teach science? However, Day Star School teachers have not been informed of nor have the been invited to State sponsored workshops or seminars due to their status as a privately funded school. Although the vice-principal has attended workshops in the past, it has been generally of his own accord. Moreover, he only hears of the State sponsored workshops through word of mouth or coincidence (Elias 2000, pers. comm).

Day Star School is equipped with a computer lab with 20 computers. The Principal and the Vice-principal are equipped with personal computers and have access to the Internet. However, at the time of the study, students did not have Internet access.

Finally, when students were asked how they receive information on the environment and environmental issues, the majority of students stated that television was an important medium. Moreover, some students cited American channels such as The Discovery Channel and National Geographic Channel as their primary source of environmental information. This information is noteworthy in that it reveals that these students had televisions and satellite dishes to receive the speciality channels they mentioned. Despite the vice-principal's concern that his students were watching more television than ever before, this form of information dissemination should not be ignored.

#### **5.2.2.3 Financial Resources**

---

Day Star School is financed through tuition fees and through private donations. Private donations are in either monetary form or donations in the form of infrastructure and supplies. The computers at Day Star School, for example, were a private donation.

Day Star School also raises funds through fundraising drives organised by the schools administration. Unlike the other two participating schools, Day Star School does not receive government funding. Table 5-3 outlines Day Star School's the tuition structure.

**Table 5-3: Details of the Fee/Tuition Structure for Day Star School**

|                                                     |                                                                  |
|-----------------------------------------------------|------------------------------------------------------------------|
| Admission fee (non-refundable)                      | Rs.1500/at the time of admission                                 |
| Establishment Fee                                   | Rs.2000                                                          |
| Tuition fee (non-refundable)                        | Rs.480/month                                                     |
| Late fees fine (after 10 <sup>th</sup> day of term) | Rs.25                                                            |
| Caution Deposit (refunded upon leaving)             | Rs.1500/at the time of admission                                 |
| Building Fee                                        | Rs.2000                                                          |
|                                                     | (no refund of building fee if child is withdrawn after 3 months) |

### 5.3 *Central School For Tibetans*

#### 5.3.1 **Description**

Established in 1972, the CST - Manali is a school for Tibetan refugees located in Rangri, 2kms outside of Manali. The CST Manali incorporates pre-school until Std. VIII. The CST follows a nationally developed curriculum. Classes are taught in Tibetan until Class V when English is used as the primary language of instruction. The CST Manali includes elementary and middle school levels. The CST does not extend to the secondary level. Consequently, the CST's curriculum is not directly comparable to the curricula of Day Star School and the State Government School. However, the differences between the curricula added an interesting dimension to EE in the formal education sector of Manali and the CST was therefore included in the research.

#### 5.3.2 **Resources**

##### 5.3.2.1 **Human Resources**

The CST employs approximately 22 staff, 12 of whom are teachers. The remaining personnel include nursery school, support and maintenance staff. Permanent teachers are initially employed for two-year terms, renewable annually thereafter. The Central Tibetan Administration (CTA) located in Dharamsala appoints all teachers. The CST has an enrolment of approximately 145 students with an average class size of 12 to

15 students. Although the school is located 2 kilometres outside of Manali within the town of Rangri, the majority of the staff and students reside within the Manali area.

#### **5.3.2.2 Information Resources**

---

Information resources that are available to the CST are similar to those at Day Star School. There is a library, environmentally related course content, a computer lab (with no Internet access) and workshops available to teaching staff. Few students recognised television as their primary source of environmental information. This does not imply that the students did not have access to television. Rather, it comments only on their perception that television was not viewed as an important information resource. Consequently, students at the CST acquired the majority of their environmental information through the school system.

There are two reasons for the CTA's choice of curriculum. Firstly, there exist numerous Tibetan refugee schools all across India. For reasons of simplicity, the CTA chooses to observe one national curriculum instead of numerous state curricula. Secondly, despite the aforementioned difficulties, for Tibetan students who choose to continue their education, the level of education will be consistent among all Tibetans across India. Consequently, the CST follows the centrally developed NCERT curriculum.

The NCERT curriculum is similar to the ICSE curriculum in that it has a set of two subject lists from which the curriculum is designed. However, the CBSE curriculum differs from that of the ICSE in that there are eight compulsory subjects and one smaller set of additional subjects. Compulsory subjects include two languages (Hindi and English), mathematics, science, social science, work experience, art education, physical and health education. The list of non-compulsory subjects, with which schools can supplement their curricula, consists of a third language and commerce, painting, music or home science.

The difference between the ICSE curriculum and the NCERT curriculum is significant because it lacks of an ES option. Consequently, any knowledge students gain concerning environmental issues is obtained primarily through the science and social science courses. While the science and social science courses did not have a specific

focus on environmental issues, environmental issues were still addressed within these two courses (see table 5-4 and table 5-5).

---

**Table 5-4: Social Science Syllabus of the CST for Std. VIII**

---

1. History
  2. Geography
    - The Atmosphere
    - Water and the Oceans
    - North America
    - Europe
  3. Civics
- 

---

**Table 5-5: Natural Science Syllabus of the CST for Std. VIII**

---

---

**Chapters in Science Textbook**

---

1. Carbon
  2. Carbon Compounds
  3. Light
  4. Pressure
  5. Magnetism
  6. Electric Current
  7. Rocks, Minerals and Metals
  8. Metals and Their Properties
  9. Man-Made Materials
  10. Microbial World
  11. Agriculture: Practices and Implementation
  12. Useful Plants and Animals
  13. Organic Evolution
  14. Conservation of Natural Resources
  15. Alternative Sources of Energy
  16. How are Leaves Designed
- 

The environmental literature available to the staff and students of the CST was lacking in comparison to the selection of Day Star School. The CST had considerably fewer books and journals compared to Day Star School and there was no section within the library of the CST that was exclusively dedicated to environmental issues. Instead, environmental literature was found under the headings of Science, Geography, History and Civics. The Science section focused on wildlife, palaeontology and planetary systems. The geography section contained books on environmental education, as well as

physical geography. The History and Civics section included books on the structure and functions of national governments, NATO, and U.S. Presidents.

A reference and periodical section for students contained a series entitled Young Scientist that addressed energy conservation and land and water systems. A collection of World Wildlife Federation (WWF) publications, Science Year Encyclopaedia and the Childcraft and Worldbook Encyclopaedia series were also within this section. A reference section for the teaching staff included a teacher's handbook on Environmental Studies (1988) and a book entitled Happy Birthday Earth (1993). All books contained within the library were in English and students are allotted one English period per week to spend time in the library.

Because the CST adheres to the national curriculum, teachers of the CST are not invited to seminars and workshops organised by the state government. However, the education department of the CTA occasionally holds workshops on various subjects and one teacher from the CST had attended a workshop regarding environmental issues. Unfortunately, the teacher could not be contacted for an interview for her comments on the insight she gained as a result of attending the workshop. Moreover, research determined that the CST had never been visited by an NGO or community group that could educate students on pressing environmental issues facing Manali

Finally, the CST also has a computer lab with six computers and no Internet access. However, teachers lacked computer knowledge and training and, therefore, could not teach students in this regard (Gandun pers. comm. 2000). Consequently, the computers are predominantly used for data entry and typing skills.

#### **5.3.2.3 Financial Resources**

---

Financial resources of the CST are minimal. Apart from some private international donations and funding from the CTA, the CST obtains one rupee per child per month from the GOI. The GOI also pays the teachers' salaries of the CST and provides required textbooks.

---

#### **5.4 State Government School**

---

##### **5.4.1 Description**

Established in 1907, the State Government School is the longest established school within Manali. The State school is centrally located within the town and has the highest enrolment amongst all schools in Manali and the surrounding area. The school is also the only state-subsidised secondary school in Manali. The State School starts at Std. VI and extends to Plus 1 and Plus 2.<sup>13</sup> The primary language of instruction is Hindi.

##### **5.4.2 Resources**

###### **5.4.2.1 Human Resources**

There are approximately forty staff with thirty-three paid teaching staff and one volunteer teacher at the State Government School. Teachers are appointed through the Public Service Commission and from the director of the SCERT. Teachers are required to have a certificate in education and are appointed on three-year terms with two initial probationary years.

There are approximately 1003 students enrolled in Std. VI to Std. X., with an additional 500 students enrolled in the post-secondary education levels of Plus 1 and Plus 2. State and central government policy exempts girl students from paying tuition from Std. VI to Std. VIII in an attempt to encourage the education of girl students. Consequently, the ratio of girls to boys is estimated at approximately 60/40.

###### **5.4.2.2 Information Resources**

Information resources available to teachers and students of the State Government School are minimal. Students obtain information through courses and course textbooks developed and supplied by the SCERT. Accordingly, the State Government School follows the SCERT-designed curriculum. Although it is the prerogative of the state schools to develop and follow a curriculum other than the centrally developed curriculum, this is not the case in HP. However, teachers stated that the two curricula were essentially identical. Consequently, students at the State Government School

---

<sup>13</sup> Plus 1 and Plus 2 is equivalent to what would be considered Senior 3 and Senior 4 in Canada.

receive most information on environmental issues through their Science and Social Science course work. Tables 5-6 and 5-7 outline the Social Science and Science syllabus of the State School.

---

**Table 5-6: Social Science Syllabus of the State Government School for Std. IX**

---

1. History
  2. Geography
    - Man/Environment interrelationship
    - Interdependence of Nations and Regions of the World
    - Population Growth
    - Protection and Conservation of Natural Resources
    - Domestic Environmental Problems in the Context of Development
  3. Civics
  4. Economics
- 

---

**Table 5-7: Natural Science Syllabus of the State Government School for Std. IX  
Std. IX (Units in CBSE curriculum)**

---

1. Matter – Nature and Behaviour
  2. Motion, Force and Energy
  3. Ways of Living
  4. Human Beings
  5. World of Work
- 

Information resources available within the State Government School's library were unavailable for review. The library of the school was locked constantly and access was only possible through an appointment with the librarian. Although the researcher made six attempts to visit the library, no mutually convenient arrangement could be scheduled. Despite the inconvenience, observations made through the library's windows showed dusty and unkempt tables and bookshelves. It is reasonable to assert that the library is rarely, if ever, used.

Interviews with the Acting Principal of the State Government School determined NGOs had not been to classes to speak on environmental issues. However, he stated that the school recognises World Environment Day on June 5th of every year. This year, the district level NGO Gian Bigan Samiti lectured to the secondary classes on local and global environmental issues.

Information sources available to teachers are also minimal. Concerning reference materials, teachers rely primarily on reference materials distributed by the SCERT. In addition, the SCERT conducts annual workshops on various topics to which all teachers are invited. Teachers are offered an allowance for travel, daily expenses and hotel accommodation. The SCERT also offers more subject-specific workshops throughout the year. In 1999, the science teacher attended a workshop on environmental issues held in the state's capital. The workshop focused on how to incorporate environmental issues into the curriculum. The science teacher was provided with Rs. 2000 to cover expenses.

Finally, the State Government School has a computer lab. However, like the CST, there is no access to the Internet and teachers generally do not have a very high level of computer literacy. Consequently, students do not gain from this resource.

#### **5.4.2.3 Financial Resources**

Fees at the State Government School are only collected once students begin Std. VI. Once students begin attending Std. VI, a fee of Rs. 3.5/month is required for levels VI to VIII. The fees increase once students begin Std. IX and X to Rs. 6.1/month. Students who choose to advance to Plus 1 and Plus 2 are obligated to pay a significantly higher tuition of Rs. 135 for 6 months with an additional Rs. 80 for each course beyond the required courses. An additional Rs.54 is necessary for students entering medical studies. Fees are submitted to the State Department of Education, which pays the teachers' salaries, overhead, and other school-related expenses.

However, financial resources obtained through fees are not enough to sustain the school. Thus, additional funds are collected through fund-raising efforts by the Parent Teachers Association (PTA) and through taxes. For example, the state offered a Rs. 30000 subsidy to pay for the cost of a new science lab although this was not enough to cover the complete costs. Consequently, the fund-raising by the PTA supplemented the initial subsidy.

### **5.5 Non-Government Organisations**

#### **5.5.1 Contextual Factors affecting Manali's NGOs and their Future Development**

Petts (1999, p.37) writes that "The participation of both governmental organisations and NGOs in the formulation process [of EE for environmental assessment]

is essential because of the need for dialogue and consensus building and because strategies for capacity development must involve a balance between public sector capacity and the capacity of NGOs”.

Although Petts (1999) writes of her experience in developing capacity for environmental assessment, the involvement of NGOs in CD strategies for EE for pro-environmental behaviour is also imperative. NGOs bring a different perspective, varied and valuable resources, experience, time and energy to various initiatives within the city. In Manali’s case, the NGOs involved in the study have acted as a women’s support and family counselling organisation, an environmental awareness group, a literacy advocate group, a cultural advocacy group and an ecologically minded social advocacy group that focuses on the family unit. The diverse opinions and perspectives that these groups bring to Manali are valuable resources in themselves.

However, contextual issues challenge the EE capacity of Manali’s NGO community. For example, it is important to note that the number of NGOs and environmental NGOs in HP, and more specifically Manali, is not representative of the whole of India. The mountain states have considerably fewer active NGOs than these states in the plains. There are higher population densities in the southern states; Kerala, is one example where the population density is 501 to 1000 persons per km<sup>2</sup> compared to a population density of 101 to 200 persons per km<sup>2</sup> in HP (Census of India Internet Site 2001). As a result, there is a larger pool of human resources on which to draw. Secondly, the hill states have, only relatively recently, been exposed to outside influences and the associated challenges they bring with them. Consequently, the development of hill states’ social organisation networks has not had the same history as those in the south. Lack of experience and lack of knowledge regarding the process of becoming a registered NGO may also contribute to a fewer number of NGOs in the hill states.

Legitimacy and integrity are also issues among Manali’s NGO community. Despite the detailed NGO registration process, NGOs in Manali, and generally in India, are faced with a sceptical audience. The NGOs are expected to produce, affect, implement and/or develop changes for the betterment of the community with very limited resources. Only then is their legitimacy solidified in the eyes of the residents. If an organisation decides it needs additional resources, particularly financial resources, the

organisation must ensure that it is exceedingly transparent and accountable in its expenditures. Moreover, any revenue received no matter what the amount, is stretched to maximise the results/output per rupee. The slightest hint of personal enrichment, however unsubstantiated, can cause the organisation to lose all legitimacy within the town.

This intense scrutiny and overall sense of suspicion is apparently not unique to Manali. Within a period month, two newspaper articles in the Times of India Newspaper on NGO corruption (Times of India 2000; Mukul 2000). Citizen's concerns over the integrity of NGOs are therefore justified.

Transparency and accountability should be aspirations for all NGOs. However, there is a difference between expecting transparency and accountability and being prematurely sceptical of NGOs' intentions. One Manali NGO member stated that most NGOs are not legitimate and want to "milk the cow and not do anything" (Singh, R. pers.comm. 2000). Another claims that many NGOs are discretely taking funds from the government but are not doing productive work (Prem pers. comm. 2000). This climate of scepticism does not contribute to the growth and development of the NGO community in Manali.

Other contextual challenges or barriers to the functioning of NGOs as identified by the leaders of the organisations include: associations with Christian organisations (Madan pers. comm. 2000) and limited time for volunteer work due to the seasonal nature of the town was also described as important obstacle (Thakur pers. comm. 2000).

---

### **5.5.2 Resources**

---

Five NGOs participated in the study. Two of the organisations, Bharat Vikas Parishad (BVP) and Gian Bigan Samiti (GBS), are local branches of larger, national organisations. Consequently, these organisations have a substantial human resources base. BVP, whose focus is to educate and create an awareness of cultural issues, have a membership of approximately twenty-two people in Manali town. GBS's mandate is to promote literacy across India. They have a membership of approximately 5000 or more in the Kullu district. The Manali Mahila Mandal's membership is approximately 100 women. Their group offers counselling service to families and women within the town of Manali. Similarly, the Society for Holistic Action and Rehabilitative Ecology (SHARE),

which has approximately twenty-three paid staff, primarily addresses issues concerning women and children in the villages surrounding Manali. SHARE has been responsible for establishing approximately twelve Mahila Mandals in the area surrounding Manali. Finally, Arohi Environmental and Nature Conservation (AENC) has only one permanent member. AENC's goal is to contribute towards an environmentally aware citizenry. Mr. Thakur's, who is the president of the organisation, projects have included cleaning up the popular tourist site of Rohtang Pass near Manali as well as being instrumental in the Poly-bag ban. Mr. Thakur is also an environmental journalist who raises awareness through newspaper articles that he writes for The Tribune of New Delhi. Although Mr. Thakur is the only member, he recruits the help of volunteers when needed. AENC was the only one of the NGOs' that was not a registered NGO. The majority of the participating NGOs obtain their membership through volunteers. SHARE is the exception. Although SHARE also enlists the help of volunteers, the majority of their staff receives remuneration for their services.

Concerning the number of members, NGOs indicated that most felt their member numbers were adequate to conduct future projects. Although he is officially the only member of AENC, Mr. Thakur also felt that his staffing was sufficient. When asked if he would prefer to have additional staff to help him conduct projects, Mr. Thakur responded: "Ghandi was only one". However, Mr. Thakur often recruits the help of volunteers and the NP on project-specific initiatives such as yearly clean-ups of Rohtang Pass. BVP was the only organisation among the five that would like to recruit more members. The president felt that there was not enough to implement future projects and was seeking methods to recruit more members.

NGOs did not appear to be familiar with one another. NGOs named primarily unions (i.e. the shopkeeper's union or the taxi unions) and one or two NGOs when questioned on their familiarity of other organisations. The shopkeeper's union and the taxidriver's union were the two unions that were most often mentioned and AENC, GBS and BVP, with BVP mentioned were the NGOs most often by the representatives of the participating NGOs. However, their responses did not indicate a reluctance to work with one another but rather demonstrated a lack of awareness of other NGOs. They were less clear as to one another's mandates.

Most NGO's had collaborated on projects with government departments. Other than BVP, most of the NGOs did not express apprehension about working with government. However, NGOs claimed they had to approach the NP to initiate projects because the NP initiated few projects without external influence. However, the NGOs stated that the NP was co-operative and offered its available resources to facilitate projects. For example, Mr. Madan, the chairman of SHARE, stated that the NP often offers in-kind support in the form of staff or vehicles to transport equipment or goods. The NP, in co-operation with the Rotary Club, of Manali also provided staff to clean litter from the area surrounding Manali's Hadimba Temple during a "Keep Manali Clean" campaign.

Nationally supported NGOs had the best network of information. For example, GBS is a large, national-level entity and is well organised. They have sub-committees at the district level that facilitate research into various topics. Regular meetings facilitate the dissemination amongst members. In addition, GBS's newsletters target a large number of members and volunteers, which further enables the dissemination of information.

BVP is also a national-level NGO. However, interviews with the organisation's president and former-president demonstrated that the national level of the organisation has not been active in recent years. The president stated that the Manali chapter of BVP has been the most active in the last 6 years compared to BVP affiliates in other communities. Consequently, the BVP does not currently enjoy the same networking of information as GBS.

The readily available information resources of the NGOs were negligible. SHARE and AENC had the most conveniently available information. However, it is important to clarify the nature of these organisations. AENC consists of only one person and his information is a personal collection. He is also a journalist and requires this information to write newspaper articles. Mr. Madan, the Chairman of SHARE, also has a substantial personal collection of information. Moreover, both of these organisations have a strong environmental focus, which also contributes to their specialised information resources.

GBS and BVP garner the majority of their information resources from their state and central counterparts. In interviews, GBS's member secretary, Mr. Singh presented numerous documents, including newsletters and reports that he had received from the state and central divisions of GBS. However, these resources are used primarily by those who are actively involved in the administration of GBS, such as Mr. Singh. The majority of GBS's members are volunteers that do not take part in the administration of the organisation. Their role is to promote citizen literacy by visiting and teaching in the villages that surround Manali.

The Mahila Mandal had the least extensive available information resources. Beyond what was available to the general public of Manali, i.e. Internet cafes and bookstores, the Mahila Mandal did not have any readily available information, nor had the President ever been invited to or attended any workshops. Its members are women from Manali town and few of them have any personal resources related to environmental issues. However, the president is also a member of BVP and, therefore, receives information from this source.

The organisations were divided on the issue of whether the NGO presence in Manali was sufficient to respond to the needs of the town. Two organisations, the BVP and the AENC, stated that, in their opinion, there was a sufficient NGO presence and that more NGOs would not improve Manali's current problems. However, Singh of GBS felt that NGO presence was not sufficient and that the presence of more "sincere" NGOs that do earnest work instead of "pushing paper" would improve the situation in Manali (Singh, R., pers. comm. 2000). SHARE's chairperson and the president of the Mahila Mandal Manali also commented that the NGO presence in Manali was inadequate. They suggested that Manali could benefit from having an NGO whose focus was to facilitate the dissemination of environmental information amongst the townspeople and tourists. Some citizens of Manali echoed this sentiment. Approximately half of the respondents (5/12) indicated that a group that is educated on environmental matters should teach residents.

Finally, most of the organisations' financial resources were obtained through membership fees. Four of the five NGOs that participated in the study did not solicit funding from government or international sources. Accepting government funding

carries the stigma of corruption and it is widely felt that accepting government funding damages the credibility of an organisation. SHARE was the only organisation that applied for and received international funding.

---

## **5.6 The Nagar Panchayat**

---

### **5.6.1 Contextual Implications of the Regulatory Abilities of Manali's NP**

Since 1997, Manali has been designated a NP (Pandey, Singh and Singh 1998). According to the Indian Constitution, Seventy-Fourth Amendment Act of 1992, urban local bodies, which include Municipal Corporations, Municipal Councils and NPs, have the following responsibilities:

- Urban Planning including town planning
- Regulation of land-use and construction of buildings
- Planning for economic and social development
- Roads and bridges
- Water supply for domestic, industrial and commercial purposes
- Public health, sanitation, conservancy and solid waste management
- Fire services
- Urban forestry, protection of the environment and promotion of ecological aspects
- Safeguarding the interests of weaker sections of society, including the handicapped and mentally retarded
- Slum improvement and upgradation
- Urban poverty alleviation
- Provision of Urban amenities and facilities such as parks, gardens, playgrounds
- Promotion of cultural, educational and aesthetic aspects
- Burials and burial grounds, cremations, cremation grounds and electric crematoriums
- Cattle pounds, prevention of cruelty to animals

- Vital statistics including registration of births and deaths
- Public amenities including street lighting, parking lots, bus stops and public conveniences
- Regulation of slaughter houses and tanneries

The NP has the power to enact, affect and enforce by-laws and impose fines, taxes, levees and/or tolls in relation to the above mentioned functions. The NP of Manali therefore has regulatory power and jurisdiction over numerous environmental matters, including the protection of the environment and the promotion of the town's ecological aspects.

#### 5.6.2 Resources

Manali's permanent resident population is approximately 4000 people. The town does not have, nor does it need, a municipal administration comparable to that of a larger urban centre. The sanitation department employs the majority of the NP's total staff, with twenty permanent employees and an additional thirty temporary employees to accommodate the tourist seasons (May/June and Sept./Oct.). Consequently, there are only eleven people employed in the NP's administrative department. However, this number, according to the president of the NP, is adequate to deal with the municipal issues of Manali.

Readily available information for the NP on environmental issues is not sufficient within the NP. Manali does not have a library, NP staff have very limited computer access, no access to the Internet, and minimal available reference materials. However, the lack of on-hand information resources does not appear to concern to the NP's president (Gotham, pers.comm. 2000). Apparently, the NP deals with these information gaps on a case-by-case basis. If a particular project or programme is being implemented or if there is a problem that needs to be addressed, the NP takes steps to educate its employees accordingly. For example, an upcoming Indo-Norwegian solid waste management (SWM) project allocates a portion of the overall funding to educate the NP's employees. A detailed view of the SWM project budget (see Table 5-8)

demonstrates that Rs 9.3 lakh and Rs 0.5 lakh are allotted to employee training and relevant field visits respectively.

**Table 5-8: Cost estimates for Building Awareness in the SWM Project for Kullu and Manali Towns (Rs in Lakhs)**

| Name of the Component                                                                                                    | Manali | Kullu | Total Cost |
|--------------------------------------------------------------------------------------------------------------------------|--------|-------|------------|
| 1. Development and printing of educational material: Print, Film, Slides, Street plays, etc.                             | 3.0    | 3.0   | 6.0        |
| 2. Organising meetings, training programmes for NGO's, Citizen's groups, tourists @ Rs 5000/per event for 50 such events | 1.5    | 1.0   | 2.5        |
| 3. Training for workers of the municipality @ Rs.10000/per workshop for 9 such workshops                                 | 0.5    | 0.4   | 0.9        |
| 4. Field visits: Travel to Bangalore @ Rs.20000/ round trip for 8 persons                                                | 0.8    | 0.8   | 1.6        |
| 5. Programmes in schools @ Rs.10000/per school for 20 schools                                                            | 1.0    | 1.0   | 2.0        |
| 6. Campaigns @ Rs. 50000/per campaign for 9 such campaigns                                                               | 2.5    | 2.0   | 4.5        |
| SUB-TOTAL                                                                                                                | 9.3    | 8.2   | 17.5       |

Source: Town of Manali 1998

In addition to the case-by-case training, there are information resources in the form of networks with other states. For example, at the time of the research, the neighbouring state of Uttaranchal was soliciting the advice of the NP in Manali concerning its successful polyethylene bag ban. In the same context, Manali was requesting the help of the state of Bangalore in implementing its SWM project.

The NP's financial support can be categorised into five areas. Municipal taxes, such as property taxes, are levied from Manali residents and private businesses. Financial support comes from the state in the form of subsidies or other supplementary type funds. Revenue is also generated through the collection of fines from such programmes as the poly-bag ban and through traffic offences. Tolls at the town's two entrances are collected from non-resident vehicles, transport trucks, state-run buses, and other commercial transportation vehicles, which add to the NPs revenues. Finally, international development agencies provide funding for specific projects and programmes, as in the case of the SWM project.

The NP was satisfied with the level of its resources. Although the NP's resources may not be readily available, there is a consistent opportunity to acquire them. However, the available resources do not allow for self-sufficiency. Undertaking large municipal works such as water and sewage treatment, waste management (proper landfill sites) and adequate parking for the large influx of tourists is beyond the NP's immediate abilities.

---

### **5.7 Summary**

---

Surprisingly, the majority of organisations that were interviewed during the research were relatively satisfied with the level resources available to them. However, a few key points should be highlighted. Concerning human resources, all organisations found their ability to perform their projects was not hindered by a lack of members or staff - with the exception of BVP. This organisation expressed that they would like to expand their membership, and felt that they may be lacking members because they are only beginning to gain a voice within the community. The BVP president also commented on the scarcity of well-educated residents within Manali that could be an asset. Further comments indicated that residents did not have time to volunteer their services during high-season, nor had they the financial stability to forego potential tourism revenue.

A lack of enrolment is definitely not a problem for the State Government School that has a shortage of educators. A calculation of total teachers and total number of secondary students indicates that there is an average of 46 students per teacher. Moreover, when the researcher conducted a waste audit project with the students, class size exceeded 80 students. Both of these totals, however, exceed state government policy of 40 students per teacher. Unfortunately, the State Government School does not have the financial resources to employ additional teachers.

Attitudes towards financial resources were remarkably indifferent. Questioning participants on whether they felt their financial resources were adequate to conduct their projects was often met with shrugged shoulders. Participants did not see the point of indicating that their financial resources were inadequate because they perceived that there were no opportunities to gain more. The Mahila Mandal of Manali was the most vocal with their dissatisfaction of their financial resources. The president explained that the Mahila Mandal would prefer to have more capital for projects but was unaware of how to

solicit more funding. Those interviewed at the State Government School were also vocal about the shortage of funding. However, they were also at a loss on how to improve the situation.

Information resources are closely linked to financial and human resources. For example, the information resources of the schools were a result of current financial situation. Consequently, teachers and school administrators had little to say on the information resource situation of their respective schools. Day Star School had the most information available to students and staff with numerous textbooks, library books, specialised courses, pertinent journals and some, albeit limited, Internet access. The State Government School, however, had the fewest available resources, working mostly from the textbooks provided by the state government and no library access. Although practical work and in-service training are not tangible resources, such as books, journals or Internet accessibility, these types of resources contributed to the students' and staffs' available information. Day Star School's curriculum incorporated the greatest amount of practical, outdoor work while the state school incorporated the least. In-service training, despite becoming more prevalent, was insufficient according to most teachers.

Regarding information resources available to the NP and the participating NGOs, both sectors seemed relatively satisfied with their level of resources. Despite the lack of on hand information resources, both sectors seemed able and even innovative in their ability to find information relevant to the projects they chose to pursue. However, the organisations did not have all the information resources they required to pursue any type of project. Rather, it suggests that organisations choose projects suitable to their budgetary constraints.

The contextual factors identified in chapter four as well as the contextual factors and resources documented in this chapter provide data for the capacity assessment outlined in the following chapter. Consequently, in chapter six, Hungerford and Volk's (1990) model of pro-environmental behaviour is applied to the information documented in the previous two chapters.

---

## **Chapter 6: Capacity Assessment of Organisations' Ability to Foster Pro-Environmental Behaviour**

---

---

### **6.1 *Applying the Framework***

---

This CA focuses on the capacity of Manali's organisations to foster pro-environmental behaviour, with pro-environmental behaviour being the ultimate goal of EE (Stapp et al. 1969; Sia et al. 1986; Hungerford and Volk 1990). To review, the purpose of a CA is to establish a baseline scenario of the function in question and then compare the result to the desired status. This process determines capacity gaps and subsequently identifies opportunities to bridge those gaps.

The assessment includes two stages. In the first stage, the assessment determines how the organisations' resources affect their own capacity with respect to the EE variables. Within the second stage, the impacts that past EE strategies have had on respective target audiences are assessed. The analysis is followed by a summary table of the key findings.

---

### **6.2 *Schools***

---

---

#### **6.2.1 *Entry-level Variables***

---

---

##### **6.2.1.1 *Assessment of Teachers and Administration***

---

As demonstrated in chapter 5, teachers do have access to information about ecological processes. Day Star School has the greatest advantage, having the most resources, both in terms of on-hand resources and in terms of relatively more revenue in order to obtain resources. At the CST and Day Star School, the libraries housed teaching resources and some Day Star School teachers had access to the Internet, which also increased their access to information on ecological processes. The State Government School had the poorest on-hand accessibility to information on ecological processes and the least opportunity to increase them, with the least amount of funds and the poorest accessibility to information resources. However, teachers at the State Government School have more opportunities for in-service training. Relevant government

departments and state level NGOs focus their attention on State schools and there are consequently fewer opportunities for private schools to attend in-service training.

Survey results confirmed that staff of Day Star School felt they have a reasonable grasp of ecological processes (see Appendix III for survey design). One question asked teachers to assess their knowledge of environmental impacts to 1. Forests, 2. Grasslands, 3. Natural Habitat and, 4. Water Bodies. Six out of nine teachers felt they were aware of the impacts to forests, four out of nine of the impacts to grasslands, six out of nine of Natural Habitat and six out of nine to water bodies<sup>14</sup>.

Teachers also provided indications of environmental sensitivity, most notably, the science teacher at the CST and the ES teacher at Day Star School. Both teachers were enthusiastic about the researcher's project and offered considerable support throughout its duration. These teachers were involved from the beginning of the project and incorporated the audit into their course programme.

Day Star School's decision to include ES as a stand-alone course within the curriculum also demonstrates that the administration of the school is environmentally sensitive. Because ES is not a compulsory course according to the central government and is therefore not tested for at the national level, Day Star School's decision to incorporate it into curriculum is noteworthy.

#### **6.2.1.2 Impact on Students**

---

Although the curricula of all three schools differ, all students within the participating schools were exposed, in varying degrees, to knowledge of ecological processes throughout the course of their curriculum. Their education regarding ecological processes was supported through textbooks, library resources (with the exception of the State school), television, practical work and outdoor experiences<sup>15</sup>.

---

<sup>14</sup>This survey was a survey originally developed by the Education Department at HP University to assess teachers' perspectives on Environmental Education. Surveys were distributed to Day Star School and to the CST. However, only Day Star School returned the questionnaires. After four attempts to retrieve the surveys from the CST, they were not returned. The State Government School did not receive the survey because of language barriers.

<sup>15</sup> Practical work includes a medicinal plants project at Day Star School and a science fair on environmental issues at the CST. All schools have participated in plantation excursions and Day Star School organises an excursion to the Great Himalayan National Park every year to expose students to the biodiversity and wildlife of the Park.

Day Star students had an understanding of what was meant by an ecological footprint and all students that participated in the waste audit understood many of the problems Manali is facing with respect to waste issues. Moreover, the ES teacher at Day Star School is confident that his students' knowledge of waste issues is adequate. However, he was less confident in their environmental behaviour: "Their knowledge is good but it is not translating to behaviour" (Elias, pers. comm. 2000).

Significant resource and contextual factors impeded the knowledge of ecology variable for staff and students. For example, because ES is not a compulsory course the teachers at Day Star School and Dr. Kulvinder Singh (pers. comm 2000), an education professor at HP University, believe that parents do not want their children to waste their time. Disregarding the subject, however, has the potential to hinder the seriousness in which students approach the subject. In addition, a shortage of funds and staff translates into a lack of Internet access. The State Government School suffers from overcrowding which can significantly affect student's ability to learn, whether it is regarding ecological processes, environmental action strategies or any other subject. Staff and students of the State Government School did not appear to have access to the library, which further limited these students' access to knowledge of ecology.

Students of all schools demonstrated environmental sensitivity through their inquisitiveness and through their desire to help. Students were extremely curious about the research and students from the CST and Day Star School were eager to participate in the researcher's waste audit project. Students at the CST agreed to return to school on a holiday Saturday morning to conclude the waste audit, despite the fact that they would not receive a grade or extracurricular credit. Moreover, students at Day Star School compiled comprehensive reports addressing all of the issues that the researcher had raised in the initial discussions of the project.

The State Government School's enthusiasm for the researcher's project was less apparent. However, it is not likely that the teachers at the State School were apathetic but rather that the teachers at the State Government School were overwhelmed. With class sizes exceeding 80 students, teachers have limited time and energy for any projects beyond standard curricula.

The greatest indicator of students' environmental sensitivity, however, came through in their desire to help. In all classes, students wanted to know what they could do to improve the environment. Questions included: "What can we do to protect the environment?", "How can we keep the area clean of garbage?", "How can we stop all the garbage along the river banks and nallahs?" and "What should we do with the poly-bags that are out there now?".

Environmental sensitivity of students and teachers is hampered, however, by a lack of resources and particularly by immediate contextual influences. Limited information resources, specifically those that facilitate students' participation in environmental activities, hinders the development of current and future environmental sensitivity (Palmer 1993; Finger 1993). Day Star School, however, did incorporate these types of activities into their curriculum through annual visits to the Great Himalayan National Park and through various hands-on projects.

---

## **6.2.2 Ownership Variables**

---

### **6.2.2.1 Assessment of Teachers and Administration**

---

Although teachers felt that they had some foundation in in-depth environmental issues facing Manali, they unanimously agreed that they would benefit from further knowledge on the issues. However, they felt that there were few opportunities for such in-service training. Only one teacher from each school had attended an environmentally oriented in-service seminar. Teachers, therefore, felt less than adequate in their ability to teach current environmental issues facing their community and would appreciate more in-service opportunities.

Teachers also had an apparent personal investment in the environment. The decision to incorporate ES into the curriculum by the administration of Day Star School indicates a significant investment in the sense that in doing so, they have devoted considerable resources to the subject. Teachers from the CST and the State Government School have an investment in the environment in the sense that EE is legally compulsory and they are required to teach relevant components of their respective curricula. Moreover, comments from teachers at the State Government School such as "Students and teachers are aware because they understand it's an important part of life" (Lal pers.

comm. 2000) as well as volunteering to organise the school's "Green Army - Monal Eco-Club" indicate a definite sense of investment in the environment.

#### **6.2.2.2 Impact on Students**

---

An indication of in-depth knowledge of environmental issues is apparent in the students' answers to the question of what issues they thought were relevant and pressing to Manali. Answers primarily pointed to deforestation and waste problems - in particular the poly-bag situation. However, despite students' concern of the waste in their community, their knowledge about the issue was somewhat inconsistent. For example, students at Day Star School were aware of the '3 Rs' and knew the difference between biodegradable and non-biodegradable. Students at the CST were not aware of the 3 Rs and they also prioritised the 3 Rs in reverse order once they were provided. That is, students agreed that recycling was most important, followed by reusing and then reducing. Students at the State School, however, prioritised 'reduce' as most important "because if you buy less, there is less rubbish". Initially, the students of the State Government School were unaware of the 3 Rs and also prioritised the remaining Rs, reuse and recycle, in reverse. In general, however, students' knowledge of waste issues focused mainly on aesthetics and they consequently believed that the best solution was to ensure that litter was placed in the correct locations or burned in some cases.

As mentioned, deforestation was also outlined as a problem and students' knowledge of this issue appeared to be more in-depth compared to the waste management issue. Particularly at Day Star School, students understood the consequences of deforestation and named landslides and flooding as potential associated problems. Likewise, students at the CST named flooding as a problem. However, their knowledge of flooding as an environmental problem was not a result of their knowledge of deforestation and its consequences but because the original CST had been seriously affected by the flood of 1995 and subsequently required rebuilding. Additional indicators of students' in-depth knowledge of issues included recognition of the connection between population pressures and environmental stresses, the impacts of tourism and the impacts of pollution on health.

Unfortunately, students have not had the benefit of the in-depth knowledge of some of the potential guest speakers that exist in Manali. In fact, guest speaker

appearances are rare at all schools. This situation is further compounded by the fact that teachers appear rarely to take the initiative to invite guest speakers to their classroom. Teachers stated that guest speakers visit their classes but when NGOs were asked if they visited schools, they stated that teachers did not often take the initiative to invite them, indicating a lack of communication.

Students' personal investment in the environment was described mostly in terms of the aesthetic value of the environment. Students at the CST felt it was important to "keep Manali clean for the people who live here and for people who visit". Students at the other two participating schools expressed similar sentiments.

Health, however, was the most dominant, non-aesthetic connection to personal investment. As mentioned, students were aware that waste and other forms of pollution were problems in Manali. One of the consequences highlighted the impact to students' health and to the health of animals. Some comments included "When we breathe, the air pollution will affect our breathing" and "Due to pollution, there are so many diseases". In addition, students understood the connection between the disposal of poly-bags and the ingestion of poly-bags by the cows, which eventually made them sick. This was deemed important for students' health because if their cows become sick, their family would suffer.

Students' existing sense of personal investment in the environment and in the problems facing Manali was achieved through diverse educational activities. Guest speakers, though limited, practical experiences and related projects have all played a role in this EE variable. Projects and personal experiences were the strongest contributors.

---

### **6.2.3 Empowerment Variables**

---

#### **6.2.3.1 Assessment of Teachers and Administration**

---

As the third stage in Hungerford and Volk's (1990) model of environmental behaviour, empowerment variables depend on and often work synergistically with variables in the former categories. For instance, teachers were modest in their self-assessment of their knowledge of and perceived skill in action strategies because they felt inadequate with respect to their in-depth knowledge of issues. Accordingly, the ES teacher at Day Star School felt confident about his in-depth knowledge of issues, he

consequently felt informed of action strategies and was also confident in his perceived skill in action strategies. In fact, the ES teacher was very vocal in his opinion that the ICSE curriculum should be reformatted. He suggested that the curriculum should present problems immediately followed by any potential solutions as opposed to only presenting environmental problems to students in the first year of ES followed by their solutions in the second year of ES.

Finally, teachers of all schools have an internal locus of control by the very nature of their profession. Teachers understand that they can contribute to change through the knowledge and experiences they impart to their students. Their reinforcement to act is the proven ability to foster an educated youth.

#### **6.2.3.2 Impact on Students**

---

The majority of the questions posed by students focused on what they, as students, could do to protect the environment. How could they help, how could they stop the use of poly-bags in the villages and how could they keep the area clean of garbage? This type of questioning indicates a lack of knowledge of action strategies and, accordingly, a lack of perceived skill in action strategies.

However, students at Day Star School and the CST demonstrated considerable creativity when devising action strategies. An excellent example of students' knowledge of action strategies appears in their responses to questions related to Manali's traffic problems. Students offered ideas that included:

- increasing public transportation
- building a parking lot outside the town's boundary to promote walking instead of driving
- having the NP limit the amount of permits for personal vehicles
- imposing heavy taxes on personal vehicles
- improving footpaths
- holding weekly or monthly "Vehicle-free Days" and restrict vehicle access to certain areas

However, students' ideas centred around action that would be undertaken by the NP. Understandably, issues of traffic regulation are difficult for students to act upon

independently, but the theme of governmental responsibility permeated numerous suggestions. This devolution of responsibility indicates a negative perception in their perceived skill in action strategies and an external locus of control. Students with an external locus of control do not feel as though they can affect a particular situation compared to those students with an internal locus of control (Hungerford and Volk 1990). Students need to know that their personal actions can contribute to an improved environment.

---

### **6.3 NGOs**

---

As mentioned, all of the EE variables are assessed in terms of the organisations' accessibility and in terms of how they are fostered within their members and audience. In order to do this, past examples of EE initiatives, such as the poly-bag ban, are used to exemplify how and to what degree these variables have been manifested amongst the target audience.

With the exception of AENC, NGOs were not entirely environmentally focused. Therefore, some NGOs were more experienced in certain categories and variables than others, due to the nature of their organisation. For example, AENC was more experienced in knowledge of ecological processes because his organisation is an environmental organisation. However, the diversity of foci is not necessarily a weakness. Rather, it highlights that some NGOs are better suited at contributing to certain variables while others may have strengths imparting others.

---

#### **6.3.1 Entry-level Variables**

---

##### **6.3.1.1 Assessment of NGOs**

---

NGOs have diverse methods of acquiring knowledge of ecological processes. Given their diverse areas of expertise, their access to and method of acquiring this variable is therefore not surprising. AENC has the best access to information about ecological processes. Mr. Thakur of AENC subscribes to various environmental journals and similar publications and is a member of two environmental organisations. GBS, however, has a well-developed organisation, which includes various sub-committees, with one that had a focus on the environment. Information from these sub-committees is

disseminated amongst its members, thus furthering their ecological knowledge. The members of SHARE have a library, albeit housed with English novels, and Internet access and BVP is still in a developmental stage. BVP therefore does not have easily accessible information except personal knowledge and information that is shared down from the state level BVP. The Mahila Mandal has the poorest accessibility to ecological information because of their limited financial resources. Organisations that have the strongest link to environmental issues, consequently, (AENC, GBS and SHARE) have the most access to information regarding ecological processes.

Environmental sensitivity, despite being a quality that is often instilled in people at younger ages (Palmer and Suggate 1996), is a variable upon which NGOs can exert a significant effect in comparison to the knowledge of ecology variable. Allen and Ferrand (1999) state that individuals and groups that demonstrate concern and sympathy for others, regardless of the specific focus, are highly likely to be environmentally sensitive as well. NGOs are predominantly socially conscious organisations that promote and facilitate the social development of communities, states or nations, regardless of their focus. By their nature, they are concerned, conscious and sensitive organisations, which contributes to their environmental sensitivity (Allen and Ferrand 1999).

Likewise, the motivation behind NGO members for joining or starting the organisations also demonstrates sensitivity and concern. Mr. Madan originally founded SHARE to protect the ecology of the area but later concentrated on a more holistic approach that currently focuses on the development of the family unit. Mr. Thakur of AENC started his organisation "because he felt like it was his duty to protect nature". The former president of BVP joined the organisation when he retired because he "wanted to donate time to social activities". The current president had similar motivation. GBS formed in response to the Union Carbide disaster in Bhopal with an original mandate to engender a scientifically literate population. Finally, the Mahila Mandal in Manali town acts as a family counselling service for women and their families.

Accordingly, an objective among these organisations' is to foster a like-minded constituency, that their members, as well as members of the community, become socially conscious. Thus it is presumed that the projects that these organisations undertake also encourage environmental sensitivity, although perhaps indirectly.

#### **6.3.1.2 Impact on Residents and Tourists**

---

Knowledge of ecology among the target audience members of the NGOs is a difficult variable to assess. Comments about ecological knowledge were most often made in relation to the in-depth knowledge of ecology variable, which is addressed in the Ownership category. Some comments regarding ecological processes referred to deforestation and the impact on climate change, landslides and flooding.

NGOs have used some methods that contribute to fostering environmental sensitivity among their target audience, including plantation (reforestation) projects and various 'Clean Manali' campaigns. Plantation projects encourage experience and interaction with the outdoors. Similarly, 'Clean Manali' campaigns also encourage outdoor activities that allow participants to interact with their environment. These experiences in the outdoors are purported to contribute to environmental sensitivity (Palmer 1993; Finger 1993; Palmer and Suggate 1996). Although the goal of these projects was not to engender an environmentally sensitive community, their nature and method contribute to that end. Unfortunately these campaigns have been almost exclusively focused on school children and generally neglect the general population and tourists.

The ban on poly-bags is an on-going campaign that involves all residents of Manali as well as tourists. Components of the ban included a door to door campaign, newspaper advertisements, stickers for shopkeeper windows, painted outdoor walls (see figure 6-1), and a play performed by school children. The NGOs, however, employed few of these techniques. NGO methods primarily focused on campaigns that consisted of one-time door to door visits that have a limited contribution to fostering environmental sensitivity. The success of the ban is largely attributed to the shopkeepers' compliance and the enforcement carried out by the NP.

Comments from residents that offered some indication of their environmental sensitivity include, "It makes me feel sad when I think about the illegal cutting of trees" and "The environment has changed for the worse due to pollution from vehicles and from poly-bags". However, out of twelve residents interviewed, half believed that Manali did not face any environmental problems. They felt that, compared to other areas of India,

Manali was a pristine, clean environment and that “the atmosphere was better than other places”.

Indian tourists had a similar perspective. Tourists come from Bombay, Calcutta, Delhi and other larger urban centres that experience environmental problems that are far greater than those being currently experienced in Manali. Therefore, because Manali’s environment is comparatively pristine, they have less sensitivity towards the environmental problems Manali might be facing. This attitude evidently poses a challenge to Manali’s NGOs when trying to engender environmental sensitivity within tourists. However, given that most tourists state that they come to Manali for its natural beauty, they evidently have a degree of environmental sensitivity, although it may only be related to aesthetics values.

---

## **6.3.2 Ownership Variables**

---

### **6.3.2.1 Assessment of NGOs**

---

NGOs’ obtained in-depth knowledge of issues through similar methods as described for the knowledge of ecology variable. However, the information that comprises the in-depth knowledge of issues is specifically focused on particular issues. To illustrate, information that Mr. Thakur of AENC reads in his environmental journals is issue specific – although perhaps not related to Manali. The GBS’s sub-committee on the environment has addressed issues such as natural and manmade soil erosion and natural hazards of the area. Their newsletters contribute significantly to the in-depth knowledge of issues among its members. In addition, SHARE has a significant personal collection of material, although it may not necessarily be locally relevant. The two remaining NGOs, BVP and the Mahila Mandal, do not have the same opportunities to acquire this in-depth knowledge of issues.

Although GBS, AENC and SHARE have an advantage with respect to the in-depth knowledge of issues variable, there are also efforts being made to familiarise NGOs with local environmental problems. In past initiatives, in-depth knowledge of issues that pertain to local issues has been communicated to the NGOs through meetings organised by the NP.

The NP of Manali deals with environmental issues on a case by case basis and holds meetings as a tool to inform NGOs of the issues. The NGOs' expertise is then solicited to help in the resolution of the problem. NGOs are requested to contribute to the discussion of a particular issue, they are provided with relevant, pertinent information and subsequently develop their own approaches or methods to instil an in-depth knowledge of the issue to its members, volunteers and audience.

Personal investment implies a proprietary interest in an environmental issue or action, although this is not necessarily a financial interest. The NGOs, with the exception of SHARE, recruit volunteers who do not gain or benefit from the activities of their organisations except that, perhaps, they increase their social conscience. In addition, the NGOs operate with minimal revenues and purposefully limit their sources of funding in order to demonstrate that their incentive is altruistically motivated and not driven by monetary concerns. However, it could be argued that the NGOs have a personal investment insofar as they are working in their own community and feel an investment in its future as a healthy community. NGOs are 'owning' the problems with which Manali is faced and look to solutions through their work as an NGO. Although not specifically environmentally focused, the NGOs' commitment to the betterment of the community indicate an attitude of personal and organisational investment.

Mr. Thakur's group is an environmentally focused organisation and he is, consequently, personally (and organisationally) invested. However, Mr. Thakur has his own slightly different perspective in terms of personal investment. He also runs a trekking business in Manali, and realises that a clean, healthy and sustainable environment is necessary for his business to function. As he states, "My business takes from nature and I want to give back to nature" (Thakur pers. comm. 2000). Mr. Thakur's indebtedness to the environment even incites him to use his personal finances to implement AENC's environmental projects. His motivation for founding AENC could thus be attributed to his personal financial investment in the environment.

#### **6.3.2.2 Impact on Residents and Tourists**

---

Although half of the residents that were interviewed felt that Manali faced no environmental problems, relative to other cities in India, the other half highlighted many pertinent issues. Of the six residents who felt Manali was experiencing environmental

problems, three mentioned haphazard hotel construction, three mentioned illegal felling of trees and all six mentioned the poly-bag problem. They also understood the consequences of these problems in terms of the long-term and short-term impacts on their personal lives.

NGOs that did participate in the poly-bag ban primarily conducted one-time door to door campaigns that contributed to residents' in-depth knowledge of the issue. Despite the campaign's success being largely attributed to the co-operation of the shopkeepers union and to the NP's enforcement, the six residents agreed that door-to-door visits was effective in informing citizens of the ban. These same residents commented that door-to-door campaigns should be used as an approach for future initiatives.

Because of the NGO members' perceptions of personal/organisational investment, they also feel that Manali's residents should have a clear personal investment in the environment. At least one NGO (AENC) feels that personal investment is a critical environmental behaviour motivator given Manali's particular situation. Tourism is one of the largest sources of revenue for the town and its residents have come to depend on the seasonal revenue flow. Mr. Thakur feels that AENC, and other NGOs, should demonstrate to the private sector that their business depends on tourism, that the tourists come for the nature and, consequently, their business depends on the environment. To date however, EE campaigns have not promoted or focused on this variable.

NGOs recognise that tourists, who make up the vast majority of the population in high season, do not have a personal investment in any local environmental issue. A tourist from Delhi agrees, "Tourists have no stake in it [the environment] so they don't care" (Delhi tourist pers. comm 2000). Understandably, reaching tourists is a difficult task. As one BVP member (Prem pers. comm 2000) stated, "They [tourists] come with a different mind set - they come here for recreation. They come with their habits and it takes time." A foreign tourist agrees, reaching this segment would be challenging, after all "tourists come with their own set of values". BVP therefore does not feel it is worth devoting their resources towards a project to target tourists. No other participating NGOs have implemented a campaign that exclusively targets tourists.

### **6.3.3 Empowerment Variables**

#### **6.3.3.1 Assessment of NGOs**

Previous chapters demonstrated that the NGOs of Manali have initiated, implemented and participated in various projects that promote action strategies to their members. This indicates that NGOs are attempting to impart knowledge of action strategies to their members and audience. It also indicates that the NGOs hold some knowledge of action strategies themselves, or at least have the means to learn about the various options for action. In other words, NGOs could not carry out a project such as the poly-bag ban if they felt they had no knowledge of action strategies.

Concerning the locus of control variable, the act of founding and/or participating in an NGO indicates a presence of an internal locus of control. GBS believed that they could change the literacy levels of the nation through their literacy campaigns. The Manali Mahila Mandal was founded to empower women in difficult situations and to act as a support system and Mr. Thakur believes that through education and awareness he can foster an environmentally motivated citizenry. Evidently, NGOs and their members believe that they can change conditions and circumstances they perceive to be unsatisfactory through their work.

#### **6.3.3.2 Impact on Residents and Tourists**

Although NGOs themselves have some knowledge of action strategies, their capacity to convey these messages to their audience is not as effective and/or successful. Knowledge of and perceived skill in using action strategies is lacking as an EE component of awareness campaigns in Manali. Comments to interview questions indicated that the residents of Manali would like to help but they do not know how. "The problem is that people don't know where to throw the garbage". Roop Singh (pers. comm. 2000) who believes that "people understand that things are causing problems but they have no knowledge of alternatives" reiterates this sentiment. One resident agrees and believes that the best method to educate people is to offer them easily accessible, environmentally friendly alternatives such as low-cost electricity to reduce the use of fuel wood.

Residents have long practised particular behaviours that can no longer be the usual course of action when combined with tourists' actions that add significantly to the environmental stresses. For example, residents historically threw their waste on to the riverbank. With a floating population reaching upwards of 20 000 people who consume large quantities of non-biodegradable goods, this practice can no longer be absorbed by the environment. Yet people are unsure of alternative courses of action, which seriously impedes their move towards pro-environmental behaviour.

The members of the NGOs are not representative of Manali's general population. With respect to the knowledge of and perceived skill in action strategies, residents and tourists demonstrated an external locus of control. When asked how environmental problems should be remedied and who should be responsible for action, the majority of residents and tourists indicated that regulatory measures should be implemented.

This was particularly evident in the case of the poly-bag ban; at least two tourists and one resident stated that creating awareness about the poly-bag problem would be unnecessary if the police strictly enforced the ban. Although this method can and has been effective in limiting the presence poly-bags in Manali, residents and tourists evidently are not empowered to make change themselves. Rather, they believe that being forced to act in order to avoid being fined is the best way to solicit change. However, once enforcement is relaxed, without an internal locus of control and without some grounding in the other empowerment variables, residents and tourists are not likely to sustain the behavioural change. This method, therefore, does not contribute to a long-term environmentally responsible citizenry.

The door-to-door campaigns, that were the vehicle of choice amongst NGOs to promote the poly-bag ban, offered a limited contribution to fostering an internal locus of control. Although door-to-door campaigns were considered somewhat useful in informing residents of the issue (50% of residents concurred), the door-to-door campaigns reminded residents that they must comply or face a fine instead of suggesting that residents can personally affect the situation and hence gain their voluntary participation. Alternatively, 'Clean Manali' campaigns and plantation projects demonstrate that residents can be effective in improving environmental problems and

they can contribute to their resolution. Again, these types of campaigns have focused almost exclusively on students.

---

## **6.4 *Nagar Panchayat***

---

### **6.4.1 Entry-level Variables**

---

#### **6.4.1.1 Assessment of the NP**

---

Evidence of the knowledge of ecology variable was scarce within the NP. Information obtained throughout interviews indicated that the NP's information, or accessibility to information, centred mainly on in-depth knowledge of issues. Financial resources that were dedicated to training of NP staff on environmental issues seemed to be allocated on a project/issue specific basis and not for general ecological knowledge. Consequently, there was limited opportunity for NP staff to improve their knowledge of ecology.

Although the employees of the NP may have had positive outdoor experiences within their youth and may continue to engage in outdoor experiences outside of their work environment, actual opportunities within the NP that might foster environmental sensitivity were also lacking.

#### **6.4.1.2 Impact on Residents and Tourists**

---

The NP of Manali deals with environmental issues on a case by case basis. Historically, the NP's approach has been to react to crises that require immediate attention. Three cases exemplify this point. Although there has been a state-wide ban on poly-bags since 1995, little had been done on the issue until 1998. Secondly, a ban has only recently been imposed on any further construction of hotels and guesthouses despite the fact that there are almost 900 hotels and guesthouses in a town of approximately 4000 people. Moreover, the ban is only applicable to the construction of buildings that exceed three levels. Finally, Manali has only just undertaken a solid waste management project due to recent state waste regulations.

The reactive nature of most environmental initiatives of the NP has meant that campaigns have not historically had a basis in information of ecological processes. Mr. Madan of SHARE supported this idea: "Too often things [campaigns] are done

backwards. The starting point should be two to three years of education for the citizens” (Madan pers. comm. 2000). Mr. Madan believes that the NP ‘educates’ citizens on issues and projects through regulation and enforcement, instead of through a long-term education programme that would potentially result in a more sustainable initiative.

Optimistically, the new SWM project, as stated earlier, has allocated a portion of funds, Rs 9.3 lakh, for “building awareness in the SWM project” for Manali town (see table 5-8 in Chapter 5). Although these funds are designated for issue-specific materials and training, based on Palmer’s and Suggate’s (1996) findings that education and texts contribute to environmental sensitivity, the materials and training may contribute to the environmental sensitivity of Manali’s citizenry.

---

#### **6.4.2 Ownership Variables**

---

---

##### **6.4.2.1 Assessment of the NP**

---

Through the implementation of past environmental initiatives, the NP has demonstrated that they have access to information on in-depth knowledge of issues. The NP takes the initiative and seeks out the information required for particular projects they wish to implement if information is not readily accessible. For example, the NP of Manali, as mentioned, is seeking the assistance of the government of Bangalore in its similarly designed SWM project. They have built in Rs 0.8 lakh into the proposal to educate its employees on the in-depth issues of the project.

The NP has a personal investment in environmental issues or actions only in the sense that its constituency has an investment. The NP is an elected council and its actions are meant to represent the needs and desires of the majority of voters. If the residents of Manali do not express a sense of personal investment in environmental issues or actions then the NP does not have the responsibility to act as though residents do have this sense of investment. Past campaigns have neglected the opportunity to focus on this variable and, as a result, the NP also has not focused on this area.

---

##### **6.4.2.2 Impact on Residents and Tourists**

---

Based on the poly-bag ban and the upcoming SWM project, the NP appears to recognise that in-depth knowledge of an issue is a critical variable for the success of any initiative. The NP’s approach to the poly-bag ban supports this assertion despite the fact

that the ban is being carried out by local NGOs. Although the awareness campaign for the SWM project would also likely contribute to citizens' environmental sensitivity, the main objective of the campaign, based on the breakdown of fund allocation (see table 5-8), is to provide residents with a solid grounding in the issue at hand. Despite recognising that this is an important variable to foster among citizens and residents, the efforts undertaken by the NP have not contributed significantly to residents' in-depth knowledge of issues. The knowledge tourists and residents have acquired regarding this variable has come mostly from the work of NGOs and other groups, such as unions.

Specific tools that the NP has used to educate people on the poly-bag ban include signage (see figure 6-1) and a jute bag subsidy programme. However, according to residents, these tools have had a limited effect. Two thirds (8) of the residents interviewed believe that the signs were not effective, while the remaining (4) respondents believe they had limited effectiveness. Moreover, those who believed the signs had limited effectiveness also stated that the signs were more likely to have an impact on people with an education and the impact was likely temporary.

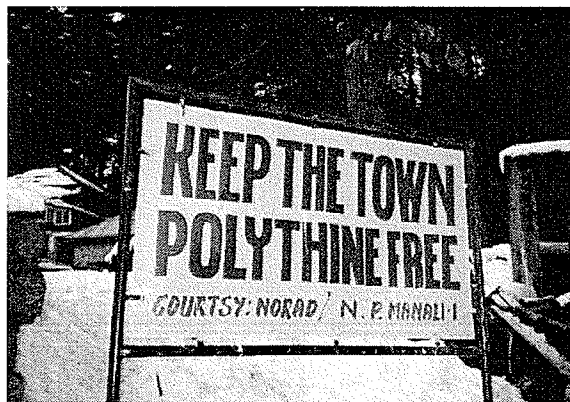


Figure 6-1: Poly Bag Ban Sign

EE programmes initiated by the NP did not tend to foster a sense of personal investment amongst residents and tourists. It could be argued that the majority of the residents of Manali instead have a personal investment in the growth of tourism. Cole (2000 p.191) writes that "the fear of losing tourist dollars is, undoubtedly, a key factor fuelling the desire to have more tourist attractions developed in the Manali area". Thus residents' most immediate concerns are perhaps couched in less environmentally-oriented and more tourism-driven positions. Tourists' short-term stays also do not provide the atmosphere for fostering a personal investment in Manali's environment.

---

### **6.4.3 Empowerment Variables**

---

#### **6.4.3.1 Assessment of the NP**

---

The NP does not have a readily available knowledge of action strategies. However, the NP does have the knowledge to engage the assistance of other relevant organisations that demonstrate superior capacity with respect to specific issues. In other words, the NP has the knowledge to devolve the co-ordination of an awareness campaign to a group that has more experience and/or a group that can be more effective in gaining pro-environmental behaviour. Moreover, the NP has access to knowledge of action strategies through its networking with other states as demonstrated by the upcoming SWM project.

The NP recognises that the residents of Manali and the tourists need knowledge of action strategies. Accordingly, the NP has adopted a strategy to provide residents and tourists with jute bags as an alternative to poly-bags. The jute bag subsidy was intended to provide residents with an action strategy that was easily adaptable. The SWM project is also currently offering residents an alternative to their waste management practices. As part of the SWM project, there is an intention to collect organic waste from residents' homes and brought to a centralised composting facility. Thus, the actions of the NP demonstrate a perceived skill in environmental action strategies through actual implementation of the jute bag subsidy and through the current construction of the compost processing facility.

With respect to the locus of control variable, the NP's strong internal locus of control is attributed to the fact that it is an elected body; the confidence and expectations of the majority of voters contributes to the NP's internal locus of control.

#### **6.4.3.2 Impact on Residents and Tourists**

---

In terms of the NPs' efforts in promoting the knowledge of and perceived skill in action strategies to the residents of Manali, the NP integrates this variable in its approach to environmental initiatives - but in some cases only in a limited fashion. The NP subsidised jute bags as an alternative to poly-bags. The residents of Manali are aware of this option, yet the alternative is not promoted or advertised to tourists. The shopkeepers union stated that a pamphlet is distributed to tourists at the entrance of the town, but no

domestic and foreign tourists had received the pamphlet. The president of the shopkeepers union would like the NP make more efforts in this regard. He would prefer that tourists hand in their poly-bags at the entrance to Manali and a jute bag would be offered as a replacement.

Within the new SWM project, the NP has also ensured that residents have an alternative to burning or dumping their waste illegally. As mentioned, residents comment that they are uncomfortable with their current waste practices but are unaware of alternatives. The most commonly identified problem was that the town waste locations were too far or full and that burning or dumping their waste in a non-designated area was more convenient. The project intends to engage an NGO to collect resident's waste from their homes, eliminating the problem of inconvenience.

Organic waste, however, does not arise as a problem among residents. The few residents that have received information on the project remain somewhat confused. One resident did not believe it was a viable project because residential organic waste does not present a problem to Manali. It was suggested that most residents feed organic waste to their animals, particularly cattle. Another resident understands that the SWM project could be beneficial to Manali, but remains confused as to the final destination of non-biodegradable waste, which is a more pressing problem. Consequently, the SWM project may offer a convenient, alternative method to waste disposal for residents, but the greater issue of disposing of non-biodegradable waste remains unclear.

The project also does not contribute to teaching action strategies to tourists nor does it offer them an opportunity for participation. Tourist hotels and restaurants are expected to segregate their waste of their own accord and ensure that their waste is transported to the correct locations. This consequently doubles the workload of hotels and restaurants. Previously, restaurants and hotels had only to transport their waste to the appropriate locations. Under this project, they would now have the added responsibility of segregating their waste.

The majority (72%) of tourists felt they had a responsibility to keep Manali "clean and green". The majority (64%) also felt that providing strategies for pro-environmental behaviour to tourists was the responsibility of the local government. However, tourists differed in how these opportunities should be manifested. Domestic tourists preferred a

regulatory approach. For example, "You've got to beat them [tourists] up, slap a fine on them", "Make it a law, strictly enforce it then you don't have to educate people. Regulation becomes the education" and "Government should be more strict. Advice will not do - they [tourists] need rules and guidelines". Conversely, foreign tourists seemed to want alternatives that allowed them to participate. "There should be a place to refill your water bottle and it should be advertised in your hotel" and "Footpaths should be more well advertised so people can walk. Nobody knows about them right now".

These different perspectives could be attributed to the difference in the type and length of stay in Manali. Typically, domestic tourists stay for three to four day periods, either to honeymoon or to escape from the city. Foreign tourists are in Manali for longer periods in order to acclimatise before and after a trek, as part of an extended trip throughout India or as a base camp for numerous treks. Tourists who stay for three to four days do not want to become an active participant in the environmental problems of the town. Those who stay longer may begin to have a deeper understanding of the problems and may feel they can or should contribute. The difference could also be linked to tourists' diverse educational and cultural backgrounds and the environmental state of their home cities/towns relative to Manali's current environmental state.

Currently, however, these different perspectives demonstrate an external locus of control by domestic tourists and an internal locus of control by foreign tourists. Domestic tourists feel that their pro-environmental behaviour may come only through the threat of a fine and not from the recognition that they can be independently effective. Foreign tourists understand that they could be independently effective if alternatives existed.

Residents of Manali also have a strong inclination towards regulatory measures. One resident says "It [an environmental initiative] needs to be a law otherwise people won't care". Another resident says, "The government should be more strict if the ban is to improve". Although residents attribute much of the success of the poly-bag ban to the shopkeepers' union's co-operation, they also attribute a large part of the success to the NP's enforcement of the regulation. Consequently, they believe that more regulation will improve the current success rate.

It is difficult to argue with regulatory incentives considering Manali's poly-bag ban success rate is at an admirable 90% (Gotham pers. comm. 2000). In fact, Manali has been so successful in its poly-bag ban that neighbouring states have sought Manali's advice in order to implement a similar ban. However, this approach does not contribute to the community's sense of an internal locus of control. Complying with regulations is, arguably, a forced behaviour and forced behaviour does not contribute to a sense of empowerment.

---

### ***6.5 Contextual Issues Affecting EE variables***

---

Contextual influences are critical to CD. Chapter four highlighted two important contextual issues that play a role in Manali's capacity for EE. The growths of tourism and legal and policy mechanisms were identified as factors that help and hinder EE capacity. Chapter five further supplemented the broad contextual overview outlined in chapter four by establishing contextual issues that are specific to each of the participating sectors. This section highlights how these contextual influences impact the EE variables in Hungerford and Volk's (1990) model of environmentally responsible behaviour.

Both positive and negative contextual factors influence the knowledge of ecology and other cognitive variables within the school system, such as in-depth knowledge of issues, knowledge of action strategies and perceived skill in action strategies. Many of the policies and legal mechanisms that have been highlighted within chapters four and five support EE and consequently support the introduction of EE principles into the curricula of the schools. The efforts by the central and state governments to strengthen the role of pre-service training also contribute to a positive EE context.

The lure of the tourism industry and policies that support the industry's current pattern of development have negative impacts on the aforementioned cognitive EE variables. For example, the allure of quick monetary gain lures students away from their education. This outcome has the simultaneous effect of contributing to both the current rapid, unsustainable growth of the tourism industry and to the elimination of opportunities to instil ecological knowledge, in-depth knowledge of issues, knowledge of and perceived skill in action strategies to Manali's youth via the education system. In addition, policies such as the subsidisation of hotel and restaurants as well as poorly

enforced building regulations only serve to reinforce young people's ideas that tourism is the 'golden egg' and few may look to alternative means of income generation.

These contextual influences also impact the affective variables of the model - environmental sensitivity, personal investment and locus of control. Although the textbook, rote-type classroom learning does not significantly contribute to these variables, they are influenced through practical exercises and extra-curricular activities. If Manali's young people opt for the economic benefits of the market, they not only forfeit the cognitive environmental knowledge offered through the school system but they also forfeit the experiences that contribute to their environmental sensitivity and personal investment.

Government policies that seemingly compete with fostering environmentally responsible behaviour also influence young people's personal investment and locus of control. If policies continue to encourage the rapid development of the area, youth may feel that their personal investment should also be oriented to tourism. Likewise, if policies strongly support tourism growth, this may contribute to young people's perceptions of their ability to affect the situation, which may lead to an external locus of control.

NGOs within Manali are also affected by some of the contextual factors mentioned above. Perhaps the most pressing contextual factor that hinders Manali's NGOs' capacity to affect both the cognitive and the affective variables of EE is the scepticism surrounding the integrity of the NGO community. Despite claims of adequate resources, this scepticism limits the NGOs' funding opportunities and limits the projects they can pursue or at least limits the approach NGOs take towards certain projects. For example, although Mr. Thakur from AENC feels his personal finances are adequate for pursuing all his projects, his approach to building environmental awareness is limited to his personal financial situation. Thus, instead of pursuing projects that may effectively contribute to all of the EE variables, NGOs may choose projects based on their budgetary constraints.

The NP of Manali is also not immediately affected by the policies that support the incorporation of EE into the school curriculum. However, the ability of the NP to impact the EE variables within the model is affected by economic influence of tourism and by its

regulatory abilities. Although the NP has the responsibility, according to the Indian Constitution's Seventy-Fourth Amendment Act of 1992, of *urban forestry, protection of the environment and promotion of ecological aspects*, among other environmentally related responsibilities, it also receives substantial revenue from tourism. The NP is in a difficult position of garnering a large portion of its municipal funding from an industry that has proven to be environmentally damaging in the past. Consequently, an EE initiative upon which the NP embarks that also threatens tourism revenue will not likely touch upon the EE variables to the degree necessary to be effective.

Finally, a large portion of the NP's and the NGOs' target audience is the tourist segment of the population. Tourists bring their own values, attitudes and behaviours. The chances of eliciting sustained, pro-environmental behaviour after spending an average of four days in Manali, is perceived as futile and a waste of the NGOs' and resources to a lesser degree, the resources of the NP.

---

## 6.6 Summary

---

Table 6-1 summarises key points related to the participating organisations' demonstration of Hungerford and Volk's (1990) EE variables as well as how each organisation has impacted their respective audiences in terms of the same variables.

As the table shows, all schools had access to information related to ecological processes, although to varying degrees. Day Star School had the greatest degree of accessibility, which is related to their relatively substantial resource base. Teachers and students demonstrated environmental sensitivity and a personal investment. However, a lack of practical, outdoor experiences hinders environmental sensitivity, particularly within the State school because of the high student/teacher ratio.

Teachers felt inadequate concerning their in-depth knowledge and knowledge of action strategies which also corresponds to students' weaknesses in these same variables. Day Star School's ES teacher felt knowledgeable about in-depth issues and action strategies yet students did not demonstrate corresponding environmental behaviour. This may indicate that current teaching strategies are ineffective or contextual influences play a more significant role than do environmental knowledge and attitudes in students' environmental behaviour, as suggested by Finger (1993).

**Table 6-1: Assessment of the Organisations' Capacity and their EE Impact on Respective Target Audiences using Hungerford and Volk's (1990) EE Variables**

|         | Entry-Level Variables                                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | Ownership Variables                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                             | Empowerment Variables                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                            |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|         | Teachers & Administration                                                                                                                                                                                                                                                                                                                                                                                    | Impact on Students                                                                                                                                                                                                                                                                                                                                                                                                                                                       | Teachers & Administration                                                                                                                                                                                                                                                                                                                                                                                 | Impact on Students                                                                                                                                                                                                                                                                                                                                                                                                          | Teachers & Administration                                                                                                                                                                                                                                                                                  | Impact on Students                                                                                                                                                                                                                                                                                                                                                                                         |
| Schools | <b>Knowledge of Ecology</b><br>- Day Star (DS) had best access to info. on ecological processes & most revenue to obtain resources<br>- State school had least on-hand resources with poorest opportunity to increase resources<br><b>Environmental Sensitivity</b><br>- Teachers of CST & DS showed most sensitivity<br>- Including ES into curriculum shows great degree of sensitivity by administration. | <b>Knowledge of Ecology</b><br>- All students exposed to info. Related to ecology<br>- DS students had best knowledge<br>- Barriers include lack of funds, lack of on-hand resources, over-crowding and lure of tourism<br><b>Environmental Sensitivity</b><br>- All students were highly inquisitive & eager to contribute to solutions<br>- High interest in CST & DS<br>- Barriers to sensitivity are lack of practical outdoor activity and lure of tourism industry | <b>In-depth Knowledge</b><br>- Teachers felt their in-depth knowledge of issues was inadequate except DS's ES teacher<br>- Teachers would benefit from more training<br>- Barriers include funding & time<br><b>Personal Investment (PI)</b><br>- DS showed investment in environment through inclusion of ES into curriculum<br>- CST & State school have a legal investment to address EE in curriculum | <b>In-depth Knowledge</b><br>- DS students had greatest in-depth knowledge<br>- All students were aware of waste & deforestation issues<br>- Waste issues were a priority mainly because of the effect on town's aesthetics<br><b>Personal Investment</b><br>- Practical projects were strongest contributor<br>- Health was dominant connection to PI<br>- PI was described in terms of aesthetics the environment offered | <b>Knowledge of &amp; Skills in Action Strategies</b><br>- Most teachers felt their ability was inadequate except DS's ES teacher<br>- DS's ES teacher was very confident in this area<br><b>Locus of Control</b><br>- Teachers have an internal locus of control as a natural element of their profession | <b>Knowledge of &amp; Skills in Action Strategies</b><br>- Questions on how to help & what solutions & alternatives exist to current damaging practices indicate lack of knowledge & consequently skill in action strategies<br><b>Locus of Control</b><br>- Considerable creativity when designing solutions, albeit heavily dependent on outside (NP) action – demonstrates an external locus of control |
|         |                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                            |

|      | Entry-Level Variables                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Ownership Variables                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                | Empowerment Variables                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
|------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | Assessment of NGOs                                                                                                                                                                                                                                                                                                                                                                                                    | Impact on Residents & Tourists                                                                                                                                                                                                                                                                                                                                                                                                                    | Assessment of NGOs                                                                                                                                                                                                                                                                                                                                                                                                                    | Impact on Residents & Tourists                                                                                                                                                                                                                                                                                                                                                                                                                 | Assessment of NGOs                                                                                                                                                                                                                                                                                                                                                                                                                               | Impact on Residents & Tourists                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| NGOs | <b>Knowledge of Ecology</b><br>- Organisations that have link to env. issues have greatest accessibility, including AENC, GBS & SHARE<br>- MM have poorest access to ecological knowledge<br><b>Environmental Sensitivity</b><br>- Individuals and groups (e.g. NGOs) who demonstrate concern for others are likely to be sensitive of the environment (Allen and Ferrand 1999)<br>- NGOs may foster env. Sensitivity | <b>Knowledge of Ecology</b><br>- Knowledge centred mostly around deforestation and related knowledge of issues<br>- Knowledge was mostly at a superficial level and related primarily to aesthetics<br><b>Environmental Sensitivity</b><br>- Practical projects impact environmental sensitivity (Palmer 1993).<br>- Barriers include tourists' diverse value sets and short duration of stay; many believe Manali has no environmental problems. | <b>In-depth Knowledge</b><br>- Organisations that have access to ecological knowledge resources have greatest accessibility, including AENC & GBS<br>- Efforts in place to familiarise remaining NGO's through project related mtgs with NP<br><b>Personal Investment</b><br>- NGO's commitment to betterment of community indicates personal and organisational investment<br>- AENC has financial investment in healthy environment | <b>In-depth Knowledge</b><br>- 50% of citizens felt Manali faced no env. problems; 50% felt problems existed<br>- Problems stated include hap-hazard hotel construction, illegal felling & polybag problem.<br>- NGOs implement mostly door-to-door campaigns with limited success<br><b>Personal Investment</b><br>- Limited NGO campaigns that target tourists<br>- AENC feels this variable should be promoted due to investment in tourism | <b>Knowledge of &amp; Skills in Action Strategies</b><br>- NGOs lack knowledge of ways to increase resource base<br>- NGOs promote action strategies within EE campaigns<br>- Perceived skill in action strategies is evident in work as NGOs<br><b>Locus of Control</b><br>- Act of founding &/or participating in an NGO indicates an internal locus of control – believe they can change what is unsatisfactory through their work within NGO | <b>Knowledge of &amp; Skills in Action Strategies</b><br>- Ability to convey msgs. of action strategies does not seem to be successful<br>- Comments suggested that people wanted to help but were unaware of alternatives.<br><b>Locus of Control</b><br>- Weak presence of internal locus of control<br>- "Regulation should be the education" attitude<br>- Door-to-door campaigns offered limited contribution to fostering internal locus of control – only reminded residents of fines. |
|      |                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

|        | Entry-Level Variables                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                         | Ownership Variables                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                     | Empowerment Variables                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                              |
|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|        | Assessment of NP                                                                                                                                                                                                                                                                                          | Impact on Residents & Tourists                                                                                                                                                                                                                                                                                                                                                                          | Assessment of NP                                                                                                                                                                                                                                                                                                                                     | Impact on Residents & Tourists                                                                                                                                                                                                                                                                                                                                                                                      | Assessment of NP                                                                                                                                                                                                                                                                                                                                                                                | Impact on Residents & Tourists                                                                                                                                                                                                                                                                                                                                                                                               |
| The NP | <b>Knowledge of Ecology</b><br>- Appeared limited within NP – info. centred mainly on in-depth knowledge of issues<br>- Resources were dedicated to project/issue specific knowledge<br><b>Environmental Sensitivity</b><br>- Limited evidence that indicates ability to foster environmental sensitivity | <b>Knowledge of Ecology</b><br>- Reactive nature of past campaigns indicate poor initiation to ecological knowledge<br><b>Environmental Sensitivity</b><br>- Perhaps outside of NP's abilities - env. sensitivity is most often nurtured at young ages<br>- Recent projects allow for issue-specific material and training, which can contribute to environmental sensitivity (Palmer and Suggate 1996) | <b>In-depth Knowledge</b><br>- Access to information related to issues – most info. NP receives is issue-specific<br>- NP takes initiative to seek out info. related to projects they implement<br><b>Personal Investment</b><br>- Investment only insofar as constituency is invested<br>- Legal investment according to environmental regulations. | <b>In-depth Knowledge</b><br>- Tools used by NP have limited effectiveness: 8/12 residents felt painted wall signs (a popular awareness building tool) were ineffective<br>- Most awareness building activities are conducted by NGOs<br><b>Personal Investment</b><br>- Tourism incentive are priority for residents<br>- Barriers for tourists include tourists' diverse value sets and short duration of holiday | <b>Knowledge of &amp; Skills in Action Strategies</b><br>- Access to info. on action strategies through networking with other states<br>- No ready info on action strategies but will devolve responsibility to groups with more capacity and related experience and resources.<br><b>Locus of Control</b><br>- Confidence and expectation of voters fosters the NPs' internal locus of control | <b>Knowledge of &amp; Skills in Action Strategies</b><br>- Residents aware of available strategies but not tourists<br>- New SWM project offers alternatives but residents question the projects' viability<br><b>Locus of Control</b><br>- Domestic tourists believe that Manali should rely on regulatory measures, indicating an external locus of control<br>- Residents also rely on regulatory measures for compliance |
|        |                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                              |

Representatives of participating NGOs and the NP indicated a relative satisfaction with their level of resources. Both sectors stated their ability to perform their projects was not hindered by a lack of volunteers or employees - with the exception of BVP. BVP expressed a preference for an increase in their members; their current membership is low because they have recently re-established themselves within the community. Additional comments from BVP members suggested that there might be a lack of well-educated residents within Manali that could be productive members of their organisation.

Although there was no definitive indication of a scarcity of financial resources by the NP or by the NGOs of Manali, there was a definite perception that there were limited, if any, opportunities to capture more financial resources. In addition, the current scepticism surrounding government or international funding limits the NGOs' opportunities for additional financial support. The NP is more fortunate in this regard because it is more acceptable for a municipal council to receive state level, national or international funding. Furthermore, the NP has a consistent source of revenue, unlike Manali's NGOs, whose funding is dependent on less secure sources such as memberships and fundraising.

Both the NP and the NGOs were predominantly satisfied with their current level of information resources. Although there was an apparent scarcity of on hand information resources, both sectors seemed able and even innovative in their ability to find information relevant to the projects they chose to pursue. This is not to say, however, that the organisations had all the information resources they required in order to pursue their choice of projects. Rather, it suggests that organisations choose projects suitable to their budgetary constraints. Despite this feeling of relative resource adequacy, the NGOs and the NP of Manali have difficulty fostering environmental attitudes and eliciting environmental behaviour from their respective target audiences.

---

## **Chapter 7: Conclusions and Recommendations**

---

---

### **7.1 Conclusions**

---

The population pressure from tourism and in-migration threatens Manali's already fragile environment. Efforts to educate Manali's residents and its tourists on the town's environmental problems are critical. However, past research has demonstrated that there has been a lack of capacity concerning such educational efforts. Therefore, the purpose of this research was to assess the EE capacity of organisations in Manali and to identify opportunities to develop that capacity.

Identifying relevant organisations involved in EE within Manali was the first objective of the research. Three schools, five NGOs and the municipal government (NP) were identified as key participants in the research. The participating organisations had diverse strengths and weaknesses, assorted perspectives, varied levels of experience and different target audiences. The formal education system reaches Manali's youth, has access to unique resources and carries the central responsibility of shaping young attitudes. The NGOs are socially-minded organisations consisting of primarily volunteer members but are severely restricted by a limited resource base. Manali's NP is elected by the citizens of Manali, has numerous responsibilities with limited resources, must prioritise seemingly competing agendas (e.g. tourism development and environmental sustainability) and has significant regulatory abilities. All three sectors were, therefore, important to include in the study.

---

#### **7.1.1 The Formal Education System**

---

The second objective of the study sought to identify contextual factors that impacted the participating organisations' EE capacity. Within the formal education system, the legal requirement to include EE within all curricula was a positive contextual impact. Consequently, each of participating schools included elements of EE within their respective curricula.

Negative contextual barriers to EE capacity within the participating schools included: the lure of the market and a lack of political action. Non-compulsory courses, according to the central government's examination schedule (e.g. Day Star School's ES

course), often suffer from a lack of devoted study time. Although the incorporation of EE into the school system is required, a stand-alone environmental studies (ES) course is not. Consequently, as a stand-alone course, ES does not capture the respect it requires from students' parents. Parents would prefer that their children's attention be focused on courses on which they will be tested at the national level.

The economic benefits of the tourism industry are also a challenging contextual barrier that is often overwhelming for many students. Students who attend the State Government School are particularly affected. These students are less financially privileged than Day Star School students and may, consequently, be more easily convinced to abandon their studies, including EE, in exchange for tourist rupees.

Finally, the youth of Manali are regularly exposed to a local government that implements policies supportive of rapid tourism development. Moreover, the NP poorly enforces some environmental regulations such as hotel construction. Students who observe their municipal government demonstrate a lax attitude towards environmental regulations would not therefore be motivated to demonstrate environmental behaviour, especially when such behaviour might involve foregoing convenience.

Identifying the human, financial and information resources available to the organisations was the third objective of the study. With respect to human resources within the formal education system, the CST and Day Star School were well within the central government's policy of 40 students to one teacher. The State Government School exceeded the maximum with classes approximately twice the recommended number of students. However, the State Government School does not have the financial resources to employ additional teachers.

The State Government School had fewest information resources available; the state government provided minimal textbooks and there was no library access. Though scarce within the State Government School, practical work and in-service training contributed to the information resources available to students and staff of the State Government School. Day Star School had the most readily available information resources with numerous textbooks, library books, specialised courses, pertinent journals and some, though limited, Internet access. Day Star School also experienced the most practical, outdoor work while the State Government School had the least. In-service

training, despite becoming more prevalent, was insufficient according to the majority of the teachers from all three schools.

The fourth objective of the research assessed the organisations' capacity based on Hungerford and Volk's (1990) model of pro-environmental behaviour. The assessment of the participating schools' EE capacity, based on Hungerford and Volk's (1990) model, highlighted that the schools' EE capacity was a reflection of the contextual influences and resource base of the schools. For example, Day Star School was more privileged with respect to available resources compared to the other participating schools. Their stronger resource base contributed to a manifestation of Hungerford and Volk's (1990) cognitive variables of ecological knowledge, in-depth knowledge of issues and knowledge of and perceived skill in action strategies. Conversely, a general scarcity of resources contributed to the State Government School's inability to familiarise themselves with the cognitive variables and contributed to an inability to fully foster these variables within the students.

However, while Day Star School had the benefit of a relatively substantial resource base, challenges remained when trying to elicit behavioural change. As such, it became apparent that pro-environmental behaviour did not depend on resources and cognitive knowledge alone. Schools faced similar contextual influences and students from all of the participating schools indicated similar patterns when it came to Hungerford and Volk's (1990) affective variables: environmental sensitivity, personal investment and internal locus of control. For example, the tourism industry and the economic benefits that accompany it suggest that students' personal investment should be in the market and not in the environment. Similarly, the NP's development policies that encourage environmentally damaging practices do not offer students a sense that they can change the situation and, therefore, weaken their internal locus of control.

In general, the formal education system demonstrated a weakness with respect to affective variables of Hungerford and Volk's (1990) EE model, with the exception of environmental sensitivity and, to a limited degree, personal investment. There was also an apparent disparity concerning resource accessibility, which directly affected the cognitive variables of the model. Opportunities to develop capacity for EE within the formal education system should emphasise that students have a personal investment in

the environmental issues and should foster students' internal locus of control. Strengthening the affective components of EE require that contextual barriers be examined for their effect on student's environmental attitudes and behaviours and consequently solutions to overcome these barriers will be appropriate and effective. Opportunities for resource sharing and possibilities for networking should also be explored in order to expand schools' resource base.

### ----- **7.1.2 The NGOs and NP of Manali** -----

The second objective of the study also sought to identify contextual influences that impacted the participating NGOs and Manali's NP. Negative contextual factors included: a scepticism surrounding the participating NGOs' funding sources, a lack of qualified environmental NGOs, a lack of political will and poorly enforced environmental regulations in some situations, such as the guesthouse construction moratorium. In addition, past development of the tourism industry has encouraged rapid economic growth versus environmental sustainability. Tourists with diverse value sets and attitudes, which are not all in harmony with the pro-environmental behaviour, also challenge Manali's EE capacity.

Positive contextual influences have also impacted the NGOs' and the NP's EE capacity. For example, EE is encouraged at the central and state government levels through enabling legislation. The NP's regulatory abilities ensure enforcement of some environmental regulations, such as the poly-bag ban, which also contributes to an enabling EE environment.

The third objective of determining the resources of the organisations, found that the human, financial and information resources of the NGOs and the NP were diverse and mostly inadequate though both the NGOs and the NP claimed to be satisfied with what was available to them. Despite the scarcity of financial and available information resources, these organisations were practical and creative when they required information relevant to the projects they chose to pursue. However, the organisations did not have all the resources they required to pursue any type of project. Available resources did not allow for self-sufficiency when the NGOs and the NP sought to take on large-scale projects.

Using Hungerford and Volk's (1990) EE model to assess the NGOs' and the NP's EE capacity was also a component of the study's fourth objective. The study concluded that an inadequate resource base and context hampered NGOs' internal capacity and their capacity to foster Hungerford and Volk's (1990) cognitive EE variables. Residents demonstrated a limited knowledge of ecological processes, limited but better in-depth knowledge of issues and lacked knowledge and perceived skill in action strategies.

Concerning the affective variables of Hungerford and Volk's (1990) EE model, NGOs demonstrated a strong internal capacity but were limited in their capacity to transfer these variables to their target audience. It was especially challenging for the NGOs to influence tourists therefore many did not attempt to address that sector of the population. However, residents of Manali did not exhibit a familiarity with the affective variables, which is an immediately pertinent issue. Residents were somewhat environmentally sensitive, but did not demonstrate personal investment or an internal locus of control.

Based on Hungerford and Volk's (1990) EE variables, the internal EE capacity of the NP was also inadequate with the exception of their capacities within the empowerment category. Although the NP rarely had readily available action strategies on how to handle environmental problems, there was generally always a strategy to learn how to remedy the situation. Moreover, due to their status as an elected government, their internal locus of control was apparent. However, there was limited manifestation of all the EE variables within the residents of Manali. Strategies that the NP has implemented in the past have not significantly contributed to residents' environmental sensitivity and have had even less impact on their personal investment and internal locus of control. Although there has been a successful campaign to ban the use of poly-bags, without the supporting regulations, the apparent lack of ownership and empowerment variables among the residents of Manali would not likely support the 90% success rate.

Opportunities to develop the EE capacity of the NGOs of Manali and the NP should consequently focus on developing residents' ownership and empowerment variables. Residents need to be aware that they are personally invested in Manali's environment and need alternative action strategies that are accessible, convenient and pragmatic. Although regulatory incentives appear to be successful, these solutions can be

superficial and do not provide the necessary ecological and in-depth information to residents and do not foster residents' internal locus of control. Emphasis should be placed on residents' ownership and empowerment before instead of relying on legislation alone.

---

## **7.2 Recommendations**

---

The fifth objective of the research was to develop recommendations and resources to enhance the existing capacity of the identified organisations. This section addresses this objective and provides recommendations to enhance the EE capacity of the organisations in three areas: Networks, Exploring Local Resource Potential and Incentives - all of which consider the organisations' resources and contextual limitations.

---

### **7.2.1 Networks**

---

The interests of Manali's organisations are diverse and not necessarily exclusively focused on environmental issues. However, the diversity of interests also contributes to a diversity of strengths. Becoming informed and knowledgeable of the others' activities, resources base and strengths can reduce overlapping efforts. Moreover, co-ordinated EE efforts are more efficient when the organisations are aware of each other's strengths and abilities.

Information resources are most impacted with an improved network of communication. For example, a useful outcome of establishing a communication network between organisations is the opportunity of hosting local information workshops on pressing environmental issues. Local NGOs have a wealth of knowledge and experience from which teachers, and undoubtedly residents, would like to learn. Workshops could be co-ordinated on a monthly or bi-monthly basis and organised by teachers and students. An on-going speaker series is an ideal programme for which to seek the National Environmental Awareness Campaign (NEAC) grant from the department of Science, Technology and Environment (STE). This approach demonstrates long-term thinking, which is a variable that the STE claim has been lacking in past proposals. Such a programme would also increase the public profile of the NGOs and would negate the necessity for the NGOs to seek their own funding. Not only does

such an opportunity increase the knowledge base of teachers, students and residents but fosters a sense of community and the idea that there is strength in numbers.

Networks, however, do not necessarily have to be restricted to the participating organisations. Accessing the resources offered by the private sector can certainly supplement current information. For example, Manali is a highly travelled to destination with numerous Internet cafes that have been recently established in the area. The cafes have been established to service the large volume of tourists who want to communicate via e-mail with their family, friends or places of work. Public-private partnerships between the Internet cafes and the schools could be established as a new information source. Bi-weekly arrangements with some of the numerous cafes could be co-ordinated to allow students access to this valuable information resource. This type of arrangement would be especially feasible during the off-season when Internet cafes that have not closed for the season are often void of customers. Alternatively, students could carry a frequent user card with ten one-hour sessions over the course of the school year. In the same regard, the Department of Information Technology, which has recently established a state government Internet centre, could co-ordinate student access with the SCERT.

#### **7.2.1.1.1 ACTION**

From preliminary observation and analysis while in the field, the issue of establishing networks was addressed by developing an information brochure, highlighting the participating NGOs and their mandate. This brochure was distributed to teachers and other NGOs to inform them of the participating NGOs' activities and to offer the schools their services (see Appendix I).

### **7.2.2 Exploring Local Resource Potential**

#### **7.2.2.1 Human Resources**

One of the most significant barriers to EE initiatives was a lack of time. Because tourism is an important source of revenue for many of Manali's residents, their time and energy are almost exclusively applied to tourism during the peak season. Consequently, residents have limited spare time and energy to devote to environmental and/or EE projects. However, members of the participating organisations, their target audience, and

those who are involved in the tourism industry also experience an off-season. Co-ordinating and implementing projects during this time will contribute to EE efforts while ensuring that residents are less distracted by their work.

During the off-season, residents could also help mobilise the energy of Manali's youth. Youth should be actively encouraged to establish environmental youth groups, either within or outside of school. Considering students from all three schools do not share the same holiday periods<sup>16</sup>, the newly formed group could consist of students from all participating schools in order to capitalise on the infrastructure and guidance of the school system. Providing the necessary support for young people to establish their own environmental group can go a long way to contributing to their ownership and empowerment. Youth who are motivated and who co-ordinate and implement projects themselves will contribute to future EE capacity.

#### **7.2.2.2 Financial Resources**

---

Comments throughout the field research process suggested a lack of locally available resources that might facilitate EE efforts. However, through improved networks and communication, local resources can be used more efficiently or, local resources can be developed. For example, NGOs, schools and government departments have made poor use of the existing grant programmes. Applications made by schools of Manali to the department of STE for the NEAC are generally for one day programmes and demonstrate few, if any, long-term opportunities (Sharma 2000, pers. comm.; Singh, K. 2000, pers. comm.). Moreover, the NGO community does not submit any proposals to government departments for fear that their credibility and legitimacy will be jeopardised. However, this barrier may need to be addressed by the department of STE and not by the organisations of Manali.

The state government could take more steps to educate the NGOs as to their funding opportunities. The department of STE has several programmes that allow NGOs, schools and individuals to apply for funding for projects related to environmental issues. More education and promotion about the nature of these programmes, how to apply for funding under these programmes and explaining how the funds are disseminated might

---

<sup>16</sup> The CST and the State Government School take holidays in summer, while Day Star School holiday in winter.

alleviate some of the scepticism surrounding government funding. If NGOs and their audiences are more aware of this type of information, a level of clarity might be brought to these funding programmes that contributes to their transparency.

The current state of funding nonetheless restricts the projects that all participating organisations can co-ordinate and implement. Projects are more than likely designed with the understanding that there will be no supplemental sources of income and need to be tailored to limited budgets. However, new sources of funding are perhaps the most difficult need to address. For the new source of funding to be sustainable, it cannot be a quick-fix solution where an international donor or government department contributes a set sum of money to 'fix' the problem. In order for the funding to be meaningful, it would need to be self-administered.

A recommendation that incorporates these considerations is imposing an environmental levee on tourists. Five or ten rupees or a percentage of tourists' accommodation fees could be levied through an environmental tax on hotel bills as a means to support environmental and EE projects. The funds could be collected by the Hotelier's Union and administered through the NP or an advisory group as a grant programme for the NGOs interested in implementing environmental projects.

#### **7.2.2.3 Information Resources**

---

Current information resources are scarce within Manali. Furthermore, with the limited financial resources, increasing the tangible information resources, such as textbooks, is not a possibility in the near future. However, intangible information resources, such as outdoor experiences, have the greatest possibility of development given these resource restraints while also contributing to a greater number of EE variables. Practical projects can incorporate many of the EE variables, while not depending on, for example, expensive textbooks or Internet research. Therefore, projects that involve students and residents in solutions to environmental problems can simultaneously foster environmental sensitivity, in-depth knowledge of pertinent environmental issues, knowledge of action strategies and by association, perceived skill in action strategies (Palmer 1993; Palmer and Suggate 1996).

#### 7.2.2.3.1 ACTION

Since solid waste management was identified as an important issue among tourists and residents a waste audit was conducted with the students of the three participating schools (see figure 7-1). The waste audit required students to collect the garbage from their classroom for a 3 to 4 day period in which time they were asked to separate it into previously determined categories such as paper products, glass, plastic and metals. The material was then weighed (or the weight was estimated, as two of the schools did not have scales). Students were then asked to identify ways in which they could act to help the environment including means to reduce, reuse or recycle the waste. Students were asked to develop ideas and suggestions that could be offered to tourists concerning the impact tourists have on the local environment.

Although the researcher worked with a local translator to conduct the project, working closely with a teacher would have contributed more weight to the project, particularly in the case of the State Government School. Not following this course of



**Figure 7-1: Waste Audit Project**

likely that this project will be transferred to future classes within the State Government School. In addition, training the teacher, in this case, to conduct the project in future years would have also provided for a better-quality CD opportunity than working directly with the students.

---

#### 7.2.3 Incentives

---

Incentives need to be explored to encourage environmentally sound actions by citizens and tourists. For example, while in interviews with tourists, the NP and the State government were common responses to the question of who was responsible for informing citizens and tourists of environmental matters in Manali. Respondents further explained that the NP had to be vigilant in its enforcement of any environmental

legislation. In other words, the respondents indicated that the local or state government should impose fines on those who contravene the legislation. In this case, behaviour will change only insofar as enforcement follows. Incentives other than legislated fines also need to be explored.

Despite its short existence, one incentive that proved to be successful was the jute bag initiative implemented by the NP in response to the poly-bag ban. In an attempt to reduce the amount of poly-bags being distributed throughout Manali, the NP subsidised jute bags as an incentive for residents not to use poly-bags. Large bags were made available at local retailers at a price of Rs. 15. However, the initiative was successful only until the bags could be subsidised by the NP. Once the bags were no longer available at a low cost, residents were less inclined to make the investment. In addition, because the bags were subsidised for a limited time, once the large bags were out of stock, no more were made and the remaining smaller bags were too small to be useful.

Nonetheless, the jute bag example demonstrates that people are willing to contribute to a healthier environment if they have an incentive to do so. Other similar programmes, such as low-cost refillable water bottle stations for tourists, free walking maps (see Appendix II) to discourage vehicular use or subsidised waste bins for residents and hotel and restaurant owners for biodegradable and non-biodegradable waste separation. These programmes should be further supported by those organisations that implement them through follow-up advertisements that congratulate residents for contributing to a 'clean and green Manali'. For example, the NP should consider signage that, instead of reminding residents of the poly-bag ban, congratulates residents for achieving a 90% success rate. Actions like this could contribute to residents' internal locus of control.

#### **7.2.3.1.1 ACTION**

---

A footpath map was developed in response to residents' concerns to excessive vehicular traffic and the resulting air pollution. The map was developed using Geographic Information System and Global Positioning System technologies and it is intended for distribution through the Manali Himachal Pradesh Tourist Development Corporation (HPTDC) office and hotels. Although the initial cost of developing and

reproducing the map was borne by the parent project of this research, the future costs expect to be absorbed in part by the Hoteliers' union. The union president at the time of the research was supportive of the map and tentatively agreed to the future cost of copying the map for the union's members. The HPTDC was also receptive to the idea and implied that they would continue copying the map if the initial run proved to be successful.

---

### ***7.3 Future Research Opportunities***

---

The purpose of Hungerford and Volk's (1990) study on changing learner behaviour through EE was to provide a model of EE that would foster pro-environmental behaviour. The model hypothesised that pro-environmental behaviour could be elicited through a linear transition of relevant EE variables, starting at entry-level variables to ownership variables and ending in empowerment variables.

However, Hungerford and Volk's (1990) model did not include a component that recognised the factors that influence the model's variables. Hines et al.'s (1987) model included such a component and suggested that "situational factors", such as an individual's economic or cultural context, played a role in pro-environmental behaviour. McKenzie-Mohr (2000) uses "barriers" to behaviour to explain the same concept. McKenzie-Mohr (2000, p. 547) also considers "whether the resources exist to overcome identified barriers" as a third step in designing a community-based programme.

Establishing what could contribute to negligible environmental behaviour before implementing an EE programme is essential in order to address the lack of EE efforts appropriately. While these shortcomings were addressed in the research by modifying the model to include resource and contextual influences, Hungerford and Volk (1990) did not include these elements within their model. Consequently, Hungerford and Volk's (1990) assumption of adequate resources and the exclusion of contextual influences does not contribute to operationalising the goals of EE.

While applying Hungerford and Volk's (1990) model, it also became apparent that Hungerford and Volk's (1990) research does not explicitly focus on the formal education system, though their pro-environmental behaviour model might be better suited to this sector. A classroom setting provides a direct teaching forum and outside influences can be limited, though temporarily. Limiting external influences means there

is less competition for student's thoughts and energy. In addition, though resources are scarce within the formal education system in Manali, they are relatively consistent. The resources in the non-formal education system, however, are directly or indirectly connected to contextual influences and are therefore less consistent and reliable. Less reliable resources means that EE campaigns need to be flexible, which is not a strength of Hungerford and Volk's (1990) model.

It became apparent throughout the research that Hungerford and Volk's (1990) model approaches EE from a non-issue specific perspective. While non-issue-specific methods approach EE from a holistic perspective, which has its benefits when applying EE at a macro level, issue-specific approaches investigate EE at an individual, micro level. For example, Finger (1993) suggests that environmental issues need to consider an individual's "life-world" and McKenzie-Mohr (2000) investigates an individual's "barriers" to behaviour of a specific issue. Hungerford and Volk's (model) does not have the ability to approach EE challenges from a micro-level, which may exclude it from solving environmental issues at that level.

Because Hungerford and Volk's model did not focus at the more immediate and micro-level of EE, challenges arose when it became apparent that many of Manali's environmental problems needed to be addressed in a relatively immediate and focused manner. Consequently, a campaign that systematically follows all of the EE categories in Hungerford and Volk's (1990) model is not necessarily realistic. Residents' actions might be better informed if they were educated on the ecological nature of the surroundings (entry-level category) as opposed to only being informed of the specific issue (ownership category). However, time and resources do not always allow for this to occur and action often needs to be immediate and focused.

In the past, Manali has taken the regulatory approach to address this immediate need for action. However, regulatory measures are only effective as long as they are enforced. Approaches to EE that have the ability to address specific environmental challenges in a relatively short period without resorting to regulatory measures could be investigated for future EE campaigns in Manali. For example, applying McKenzie-Mohr's community based social marketing techniques of eliciting environmental

behaviour change could be applied in specific situations to determine if removing barriers is a sustainable approach to EE for Manali's residents.

Another possibility for future research lies in linking EE and the tourism industry as an educational opportunity. Tourism will not likely be abandoned as an important revenue source in Manali. Therefore, the fragile nature of Manali's environment, and the mountain environment in general needs to be communicated to its visitors, and its residents. However, residents need to be involved in the beginning stages of the development of such an endeavour in order for them to feel a sense of ownership and empowerment with respect implementation and operation. Future research could therefore examine the possibility of developing Manali as a model 'eco-town' that involved the participation and contributions from its residents at the outset. Developing Manali as an 'eco-town' would serve to educate its residents on the importance of Manali's environment and the connection to its economy and would simultaneously educate tourists on important environmental matters in the town.

Finally, future research could also investigate the possibility of the aforementioned recommendation of imposing an environmental levy. Research could examine the process of how the levy system could be implemented appropriately and could investigate the potential of an advisory committee that disseminates the funds through one or numerous grant program.

---

## References

---

- Aggarwal, I.P. 1999. School Education for the New Millennium. In: *Journal of Indian Education: Special Issue on Curriculum Development I*, 25(3):52-58.
- Allen, J. B. and J. L. Ferrand, 1999. Environmental Locus of Control, Sympathy, and Pro-environmental Behaviour. In: *Environment and Behavior*, 31(3):338-354.
- Arbuthnot, J. 1977. The Roles of Attitudinal and Personality Variables in the Prediction of Environmental Behavior and Knowledge. In: *Environment and Behavior*, 9(2):217-232.
- Arnstein, G.E. 1971. What is Environmental Education?. In: *Journal of Environmental Education*, 3(1):7-9.
- Ballantyne, R. and J. Packer, 1996. Teaching and Learning in Environmental Education: Developing Environmental Conceptions. In: *Journal of Environmental Education*, 27(2):25-32.
- Batta, R. N. 2000. Tourism and the Environment: A Quest for Sustainability with Special Reference to Developing Countries, and Policy Analysis on Himachal Pradesh. D. K. Publishers, New Delhi.
- Bayon, R. and R. Rodriguez, 1993. Capacity Building: It is All About People. In: *Capacity Building in Environment and Development*. International Academy of the Environment, pp.12-16.
- Berkes, F., G. S. Chauhan, I. Davidson-Hunt, K. Davidson-Hunt, C. Duffield, J. Gardner, L. Ham, B. W. Pandey, J. Sinclair, R. B. Singh & M. Thakur, 1998. Sustainability of a Mountain Watershed Ecosystem in the Himachal Pradesh Himalaya: Background & Overview. In: *Sustainable Development of Mountain Environment in India and Canada* (R.B. Singh, Ed.). Oxford & IBH Publishing Co. PVT. LTD., New Delhi, pp. 1-35.
- Berkes, F. and J. Gardner, 1997. *Mountain Environments and Sustainability*. Sustainability in Mountain Environments. Retrieved from [http://www.umanitoba.ca/academic/institutes/natural\\_resources/mountain/book/1/index.html](http://www.umanitoba.ca/academic/institutes/natural_resources/mountain/book/1/index.html).
- Bolger, J. 2000. Capacity Development: Why, What & How. *CIDA Capacity Development Occasional Series*. No. 1 May.
- Borden, R. and A. Schettino, 1979. Determinants of Environmentally Responsible Behavior: Facts or Feelings? In: *Journal of Environmental Education*, 10(4):35-39.

- Capacity.org Homepage 2000. Retrieved from <http://www.capacity.org/definit.html>.
- Census of India Homepage 2002. Retrieved from <http://www.censusindia.net/>
- Centre for Environmental Education Homepage 2002. Retrieved from <http://www.ceeindia.org/>
- Chambers, R. 1983. *Rural Development: Putting the Last First*. Longman, New York.
- Chandna, R. C. 1998. *Environmental Awareness*. Kalyani Publishers, Ludhiana.
- Chetwode, P., 1972. *KULU: The end of the habitable world*. Time Books International, New Delhi.
- Cole, V. 1999. The Growing Ecological Footprint of the Himalayan Tourist. Shastri Project on Sustainable Development of Mountain Environments in India and Canada: Technical Report No. 12. "Urban Development and Environmental Impacts in a Mountain Context" Retrieved from [http://www.umanitoba.ca/academic/institutes/natural\\_resources/mountain/current/cole/](http://www.umanitoba.ca/academic/institutes/natural_resources/mountain/current/cole/).
- Cole, V. 2000. Using Ecological Footprint Analysis to Measure Sustainability in a Himalayan Tourist Centre. Natural Resources Institute. Winnipeg, University of Manitoba.
- C.P.R. Environmental Education Centre Homepage 2002. Retrieved from <http://cpreec.org/>.
- Cullough, J., K. Helomere and P. Stock 2000. Annual Report 2000: Building Human and Institutional Capacity for Sustainable Development. UNDP. Retrieved from <http://stone.undp.org/maindiv/bdp/dl/view.cfm?DocId=177&CFID=262436&CFTOKEN=69821149>.
- Day Star School (no date). Day Star School Prospectus - Manali.
- Deikmann, A. and Preisendorfer, P. 1998. Environmental Behavior: Discrepancies between Aspirations and Reality Abstract. In: *Rationality and Society* 10(1):79-103.
- Diduck, A. 1999. Critical Education in resource and environmental management: Learning and empowerment for a sustainable future. In: *Journal of Environmental Management*, 57: 1-13.
- Disinger, J.F. 1990. Environmental Education for Sustainable Development. In: *Journal of Environmental Education*, 21(4):3-6.

- Elias 2000. Vice-Principal and Environmental Studies teacher. Day Star School Manali. Personal Communication.
- Finger, M. 1993. From Knowledge to Action? Exploring the Relationships Between Environmental Experiences, Learning and Behaviour. In: *Journal of Social Issues*, 50(3):141-160.
- Fowler, A. 1997. *Striking a Balance: A Guide to Enhancing the Effectiveness of Non-Governmental Organisations in International Development*. London: Earthscan Publications.
- Gandun, T. 2000. Central School for Tibetans, Manali. Science Teacher. Personal communication.
- Gigliotti, L. M. 1990. Environmental Education: What went wrong? What can be done?. In: *Journal of Environmental Education*, 22(1):9-12.
- Giovannini, B. 1993. Editorial. In: *Capacity Building in Environment and Development*. International Academy of the Environment, p. 3.
- Glover, J.M. and L Deckert, 1998. Beyond Praying for Earthquakes: What Works in Environmental Education. In: *Parks and Recreation*, 33(11):30-41.
- Gotham 2000. Nagar Panchayat Manali. President. Personal communication.
- Government of India Ministry of Environment and Forests 1996. Sustainable Development Goals, Strategies and Priorities: India Country Paper. Prepared for the 2<sup>nd</sup> Meeting of the National Councils for Sustainable Development held in Manila, Phillipines.
- Government of India, Department of Education Homepage 2000. Retrieved from <http://education.nic.in/>.
- Gupta 2000. Nagar Panchayat Manali. Secretary. Personal Communication.
- Hawkes, B.B. 1991. Teacher Locus of Control: Who's Responsible. In: *Education*, 111(4):475-478.
- Himachal Pradesh Tourism Development Corporation 2000. Tourist Comment Ledger Book.
- Hindustani Times 2000, July 29. HP Tourism Policy Paves Way for More Private Investment. In: *Hindustani Times*, New Delhi.

- Hungerford, H. and T. Volk, 1990. Changing Learner Behavior Through Environmental Education. In: *Journal of Environmental Education*, 21(3):8-19.
- Hsu, S., and R. E. Roth, 1998. An Assessment of Environmental Literacy and Analysis of Predictors of Responsible Environmental Behaviour Held by Post Secondary Teachers in Hualien are of Taiwan. In: *Environmental Education Research*, 4(3):229-250.
- Hwang, Y., S. Kim and J. Jeng, 2000. Examining the Causal Relationship Among Selected Antecedents of Responsible Environmental Behavior. In: *Journal of Environmental Education*, 31(4):19-25.
- Ibikunle-Johnson, V. 1989. Managing the community's environment: Grassroots participation and environmental education. In: *Convergence*, 22(4):13-23.
- Lal, S. 2000. Science Teacher. State Government Secondary School. Personal Communication.
- Lavergne, R. and J. Saxby, 2001. Capacity Development: Vision and Implications. *CIDA Capacity Development Occasional Series*, No. 3. January.
- Leeming, F. C., W. O. Dwyer, B. E. Porter and M. K. Cobern, 1993. Outcome research in environmental education: A critical review. In: *Journal of Environmental Education*, 24(4), 8-21.
- Lusthaus, C., M. H. Adrien and M. Pertsinger, 1999. Capacity Development: Definitions, Issues and Implications for Planning, Monitoring and Evaluation. Universalialia. Retrieved from <http://www.universalialia.com/files/capdev1.pdf>.
- Madan, S. 2000. President. Society for Holistic Action and Rehabilitation Ecology. Personal Communication.
- Mayur, R. 2001. Environment. In: *Futurist*, 35(3), p.10.
- McKenzie- Mohr, D. 2000. Promoting Sustainable Behavior: An Introduction to Community-Based Social Marketing. In: *Journal of Social Issues*, 56(3):543-554.
- Moore, M. 1995. Promoting Good Government by Supporting Institutional Development?" In: *IDS Bulletin*, 26(2):93-97.
- Morgan, P. 1997. *The Design and Use of Capacity Development Indicators*. CIDA, Policy Branch.
- Mukherjee, N. 1993. *Participatory Rural Appraisal: Methodology and Applications*. Concept Publishing Company, New Delhi.

- Mukul, A. 2000, October 11. Fake NGOs Easy Way to Make a Quick Buck. In: *Times of India*, New Delhi.
- Negra, C. and R. E. Manning, 1997. Incorporating Environmental Behavior, Ethics, and Values into Nonformal Environmental Education Programs. In: *Journal of Environmental Education*, 29(2):10-22.
- Palmer, J. 1993. Development of Concern for the Environment and Formative Experiences of Educators. In: *Journal of Environmental Education*, 24(3):26-30.
- Palmer, J. and P. Neal, 1994. *The Handbook of Environmental Education*. Routledge, London.
- Palmer, J. and J. Suggate, 1996. Influences and experiences affecting the pro-environmental behaviour of Educators. In: *Environmental Education Research*, 2(1):109-122.
- Palmer, J. 1998. *Environmental Education in the 21st Century: Theory, practice, progress and promise*. Routledge, London.
- Pande, A. 2001. Environmental Education in Rural Central Himalayan Schools. In: *The Journal of Environmental Education*, 32(3):47-53.
- Pandey, M.M. 2000. Curriculum Transaction and Evaluation: Some Issues. In: *Journal of Indian Education: Special Issue on Curriculum Development II*, 25(4):107-114.
- Pandey, B.W., R.B. Singh & T. Singh, 1998. Population, Urbanization and Tourism in the Kullu District. In: *Sustainable Development of Mountain Environment in India and Canada* (R.B. Singh, Ed.). Oxford & IBH Publishing Co. PVT. LTD., New Delhi, pp. 153-171.
- Petts, J. 1999. *Handbook of Environmental Impact Assessment*. London: Blackwell Science
- Pomerleau, C. and G. Greene, 1996. Capacity Development in Environmental Management: An approach towards a more effective development assistance in environment. Hull: Policy Branch, CIDA.
- Prem 2000. Former President Bharat Vikas Parishad. Personal Communication.
- Qualman, A. and J. Bolger 1996. Capacity Development: A Holistic Approach to Sustainable Development. In: *Development Express*. Retrieved May 20, 2000, from <http://acdi-cida.gc.ca/xpress/dex/dex9608.htm>.
- Qualman, A. and P. Morgan, 1996. Applying Results Based Management to Capacity Development. Hull, CIDA.

- Raina, V.K. 1999. Trends in Curriculum Development: International Perspective. In: *Journal of Indian Education: Special Issue on Curriculum Development I*, 25(3):126-136.
- Rajput, J.S. 1999. School Curriculum in India: with Focus on Value Education and Works Experience. In: *Journal of Indian Education: Special Issue on Curriculum Development I*, 25(3):1-13.
- Ramsey, C. and Rickson, R. 1977. Environmental Knowledge and Attitudes. In: *Journal of Environmental Education*. 2(3):10-18
- Rishi, P. 1998. A Study of Environmental Attitudes and Knowledge and their Role in Pro-Environmental Behaviour. In: *Indian Journal of Social Research*, 39(3-4):177-186.
- Sandhu, M. K. 1998. Tourism and Sustainability: The Commercial Trekking Industry in the Kullu Valley, Himachal Pradesh India. Natural Resources Institute. Winnipeg, University of Manitoba.
- Saxena, A.B. 2000. A Critical Study of Textbooks for Environmental Studies at the Primary Level. In: *Journal of Indian Education: Special Issue on Curriculum Development II*, 25(4):80-86.
- Schacter, M. 2000. "Capacity Building": A new way of doing business for development assistance organisations. *CIDA Policy Brief No. 6*. Institute on Governance, Ottawa.
- Sessions, K. 1993. Building the Capacity for Change. In: *EPA Journal*, 19(2):15-21.
- Sharma 2000. State Department of Science Technology and Environment. Simla. Personal Communication
- Sharma, D. 1999. Curriculum Development: Socio-Cultural Issues and Problems. In: *Journal of Indian Education: Special Issue on Curriculum Development I*, 25(3):74-85.
- Sia, A.P., Hungerford, H. and Tomera, A.N. 1986. Selected Predictors of Responsible Environmental Behavior: An Analysis. In: *Journal of Environmental Education*, 17(2):31-40.
- Sinclair, A.J. and A. Diduck, 2000. Public Involvement in environmental impact assessment: a case of hydro development in Kullu District, Himachal Pradesh, India. In: *Impact Assessment and Project Appraisal*, 18(1):63-75.

- Singh, R. 2000. Member Secretary of Gian Bigan Samiti. Manali. Personal Communication.
- Singh, K. 2000. Professor at Himachal Pradesh University, Simla. Personal Communication.
- Sivek, D. and H. Hungerford, 1989. Predictors of Responsible Behavior in Members of Three Wisconsin Conservation Organisation. In: *Journal of Environmental Education*, 21(2), 35-40
- Stapp, W.B., S. Havlick, D. Bennett, W. Bryan, J. Fulton, J. MacGregor, P. Nowak, J. Swan and R. Wall, 1969. The Concept of Environmental Education. In *Journal of Environmental Education*, 1(1):30-31
- Thakur 2000. Arohi Environmental and Nature Conservation. Manali. Personal Communication.
- Thaplyal 2000. Principal of Duff Dunn International School. Manali. Personal Communication.
- Tilbury, D. 1995. Environmental Education for Sustainability: Defining the New Focus of Environmental Education in the 1990s. In: *Environmental Education Research*, 1(2): 195-213.
- Times of India 2000, September 16. Blacklisted NGOs Go Up on Maneka's Website. In: *Times of India*, New Delhi.
- Town of Manali, 1998 (?). Integrated Solid Waste Management and Environmental Project for Manali Town.
- Townsley, P., 1996. *Rapid Rural Appraisal and Participatory Rural Appraisal and Aquaculture*. Food and Agriculture Organisation. Rome.
- UNCED 1992. *Agenda 21: Programme of Action for Sustainable Development*. New York.
- UNDP 1994. Capacity Development: Lessons of Experience and Guiding Principles. UNDP Internet site: Management and Governance Network. Retrieved from <http://magnet.undp.org/cdrb/CDPRIN1.htm>.
- UNDP 1997a. *Capacity Building Requirements for Global Environment Protection*. John Ohiorhenuan and Stephen Wunker. GEF Working Paper 12.
- UNDP 1997b. *Capacity Development*. Technical Advisory Paper II. Management and Governance Division.

- UNDP 1998. Capacity Development Assessment and Development In a Systems and Strategic Management Context. Technical Advisory Paper III. Management and Governance Division.
- UNDP 2000. India's Capacity 21 Summary Report: United Nations Development Programme. Retrieved from <http://www3.undp.org/c21/>.
- UNESCO 1980. *Environmental Education in the Light of the Tbilisi Conference*. UNESCO, Paris.
- UNESCO 1985. *A Comparative Survey of the Incorporation of Environmental Education into School Curricula*. Environmental Education Series 17. UNESCO-UNEP International Environmental Education Programme
- UNESCO 2002. Retrieved from [http://www.unesco.org/education/efa/ed\\_for\\_all/background/background\\_kit\\_achie\\_goal.shtml](http://www.unesco.org/education/efa/ed_for_all/background/background_kit_achie_goal.shtml)
- UNICEF 2000. Activities: Research and evaluation. Retrieved from <http://www.unicef.org/reseval/>
- UNFPA 2001. Human Activity Posing Dangers to Ecosystems. In: *Popline: World Population News Service*, 23: 1-8.
- Wakely, P. 2000. Capacity Building for Better Cities. In: Journal of the Development Planning Unit. Retrieved August 28, 2001, from <http://www.gdrc.org/uem/capacity-build.html>
- Wei, L. and X. Ji-yu, 2000. Urban environmental problems transition and environmental education towards sustainable cities in China. In: *Journal of Environmental Sciences*, 12(1):18-22.
- Zelezny, L.C. 1999. Educational Interventions that Improve Environmental Behaviors: A Meta-Analysis. In: *Journal of Environmental Education*, 31(1): 5-14.

---

## Appendix I: NGO Brochure

---

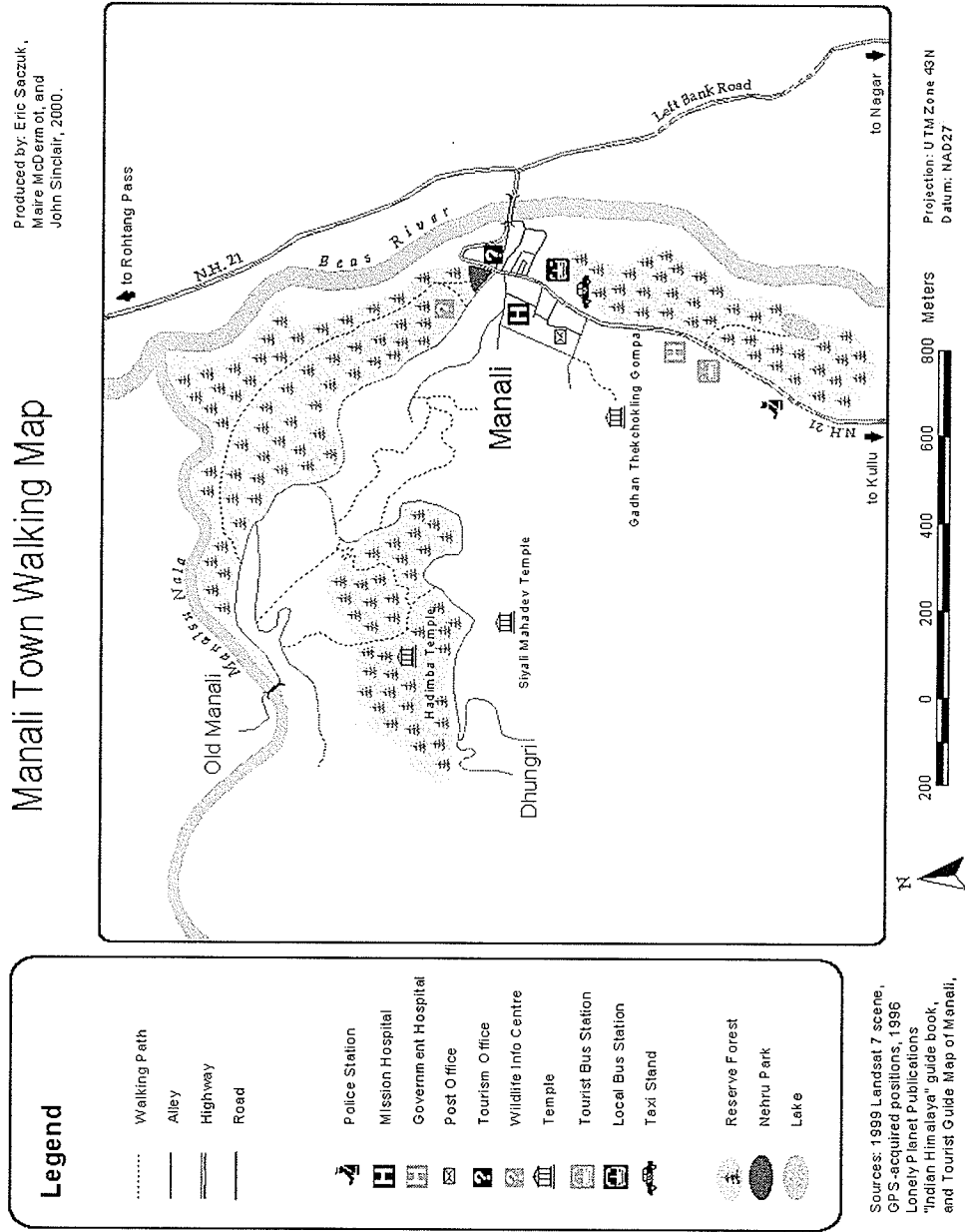
# Teachers



The non-governmental organizations (NGO's) of Manali are an excellent resource at your fingertips. Their wealth of knowledge on anything from environmental issues to social activism can add a creative and inspiring dimension to any lesson plan.

This brochure provides a list of the NGO's who are currently active in the Manali area and who can contribute an interesting aspect to any classroom setting. Contact them for further information!

## Appendix II: Manali Town Walking Map



---

## Appendix III: Project questionnaire on Environmental Education in School Programmes

---

### Project questionnaire on Environmental Education in School Programmes

Environmental education is being given a fresh style of education which seeks to make pupils fully aware of the problems connected with their environmental and teach them new attitudes and behaviour to enable the, together with the other members of their community to contribute to their solution. This is to be achieved by creating an interdisciplinary curriculum which instructs students from an early age about the interdependence between human beings and their total environment; about the limits to technology; about conserving water and soil; about preserving natural landscapes. Further it is expected to encourage thinking and first-hand observation especially relating to the local environment – physical, biological, social and about changes going on all around. It should take full advantage of and nurture the indigenous knowledge base. Educational activities should become an instrument of monitoring development and injecting full accountability in to the machinery involved in development programmes.

The attached questionnaire is being distributed in an attempt to understand teachers' attitudes towards the environment. The information collected through this survey will provide my research with a more comprehensive perspective of the atmosphere in which students are learning about environmental issues. You are requested to respond to identified issues of concern by responding on the issues on a 5 point continuum – Strongly Agree (SA); Agree (A); Uncertain (U); Disagree (D); Strongly Disagree (SDA). Please feel free to make any suggestions or contribute any further knowledge you may have on this subject.

Thank you.

Maire M<sup>c</sup>Dermott  
Masters of Natural Resources Management Candidate  
University of Manitoba, Canada

---

1. Do you agree that content related to environment and allied issues should be part of the:

- |     |                       |       |          |
|-----|-----------------------|-------|----------|
| i)  | Textbooks             | agree | disagree |
| ii) | Curricular activities | agree | disagree |

2. Do you agree that environment related activities can be taken up regularly in the academic session in terms of :

- |      | SA | A | U | DA | SDA |
|------|----|---|---|----|-----|
| i)   |    |   |   |    |     |
| ii)  |    |   |   |    |     |
| iii) |    |   |   |    |     |
| iv)  |    |   |   |    |     |

3. Kindly identify the activities in terms of the priority to be taken up in school programmes:

SA      A      U      DA      SDA

- i) Lecture
- ii) News items
- iii) Posters/models/aids
- iv) Essay/poem/story
- v) Debate
- vi) Quiz
- vii) Exhibition
- viii) Film show/ video-show/audio-visual presentation
- ix) Cleanliness
- x) Plantation
- xi) Beautification
- xii) Seminar/workshops
- xiii) Excursions
- xiv) Celebration days
- xv) Any other kind (please specify)

---

---

---

4. Do you agree that such activities play an important role in the teaching/learning process?

Agree

Disagree

5. What problems do you envisage in the proper implementation of these activities in the school programme?

a. \_\_\_\_\_, b. \_\_\_\_\_, c. \_\_\_\_\_, d. \_\_\_\_\_

6. What could improve the current situation?

---

---

7. Suggest the incentives to be given to teachers in the implementation of these activities:

a. \_\_\_\_\_, b. \_\_\_\_\_, c. \_\_\_\_\_, d. \_\_\_\_\_

8. How can student participation be increased in these activities?

a. \_\_\_\_\_, b. \_\_\_\_\_, c. \_\_\_\_\_, d. \_\_\_\_\_

9. How can community participation be encouraged in the implementation of such activities in school programmes:

a. \_\_\_\_\_, b. \_\_\_\_\_, c. \_\_\_\_\_, d. \_\_\_\_\_

10. Do you agree that these activities can be taken up in the school programmes as Socially Useful and Productive Work (SUPW) activities?

Agree

Disagree

Kindly give reasons for your response:

---

---

---

11. Has your school participated in the Children Science Congress or any other environment related programme: Yes/No

If yes, kindly list the activities in which it participated:

---

---

---

12. Are you aware about the negative impact of the development activities on the environment?

|                      | Agree | Uncertain | Disagree |
|----------------------|-------|-----------|----------|
| i) Forests           |       |           |          |
| ii) Grasslands       |       |           |          |
| iii) Natural habitat |       |           |          |
| iv) Water bodies     |       |           |          |
| v) Life pattern      |       |           |          |

13. Do you think that empowerment of local bodies (Municipal Councils/Panchayat) will help in:

- i) Environmental conservation and preservation?
- ii) Air pollution
- iii) Water pollution
- iv) Noise pollution
- v) Solid waste management
- vi) Promotion of non-conventional energy sources

14. Have you participated in any type of workshop or seminar related to environmental issues? Yes/No

If yes, kindly list the seminars or workshops in which you participated. Also, please list the sponsoring agency. e.g. Government department or name of the Non-governmental organisation.

15. Would you like to participate in the documentation of different environment related programmes/activities? Yes/No

If yes, please specify the task that you would like to undertake (priority wise):

- i) Data collection (field work)
- ii) Experimentation
- iii) Analysis and compilation
- iv) Any other:

Kindly list some tasks that you think are appropriate for the conservation of the environment

---

---

---

---

## Appendix IV: Interview Questions<sup>17</sup>

---

### Questions to tourists (foreign and domestic)

---

1. Where are you from?
2. What was your reason for coming to Manali?
3. What are your first impressions of Manali?
4. What kind of environmental problems do you think Manali is facing – if any?
5. What kind of suggestions do you have that might lend to remedying the problem?
6. What would be some good methods to inform people about Manali's environmental problems or any initiatives that the NP is taking to resolve the situation?
7. Are you aware of the poly-bag ban?
  - a. If YES, how and/or from where did you hear about it?
  - b. If YES, do you have any ideas of how it could be improved?
  - c. If NO, what would be a better way of informing tourists of it?
8. Who can help in inform people of the ban? Whose responsibility is it to inform people?
9. What responsibilities do tourists have with respect to improving or, at the least, not worsening the situation?

### Questions to Residents

---

1. Are you from Manali or the surrounding area?
2. If yes, for how long have you lived here?
3. What are your impressions of Manali's environment?
4. Does Manali's environmental problems affect you? If YES, how?
5. What should be done to address the problems?
6. Who should be responsible?
7. Do you personally take part in helping the environmental situation of Manali?
8. What are your impressions of the poly-bag ban stickers?
9. What are your impressions of the government subsidised jute bags?
10. How effective are the painted signs that deliver environmental messages?

### Questions to Teachers

---

1. Do you think the level of EE is adequate in the school?
2. Do you conduct any practical projects?  
Explain
3. Would you say your students are sensitive to the environment?  
Explain
4. Do you feel your students are knowledgeable concerning environmental issues?
5. Would you, as a teacher, want more training with respect to environmental issues?
6. In your opinion, what is the best approach to EE?

---

<sup>17</sup> Interviews were of a semi-structured format and the questions within this appendix were devised before interviews began. Consequently, questions may have been changed, excluded or added according to the progress of the interview.

7. Do you feel comfortable with your level of knowledge of the environment and ecology?

#### Questions to NGOs

---

1. How is your organisation structured?
2. What does the organisation do?; What is your mandate?
3. How are decisions made within the organisation?
4. How is the organisation funded?
5. How long has the organisation been established in Manali?
6. How many members does the organisation have?
7. In what types of projects has your organisation been involved?
8. Has your organisation done any work related to environmental issues?
9. In what capacity, if any, was the organisation involved in the polybag ban?
10. How does the group decide which projects are funded?
11. Has the organisation ever collaborated with the NP on certain projects?
12. How do you and/or your group inform themselves of environmental issues?
13. What was your reason for founding/joining the group?
14. Do you feel there is a sufficient NGO presence in Manali?
15. Has your organisation ever filled in a proposal for funding?
16. Does the organisation work with any other groups or organisations?
17. Does the organisation have any future projects planned?
18. What do you, as a member or as president, perceive as a barrier to the organisation?
19. Do you feel that, as a member or as president, the organisation has the resources it requires to conduct the projects it wishes to conduct?
20. What projects would you like to undertake in the future?
21. What types of assistance do you need to accomplish these projects?
22. What does your group feel are the most important environmental issues facing your local area?

#### Questions to the NP

---

1. How many people are employed with the NP?
2. What is the NP's areas or responsibility?
3. What fines/penalties currently exist with respect to solid waste disposal?
4. What current laws/policies are in place with respect to solid waste?
5. Is the NP divided into individual departments?
6. Is the NP planning any future environmental projects?
7. Have employees of the NP ever attended any environmentally related workshops or seminars?
8. Has the NP ever worked with community groups on environmental projects?
9. How effective do you think the poly-ban stickers have been?