CHAPTER 4
GEOTOURISM DEVELOPMENT, SITE AND VISITOR MANAGEMENT

4. 1 INTRODUCTION

Chapter 4 will look at the development of geotourism, site and visitor management and how the various approaches and tools for the management of geotourism can be applied. Without attractions and destinations, there would be no need for other tourism services. A geotourism destination should be able to compete by involving social, environmental, economical, cultural, political and technological strengths. The steps to destination success described by Ritchie and Crouch (2003) will be interrogated.

In developing the conservation of geoheritage for a sustainable and integrated environment case studies from Finland, the US and Canada will be used. It will be shown how the "*Australian Natural Heritage Charter for the Conservation of Places of Natural Heritage Significance*" assists destinations with an interest in natural places to establish their natural heritage values and to manage them accordingly.

A new trend is the establishment of geoparks worldwide. They are being set up to conserve and manage geoheritage and, this will be discussed, in addition to the European and Global UNESCO Network of Geoparks. The conditions and aspects that are involved such as geoconservation, geoheritage, economic development, geo-education and management will be examined. The utilisation of geotourism products through, geological and mining museums, theme parks, geo-events and geo-exhibitions will then be discussed. The role of The South African Gold Panning Championships held annually at Pilgrim's Rest will be described as it is the only event of its kind in the country, so far. Exhibitions to explain geology to the public have been introduced in Europe and their introduction will be evaluated.

Because interpretation forms a vital part of geotourism in these places, this too will be examined. Another aspect that will receive attention is the role of interpretation as a communication tool directed at visitors for this can persuade people to become more environmentally and socially conscientious. It can also regulate visitor behaviour as a key strategy for managing environmental impacts.

4.2 VISITOR ATTRACTIONS AND DESTINATIONS

The tourism product concept was given as *"... an amalgam of many components, the attractions of the destination, the facilities at the destination and the accessibility of it*" (Middleton, 1979, as cited by Bennet, 1995:7). The tourism product is therefore an amalgam of many components, or a package, which forms a composite product. The main components

of the tourism product are perceived by the prospective tourist as an experience available at a price. This then leads to the addition of the image of the destination and the price to the consumer, as basic components of the tourism product (Bennet, 1995:7). Indeed, attractions are the most important components of the tourism system. They are the main motivators for a tourist trip, and are the core of the tourism product. Without attractions, there would be no need for other tourism services. In fact, it is doubtful if tourism as such would exist if it were not for attractions (Swarbrooke, 1997:3).

According to Walsh-Heron and Stevens (1990:3), a visitor attraction is a feature in an area that is a place, venue or focus of activity. It does the following:

- Sets out to attract visitors/day visitors from either residents or tourist populations, and is managed accordingly
- Provides a fun and pleasurable experience and an enjoyable way for customers to spend their leisure time
- Is developed to realize its potential
- Is managed as an attraction, providing satisfaction to its customers
- Provides an appropriate level of facilities and services to meet and cater to the demands, needs, and interests of its visitors
- May or may not charge an admission for entry.

It is because of the uniqueness of attractions that tourism is possible. Attractions may be either resource-based or constructed. The primary intention is to manage attractions as the following list implies. The aim is to give advice to some of the less intensive systems of management such as natural resources. To classify and define an attraction more precisely, the following criteria that relate to the management of the enterprise must be considered:

- It must be perceived and recognised itself as a tourist attraction
- It must be publicly marketed and promoted as the attraction
- On-site management and staffing must be provided; and
- The visitor must recognise it as a tourist attraction.

Primary geosites could be regarded as attractions and, when they are grouped together to form a geopark, they collectively can become a destination. This is, however a very simplistic assumption.

Swarbrooke (1994:222, 224) says that the product can be natural or manufactured, and can be a single attraction, a destination area, or even a whole country. Thus, the heritage tourism product is not heterogeneous. Some heritage is consciously owned and managed to attract tourists, while other heritage features are managed with the aim of reducing problems caused by unwanted tourism. Different types of organisations with different objectives control the heritage product. The profit motive is often the aim of private-owned attractions, while those in the public sector tend to be managed with wider social objectives in mind, such as

education and provision leisure facilities for the community. Some of the heritage products are very authentic, while others are less authentic.

Prentice and Light (1994:210-211) offer a classification of heritage attractions. With regard to the evaluation of interpretation comparisons between attractions of similar types, the researcher suggests that heritage attractions should be classified in South Africa as follows:

- Natural history attractions, including nature reserves, nature trails, geomorphological and geosites that include caves, gorges, cliffs and waterfalls
- Science-based attractions, including geological museums
- Stately and ancestral homes, including country houses, manor houses
- Towns and townscape, principally historic townships (Pilgrim's Rest), groups and buildings in an urban setting
- Old mines, mine shafts, mining equipment
- Socio-cultural attractions, including archaeological sites (Masorini, Thulamela)
- Countryside and treasured landscapes, including National Parks and other countryside amenity designations
- 'Rural' landscapes which may not be officially designated but are enjoyed by visitors
- Regions, including *pays*, or other historic or geographical areas identified as distinctive by their residents or visitors.

Dallen, Boyd and Boyd (2005:46-47, 59) are of the opinion that attractions are viewed as the primary elements consisting of activity places and their leisure setting, while the secondary elements focus on services aspects within a region.

Different categories of attractions

Many new types of heritage attraction emerged or were created because there is an acceptance that heritage is present across many environments. Heritage attractions should be developed for all possible environments provided only that they reflect the heritage attributes of their locations. Natural history museums, nature reserves, nature trails, aquatic displays, wildlife parks, zoos, caves, gorge cliffs and waterfalls all fall into this category.

Support services that operates at heritage locations

Because heritage attractions cannot exist by themselves, they require a good support service infrastructure around them to bring tourists to them and to cater for their needs while they are at the attraction. Thus, accommodation, food, shopping facilities and transportation should be developed. The support infrastructure is a very important element of supply and should be seen as being at least as important as the attractions themselves

The context within which heritage exists

Although they might already exist in the region, the economic role and development of regions and their scale should supplement the heritage attraction. Protected areas and or relatively untouched regions are important places to the natural heritage. Yellowstone Park

was established as long ago as 1872 and tourists have been drawn to such places because of the natural heritage they offer. National Parks and many protected spaces often represent the heritage landscapes of certain regions. This is certainly the case in most of the USA, Canada and New Zealand where most of the heritage features are from the natural environment. The Parks in Canada are valued as part of the national landscape. "*With their spouting geysers, towering plinths of granite, volcanic peaks, mountain ranges, valleys and lakes, wetlands, tundra deserts, and isolated outback regions, the National Parks in many countries rank as internationally renowned visitor attractions and often the most visited heritage* attraction*…. The grandeur of the naturalness of regions is an essential element in the heritage supply they can offer. As such, this type of supply is attractive to other types of tourism (for example, ecotourism) as Parks offer opportunities to observe, admire and learn about existing flora, fauna and the natural process*".

Dallen *et al*. (2003:19-60, 59 and 282) believe that "*Attractions should be developed in association with the support services they require. Failure to do so may result in the supply being underused, or for more popular attractions, an inability to cater for the needs of visitors*". Creating a new supply by adding extra dimensions to the supply from the heritage setting itself is the case of the development of the gold and gold trails in New Zealand at central Otago.

4.2.1 THE COMPETITIVE AND SUCCESSFUL GEODESTINATION

Although the discussion below is primarily about tourism, it can be successfully applied to geotourism in South Africa.

Goeldner and Ritchie (2006:436-438) are of the opinion that good planning must be based on a sound understanding of those factors that fundamentally determine the success of a tourism destination. The framework is shown in Figure 4.1 which includes nine major components:

1. Supporting factors and resources.
2. The core resources and attractors.
3. Destination management.
4. Destination policy, planning and development.
5. Qualifying and amplifying determinants.

6, 7. Comparative versus competitive advantage.

8, 9. Global (macro) versus competitive (micro) environment.

Weaver (2006:133-149) believes that tourist destinations are extremely diverse and that they each form spatial entities, having in common the characteristic of place that fundamentally dictates the way that sustainable tourism is engaged. Therefore, the pursuit of sustainability is critically influenced by factors such as cultural landscapes, scale boundaries, absolute and relative location and the fact that all geodestinations are positioned and influenced by a nested hierarchy of other destinations.

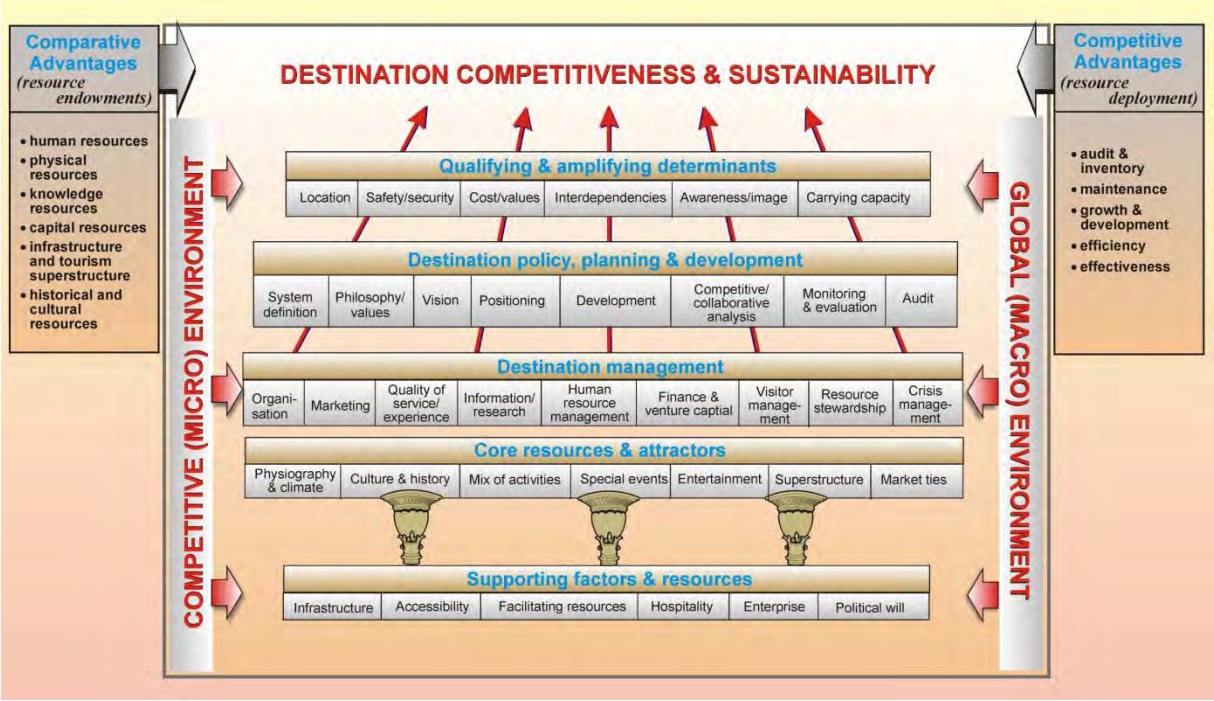

Figure 4.1: The Ritchie/Crouch model of destination competitiveness and sustainability (Goeldner and Brent Ritchie, 2006:437)

Ritchie and Crouch (2003:2, 9-29) state that "... *what makes a tourism destination truly competitive is to increase tourism expenditure, to increasingly attract visitors while providing them with satisfying, memorable experiences, and to do so in a profitable way, while enhancing the well-being of destination residents and preserving the natural capital of the destination for future generations*". Therefore, a tourism destination should be able to compete by involving social, environmental, economical, cultural, political and technological strengths. The nature of competitiveness and sustainability is in constant evolution and therefore destination managers must monitor the surrounding world so that they are anticipating tomorrow rather than reacting to yesterday. A destination must try to achieve when it proclaims its goal of enhancing its competitiveness. Destination competitiveness must be viewed from a long-term perspective. Competitive advantages relate to a destination's ability to use its resources effectively over the long term.

Further, Ritchie and Crouch (2003:30) emphasise that the competitiveness of a destination derives from a combination of both its resources and assets (naturally occurring or created), which can be deployed to assemble the tourism product, and from the ability of the destination to mobilize these resources. Part of this ability to mobilise resources (that is, its competitive advantage) arises from the degree to which the destination has been able to chart a coherent, widely supported course.

They (Ritchie and Crouch, 2003:29, 49) go on to express the opinion that every destination must examine its ability to maintain all dimensions of sustainability (environmental, social,

cultural and political) if it is to develop and preserve true competitiveness. Destination competitiveness and performance are linked by several steps, which are illustrated in Figure 4.2. Therefore, geodestination competitiveness should combine both comparative and competitive advantages. The target marketing strategy should find congruence between the competitiveness profile of the geodestination and 1) alternative market segments, 2) the competition (allies and enemies) and their own strategies, and 3) the goals that the destination aspires to achieve. The implementation of the strategy results in an outcome that must be judged by comparing it with its own goals. The geodestination success is the shared responsibility of everyone.

Ritchie and Crouch (2003:30) believe that the act of planning provides no guarantee that a destination will succeed, but it does improve the chances of success. A tourism development plan can, potentially:

- Identify the best courses of action - a formal planning process requires a more comprehensive and systematic assessment of a destination's strengths and weaknesses, tourism opportunities and threats, and viable alternatives
- Maximise community and industry support - planning, if undertaken appropriately, provides an opportunity for all stakeholders to air any concerns and influence the destination's course
- Mobilise effort towards a shared goal - a plan acts as a communication tool to ensure that those involved in its implementation have a clear sense of purpose and direction, and an understanding of their role in the process
- Ensure the efficient use of resources - as resources are finite, their allocation among alternative, competing uses will result in different outcomes. Planning ensures that the resource allocation is made explicit.

The steps to destination success (Ritchie and Crouch, 2003:29) are shown in Figure 4.2.

According to Edgell (2006:88-89), a comprehensive inventory of potential rural tourism resources is critical to the success of any tourism project. Attractions can be classified as:

- Natural, scenic or environmental features including mountains, rivers, lakes, springs, beaches, forests, wildlife and farms. These attractions and activities associated with them, such as hiking, sightseeing, photography, nature study, hunting and fishing, could attract large numbers of visitors
- Cultural and ethnic attractions including unique lifestyles, archaeological sites, early settlements, museums and art galleries. They are popular with many tourists and occupy a high-growth area in today's market place; and
- Special events including community-sponsored activities designed to entertain, educate or allow tourists to participate. The events that often reach a wide audience may be connected to the history, culture and natural features of the community. They are growing in popularity as tourist attractions and most communities have the potential to use them and festivals to draw tourists to their area.

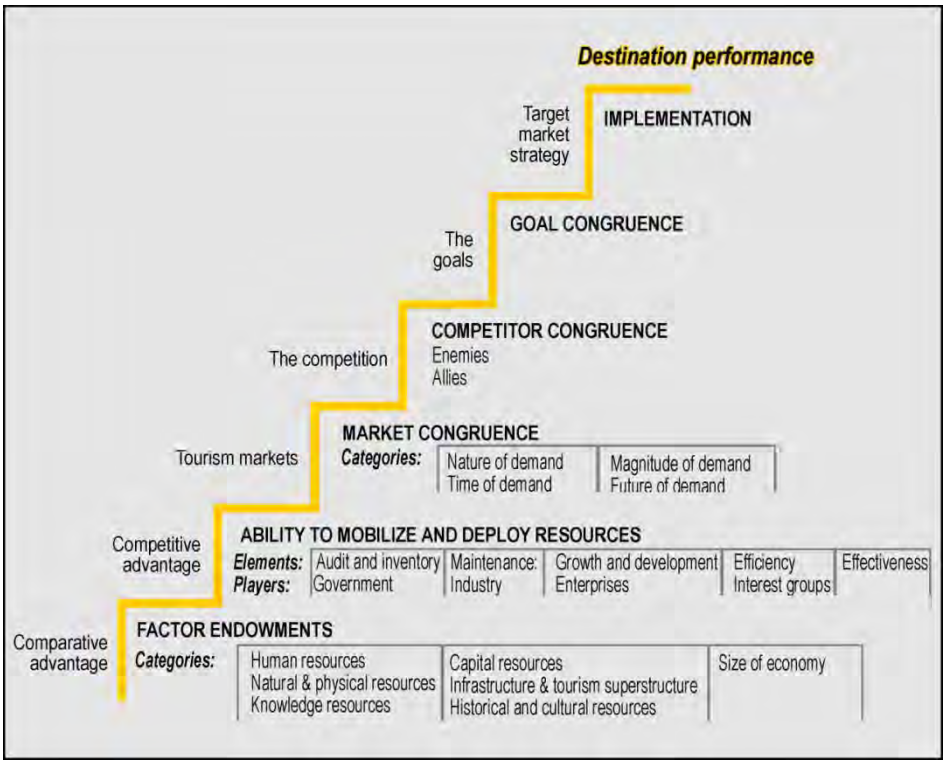

Figure 4.2: Steps to destination success (Ritchie and Crouch, 2003:29)

Eagles, McCool, Haynes and Christopher (2002:26) state that when capturing economic benefits, the following are necessary:

- Increasing the number of visitors
- Increasing the length of stay
- Attracting the richer market niches
- Increasing purchases per visitors
- Providing lodgings
- Providing guides or other services
- Hosting events
- Purchasing local food and drink.

Eagles *et al*. (2002:114) shows the economic value of a protected area as being ideally suited for geotourism as shown in Figure 4.3.

Ryan (2005:202-215) mentions that site managers are faced with operational considerations when seeking to protect both natural environments and create satisfactory visitors experiences. Site management of natural places involves several considerations:

- The nature of the terrain and the maintenance of physical infrastructure
- The needs of visitors
- The needs of environmental conservation and restoration

- The sustainability of the operational viability of the conservation agency.

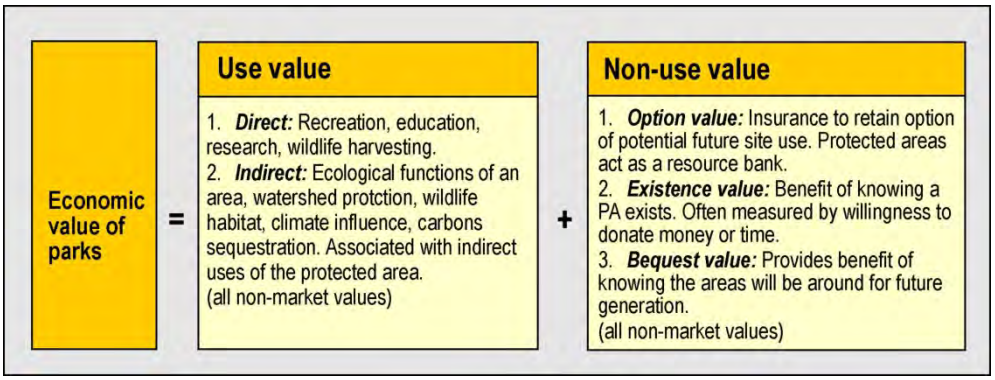

Figure 4.3: Total economic value of a protected area (Eagles *et al*, 2002:114 as adapted from Wells, 1997 and IUCN, 1998)

This leads to the enhancement of service provisions by introducing new interpretive services that will allow for more time in meeting visitor demand by building visitor centres, conducted talks and tours. Operational techniques by which geosite management can enhance visitor experience while protecting natural environments are:

- Marketing materials
- Footpaths and trials
- Signposting
- Zoning.

Marketing materials such as brochures, maps and booklets are important in shaping visitors expectations. The destination can be presented in glossy brochures with photographic and pictorial illustrations, and interpretations of data in terms of visitor experiences. Therefore, promotional material in bringing messages to the notice of the public is not simply an advertising medium, but rather forms part of the product itself. An industry can create expectations concerning experience where the main product is the experience of the place. Promotional materials then become tools that geosite managers can use to promote messages that are pertinent to the objectives of the site plans.

Information centres can play an important role because:

- They are sources of information about a place or the natural environment at the site itself
- They can become places of visitation in their own right. Through careful design and investment, the information centres can become proxies for the place to detain visitors for significant periods of time
- They may be places of revenue generation
- They are places of refreshment and convenience through the provision if restaurants, cafés, toilets and car parking are provided

- They can fulfil the role of gatekeeper to the attributes of the place.

Visual and audio presentations, museums, other exhibits, shops, souvenirs and refreshments are all used to retain visitors in the area. Footpaths and trails concentrate and direct the flow of visitors, acting as conduits by which sites of interest are connected. Signposts may either be simply directional or they may contain information. These too have a role to play in enhancing visitor satisfaction. They also reaffirm or provide reassurance by confirming directions, informing visitors of key geosites and providing data about these sites. In the UK, signposts often give information about:

- The length and average duration of a walk to a specific site
- The nature of the terrain, what type of walking gear might be required
- Some information about the geosite itself.

The design and placing of signposts should be examined and the strategic placement can draw people to the sign and away from vulnerable areas. Zoning can be used to identify areas that range from those with specific environmental fragilities, where human intrusion is restricted solely to scientific work, to those used for popular recreational purposes. Information provision, guidance, signposting and track design are matters for site protection and appreciation. In some extreme cases, they may be aimed at the preservation of life itself.

Ritchie and Crouch (2003:30-31) state that, "*The development of a destination tourism strategy should occur as a subcomponent of the community's overall social and economic development planning process for two reasons: (i) it will be conducted more efficiently because similar questions will need to be asked and answered in these broader contexts; and (ii) overall goals will not be achieved unless sectoral plans are in harmony*".

Kotler (1993:76, as cited by Ritchie and Crouch, 2003:31) suggests that the strategic marketing planning process provides several advantages because

- Places compete for resources as do businesses
- Dynamic, global forces affect their industries
- Places compete for tourists, conventions, educated residents, factories, corporate headquarters and start-up firms
- They must be excellent or superior in some special ways
- They must be market-conscious and market-driven as the attributes they develop today will affect their market position tomorrow
- If they will choose the wrong industries they are in the same position as companies that chose the wrong products.

Ritchie and Crouch (2003:49, 146-149) conclude that sustainable competitiveness is where a firm may not be regarded as competitive unless it is able to sustain any advantages it possesses over the long term; thus "*Competitiveness without sustainability is illusionary*". Thus, a tourism policy is needed for destinations at all levels and for all types of jurisdictions.

Sustainability and competiveness must be the primary goal of that policy. The primary components are the philosophy for tourism, and a long-term vision for a destination. This vision provides important guidance for the definition of specific objectives for a tourism destination and for the identification of any constraints to be observed as tourism is developed. These objectives, in turn, provide a basis for long-term development supply and demand strategies for the region. Policy formulation is the process by which all components of policy are defined.

A tourism policy is characterised by the following characteristics:

- It must focus on macro-level policies; that is, it must be concerned with societal views of the direction that geotourism development should take at the national and even at transnational level
- It must be designed to formulate policies with a long-term perspective
- It must concentrate on how critical and limited resources can best respond to perceived needs and opportunities in a changing environment
- It must recognise the intellectual nature of policy formulation, and so must incorporate tacit knowledge and personal experience as important sources of information, in addition to the more conventional methods of research and study
- It must encourage and stimulate organised creativity so as to avoid policies based on stereotyped or outmoded conceptions
- It must be constructed to permit and facilitate a continuing dynamic process requiring inputs from multiple sources
- It must break down traditional boundaries between disciplines and industry sectors in tourism
- It must relate policies of the tourism subsystem to those of the total socio-economic system of a nation or region of which it is part.

From the above-mentioned points it is clear that it must also engage industry as a strategic priority.

Tourism policy is defined as "*a set of regulations, rules, guidelines, directives and development/promotion objectives and strategies that provide a framework within which the collective and individual decisions directly affecting tourism development and the daily activities within a destination are taken*". Thus, tourism policy formulation can be regarded as a dynamic social process within which an intellectual process is embedded. From a terminology standpoint, the output of this process is commonly referred to as an overall strategy for ecodevelopment. 'Strategy' is used for the description of specific major actions that might be used to obtain objectives.

Tourism policy is important because it is a factor in ensuring the success of a tourism destination. There must be a clear idea of where it is going or what it is seeking to become in the long-term. It must also strive to create a climate in which collaboration among the many stakeholders in tourism is both supported and facilitated.

Tourism policy should fulfil the following functions:

- It defines the rules of the game - the terms under which tourism operators must function
- It sets out activities and behaviours that are acceptable
- It provides a common direction and guidance for all tourism stakeholders and within a destination
- It facilitates consensus around the specific vision, strategies and objectives for a given destination
- It provides a framework for public and private discussions on the role of the tourism sector and its contribution to the economy and to society in general
- It allows tourism to interface more effectively with other sectors of the economy.

Tourism policy affects the extent to which the day-to-day operational activities are successful, that is, marketing, event development, attraction operations and visitor reception programs.

Ritchie and Crouch (2003:130-144) discuss supporting factors and resources that are critical elements when enhancing destination appeal:

- Infrastructure: a foundation for successful tourism
- Accessibility: addresses the curse or blessing of a location
- Facilitating resources: human knowledge and financial capital
- Hospitality: resident attitude towards tourists and tourism
- Enterprise: the generation of human energy
- Political will: is tourism part of the political landscape?

Peters and Weiermaier (2000:22-29) discuss the basic management principles in the creation of tourism attractions. In Central Europe, much emphasis is currently being placed on making tourism attractions more attractive through innovative investments in technology, human resources and new tourism events such as theme parks. Increasing the attractiveness of tourist sites should be done through appropriate management of tourist attractions. Perceived freedom and intrinsic motivation are strong elements that shape the choices of contemporary consumers. Three core elements that are common to most successfully managed tourist attractions, events and/or fantasy parks are:

- Imagination
- Attraction
- Perfection.

The first step is to create new products, services and better ‘experiences’ and these must be translated into commercialised products. Psychological foundations of the service experience and the selling of ‘quality’ must be applied so that tourism managers can build a bridge between tourist’s quality expectations and their perceptions of performance quality. The last step is the perfection of service operations by good planning.

In Europe, the geologists and geographers realised that when geosites are properly protected and managed, economic benefits could accrue. Previously isolated regions where many of the geosites occur could be developed as tourism destinations and at the same time, they could be used for educational purposes. Pforr and Megerle (2006:123-124) noted that the creation of geoparks can be seen as instruments to coordinate the many stakeholders towards the common purpose of sustainable regional development.

In conclusion, it can be said that a sustainable geotourism approach implies that the natural, cultural and other recourses of tourism are conserved for continuous use in the future, while still bringing benefits to society currently. This approach is very important because most geotourism development that depends on attractions and activities relate to the natural environment, and to a lesser extent, on the historic heritage and cultural patterns of the area. When these georesources are destroyed or degraded then the geotourist areas cannot attract tourists, and geotourism will not be successful. Most geotourists seek destinations that have a high level of environmentally quality simply because they like visiting places that are attractive, clean and neither polluted nor congested. One of the most important benefits of geotourism is that, if it is properly developed and based on the concept of sustainability, geotourism can greatly help to justify and pay for conservation of an area's natural and cultural resources. Therefore, geotourism can be an important means of achieving conservation in areas that otherwise would have a limited capability to accomplish environmental protection and conservation objectives.

This environmental planning approach is a basic technique in achieving sustainable development. It requires that the entire environment must be carefully surveyed, analysed and considered in determining the most appropriate type and location of development. Another important aspect of sustainable geotourism development is in emphasising community-based tourism. The community should be involved in the planning and development processes and in developing the types of geotourism that generate benefits to the local communities. Maximising benefits to local communities will result in geotourism being better accepted by them, and so they will actively support the conservation of local geotourism resources. A further point is quality geotourism as an achiever of sustainable tourism development. This refers to geotourist attractions that can offer good value for money, protect geotourism resources and attract the kinds of geotourists who will respect the local environment and society.

Geotourism development policies should be planned for long-term periods ranging from 10-20 years. This strategic planning focuses more on identification of, and less on the resolution of, immediate issues. It is more orientated towards rapidly changing future situations and how to cope with these changes organisationally. Short-term management, 'tactical management', is more action orientated and concerned with handling unexpected events.

The methodologies above can be implemented successfully in the development of geosites as destinations in South Africa by means of geotourism. A sustainable geodestination could

then be created. Some geosites can be developed into geo-attractions, even though only a few can become geodestinations such as, for instance, future geoparks. The latter could also include existing provincial and National Parks. In South Africa, there are many superb localities of geosites that could be utilised for geotourism. When they are being developed, the cornerstones of sustainability: environmental, the societal and economic principles must be applied. All the foregoing could be applied in South Africa with great success, and so will be discussed in the remainder of the chapter.

4.3 DEVELOPING THE CONSERVATION OF GEOHERITAGE FOR A SUSTAINABLE AND INTEGRATED ENVIRONMENT

According to the Geological Survey of Finland, the Earth's geological potential involves not only its mineral and energy resources, and land-use for construction, but also wildlife, and the educational and recreational values. Environmental knowledge extends to whatever places quality and content into people's lives. Environmental education aims to change people's environmental attitudes and, more importantly, their behaviour. Successful education and learning require:

- Setting up educational approaches, methods and tools
- Organised training for teachers, civil servants and pilot instructors
- Planning education of local people
- Producing educational material, and
- Planning educational sites.

(http://www.en.gtk.fi/Services/expert/environmental/)

It appears that the more educated a person is, the more the person travels – and then, the more of an educational experience is demanded by them from their travels. "*So why do people travel? People travel for pleasure and people travel for work. These are the two main reasons... People travel to see the world, to discover parts of it that they have only read about in book. Whatever the reason and whatever the framework, travelling is a form of adventure*". (http://www.travelaffiliation.co.uk/travel.html). Thus, geotravel is travelling to see the natural wonders of the world and nature is not a resource but a value as such.

Environmental education and geotourism can contribute to people's realisation of their responsibility for the environment and of their ability to integrate environmental considerations into all decision-making in an informed way. Geological and biological features may attract nature lovers and tourists, while natural attractions can also generate considerable services business. Therefore, tourism should be organised on a sustainable basis to ensure that these attractions give lasting pleasure to future generations. To develop geotourism, the following should be provided:

- Evaluation of regional nature values
- Mapping and popularisation of nature targets
- Innovative design of nature parks, trails and visitor centres

- Production of educational and tuition materials (guide books, site information, multimedia presentations, in-depth studies)
- Staff training.

Thus, geoheritage, landforms and natural processes should be conserved, enhanced and managed so that the best is safeguarded and made available as a scientific and educational resource. The population should also be educated about the value of geoheritage (http://www.en.gtk.fi/Services/expert/environmental/). Environmental education should therefore be taught from primary school onwards.

Carlson and Edwards (2007) state that Xanterra is the USA's largest National Park concessionaire, operating hotels, lodges, restaurants, retail, campgrounds and transportation systems in more than 20 locations, including:

- Grand Canyon - North and South Rims
- Grand Canyon Railway
- Rocky Mountain National Park
- Yellowstone National Park
- Bryce Canyon National Park
- Zion National Park
- Crater Lake National Park
- Death Valley National Park
- Petrified Forest National Park
- Everglades National Park.

Xanterra's Environmental Management System (EMS,) Ecologix, is the source of a range of innovations that are the focus of the 2007 case study by Carlson and Edwards. Ecologix is the logical integration of ecology and business, and it ensures:

- Continual improvement of Xanterra's environmental performance
- Compliance with all environmental regulations
- Incorporation of best management practices
- Flexibility to respond to property environmental priorities.

Carlson and Edwards (2007) believe that the most succinct reason for pursuing innovation in all of Xanterra's operations, through the Ecologix EMS, is captured in their mission statement where it is stated that:

- Business decisions should balance economic viability with ecological responsibility
- Waste must be reduce and recycled, energy and water conserved, and both guests and employees educated regarding environmental stewardship
- The sustainability of natural systems increased as good business.

Carlson and Edwards (2007) are further of the opinion that there is a belief within the organisation that sustaining natural systems through continuous innovation and improvement

is not only good for the environments in which they operate, but is also good business. Employees are required to hold management to explain for all operational decisions that relate to environmental performance. There is both a top-down mission and a bottom up monitoring mechanism to ensure continuous improvement in environmental performance, compliance with environmental regulations and responsiveness to environmental priorities. Ecologix is described as a hybrid Environmental Management System (EMS) as it includes aspects of compliance, sustainability and accountability. The structure of the EMS is indicated in Figure 4.4.

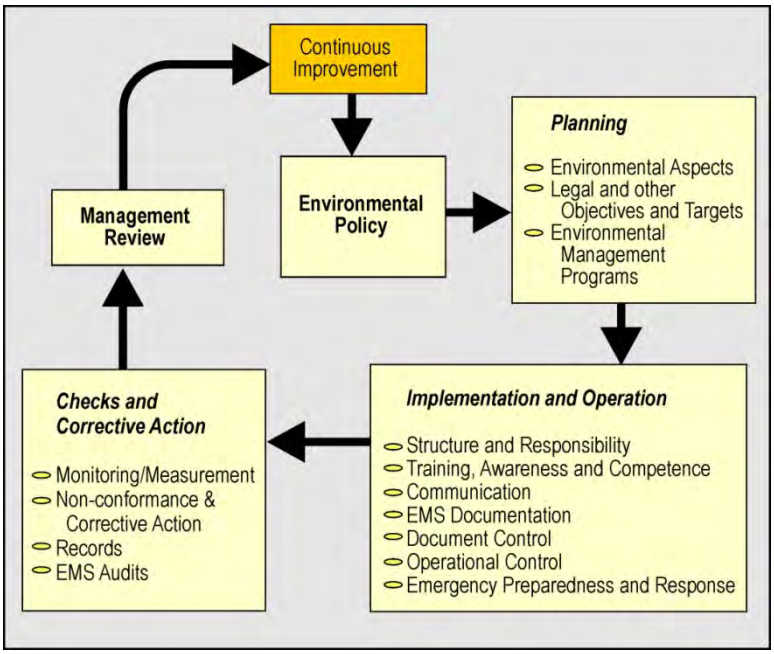

Figure 4.4: Structure of Xanterra's Ecologix EMS (Carlson and Edwards, 2007)

Carlson and Edwards (2007) conclude that Xanterra addresses significant environmental aspects by developing environmental policies, setting objectives and measurable targets, implementing actions that include activities such as inspecting a chemical storage area to ensure zero spills and providing a framework for continuous improvement (for example, by reducing energy use by 10 percent each year). A management structure exists that incorporates these objectives and targets into its programs and procedures. These are subsequently translated into work instructions to train employees in the EMS and to ensure competence in carrying out these responsibilities. As monitoring takes place, everything is documented so that progress towards goals is continually checked, and corrective action is taken when necessary. There are procedures in place to monitor and measure activities and for the handling of non-conformance. A periodic auditing and annual management review of the efficacy of the whole system is also part of the system process.

In summary, the overall benefits of Ecologix flow not only to the environment but also to the business performance of Xanterra. Increased environmental compliance, necessary

corrective action, measurement and monitoring of ecometrix, certification and external auditing, all place the company in a position of leadership regarding environmental performance. An innovative 'green' procurement program has led to reduced costs, liabilities and impact on the environment, and for Xanterra, has created a competitive advantage.

Cossette and Pomerleau (2005:11-12, 17, 26-27, 30, 51) relate how the Québec government proceeded with the creation of *Parc national des Pingualuit*, Nunavik's first, with a view to protecting one of Québec's exceptional and internationally acclaimed sites. The Pingualuit Meteorite Crater lays claim to uniqueness as much for its sharp profile, as for its geological 'youth' and for the crystalline purity of the waters it cradles. Objectives of the Park's creation are:

- With this first park in the northern part of Québec environment, the Québec government wishes to protect an exceptional geological phenomenon and a representative sample of one of Québec's largest natural regions. It also intends to facilitate discovery of this environment. The intention is to involve the Inuit with the protection, development, and management of Nunavik's parks
- Education in the *Parc national des Pingualuit* constitutes the ultimate tool to enable discovery of the territory while contributing to the achievement of the objectives of its protection. Educational activities encourage the understanding of landscapes, natural phenomena, and biological diversity, as well as history and culture of Inuit from this region of Nunavik. The founding objectives are bound by the mission of conservation and may not under any circumstances jeopardize the Park's natural and cultural heritage
- Recreation in a natural environment represents, in the same manner as education, a way to open up to the environment. As with educational activities, the recreational activities provided for in Québec Parks should be, as a priority, instrumental in achieving the mission of these territories which is to protect representative or exceptional elements of the natural heritage
- There is a strong will of the government to involve the Québec population and, in particular, strong regional forces, with the protection, management and development of the Park so that a natural, fertile territory be handed on to future generations. This objective found expression through the signature of an agreement on management of the *Parc national des Pingualuit* with Inuit organisations.

In managing the Park, the subjects most frequently reported in this matter dealt with respect towards Inuit culture, protection of Park resources, employment and training. The ultimate goal of the current master plan is to assure conservation of the territory for future generations and for its use to visitors. The Park's educational program will attract public attention to the territory's intrinsic characteristics and to integrating traits of the Inuit culture therein. Recreational activities of an extensive character can provide an intimate contact with this remarkable environment, thus fostering resourcing and discovery of pure nature while avoiding damage to the most vulnerable elements. Visitors will have a unique experience

here while discovering the Pingualuit crater, contemplating exceptional landscape, and experiencing a way of life that is unfamiliar to them. An achievement such as this will contribute to stimulation of tourist and economic activity in Nunavik, thus benefiting the entire population.

4.4 MANAGEMENT OF NATURAL AREAS

The "*Australian Natural Heritage Charter for the Conservation of Places of Natural Heritage Significance*" (http://www.ahc.gov.au/infores/publications/anhc/index.html) was drawn up in 2002. This Charter aims to assist everyone with an interest in natural places to establish their natural heritage values and manage them. A framework is presented for making sound decisions for both managing and restoring natural heritage places, based on the ecological processes that occur in natural systems. It also consists of a process that can be used to support and implement local, state and territory, national and international policies, agreements, strategies and plans. It does not, however, replace statutory obligations. In the Charter (p.3) it is stated that "A *natural heritage place is one that we believe we should keep for the future - because it is valuable to us…It may also be somewhere that we know is important because of what it is and what it can tell us scientifically. This place could be a desert mound spring, a fossil site, an ancient watercourse or a marine or bush habitat rich with life. We want to keep it because by doing so we will be protecting a resource of biological and/or geological information. This helps us and future generations to better understand the nature of our physical world and how we might live within its mean…Our natural heritage places are those we would want to inherit if we were to be born one hundred or one thousand years from now…By keeping our natural environment healthy we are investing in our own well-being, protecting the essence of Australia's unique character and securing an irreplaceable gift for the generations ahead*".

The Charter is divided into four parts:

- Part A: Definitions of terms that are needed to be understand
- Part B: Conservation Principles outlining the foundational principles on which sound natural heritage conservation is based
- Part C: Conservation Processes defining a range of processes that can be used in natural heritage conservation; and
- Part D: Conservation Practice outlining the steps that need to be taken when planning and implementing the plans for the conservation of a natural heritage place.

The diagram shows the planning process needed to be taken to conserve the natural values of places. In clarifying the concepts involved in each step, the reference numbers of the relevant articles are noted in the boxes. The conservation principles of articles 2–7 (p.7, 13) are the basis for all conservation planning and so must be considered in each step. The central theme of this process is to develop both a conservation policy and a practical conservation plan. The desired goals for conserving the natural significance of a place, in the short and long

terms, should clearly be stated. The following step would be to outline the management strategies and process that should be used and who would be responsible for the approval of the decisions and actions to be taken. This will form the basis of the conservation plan and how it will be implemented to ensure the conservation goals are met. The last, and one of the most important aspects, is that the results of the conservation plan must be monitored and reviewed continuously (p.6). The model is a very good one and could be applied to geoconservation in South Africa. The various steps in developing a conservation plan are shown in Figure 4.5.

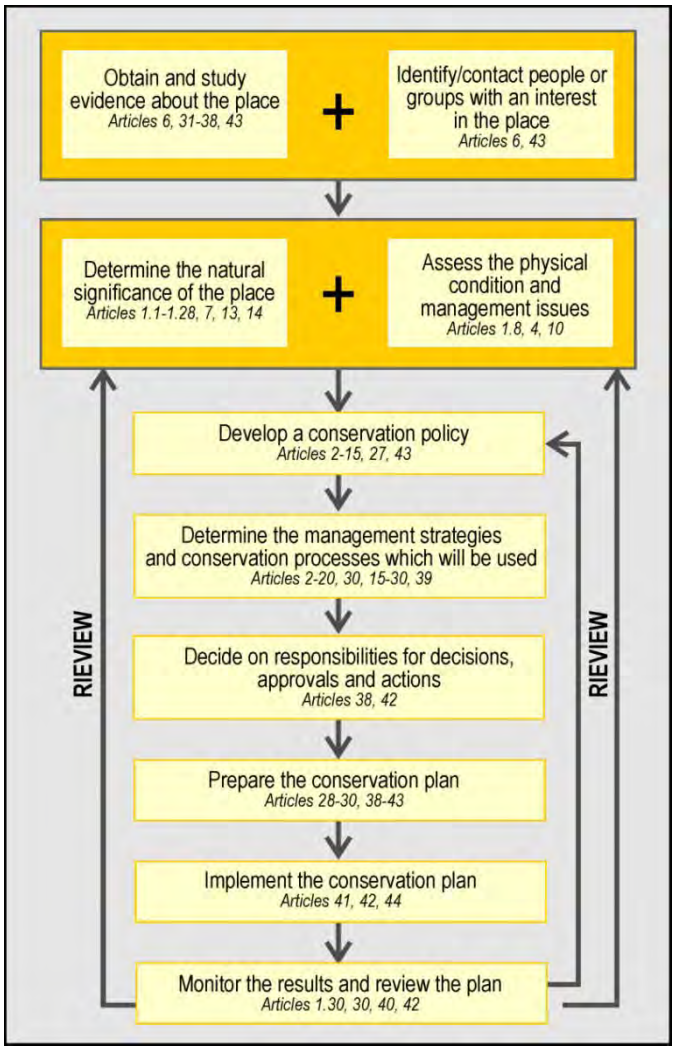

Figure 4.5: Developing a conservation plan
(http://www.ahc.gov.au/infores/publications/anhc/index.html)

4.4.1 MANAGEMENT OF NATURAL AREAS WORLDWIDE

Gray (2004:175-178) believes that the conservation movement began in North America. In 1864, the Yosemite Valley was proclaimed as the first protected area in the USA. In 1872, Yellowstone became the world's first designated National Park. It covers nearly one million

hectares of public land that have been provided for preservation from injury or spoliation, of all timber, mineral deposits, natural curiosities or wonders within the park, and for their retention in their natural condition. By this action, the land was withdrawn from settlement, occupancy or sale under the laws of the USA, and dedicated and set apart as a public park or pleasuring ground. At the northern entrance arch at Yellowstone, the words from the National Park's Act (1872) are inscribed: "*For the benefit and enjoyment of the people*". The protected area includes all the geothermal features that were known at that time. Indeed, the main reason for the creation of the Park was the protection of these geological wonders. Apart from the 200-250 active geysers, it is estimated that there are 10 000 individual geothermal features in the park. These also make the Park one of the greatest concentrations of geothermal activity on the planet. It also contains the impressive Yellowstone Falls, the Canyon of the Yellowstone River and one of the world's largest calderas. Because the area was protected for its geology, the wildlife within the park was protected at the same time. However, through the years the latter have became the focus for nature conservation efforts. After the Park's declaration, Mackinac Island (1875), Sequoia, Yosemite and General Grant (1890), Mount Rainier (1890) and Crater Lake (1902) followed. Canada's first National Park at Banff was established in 1885. An interesting point is that many of the early National Parks were established because of their scenic or geological values. But later, the overwhelming emphasis was on wildlife conservation. Perhaps, geoconservation now needs to be rediscovered?

There are specific guidelines for protected area management categories. Distinct categories of protected areas are managed mainly under the classifications of:

- I Strict protection (that is, Strict nature reserve/Wilderness area)
- II Ecosystem conservation and recreation (that is, National Park)
- III Conservation of natural features (that is, Natural monument)
- IV Conservation through active management (that is, Habitat/Species management Area)
- V Landscape/seascape conservation and recreation (that is, Protected landscape/seascape)
- VI Sustainable use of natural ecosystems (that is, Managed resource protected area).

(http://www.unep-wcmc.org/protected_areas/categories/eng/index.html). Eagles, *et al*. (2002) believe that some kind of tourism is likely to occur as a management objective in each category of protected areas, except category I (a strict nature reserve).
(http://www.uneptie.org/pc/tourism/library/sust_prot_areas.htm)

4.5 GEOPARKS

It has become common in the world to set up National Parks to efficiently protect important and unique geological heritages that have been formed during the long history of the earth, for example, the Hawaii Volcano National Park, the Grand Canyon National Park in the United States, the Galapagos Islands National Park in Ecuador and the Glacial National Park

in Argentina. Human history and the history of the Early are, naturally, closely linked. Geosites are a common heritage of mankind. To maintain them intact is a responsibility and an obligation of countries and geologists all over the world. Just as human life is recognised as being unique, the time has come to recognise the uniqueness of the Earth, and it is imperative for people to foresee the future of the Earth based on learning about its past and its present. Learning to protect global geosites is the very basis of this long-term process. It becomes the best way to set up national geoparks to protect geoheritage (www.hceis.com/product/index/geology%20and%20geophysics/in%20national%20geoparks%20of%20china.htm).

Reynard, Berger, Felber, Heitzmann, Hipp, Hug, Imper, Jordan and Von Salis (2004:2) believe that there is a necessity to define clearly what geoparks are, to coordinate their development at a national level, and to define quality assessment procedures. A special Working Group dealing with Geoparks in Switzerland is currently undertaking a project of compiling such guidelines, for Switzerland in particular, but with universal relevance. The guidelines consider that:

- A Swiss geopark may be established in areas with rich and diversified geological and geomorphological heritage
- The geopark's area has to be clearly delimited and sufficiently large to allow the economic development of a community
- A Swiss geopark must have a clear structures and organisation
- A geopark project must present a concept for sustainable tourist development based on earth science heritage
- The sustainable tourist development of a Swiss geopark will be based principally on the creation of geotourist products and services
- A Swiss geopark should improve the conservation of geotopes (geosites) within its limits in collaboration with the cantonal administration
- A Swiss geopark should develop the pedagogic means for diffusing knowledge about geosciences
- A Swiss geopark should develop a concept for public relations
- A Swiss geopark is not a legal category for nature conservation; it may on the other hand overlay protected areas
- The promoters of a Swiss geopark are not authorised to protect their geological heritage, for this protection is carried out by the cantonal and/or communal administrations.

Certification is currently in preparation for assessing the quality of geoparks (http://www.geosciences.scnat.ch/downloads/docs/Abstract_SGM_2004.pdf).

Evans (2006:5) noted that geoparks are a relatively new international initiative established and endorsed by the United Nations Educational, Scientific and Cultural Organization (UNESCO). This is a label of distinction that has become synonymous with environmental

protection, sustainable development and citizenship. A UNESCO geopark status is only granted to regions acknowledged as having the most outstanding geological heritage and pedigree. According to the UNESCO definition, "*A Geopark should integrate the promotion of geological heritage of a region without adding any additional category of statutory protection to important natural sites. It recognises as a central principle the relationship between people and earth history as well as the ability of the site or region to serve a focus for economic development, primarily through geotourism*".

Figure 4.6: Information posters in Engi, Sargansenland-Walensee Geopark, Switzerland

In essence, a geopark is a multi-faceted branding and marketing tool that aims to encourage regeneration, sustainable growth and co-operation between wide-ranging networks of partners. These networks include environmental and heritage agencies, scientific establishments, heritage centres, local authorities, industry, schools and community groups. The partner organisations are encouraged to work together to develop the use of exceptional examples of geoheritage and to promote and improve access to these resources with innovative, yet environmentally sympathetic, schemes. To many people, the term geopark suggests a fenced, enclosed Jurassic Park-style visitor attraction, but this would be a most incorrect assumption. Geoparks typically comprise a regional plexus of exceptional geographically clustered examples of geology. It is a free attraction, and designated sites within the geopark will be improved, interpreted and linked with the development of a comprehensive, integrated educational strategy. Interpretation will aim to deliver wide-ranging subject areas at several interest levels with the intention of providing something for everyone (http://www.circa.gbif.net/Public/irc/gbif/pr/library?l=/published_articles/nhcwgn_15_pdf/_EN_1.0_&a=d).

Figure 4.7: The director of the geopark at a staple of rocks symbolising geology, Réserve Géologique de Haute-Province Geopark, France in 2006

In the IGU E NEWSLETTER (No 1, July 2005:12) it is mentioned that at the end of 2004, the International Geographical Union (IGU) Executive Committee decided to launch a new task force on geoparks, an initiative that would bring a geographical perspective to the recently developed UNESCO program for the management and protection of natural and cultural heritage. According to this particular UNESCO definition, a geopark is " … *a territory with well-defined limits that has a large enough surface area for it to serve local economic development. It comprises a certain number of geological heritage sites (on any scale) or a mosaic of geological entities of special scientific importance, rarity or beauty, representative of an area and its geological history, events or processes. It may not solely be of geological significance but also of ecological, archaeological, historical or cultural valu*e". Since 2000, geographers and geologists have met on several occasions to discuss the pertinence of an interdisciplinary perspective on geoparks, linking geoconservation with endogenous local development. The latter has been one of the topics seriously undertaken by geographers during the last decades. The geographical perspective on geoparks includes integrating landscape as its main concept; requires a holistic approach and trans-disciplinary research to promote multicultural participatory bridges, and links local knowledge and practice into the research-development agenda (http://www.homeofgeography.org/).

Patzak (2000) describes a European geopark as " … *a territory, which includes a particular geological heritage and a sustainable territorial development strategy supported by a European programme to promote development. It must have clearly defined boundaries and sufficient surface area for true territorial economic development. A European Geopark must comprise a certain number of geological sites of particular importance in terms of their scientific quality, rarity, aesthetic appeal or educational value. The majority of sites present on the territory of a European Geopark must be part of the geological heritage, but their interest may also be archaeological, ecological, historical or cultural*". Macadam (2008,

www.earthwords.fsnet.co.uk/geopark.htm) gives an updated list of World Geoparks in that, as of 22 November 2008, there were 58 geoparks in the world; 33 in Europe, 21 in China, and one each in Brazil, Iran, Malaysia and Australia.

Watson (2006:4-5) is of the opinion that the UNESCO 'Geopark' is a relatively new international designation that aims to promote the sustainable economic development of disadvantaged areas through geotourism. This concept was originally developed in Europe in 2000 by four founding geoparks, but was expanded in 2004 to become a global UNESCO-backed designation with distinct continental branches. The European Geopark Network now focuses on regions of outstanding local or national importance that cannot be included in the World Heritage List, and provides international recognition for locally or regionally important sites. The sites are listed primarily for their earth science interest but many also contain important cultural and wildlife sites. Geoparks must also have a definitive boundary and must be large enough to provide potential for "*true territorial economic development*".

A European Geopark is a territory that has a special and rich geological heritage, both from the national and European perspectives, but which has also a sustainable territorial development strategy, usually supported by a European funding programme to promote development. The Geopark must have clearly defined boundaries and sufficient surface area for true, territorial, economic development. The Geopark must comprise a certain number of geological sites of particular importance, in terms of their scientific quality, rarity, aesthetic appeal or educational value. A prerequisite is that there should be enough geosites in a specific area to warrant the economic feasibility of a Geopark. The majority of sites present within the territory of a Geopark must be part of the geoheritage, but their interest may also be archaeological, ecological, historical or cultural. No destruction or sale of geological objects from a Geopark may be tolerated. The Geopark must be managed by a clearly defined structure able to enforce protection, enhancement and sustainable development policies within its territory.

A Geopark has a vital role in the economic development of its area through enhancement of a general image linked to the geological heritage and the development of geotourism. It has a direct impact on the territory by influencing its inhabitants' living conditions and environment. The objective is to enable the inhabitants to re-appropriate the values of the territory's heritage and actively participate in the territory's cultural revitalization as a whole. It also develops, experiments with, and enhances methods for preserving the geoheritage. Lastly, it must also play a vital role in educating the wider public about Earth Sciences in general and support scientific research into the geology of the area. The Geopark also supports education on the environment, training and development of scientific research in the various disciplines of the Earth Sciences, enhancement of the natural environment and sustainable development policies
(europeangeoparks.maestrazgo.org/presentation.htm,
www.sdt.shetland.org/Default.aspx?tabid=67).

Figure 4.8: The famous geosite consisting of ammonite fossils,
Réserve Géologique de Haute-Province Geopark, France

The Bergslag area in Sweden has rich ore deposits of copper, silver and, above all, iron, which caused foundries, forges, rolling mills, workshops and steel industries to develop as the basic industries of the area. As in many other parts of Europe, the mines were abandoned, one by one, over the past 30 years. The ecomuseum point of departure that focuses on the area's inhabitants and uses history as a tool for understanding and for influencing the present and the future, paved the way for a culturally exciting and revolutionary process of transformation in the area. The motive was to create an awareness of the region's importance through its history and to give people a self-awareness and enhanced sense of regional identity to arm them to meet the future and the changes that that future will inevitably bring with it. Although it is called an ecomuseum, a mining geopark would be a better description.

The Bergslag Eco Museum (http://www.ekomuseum.se/pdf/bergslagecomuseum.pdf) is described as a different kind of museum because it is a museum without walls or roof, without collections and without traditional exhibits. The museum consists of a geographical area of 7500 square kilometres, extending from the north shores of Lake Mälar up to the "*Finnish Districts*" of Dalarna County. Instead of displaying objects, the ecomuseum deals with structures, sites, settings and facilities. Structures remain preserved where they were originally built and are not moved to other sites. Important criteria for this ecomuseum are:

- Geographical space
- An authentic setting
- That it should be run and developed by people living in its 'catchment area'.

4.5.1 EUROPEAN GEOPARKS NETWORK

The localities of the 33 European geoparks in November 2008 are shown in Figure 4.9 below. The numbers are arranged to date of proclamation (2000-2008).

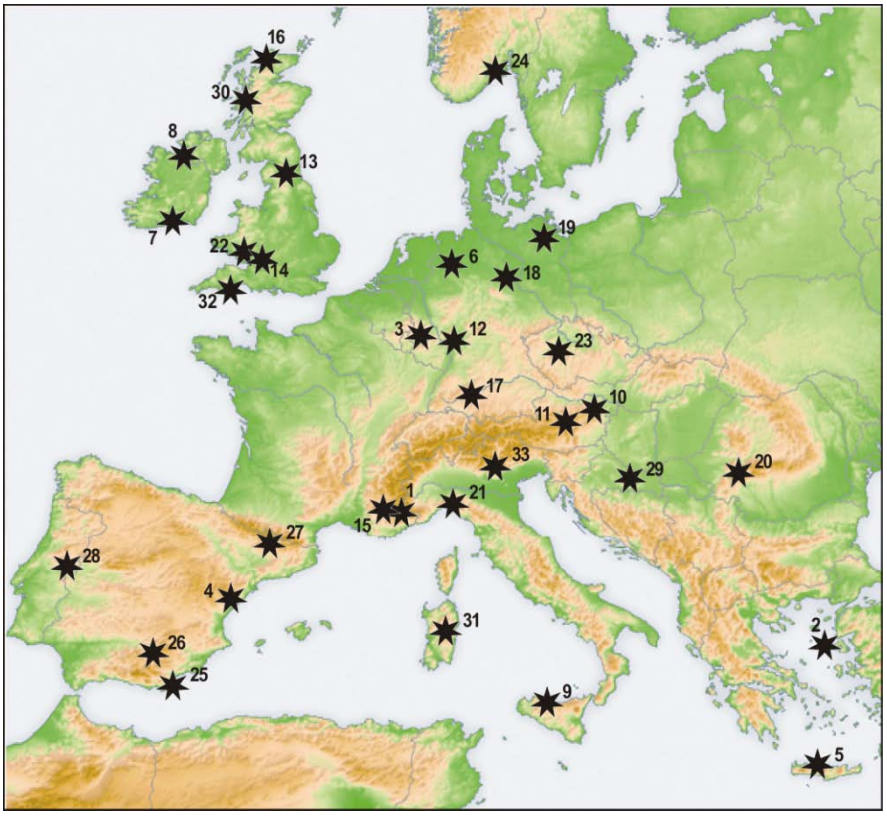

Figure 4.9: Locality map of the European Geoparks Network in May 2008 (http://www.fermanagh.gov.uk/pubuploads/egp-rollup2008-c.pdf)

Zouros (2004:165-171) described that the European Geoparks Network (EGN) was developed under the auspices of UNESCO in 2000 by the founder members in France, Germany, Spain and Greece. It was initially developed by geologists and the concept, and its criteria were taken seriously enough by UNESCO to develop and disseminate the International Network on Geoparks. A geopark must work within the EGN to further the network's construction and cohesion. It must also work with local enterprises to promote and support the creation of new by-products linked with the geoheritage in a spirit of complementarity with the other European Geoparks Network members. Bridging nature with culture, management with protection, and geoconservation with local sustainable development are the most outstanding characteristics of this new international effort. Nevertheless, its main feature is the active local participation for the establishment and administration of geoparks by linking education, participatory research, sustainable development (that is, geotourism) with geoconservation as their main goals. Geoparks may also bridge geosciences, ecology and the social sciences for protecting our world's heritage. The sites in a geopark must be linked in a network and must benefit from protection and management measures. A European Geopark must work within the EGN to further the network's construction and cohesion. It must work with local enterprises to promote and support the creation of new by-products linked with the geological heritage in a spirit of complementarity with the other EGN members. To obtain the European Geopark label, all requests for the use of the name must be accompanied by a dossier (prepared on the model of

the Application dossier for nomination) as a "*European Geopark*". This dossier must be completed and submitted by the structure in charge of managing the territory where the geopark is envisaged. The EGN Coordination Unit formed an Expert Committee made up of specialists in sustainable development and the enhancement of the geoheritage and representatives of international structures working in the area of enhancement of the geoheritage. This Expert Committee gives advice for all decisions regarding the nomination and integration of new parks within the network (www.europeangeoparks.maestrazgo.org/presentation.htm).

Geopark status is not a statutory designation, but the parks must produce a comprehensive management plan before being accepted into the network, and must also abide by a specific code of conduct. For example, the sale of geological specimens, rocks, crystals or fossils, at geopark sites is prohibited. This includes specimens taken from within the geopark, or from other geological sites from around the world, and is in recognition of the need to conserve geological heritage on a global scale. A breach of any of these specific rules could lead to the revocation of geopark status. Consortiums of local authorities, communities and private interest groups may propose new geoparks. They do not require sponsorship by national governments. Geopark status must be renewed every three years and if renewal criteria cannot be met, the site may be delisted (www.europeangeoparks.maestrazgo.org/presentation.htm, www.sdt.shetland.org/Default.aspx?tabid=67).

As an example, the Abberley and Malvern Hills Geopark (UK) has the following objectives and actions intended to accomplish them:

Geopark objectives:

- To conserve and enhance where appropriate, the geology, geomorphology and landscape of the geopark
- To promote the responsible collecting of specimens
- To encourage visitors to the geopark at levels which it can sustain
- To encourage safe use of the geopark by educational groups of all ages, and to provide a high quality range of educational information and services about the geopark
- To continue the already well-established gathering and dissemination of scientific information about the geopark
- To ensure that the geopark and all its attributes will be used responsibly
- To contribute where and when possible to the local economy and encourage involvement of the local community in geopark activities
- To ensure that the geopark plays a major role within the European Geopark Network

Key actions:

- Continue to work with agencies and landowners on practical geoconservation

- Target geotourists to visit out of season and away from overused locations
- Work with operators to develop themed packages
- Develop promotional links with Gateway Towns and interpretation centres
- Continue to develop a sustainable product range and not to sell geological specimens
- Continue to work with and inform councils and local community groups
- Continue to liaise with District and County Councils, landowners and other geoparks
- Enhance the robust information and communication strategy already in operation
- Target schools and geological groups to visit the geopark
- Continue to develop a quality geology and landscape trails program
- Continue to develop all of the above actions within existing official plans, strategies and guidelines.

(http://www.geocon.pwp.blueyonder.co.uk/factfile.htm, www.sdt.shetland.org/Default.aspx?tabid=67)

4.5.2 GLOBAL UNESCO NETWORK OF GEOPARKS

Dowling and Newsome (2006:253) noted that a more phenomenon was the establishment of [world] geoparks by UNESCO to promote places that integrated significant examples of the Earth's geoheritage, in a strategy for regional economic development. This move led to the establishment of an International Network of Geoparks. This movement could advance geotourism around the world. Through the international respect for, and reach of, UNESCO, geoparks have already made their mark on communities and regions. With greater awareness by individual countries, the geopark movement could become the benchmark for geotourism acceptance by governments, regions, communities and tourists.

Following the national and international initiatives, like the "*International Declaration of the Rights of the Memories of the Earth*" (Digne, France 1991), the IGCP, IUGS, ProGEO, Malvern Group, UNESCO's Division of Earth Sciences and the Council of Europe, an international group of experts on Geoparks recommended the establishment of a "*Global Network of National Geological Parks (Geoparks) seeking UNESCO's assistance*" in order to promote the three goals of conserving a healthy environment, educating in Earth Sciences at large, and fostering sustainable economical local development.

In February 2004, the UNESCO international group of experts assembled in Paris where the following items were discussed and decided:

- The establishment of a Global UNESCO Network of Geoparks.
- The acceptance of the Operational Guidelines for application on the global Network.

(www.europeangeoparks.org/isite/page/52,1,0.asp?mu=4&cmu=30&thID=0).

Turner, Creaser and McKnight (2006:1-2) believe that geotourism is part of a worldwide growth industry supported by people seeking a wider understanding of their environment. The new Global Geopark Network is seeking the protection and promotion of geosites while at the same time, fostering education, entertainment, fun, health and well-being for its

visitors. There is already an informal network of parties interested in forming geoparks in Australia and the South Pacific. Important aspects of geoparks are the links between the geology and the people, their stories; culture and history that can build into a sustainable source of geotourism, bring jobs to rural and indigenous people and, in turn, help protect sites of importance and promote geoheritage. A viable European Geoparks Network with 17 member countries is disseminating information on geological heritage by encouraging education and tourism linked to UNESCO. Similarly, the Chinese Government, through the Ministry of Land and Resources, has identified a network of 85 National Geoparks, twelve of which have been accepted by UNESCO. Several sites and regions, such as the Western Plains of Victoria and Mt Gambier region are actively pursuing the geoparks model as a way to provide jobs and sustain development, as well as protecting their geoheritage. MacAdam updated the above-mentioned data on 21 November 2008 (www.earthwords.fsnet.co.uk/geopark.htm).

Zhao Xun and Zhao Ting (2003:302-309) describe how, through conserving and developing geosites, favourable social, economic and environmental benefits were brought about, and created a positive climate for their inclusion in the World Geopark Network under the patronage of UNESCO. The creation of geoparks became a new growth point for local economies, and created a new field of employment. In return, geological popularization was well implemented and geo-environmental protection began to win support among local people. Active academic exchanges in this aspect have led to the establishment of many thematic research centres, and scientific-technological connotation of tourism has increased. By geoheritage protection, China developed a new field of co-operation with foreign geoscientists.

Setting up geoparks in developing countries has proven to be a feasible way to protect the geoheritage. In the new field of promotion of National Geoparks, geoscientists in China and abroad now collaborate closely, aiming at a common goal of global sustainable development. UNESCO has requested that geoparks should serve as a base for scientific popularisation. In this connection, China launched all round improvement of tourism information, such as the erection of sign posts, tourism route design, guide book compilation and tour guide training, in addition to the provision of museums. Scientific popularization has been integrated with tourism, and education with recreation. Geoparks in China became bases of scientific popularization for the public (www.wdcgeo.net/geopark/images/Sino_econ.pdf).

In a document, "*Guidelines and criteria for National Geoparks seeking UNESCO's assistance to join the Global Geoparks Network*", prepared in 2007 by Global Geoparks, it was stated that geoparks would promote Earth heritage and sustain local communities. The Network of National Geoparks had a landscape approach for geoheritage conservation, research and sustainable development. In the introduction to the guidelines documentation, it was stated, "*Geology and landscape have profoundly influenced society, civilization, and the cultural diversity our planet but until recently, no international recognition of geological heritage sites of national or regional importance, and no international convention*

specifically on geological heritage have existed. The initiative of UNESCO to support Geoparks responds to the strong need expressed by numerous countries for an international framework to enhance the value of the Earth's heritage, its landscapes and geological formations, which are key witnesses to the history of life". Following a decision of its Executive Board in June 2001 (161 EX/Decisions, 3.3.1) UNESCO was invited to support efforts of Member States to promote territories or natural parks having special geological features. National geopark initiatives that seek UNESCO's assistance would be required to integrate the preservation of significant examples of geoheritage in a strategy of regional sustainable socio-economic and cultural development to safeguard the environment (http://www.unesco.org/science/earth/geoparks/2007guidelinesJanuary.pdf).

The protection and sustainable development of geoheritage and geodiversity through geoparks initiatives, contributes to the objectives of Agenda 21, the Agenda of Science for Environment and Development into the twenty-first century adopted by the United Nations Conference on Environment and Development (UNCED, Rio de Janeiro, 1992) and which was reconfirmed by the World Summit on Sustainable Development 2002 in Johannesburg. The present geoparks initiative adds a new dimension to the 1972 Stockholm Convention concerning the Protection of the World Cultural and Natural Heritage by highlighting the potential for interaction between socio-economic and cultural development and conservation of the natural environment.

There are several criteria laid down for the establishment of a geopark wishing to join the Global Geoparks Network (GGN):

1. Size and setting

- A Geopark seeking to become member of the Global Network of National Geoparks will be an area with well-defined limits and a large enough surface area for it to serve local economic and cultural development (mainly through tourism). It will comprise of a number of internationally important geological heritage sites on any scale, or a mosaic of geological entities of special scientific importance, rarity or beauty. These features must be representative of a region's geological history and the events and processes that formed it
- A 'Geopark' needs to be a geographical area where geological heritage sites are part of a holistic concept of protection, education and sustainable development. The Geopark should take into account the whole geographical setting of the region, not solely including sites of geological significance. Non-geological themes can be an integrated part of the geopark, especially when their relation to landscape and geology can be demonstrated to the visitors. For this reason, it will be necessary to include also sites of ecological, archaeological, historical or cultural value. (In many societies, natural, cultural and social history is inextricably linked and thus cannot be separated)
- If the area of a Geopark will be identical to, or will partly or wholly overlap an area already inscribed, for example, on the World Heritage List or registered as a

Biosphere Reserve of the Man and the Biosphere Programme of UNESCO, it will be necessary to obtain prior clearance from the appropriate bodies of the said initiatives before submitting the application.

2. Management and involvement

- Prerequisite to any successful Geopark proposal will be the establishment of a management body and plan. The presence of impressive and internationally significant geological outcrops alone will not be sufficient. The geological features inside the Geopark area must be accessible to visitors, must be linked to one another and safeguarded in a formally managed park-type situation. The Geopark should be run by a designated local authority or several authorities having an adequate management infrastructure, qualified personal and adequate financial support
- The establishment of a Geopark should be a bottom-up process. It should be based on a strong multi task-force concept with political will and long-term financial support, together with professional management structures, which will adopt its own territorial policy for sustainable regional socio-economic and cultural development. Success can only be achieved through strong local involvement. The initiative to create a Geopark must therefore come from local communities/authorities with a strong commitment to developing and implementing a management plan that meets the economic needs of the local population whilst simultaneously protecting the landscape in which they live. Nevertheless, the concept needs to be endorsed at national level by the National Commission to UNESCO
- A Geopark shall provide organizational arrangements to involve public authorities, local communities, private interests, and both research and educational bodies in the design and running of the park together with its regional economic and cultural development plan and activities. This co-operation shall stimulate discussion and encourage partnerships between the different groups having a vested interest in the area; it shall motivate and mobilise local authorities and the local population
- The identity of a Geopark must be clearly visible for visitors. This will be achieved through a strong public relations concept including common branding/labelling of the sites that belong to the Geopark, the publications and all other activities taking place there
- Sustainable tourism and other economic activities within a Geopark will only be successful if they are carried out in cooperation with local communities. Tourism activities will have to be conceived specifically to match local conditions, and the natural and cultural character of a territory. They must fully respect the traditions of the local populace. To respect, reinforce and protect these local cultural values, will be a crucial part of the sustainable development effort. In many regions and countries it will also be necessary to involve the indigenous population in the establishment of a Geopark
- It is strongly recommended that advice be sought from the Geoparks Secretariat and its independent bureaux during the preparatory phases of applications. Furthermore,

the applicants should seek co-operation with respective Geological Surveys, local public and tourism bodies, local communities, universities and research bodies, and private interest groups. The applicants will be urged to broaden the composition of the start-up team in charge of the Geopark project. These groups should be representative of the scientific, conservation and socio-economic communities of the area. A wide local consultation process must involve the local population to facilitate local acceptance of the planned Geopark, and so develop a strong concept for the Geopark application dossier.

3. Economic development

- Sustainable development was defined by the World Commission on Environment and Development in "*Our Common Future*" (1987) as "*development, which meets the needs of the present generation without compromising the ability of future generations to meet their own need*".
- One of the main strategic objectives of a Geopark will be to stimulate economic activity and sustainable development. A Geopark seeking UNESCO's assistance must serve to foster socio-economic development that is culturally and environmentally sustainable. This will have a direct impact on the area involved by improving human living conditions and the rural environment. It will strengthen identification of the population with the area and trigger cultural renaissance, which in turn will aid direct protection of geological heritage
- Often, aspects of a region's cultural heritage will be linked to the geological heritage. Respectful of the environment, the establishment of a Geopark should stimulate, for example, the creation of innovative local enterprises, small business, cottage industries, initiative high quality training courses and new jobs by generating new sources of revenue (for example, geo-tourism, geo-products) while protecting the geo-resources of the Geopark (for example, encouraging casting, instead of sale of fossils). This will provide supplementary income for the local population and should attract private capital. 'Geo-tourism' is an economic, success-oriented and fast-moving discipline, forming a new tourist business sector involving strong multi-disciplinary cooperation.

4. Education

- A Geopark should provide and organize support, tools and activities to communicate geoscientific knowledge and environmental concepts to the public (for example, through museums, interpretive and educational centres, trails, guided tours, popular literature and maps, modern communication media). It should also allow and foster scientific research and cooperation with universities, and between geoscientists and the local populace
- The success of Geopark educational activities depends not only on the content of tourism programmes, competent staff and logistic support for the visitors, but also on the personal contact with the local population, media representatives and decision-

makers. Therefore, the aspects of wide community participation and capacity building on the local level (for example, training of visitor guides) will help to develop a wide range of acceptance of the geopark philosophy (and also the transfer of knowledge and information) in the population. It cannot be repeated often enough that the involvement of the local people is of primary importance for the successful establishment and maintenance of a Geopark

- Among the instruments that should available for the transfer of information will be events such as excursions for school classes and teachers, seminars, and scientific lectures for the environmentally and culturally interested public and for those residents who enjoy introducing their landscape to visitors. One of the main issues must be to link geo-education with the local context, therefore, local students must learn the importance of their geological heritage. Creating geo-curricula for primary and secondary schools, using the local information about geology, geomorphology and physical geography will all help to preserve the Geopark while at the same time reinforcing local awareness, pride and self-identity. Geoparks can be great educational tools at local and national levels
- Within the educational concept, museums, 'discovery centres', interpretive centres and other innovative new tools must be developed to promote the principle of geological heritage conservation, and the necessity of its safeguarding and archiving. The museums and centres should also serve by developing different educational programmes for visitors and local actors
- All educational activities should reflect the ethical considerations concerning holistic environmental protection.

5. Protection and conservation

- A geopark will explore and demonstrate methods and best practices of conserving those examples of geoheritage
- In accordance with national legislation or regulations, a geopark shall contribute to the conservation of significant geological features including:
    - Representative rocks
    - Mineral resources
    - Minerals
    - Fossils
    - Landforms and landscapes that will provide information on various geoscientific disciplines such as:
        - Solid earth sciences
        - Economic geology and mining
        - Economic geology and mining
        - Engineering geology
        - Geomorphology
        - Glacial geology
        - Physical geography

- Hydrology
- Mineralogy
- Palaeontology
- Petrology
- Sedimentology
- Soil science
- Speleology
- Stratigraphy
- Structural geology
- Volcanology.

A Geopark should explore and demonstrate methods and best practises of conserving these examples of geological heritage

- The management authority of the Geopark will ensure adequate protection measures, in consultation with relevant statutory bodies, to guarantee effective conservation and to provide means for physical maintenance, as appropriate. The sites will remain under the sole jurisdiction of the country in which the Geopark is situated. It will be the country's responsibility to decide how to protect the particular sites or areas, in conformity with their national legislation or regulations
- A Geopark will respect local and national laws relating to the protection of geological heritage. Its managing body should strongly discourage the selling of all elements of ornamental geological heritage, which may not be regarded as sustainable but it may permit, in certain circumstances, the limited (sustainable) collecting of geological samples for scientific and educational purposes from naturally renewable sites. It can be demonstrated that a sustainable approach in this question leads to higher economic benefit than the short-sighted selling of Earth heritage, minerals and fossils.

6. The global network

- The Global Network of National Geoparks provides a platform of cooperation and exchange between experts and practitioners in geological heritage matters. Under the umbrella of UNESCO and through cooperation with the global network partners, important local, national geological sites gain worldwide recognition and profit through the exchange of knowledge and expertise, experience and staff between other Geoparks. This international partnership developed by UNESCO, brings the advantage of being a member of, and profiting from, a worldwide network, as compared to a local isolated initiative. Members will benefit from the experience of other members of the network
- The network comprises all regions of the world and brings together groups that share common values, interests or backgrounds following a specific methodology and management. It further serves to develop models of best practice and to set quality-standards for territories that integrate the preservation of geological heritage in a strategy for regional sustainable economic development. The establishment of a Geopark brings sustainability and real economic benefit to the local populations,

usually through the development of sustainable tourism and other economic and cultural activities, in developing the sustainable development component parallel to its conservation efforts

Geoparks that are part of the Network will:

- Preserve geological heritage for present and future generations
- Educate and teach the broad public about issues in geological sciences and their relation with environmental matters
- Ensure sustainable socio-economic and cultural development
- Foster multi-cultural bridges for heritage and conservation and the maintenance of geological and cultural diversity, using participatory schemes and co-partnership
- Stimulate research when appropriate
- Contribute actively to the life of the network through joint collaborative initiatives (for example, communication, publications, exchange of information, twinning, participation in meetings, common projects)
- Contribute articles to the GGN Newsletters, books and other publications.

- UNESCO supports the development of this initiative, among others, in order to replace the geosciences on the agenda of politicians and decision-makers of the governments and local actors, as well as on the 'radar screen' of private enterprises. An important number of activities within Geoparks are being developed worldwide to increase partnership with the private sector, for example, the tourism industry. The private sector often requests the international cooperative framework that UNESCO can offer. UNESCO's umbrella will definitely raise the interest and awareness of government sectors in this effort, as the Organisation has a strong attention-gaining potential that will be used to its maximum extent informing its Ambassadors to the different Member States. This, in itself, will lead to a much better understanding of the reasons for, and support for local initiatives that want to join, the UNESCO Network
- The inclusion into the Global Network of National Geoparks would be a sign of recognition of excellence in relation to the present guidelines and will in no way imply any legal or financial responsibilities on the part of UNESCO. This relates also to the use of UNESCO's name and logo, which will need special authorization with respect to the regulatory framework of sponsorship of the Organisation. For approved network members, a special logo was created for the Global Network. The use of this logo and the mentioning of membership in the Global Network can be used only after the successful evaluation of the application and upon receipt of approval from the Global Geoparks Network Secretariat. The use of this common logo linked to the identity of the Global Network Members is strongly recommended and is essential to create a common image for all Geoparks throughout the world
- Should a member of the network wish to use UNESCO's logo ("*temple logo*") and name for a specific event or activity, it must obtain patronage through the National Commissions for UNESCO or receive special permission of the Director-General,

expressly authorized in advance, in writing. It is the responsibility of the managing body of the Geopark to avoid any misunderstandings in this regard.
(http://www.unesco.org/science/earth/geoparks/2007guidelinesJanuary.pdf)

Figure 4.10: Poster explaining the geology, Gerolstein, Vulkan Eifel Geopark, Germany. This Geopark is part of the Global UNESCO Network of Geoparks

MacAdam (2008) reckons that at November 2008, there were 58 Global Geoparks (informally the terms UNESCO Geopark, World Geopark and Global Geopark are used interchangeably) in 18 different countries. There were also 33 European Geoparks of which the best known parks are Lesvos (Greece), Eifel and Schwäbian Alb (Germany), Sargansenland (Switzerland) and Haute Province (France). China had 21 World Geoparks while there were only four Geoparks in the rest of the world: Araripe Geopark (Brazil), Qeshm Island Geopark (Iran) Langkawi Geopark (Malaysia) and Kaniwinka Geopark (Australia) (www.earthwords.fsnet.co.uk/geopark.htm, Updated 22 November 2008).

4.6 UTILISATION OF GEOTOURISM PRODUCTS

Geotourism products such as geosites, World Heritage Sites, caves, waterfalls, landscapes, museum collections, defunct and present producing mines, historical mining towns and geoparks can be utilised in various ways, for students, for the public, for visitors and tourists. Pralong and Reynard (2003:51-55) describe the tourist value and the kind of exploitation of geosites in tourist and recreational contexts. Certain specific target groups have different social, cultural and psychological characteristics that could be satisfied by geotourism. Depending on the demand, geotourism may be a form of tourism that is based on imagination and emotion that favours experience and sensations. It may also explain the natural environment by playing with its temporal and spatial dimensions and may provide opportunities for economic development. Different target groups (seniors, families and school groups) that may potentially be interested in cultural and natural landscapes seem to

constitute specific markets needing specific approaches. Therefore, on-site interpretation should be more adapted to the visitors' expectations (geohistory, adequate level of popularisation) and so a more original and striking way of communication has to be used. From a promotional point of view, geomarketing, a kind of image communication that explores the temporal and spatial dimensions of the rocks, could be developed. This will not only generate inquisitiveness among the selected target groups but should be clearly positioned to distinguish the product from similar destinations. Therefore, product communication must complete this marketing strategy with the creation, promotion and sale of specific and original products particularly during the European summer.

4.6.1 MINING MUSEUMS AND HISTORICAL MINING TOWNS

Many mining heritage sites were conserved and are now being used as tourist attractions. Examples can be found in Sweden, Wales (Blaenafon), Germany, Italy, Austria, Australia and Canada. The mining history of Røros (Norway), the historic centre of the town of Diamantina (Brazil), and the mines of Rammelsberg and the historic town of Goslar (Germany) were declared World Heritage Sites. The towns of Pilgrim's Rest, Barberton, Kimberley, Johannesburg (Gold Reef City) and O'Okiep are examples of the mining heritage of South Africa. The whole town of Pilgrim's Rest has been declared a museum.

There are only a few mining museums, and these are mostly found in countries that have a mineral/mining industry. Some well-known mining museums are:

- British Columbia Museum of Mining, Vancouver, Canada
- Mining Hall of Fame, Kalgoorlie, Western Australia
- German Mining Museum, Bochum, Germany
- German Slate Museum, Mayen, Germany
- German Volcano Museum, Mendig, Germany
- Roman Mining Museum Meurin, Kretz, Germany
- Big Hole Mining Museum, Kimberley, South Africa.

In the National Volcano Park of the in East Eifel, Germany, there are many examples of geosites that have geotourism values, for example, the German Slate Museum in Mayen. The old slate mine under the Genoveva Castle is now a living museum where it can be seen and experienced how slate, used for the roofs of houses, was mined and traded, and where the local population was protected in the old mine workings during the last World War (http://www.rathscheck.de/). The area are characterised by the many fire-belching volcanoes that once covered everything with incandescent lava. Geosites where these phenomena can be seen are the Laacher See at Mayen, the Roman Mining Museum in Kretz and the German Mining Museum and Basalt cave at Mendig. They are all well conserved, well documented and well promoted. Of special interest are the old mines where the Romans mined the volcanic material for building purposes, water wheels and other uses. In the museums, there are excellent displays of volcanism and the uses of volcanic material. Some of the material

mined was even shipped as far away as the Netherlands where they were used to construct the dikes that protect that country from the North Atlantic (http://www.vulkanpark.com/index.php).

Das Deutsche Bergbau-Museum Bochum (DBM) (The German Mining Museum) (www.bergbaumuseum.de) in Bochum, Germany, is a successful tourist attraction with more than 400 000 visitors annually. It is situated in the Ruhr area and is arguably the most important mining museum in the world. At the same time, it serves as a research institute for mining history. A mine headgear was erected over the main building with its collections ranging from mineral specimens to mining equipment. A tour can be arranged to the original coalmine underneath the museum. Clad in authentic miner's clothes, all the facets of coal mining can be seen and experienced. There is also a very well equipped museum shop where books and souvenirs can be bought. Geo-education is a very important part of the museum's activities for school children and visitors alike, and practical demonstrations of mining as well as lectures are offered.

Figure 4.11: Coal seam stope, Visitor Coal Mine, Deutsches Bergbau-Museum (German Mining Museum), Bochum, Germany

The Mining Area of the Great Copper Mountain in Falun, Sweden, was inscribed as a World Heritage Site in 2001. Copper production in this region, recorded since at least the 13th century, is illustrated by the enormous mining excavation known as the 'Great Pit' at the town of Falun, planned in the 17th century. It has many fine historic buildings, together with the industrial and domestic remains of a number of settlements spread over a wide area of the Dalarna region, and now provides a vivid picture of what was for centuries one of the world's most important mining areas. Copper mining at Falun was influenced by German technology, but it became the major producer of copper in the 17th century and exercised a profound influence on mining technology in all parts of the world for two centuries. The entire Falun landscape is dominated by the remnants of copper mining and copper production

that began as early as the 9th century and only ended in the closing years of the 20th century. The successive stages in the economic and social evolution of the copper industry in the Falun region ranges from a form of "cottage industry" to full industrial production, and can be seen in the abundant industrial, urban, and domestic remains characteristic of this industry that still survive (http://whc.unesco.org/sites/1027.htm).

The British Museum of Mining (also called the Britannia Project), Vancouver, Canada, embraced the concept of 'telling the stories of people who worked in the mine and lived in the community' that would be typical of the hardship and achievements of Canada's mining pioneers. The aim of the Britannia Project is to celebrate the importance of natural resources to Canada's history and future, and to demonstrate how innovation, leadership and sustainability are providing a foundation for responsible mineral development around the world. The museum is sited on a major highway between Vancouver and Whistler. More than two million international and domestic visitors pass the Britannia site each year - visitors who will see the transformation of Britannia from a stereotypical mine site to an internationally recognised icon of renewal and sustainability. The rehabilitation of the Mill has been undertaken, the support of the community and region is assured, and the contribution of the museum's land to be used for this tourism experience has been agreed to. The Museum's management look forward to working with industry, government and the public at large to make the Britannia Project successful. The site of Britannia with its impressive mining infrastructure remains is an intriguing landmark, and makes testimony of both Canada's pioneering history and to the challenges of pursuing a sustainable future. Remediation of the site has taken place. A diverse array of stakeholders collaborates on the new vision for this National Historic Site. It is anticipated that the Britannia experience will engage visitors in the human and technological stories of the historic mining community and may then contrast these with a modern-day story of reclamation and the regeneration of the land in the innovative Earth garden facility (The Britannia Experience: Market assessment, (http://britanniaproject.com/images/Phase_II_Market_FINALREPORT.pdf, and BC Museum of Mining 2004-2005, http://www.bcmuseumofmining.org/pdfs/education2004-5.pdf).

The Blaenafon Industrial Landscape, Wales, has been declared a World Heritage Site. 'Big Pit' stands on the edge of Blaenafon, a town that had a vital part to play in the Industrial Revolution. This revolution transformed the landscape, culture and society of Wales, the UK and the world. Awarding World Heritage Status to the town and landscape marked the wider impact of Blaenafon's unique industrial heritage. The Big Pit National Mining Museum of Wales is a real coalmine, and one of Britain's leading mining museums. With facilities to educate and entertain visitors of all ages, Big Pit is an exciting and informative facility. The colliery buildings are open to the public and an exciting multi-media tour of the modern coalmine is available to go 100m underground with a real miner to see what life was like for the thousands of men who worked at the coal face. There are also museum exhibitions in the Pithead Baths (Big Pit National Mining Museum of Wales, (www.nmgw.ac.uk/geology/collections/2002/stone).

The Big Hole Mining Museum in Kimberley is the best example of mining heritage in the South Africa. According to Roger Ketley, the De Beers project leader, the *"Big Hole"* project was a cornerstone of the social investment program of De Beers in 2005/6. It aimed to provide a world-class tourist facility in Kimberley and to support sustained employment and business opportunities. It was designed to provide both an educational and a tourism resource. The project is a joint venture between De Beers, the provincial government, various municipalities, Northern Cape and Kimberley Tourism. It includes an historical precinct that tells the story of early Kimberley, and which incorporates 13 new, small businesses. It also includes a world-class visitor centre focusing on the story of the "*Big Hole*", De Beers and diamonds. The management of the project has been undertaken by a multi-stakeholder Section 21 (not for profit) organisation. The R16.8 million Phase One investment, announced by De Beers in November 2003, started with the construction of a R2.3 million, 13-room guesthouse and a R3.8 million car park during the fourth quarter of 2004. This was approved in February 2005. The primary focus was the development of a world-class visitors centre, called De Beers Diamond World, focusing on De Beers, the Big Hole and Kimberley. Audiovisual effects simulate the underground experience while a spectacular upgraded rough diamond display, a viewing platform and interactive audiovisual displays enhance the visitor's experience. A diamond and jewellery store, coffee and curio shops complement a unique visit to Kimberley.

It is believed by De Beers that: "*Sustainability is the key to the success of the new tourist attraction, and the company's commitment to this has already been a catalyst for further investment in the area by others. There are plans for a conference centre, a 100 room hotel, a winery and further tourism-related development, potentially adding up to R300 million in further investment around the Big Hole*".
(www.debeersgroup.com/..../Economics/Case+study+-+Kimberley+Big+Hole+tourism+project.htm, www.debeersgroup.com/.../Diamond+Journey/De+Beers+Global+Operations/Projects/Kimberleys+Big+Hole+Project.htm, http://www.thebighole.co.za)

4.6.2 THEME PARKS

Weaver (2006:94-98) agrees that the mega-theme park is a potent symbol of globalization, infantalisation, inauthenticity, alienation, stereotyping, technological utopianism, hypersanitisation, escapism, decontextualisation, standardization, frivolous consumerism, corporatism or some other aspect of post-modernist socio-cultural critique (Fjellman, 1992; Sorkin, 1992; Rojek, 1993 and Bryman, 1995, as cited by Weaver, 2006:95). Theme parks are usually established in exurban locations that seem to offer an ideal compromise between access to large amounts of visitors and a proximity to urban markets. The effect of this activity is, of course, to exacerbate urban sprawl.

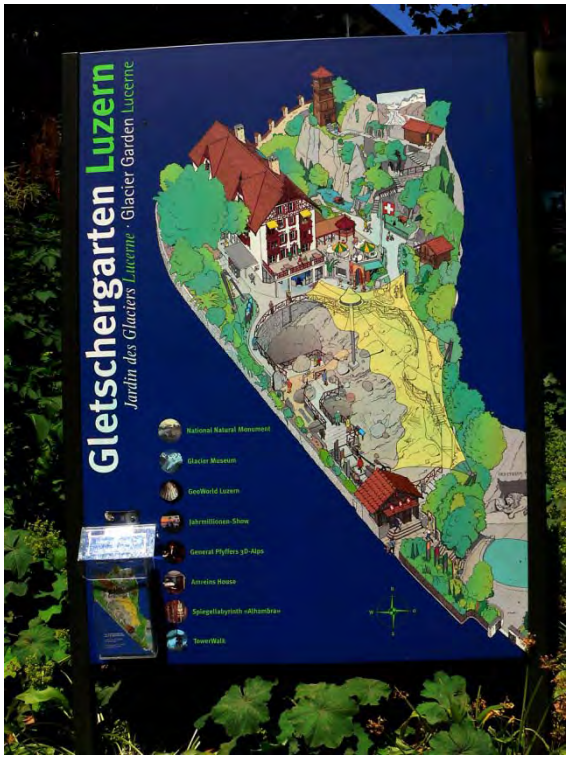

Figure 4.12: Gletschergarten (Glacial Garden) museum, Luzern, Switzerland. It is an example of a theme park

Gold Reef City is perhaps Africa's greatest entertainment theme park, created around an authentic 19th century gold mine. Mining themed-conferences, weddings and birthday parties can be all be arranged. The heritage tour (Jozi story of gold) includes the introductory movie "*Rich Beginnings - Our golden heritage*", museum houses, a gold pour demonstration, an underground mine tour, and all other attractions in the park. The museum houses are Mr. Ohlthaver's house (mine official), the Dowse house (home schooling) and the Oosthuizen house (Afrikaner home). Gold Reef City also has a secondary attraction such as a casino complex next to it. The following can all be experienced at the Gold Reef City theme park:

- Jozi's story of gold (heritage tour)
- Specialty shops
- Restaurants
- A Victorian hotel
- Conference facilities
- Amusement attractions
- Over 30 fun fair rides
- Kiddies' corner
- Farmyard
- Tribal dancing.

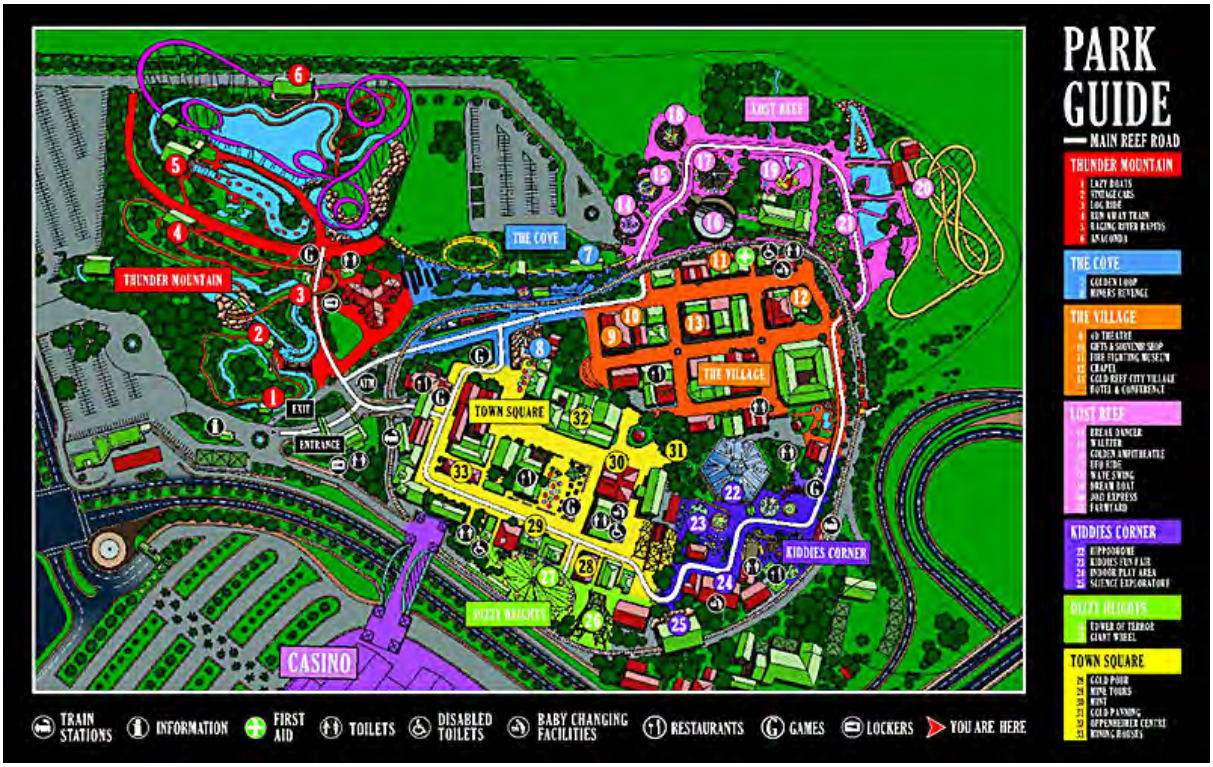

Figure 4.13: Map of Gold Reef City (www.goldreefcity.co.za in 2007)

Gold and the history of Johannesburg are intertwined. The discovery of gold in the late 1890's led to a gold rush by prospectors from all over the world to the area now known as Johannesburg. In February 1886, a prospector named George Harrison, who had arrived in South Africa from the Australian gold fields, was working as a builder on the Highveld farm, Langlaagte. One Sunday morning while he was out walking, he tripped over an outcrop. Fascinated by the quality of the rock he had stumbled upon, and realising that it was very old, Harrison broke off a piece, took it back to the farm and crushed it. He later panned the rock in a borrowed frying pan and noticed a gleam of gold. Harrison quickly reported his find, applied for, and obtained, a free prospector's license - which he promptly sold to Frank William Marsden for the grand sum of £10. This is the last history tells us of George Harrison, and while very few people know of his existence, he is, in fact, the man who sparked the evolution of Africa's biggest and most commercially active city – Johannesburg (http://www.goldreefcity.co.za).

On the 17th July 2007, it was announced that Rustenburg, in the North West Province, would soon have its own multimillion-rand theme park, with mining and technology as core themes. It will be built between the Olympia Park Stadium and the Rustenburg golf course. Rustenburg is located on the western limb of the platinum-laden Bushveld Complex, which contains most of the world's known platinum reserves. Modelled on some of the world's leading theme parks, Platinum City will be designed to highlight the past, present and future of South African mining and will feature alongside other mining tourist destinations, such as Gold Reef City, in Johannesburg, and the Big Hole, in Kimberley. As the name suggests,

Platinum City will be a theme park centred on platinum. One of the core attractions of Platinum City for the tourists will be the simulated mine experience at the start of the visitor's adventure. This would be a world first and bring the visitor to the "*coal face*" of an underground operation in a controlled and safe manner. An interactive, stand-alone, mining hall will trace mining through the ages, and will depict the impact it has had on the social history of South Africa. It was announced that a visit was intended to be educational and entertaining, with visuals, vibrations, dust, noise, playing on all the senses. The major objective of this experience is not only to amuse, but also to educate the park's guests. Therefore, "*Platinum City will become a metaphor for platinum, reflecting and complimenting the diverse attributes of this metal – dynamic, new, shiny, wearable and playing a key role in new technology. [The aim is] to design and build a purpose designed facility that will tell the story of mining, with the main focus being on platinum and its many uses in both the luxury side of the business as well as its practical applications like the use of platinum as a new energy and as catalytic converters in a new environmentally concerned world*" (Platinum City, www.miningweekly.co.za/article.php?a_id=114713).

4.6.3 GEO-EVENTS

The "*3rd International UNESCO-Conference on Geoparks*" was held in Osnabrück, Germany, from the 22-26 June 2008. The topic was communication and the goal was to create appropriate methods to raise the awareness of the geoheritage of the planet - far beyond a geopark's borders. The organisers stated that the Earth is a huge, dynamic system. Everyone is part of this system and while, admittedly, everybody is a small part, each person has the potential to destabilise the system. The history of the Earth shows that the planet is in a state of continuous change, its rocks show how past environments were formed, and fossils tell a story about the changes of ecosystems. In numerous concurrent lectures and workshops at Osnabrück, strategies were developed, answers were sought and solutions introduced. Before the conference, posters, education pamphlets and booklets from 32 World Geoparks were displayed at the 1st International Geoparks Fair. A wide-ranging, supporting program for school projects and public lecture courses ensured that the conference reached a wider public. Senior officials from local authorities, from national and international governments, professional geo-scientists and practitioners in the fields of tourism, education and cultural heritage associations attended the conference. Excursions to the highlights of the Geopark, Terra Vita and other geoparks, were offered afterwards.

The themes for the lectures and posters were:

1. **Communicating geological heritage**. How can one share geoscientific knowledge with non-scientists and encourage them to learn from the past?
2. **Young people and geoparks**. Which are the right methods for reaching children and young people with one's messages?
3. **Socio-Economic benefits of geopark**s. Can a region profit from geotourism and how can geoparks have an impact on society?

4. **Climate change and geoparks**. How can one influence people's habits, by looking at the distant past?
5. **Quality management in geoparks**. How to keep high standards in interpretation, education and infrastructure
6. **European Union and geoparks**. How are geoparks linked to the activities of the European Union, and how can the European Union (EU) support them?
7. **Tourism and geoparks**. How can tourism use the geosciences to achieve economic benefit?
8. **Presentation of new and aspiring geoparks**. New and aspiring members of the geopark community introduce themselves
9. **Criterion to join the Geopark family**. How do the different Geopark Networks operate and how can a region apply for membership?
10. **Bridging the gap between geology and soil sciences**. What can these interdependent topics do to improve the awareness of earth sciences?

Questions discussed were:

- How best to communicate the fascination of these topics to a wider public?
- How to integrate them in tourism offers?
- Can they enhance regional development?
- What is the task of the Global Geoparks in this process?

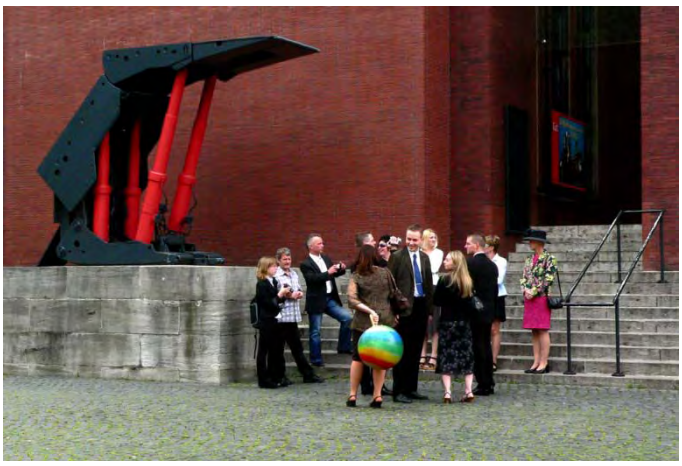

Figure 4.14: Wedding couple, Deutsches Bergbau-Museum (German Mining Museum), Bochum, Germany. This is a special event for mining employees to be married in a coal mine

The "*Inaugural Global Geotourism Conference 2008*" was held in the Esplanade Hotel, Fremantle, Western Australia, between 17-20 August, 2008. The United Nations proclaimed 2008 to be the *International Year of Planet Earth*. One of the central aims of the year is to '*increase interest in the Earth Sciences in society at large*'. To help achieve this goal, the Inaugural Global Geotourism Conference was a hallmark event which promised to set a benchmark for the tourism industry in relation to the development, management, marketing

and promotion of landscapes. In discussing and engaging all aspects of geotourism, the conference highlighted its status as a conservation tool, as an educational process and as a nature-based tourism activity. An understanding of how form and process are linked is important in geology and this can be delivered via geotourism. The unique conference included case studies that displayed the issues involved in the management and care of such attractions, and covered topics such as sustainability, impacts and environmental issues.

This unique conference aimed to:

- Build knowledge, networks and participation in the development of a sustainable geotourism industry
- Explore the positive links between geology and tourism as well as education and landscape management
- Foster geotourism as a better way to understand and acknowledge the Earth's geological attributes
- Include case studies which showcase the issues involved in the management and care of such attractions
- Cover topics such as interpretation, landscape and visual resource management, geoheritage, the arts, and environmental impacts.

(http://www.promaco.com.au/2008/geotm/)

Figure 4.15: Gold panners, The 2008 Gold Panning Championships, Pilgrim's Rest

Annually, the South African Gold Panning Association (SAGPA), in partnership with the local government's Department of Culture, Sport and Recreation (DCSR), presents and hosts the South African Gold Panning Championships at Pilgrim's Rest South Africa. Every year since 1997, South Africa has also been represented at the World Gold Panning Championships that is held annually in a different member country of the World Gold Panning Association. The 2005 World Gold Panning Championships, hosted by South Africa

at Pilgrim's Rest, was widely acknowledged by the international gold panning fraternity to have been a resounding success and a benchmark event. The number of participants at the South African National championships has grown from just 78 in 1997 to 707 competitors in 2006.

Figure 4.15: Visible gold after panning at The 2008 Gold Panning Championships, Pilgrim's Rest

The 2007 South African National Gold Panning Championships was held between 20-24 September. The event was as colourful and exciting as could have been wished, and filled with interesting activities and great competition prizes. The actual panning competition started on Saturday 22 September and the finals and prize giving l took place on Monday 24 September, which was a South African public holiday. Although this was a championship event, provision was also made for all who wished to participate, irrespective of age or gender. No special physical attributes were required other than enthusiasm and passion. It was an opportunity for each individual to experience one aspect of their heritage in an exciting and tangible way.

The year 2007 started with a sudden rush when a group of Swedish gold panners challenged South Africa's best to a gold panning competition. This event took place at the gold panning site at Pilgrim's Rest on Sunday, 7 January. The Swedish tour company donated the first prize of a full Kruger Rand and a second prize of a quarter Kruger Rand. The South African Gold Panning Association provided the third prize, an eighth Kruger Rand. The competition was intense with South Africa out-panning the Swedes. In June 2007, a group of three South African gold panning enthusiasts decided to attend the Czech Republic National Gold Panning Championships, and thereafter, the European Championships in Austria.

South African's participated at the 2007 World Gold Panning Championships at Dawson City in the Yukon, Canada, and this is where the championships took place from 20-26 August. Over the past 10 years, the SAGPA and the DCSR have succeeded in making it possible for more than 80 South Africans of all ages, genders and races to attend World Championships in Europe, Australia and Japan. Although South Africa is the youngest member of the World Gold Panning Association's 20 member countries, South African gold panning has, over the last decade, become a prominent part of the international gold panning fraternity. (http://www.sagoldpanning.co.za/index.htm, http://www.sagoldpanning.co.za/history.htm)

4.6.4 GEO-EXHIBITIONS

Exhibitions to promote geoheritage are an important mechanism to introduce and explain geology to the public and visitors. As part of its tourism programme, UNESCO World Heritage Centre hosted its first stand ever at the International Tourism Exchange (ITB), the world's largest travel and tourism trade fair, which was held in Berlin, Germany from 12–16 March 2004. UNESCO has hosted workshops at ITB every year since 1999, but this was the first time that the World Heritage Centre had a permanent presence to provide information on its tourism programme and activities. Presentations were made three times daily on issues such as World Heritage destinations, sustainable tourism at World Heritage Sites, the effects of tourism on the conservation of World Heritage Sites, individual conservation efforts, the trade's role. A single poster: "*The world's most outstanding sites*" describing cultural and natural sites, with a short description of the World Heritage Convention and its duties, was presented. World Heritage Site Managers were on hand to present information about their Sites as well as local products, services and activities that could be linked with Tour Operators attending the ITB. The Site managers also explained management issues to encourage better coordination between the tourism industry and World Heritage site management. Various forms of partnerships were presented, and interactive programmes were available to show visitors how the public and the tourism industry could participate in the conservation of natural and cultural World Heritage Sites. Current World Heritage partners such as the NGOs: The Nature Conservancy (TNC), the United Nations Foundation, and RARE, as well as the Grand Circle Foundation (founded in 1992 by Grand Circle Travel) and GTZ (one of the world's largest consultancy organisations for development co-operation), were also represented at the UNESCO stand and met with the general public and tourism professionals. Other tourism industry partners highlighted their collaboration with UNESCO World Heritage Sites and explained the 'added-value' this co-operation had brought to their corporate image
(http://whc.unesco.org/events/itb/index.htm,
http://whc.unesco.org/exhibits/expo/images/unesco_exhibition.pdf).
The Dartmoor Rock 370,000th Millennium Exhibition was held at the Postbridge Information Centre, Cornwall, UK between the 2-17th November 2002, as a celebration of Dartmoor's earth heritage that explored the fascinating story of the creation, moulding and uses of Dartmoor rock. At the exhibition, it was stressed that very little thought was given to the ground underfoot and yet it was fundamental to life itself - providing scenery and habitats,

soils for agriculture, and raw materials for building and industry. The Dartmoor landscape of Cornwall is dominated by rocks such as tors, gullies, boulder fields, stonewall and buildings and the exhibition showed the fascinating story of the creation and moulding of Dartmoor rock, starting nearly 400 million years ago and continuing to the current time. The interaction between geology, farming, wildlife, archaeology, industry and water supply revealed served as a reminder of humanity's dependence on the Earth's resources for its future (http://www.dartmoor-npa.gov.uk/dnp/darthome.shtml).

4.7 INTERPRETATION

In the document "*Communication and sustainable tourism*" at the "*E-Conference on the role of development communication in sustainable tourism*" in 2006, interpretation was defined as "*an educational activity which aims to reveal meanings and relationships through the use of original objects, by firsthand experience, or by illustrative media, rather than simply to communicate factual information*" (Tilden, Interpreting Our Heritage). Interpretation "*aims to create in visitors meaning, so that they can put a place into personal perspective and identify with it in a way that is more profound and enduring than random fact-learning can alone produce. Interpretation is meaning making*" (Sam Ham, Meaning Making - The Premise and Promise of Interpretation).

Every potential tourism destination has its own story and character, and to capture, interpret and present that story is the essence of sustainable 'place-based' tourism. It is this flavour that defines a location. The 'gel' that binds the tourism experience together ranges from product branding to visitor opportunities, resources and services. As such, its elements and many manifestations have real economic value. Interpretation can contribute to the quality of life for local peoples. It can also provide an educational tool, can contribute to community pride and sense of place and provide jobs such as tour guiding.

It is important to orient visitors to a destination before they arrive and once more when they are on-site. Orientation includes practicalities such as directional, local transportation, safety, event and business information (for example, restaurant location, hours, menu and price range). It can also include basic background information that visitors should be aware of - local customs, responsible environmental behaviour, basic history and geography, and the best ways to learn more about the place.

Thoughts, experiences, research or case studies that were shared at the conference were:

- How to involve the local population in building the image of their community and communicating their nature, culture and values
- How to support visitors in experiencing and understanding the place they are visiting;
- Communication methodologies, activities and tools that can be shared, adopted, and used to add value to the visitors' experience

- Methods for identifying and training local individuals most likely to succeed in interpretive activities; and
- How information provision to tourists can contribute to the respect and conservation of traditional values in host communities.

(www.devcomm.org/worldbank/admin/uploads/WCCD%20Files/STConcept%20Note.doc, (www.usaid.gov/our_work/agriculture/landmanagement/pubs/commun_sust_tourism.pdf:23-24)

The Scottish Interpretation Network (SIN) defines interpretation as " … *a way of imparting messages about our cultural and natural environment in a memorable way. Interpretation aims to improve understanding and enjoyment through provoking interest, relating to experience and revealing something new. Interpretation is about stories*" (http://www.scotinterpnet.org.uk/).

In the document: "*Defining 'nature tourism': meaning, value and boundaries. 2001. Tourism New South Wales. Understanding nature-based tourism – No. 2*", other definitions of interpretation are:

- "*A special process of stimulating and encouraging an appreciation of the natural and cultural heritage of a region, as well as a means of communicating nature conservation ideals and practices*" (Queensland National Parks and Wildlife Service)
- "*A special process of stimulating and encouraging an appreciation of the natural and cultural heritage of a region, as well as a means of communicating nature conservation ideals and practices*" (Queensland National Parks and Wildlife Service)
- "*A means of communicating ideas and feelings which helps people enrich their understanding and appreciation of their world, and their role within it*" (Interpretation Australia Association)
- "*An educational activity which aims to reveal meanings and relationships through the use of original objects, first hand experience and illustrative media, rather than simply by communicating factual information*" (Nature Based Tourism Strategy for Western Australia).

The first definition sees interpretation from a visitor's perspective as a means of adding value to their experience because of the added interest created when more is known about an attraction or experience. The second definition places the responsibility back with the visitor to reach their own understanding based on their collective experiences (http://corporate.tourism.nsw.gov.au/corporatelive/downloads/industry/2_defining_nature_tourism.pdf).

Moscardo (1998:2) is of the opinion that, "*There is a close relationship between interpretation and tourism. Interpretation is concerned with providing information to visitors about the places they are in and encouraging them to appreciate and care for these places. Many tourist activities are focused on interpretation. Despite this relationship, little*

has been written about the functions and importance for the success of tourist attractions and products. [There are] ways in which effective interpretation can assist in the development of more sustainable tourism".

According to Weaver (2006: 185), interpretation is a distinctive form of education that goes beyond the simple conveyance of factual information through illustrative media. Ham (1992, as cited by Weaver, 2006: 185) believes that:

- Effective interpretation must be enjoyable and entertaining, bearing in mind that tourists are non-captive recipients who can walk away from or otherwise tune out messages that are not satisfying
- It must be made personally relevant to the audience through the use of analogies and metaphors and convictions and to issues and impacts that and by referring to their values and convictions and to issues and impacts that directly affects the listener
- Good organisation whereby a commentary is delivered around five or fewer issues. and
- The revelation of meanings and relationships requires that effective interpretation be thematic, that is, based on overriding messages about selected topics.

Dallen, Boyd and Boyd (2003:174, 195-235) state that interpretation is an education-based activity that reveals meanings behind historic sites, their people and their stories. It takes several forms that include plays and exhibits, printed brochures and maps, signs, audio presentations and guided tours. It has the ability to direct people away from sensitive areas and educate them about the need to behave respectfully. Essentially a process of communication or explaining to visitors the significance of the place they are visiting. Personal interpretation is the most effective way of interaction because it also educates and entertains visitors that cause them to reflect about environmental values.

According to Herbert (1989:191), the role of interpretation is "*to make people more aware of what they visit, to provide knowledge which increases their understanding and to promote interest which leads to greater understanding enjoyment and perhaps responsibility*". Three objectives are apparent:

- To educate people about the places they are visiting
- To provide an enjoyable, and even entertaining experience for visitors; and that
- These two elements work together to increase visitors; respect for heritage and take responsibility for caring for it.

Dallen *et al*. (2003:197) believe that education forms the basis of interpretation and that it involves both a learner and a teacher, and can be undertaken by either formal or informal means. If a visitor is more interested and knowledgeable, then better interpretive materials should be presented so that more learning will take place. Pleasure and enjoyment should be seen as dichotomous and as compatible with education and, through this approach, the visitor experience will be enhanced. An important concept is to add humour when it is appropriate.

Having regard to geoconservation, the underlying value of the educative and entertaining roles of interpretation is to:

- Enhance awareness and increase knowledge of geosites and landforms
- Create a sense of ownership
- Instil a desire to interact with relics of the past in a sustainable manner
- To have a special experience, and
- To stimulate the intellect.

Tilden (1957, as cited by Ham and Weiler, 2002:36) believes that interpretation is an educational activity aimed at revealing meanings and relationships to people about the places they visit and the things they see and do there. Ham and Weiler (2002:36) believe that interpretation lies at the heart and soul of what any good tour guide can and should be doing, wherever the guide may be. Interpretive tour guiding is very important. It is not just about face-to-face communication as guiding also includes non-personal or 'static' interpretation such as printed materials, signs, exhibits, self-guided walks and various electronic media. Interpretation is used by tour operators, as well as by resorts, lodges, attractions, theme parks, zoos, museums and visitor centres. Many of these use interpretive media to enhance the visitors' understanding, their appreciation of the environments being visited and the various nature and cultural phenomena experienced. Thus, these too are informational pathways to sustainable tourism.

4.7.1 TILDEN'S GUIDING PRINCIPLES FOR INTERPRETATION

According to Dallen, *et al.* (2003:206-207), Freeman Tilden was one of the pioneering experts in interpretation and he proposed six principles that have guided much of interpretative planning and the development of many interpretive programmes throughout the world since the mid-twentieth century. His ideas became standard practice in the cultural and natural fields of interpretation. The six principles are as follows:

1. Interpretation should relate to what is being displayed or described to something within the personality and life experience of the visitor
2. Information itself is not interpretation because the latter is revelation based on information. It is therefore critical to provide visitors with new information and transmit it in a way that inspires
3. Interpretation is an art that brings together many other arts, whether the materials that are being presented as historical, architectural or scientific
4. The primary objective of interpretation is not instruction but rather provocation
5. Interpretation should be more holistic rather than be made up of simple parts
6. Interpretation addressed to different visitor groups should follow a fundamentally different approach.

4.7.2 PRINCIPLES FOR SUCCESSFUL INTERPRETATION

In the document: "*Defining 'nature tourism': meaning, value and boundaries. 2002. Tourism New South Wales. Understanding nature-based tourism - No 2*" (http://corporate.tourism.nsw.gov.au/corporatelive/downloads/industry/2_defining_nature_tourism.pdf), successful interpretation typically reflects a number of key principles:

- People learn better when they are actively involved in the learning process
- People learn better when they are using as many senses as appropriate. It is generally recognized that people retain approximately 10% of what they hear, 30% of what they read, 50% of what they see and 90% of what they do
- Insights that people discover for themselves are the most memorable as they stimulate a sense of excitement and growth. Learning requires activity on the part of the learner
- Being aware of the usefulness of the knowledge being acquired makes the learning process more effective.

('Ecotourism: Impacts, potentials and possibilities', Wearing, S. and Neil J., 2000.)

Of the utilisation of a few selected geosites, MacFadyen (2005) says that quality interpretation should be a key component of successful geotourism. At the Weekend workshop involving people in geodiversity held at Wareham, Dorset, between 7-12 September 2004 it was stated by MacFadyen that "*The way geodiversity is presented is crucial to the way it is perceived and valued. Education and interpretation involve looking at how to raise this perception. Together they represent more than simply giving information, but rather a spectrum of activities that can be employed to communicate a message. High quality interpretation and carefully targeted information to support education will encourage the understanding and support of geodiversity by present and, more importantly, future generations. There are numerous approaches to communicating geology and geodiversity to the public, including talks, visitor centres, festivals and events, guided or self-guided trails, interpretation boards, and a variety of publications, including magazines*" (www.scottishgeology.com/outandabout/geotourism.html).

4.7.3 GEOHERITAGE INTERPRETATION

Hlad and MacFadyen (2004) give a very good account of geoheritage interpretation from the "*Earth Heritage Interpretation and Tourism*" workshop, held at Crna na Koroškem, Slovenia, in October 2003. The aims of workshop were focused on learning how to help an understanding and appreciation of the geological heritage through good interpretation, with particular emphasis on geotourism. The workshop was seen as necessary as there was a lack of appropriate training for geoconservationists and others working in the growing areas of geoheritage interpretation and geotourism in Slovenia. Interpretation is an art, and requires a systematic approach together with adequate training. The Scottish Natural Heritage already had such knowledge and had gained experience in successful interpretation, particularly regarding what interpretive principles worked and what constituted good interpretative

practice. The workshop also provided an insight into the methodology, planning, management and importance of forging partnerships, and in the provision of interpretation projects. The participants at the workshop were a very multidisciplinary structured group of:

- Nature conservation authorities
- Geologists
- University staff
- Museum curators
- Interpreters and guides
- Local community representatives.


Figures 4.17a and 17b: The geoguide explaining the formation of lava flows: 1) Munterley hill (left), and 2) In an old volcano in the Volcano Eifel Geopark (right), Germany

Hlad and MacFadyen (2004) are of the opinion that communication has always played an important role when governments were successful in implementing environmental policies. Communication can help increase knowledge, raise awareness and change attitudes and behaviour. Communication involves knowing the target group within which change is to be stimulated and designing the best means and messages to bring about that change. Interpretation is communication and is about telling a story that is a vital part of how people experience the places they visit (http://www.snh.org.uk/wwo/Interpretation/default.html). Good geo-interpretation will leave visitors feeling connected, inspired and alive with curiosity. They will better understand the landscape, site or centre and will enjoy them more and so are more likely to return. Interpretation is a way of imparting messages to visitors in a memorable way. It is described by some as 'information with an explanation'. Thus, interpretation aims to improve visitors' understanding and enjoyment through provoking their interest, relating to their everyday experience and by revealing something new.

Geoheritage interpretation is necessary because geoheritage is important in underpinning the landscapes and biodiversity that currently exists. Despite this, geoheritage is probably further away from the hearts and minds of the population than other, more easily identifiable aspects, of the natural heritage, such as the flora and fauna. Like biodiversity, geoheritage is vulnerable to

the activities of mankind that may damage it. Therefore, only those people and local communities who know their geoheritage and can both identify and relate to it, can contribute to its conservation and sustainable development. Geoheritage interpretation has a clear role to establish the real links between the bio- and geodiversity and the need to conserve them both equally. Another reason for the necessity of geo-interpretation is the opportunity geodiversity offers in tourist efforts at local or national level. Good geo-interpretation will enhance the visitors' experiences and will help boost geotourism. European geoparks have already been established across Europe and they represent examples of geotourism as an opportunity to stimulate local economies. In these areas, geoconservation, sustainable development, environmental education and sustainable tourism are being practised.
(www.sgu.se/hotell/progeo/news/1_2004/sloven.htm)

Figure 4.18: The mascot of the Eifel geopark, "*Willi Basalt*", To explain volcanism to children

Dowling and Newsome (2006, 12-15) provide an example of the vital role of interpretation at an established geotourism destination, in this case, Wave Rock, Australia. Because there is no movement, sound or interaction in rocks they must be brought 'alive' to the visitor in a critical aspect of geotourism for what is important about the rocks is how they were actually formed. Therefore, trained interpreters are necessary to deliver the information and at the same time inspire the geotourist. Thus, "*as in other forms of natural area tourism, the visitor needs to be left with a sense of wonder and challenge as to where we sit as a species within the timescale of planet Earth*". The focus of interpretation should be at the geosite itself because the ultimate objective is to increase understanding and enhance the enjoyment of the place. "*By instilling interest via interpretation, appropriate visitor behaviour at the site can be achieved. The final desirable outcome should be to encourage appropriate minimal-impact behaviour, increases visitor's awareness of impacts, foster conservation of the site and promote an interest in geoconservation*". Materials assisting in interpreting geosites could include art, books, displays, slide shows and videos, interactive touch panels, models, specimens, computer animations and activities. Although these are undoubtedly extremely useful, and in many cases an essential part of presenting geotourism to the visitor, there is no substitute for a field visit. It

is therefore crucial to have on-site interpretation for face-to-face communication, but remembering that selected materials can also be used in the field to enhance the interpretive process.

In many cases, current on-site presentation is inadequate. Hose (2006: 223-238) believes that there are three problems common to all involved in geo-interpretation:

- The degree of detail required in various types of geological exposition
- The capability of the audience to absorb what is being said?
- What rules should be followed in order to communicate most effectively?

Although interpretation has been discussed in this chapter as part of visitor management, it is a vital tool in the education of visitors when explaining geology and geoheritage in simple terms to the layman (see Chapter 3, point 3.7).

4.7.4 THE ROLE OF INTERPRETATION DIRECTED AT VISITORS

Weaver (2006:185-187) believes that the overriding messages that are relevant to sustainable tourism include the deliberate and unintended, direct and indirect, environmental and social costs of Western lifestyles, the links between those lifestyles and resource exploitation, the sustainability of indigenous lifestyles and the role that individuals can play in contributing to environmental and cultural rehabilitation. He believes that the effective conveyance of these messages can have transformational consequences that make people more environmentally and socially conscientious and thereby help to achieve an enhancement orientated, comprehensive model of sustainable tourism.

Tour guides are well positioned in mediating contact between the tourist and the attraction. They can give effective interpretation but this is complicated by the multiple roles that must be played by the guides and by the multiple masters that they must serve. The tour guide is not only expected to provide appropriate interpretation, but is also expected to give group leadership, to coordinate logistics, to ensure the safety of clients, to prevent inappropriate behaviour, to deal with emergencies, to mediate interactions between clients and the host community. These, in addition to fulfilling the expectations of clients, tour operators, attraction managers and the host communities to whom they are accountable. Partially because to this, tour guides may only be able to devote a small portion of time to the development and presentation of persuasive interpretation that promotes positive behaviour in the tourist. They can and do respond to questions, engage knowledgeably in dialogue with the audience, utilising enthusiasm, bonding and personalization to increase the persuasive power of their interpretation. Static interpretation such as signage, displays, brochures, videos, webcams and audiotapes can also be used, particularly because they are more cost effective. However, these cannot bond with visitors, nor personalise interactions nor yet adjust to ever changing situational factors. Unfortunately, displays and signage are often vandalised. Many visitors lack sufficient motivation, patience and, literally, the skills to read extensive amounts of information available in brochures or on displays. Therefore, for most

attractions it is sensible to have available both effectively designed and interactive static interpretation that complements professionally trained and highly motivated local tour guides.

Because the interpretive provision at geosites is of cardinal importance, information centres must be planned carefully. According to Godfrey and Clarke (2000: vi, 14-15): *"Tourism planning at the destination level is a step-by-step-process of evaluation, action and review. Its broad purpose being to recognize gaps, identify new ideas and take action to fill those gaps. It is driven by long-term goals but with short-term actions, each contributing to the final objective, one piece at a time. It involves ongoing monitoring and allowing for revision in response to changing circumstances in the market place. Experience suggests those communities that follow a more systematic and strategic approach to tourism development and marketing are more likely to achieve long-term benefits. However, tourism is no economic panacea, and getting the most from the industry requires careful planning and management. In some areas, no matter what the capital injection, tourism may not work if it is ill-planned or mismanage"*.

Ham and Weiler (2002:37-42) are of the opinion that if interpretation is strategically packaged and creatively delivered, it can contribute to sustainable wildlife tourism by:

- Satisfying customer demand
- Creating opportunities for local employment
- Influencing onsite visitor behaviour
- Promoting a conservation ethic that may extend well beyond their on-site experience.

Figure 4.19: Volcano exhibit that shows the interior of the Earth, Vulkanhaus Strohn, Vulkan Eifel Geopark, Germany

Interpretation can facilitate economic sustainability by satisfying customer demand. To what extent are learning and information seeking important motivations for tourists? Visitors want accurate, timely and relevant information during their experience. They seek information

about the places they visit not only while they are on site, but also before and after their visit. Indeed, they expect and demand it as part of the experience for which they have paid. They want to get the right information, in the right way, at the right time and to the extent that they do this, their experience is more satisfying. Successful tourism businesses concentrate on developing and delivering interpretive services. Wildlife tourism operators, for example, offer an intellectual and emotional experience, and this combination creates satisfied customers because of the connection that interpretation creates between people and the places to which they go. This is also true for guided and self-guided tours. Apart from the mere facts given by guides, the guides' commentaries must help them to relate, connect to and care about the place and wildlife that live there. High quality interpretation is a major contributor to tourist satisfaction. Interpretation can also create local employment. People with local knowledge, and with a passion for the place in which they grew up, normally make the best interpretive guides. Training and employing local people as guides and interpreters represent an important sustainable development strategy. This will both lead to satisfied customers, and to satisfied locals who then become important allies in the protection of both the natural and cultural environment that form the basis of the wildlife tourism industry.

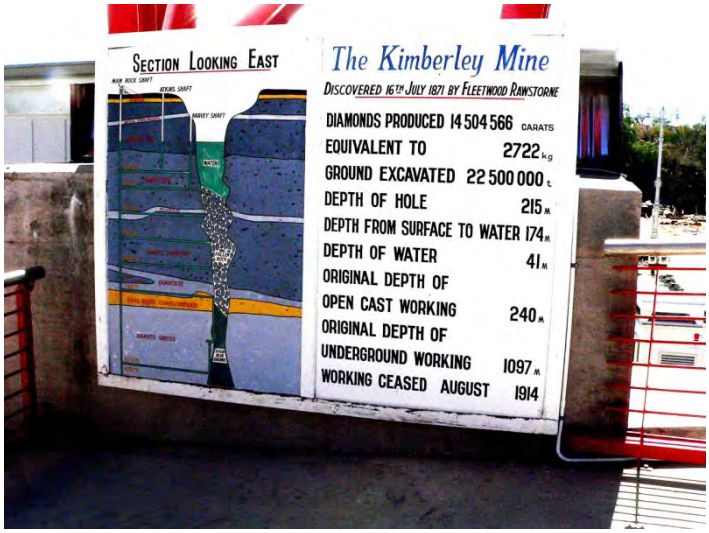

Figure 4.20: Cross section of the Kimberley Mine, Big Hole, Kimberley

Interpretation also acts as an on-site regulator of visitor behaviour and is a key strategy for managing environmental impacts. It has been employed for decades by the Canadian Parks Service. The US National Park Service implements a more sophisticated interpretive planning process aimed at informing decisions such as which audiences will be targeted with which strategic messages (themes), with the specific purpose of influencing visitor experiences and often behaviour. If how a person feels and act toward a thing needs to be influenced, then it is necessary to influence what their beliefs are regarding that thing. This is both strategic and purposeful because it is aimed at a desired outcome. Thematic interpretation is the idea of communicating beliefs in an effort to strategically influence

attitudes and, ultimately, behaviours. The intent of thematic interpretation is to plant a seed that will become the foundation of a new belief related to the desired behavioural outcome. Lastly, interpretation promotes a conservation ethic in tourists. It can play a role in long-term conservation by influencing what visitors come to believe about the area, about the resources being protected and about the strategies being used to protect them. Through the 'sleeper effect' process, a day can be spent by observing or thinking about wildlife, and through this, new beliefs can be implanted in a tourist's psyche. Reinforcement of the themes at a later stage is necessary.

Figure 4.21: Information poster and map, at the entrance of the Tumulus Building Exhibition Centre, Cradle of Humankind (COH)

In conclusion, Ham and Weiler (2002:41-42) believe that these are the premises and promises of interpretation in wildlife tourism. They are also applicable to geotourism. If interpretation is done well, it will enhance the geotourism experience of tourists, act as a mechanism for job creation, serve as an on-site management tool and act as a strategic communication medium for long-term conservation.

There are several areas in which geo-interpretation can assist to develop more sustainable forms of tourism:

1. Visitor management can be used to direct visitors to less sensitive and less crowded areas. It can also be used to develop previously under-utilised attractions and regions.
2. By using the existing attraction base and by attracting visitors to previously ignored areas using interpretation, visitors can be persuaded to stay longer in an area. Thus, economic benefits can accrue by external spending and more employment opportunities.
3. Interpretation can highlight the importance of environmental conservation, and at the same time, make visitors aware of the environmental benefits that can be achieved

4. Interpretation has a great potential to promote sustainability when the community is allowed and encouraged to promote and support the aspects of their heritage that are important to them.
5. Attitudes and values can change when interpretation increases interest and respect for local communities.
6. Enhancing the quality of interpretation at visitor centres, attractions, on tours, along trails/drives and 'in the field' or on site, is a major opportunity area for 'nature in tourism'. As far as possible, interpretation needs to capture a visitor's imagination, intellect or emotions (albeit momentarily) and in so doing, engage their interest. Differences of age and cultural background are also obvious considerations. When pursuing excellence in interpretation, there are as many paths of possibility open to visitor managers as there are creative ideas in the world. To fail to explore these is to risk having an audience label the interpretive approach adopted as too dull, tired, serious, patronizing, overcomplicated, overwhelming, superficial, or cautious. Innovative and creative ideas resulting in exciting interpretation outcomes are often achieved more successfully if more original and novel development processes are applied, the creative net cast widely. Building wider creative alliances by involving other people with different 'skill sets' (for example, those who are known for their innovative and 'wildcard' thinking capacities as well as an essential sense of humour and fun) can often prove of value - particularly if these people are properly rewarded for the business significance of their personal contribution to the results. A capacity for simple but effective delivery coupled with good commonsense and empathy also helps.

To summarise its benefits, interpretation is an effective way of adding value to the experience, of employing more locals, of creating a cultural connection for visitors, and of building understanding and differentiating an operator's product in the market.

4.8 CONCLUSION

The development of geotourism, site and visitor management and how the various approaches and tools for the management of geotourism can be applied were examined. A successful and competitive geotourism destination was discussed. Destination competitiveness and performance are linked by several steps. Steps to destination success were shown as consisting of comparative and competitive advantage, tourism markets, competition, goals and a target market strategy.

In developing the conservation of geoheritage for a sustainable and integrated environment case studies from Finland, the US and Canada were examined. The "*Australian Natural Heritage Charter for the Conservation of Places of Natural Heritage Significance*" of 2002 was discussed. It stresses that the planning processes, conservation policy, management strategies and the conservation plans must be monitored and reviewed continuously.

Geoparks have been established in Europe, China, and now also in other parts of the world. They are designated areas with a rich and diversified geoheritage. The geoheritage of those areas should be conserved, enhanced and managed for future generations and for its use by visitors. People in general must also be educated about the value of geoheritage. At present, there are 58 geoparks in the world; 33 in Europe, 21 in China, and one each in Brazil, Iran, Malaysia and Australia. Aspects in the creation of a geopark such as the economic development of a community, clear management structures, a concept for sustainable tourist development based on earth science heritage and conservation of geosites within its limits were examined in some detail.

The development of the European Geopark Network under the auspices of UNESCO in 2000 with aims of conserving and enhancing the conservation value of geopark sites, creating employment and the promotion of regional sustainable development through geotourism, the provision of educational facilities and the encouragement of public enjoyment of geological heritage was examined. Further, the Global Network of Geoparks aims of the establishment of World Geoparks by UNESCO to promote places that integrate significant examples of the Earth's geoheritage in a strategy for regional economic development were then discussed. The several criteria to be met for the establishment of a geopark wishing to join the Global Geoparks Network were examined and interrogated.

Examples were given how geotourism products are being utilised in mining museums, historical mining towns and theme parks. There are many mining heritage places that were conserved and are now being used as tourist attractions. Examples in Sweden, Wales (Blaenafon), Germany, Italy, Austria, Australia and Canada were offered. It was noted that the mining history of Røros (Norway), the historic centre of the town of Diamantina (Brazil) and the mines of Rammelsberg and the historic town of Goslar (Germany) were declared World Heritage Sites. The towns of Pilgrim's Rest, Barberton, Kimberley, Johannesburg (Gold Reef City) and O'Okiep were offered as examples of the mining heritage of South Africa. Another example was the whole town of Pilgrim's Rest that has been declared a museum.

The role of The South African Gold Panning Championships, held annually at Pilgrim's Rest, was highlighted as it is the only event of its kind in the country - so far. Exhibitions to explain geology to the public and to publicise its value were also evaluated.

The "*3rd International UNESCO-Conference on Geoparks*" was an important event that was held in Osnabrück, Germany, in 2008. The main topic was communication and the goal was to create appropriate methods to raise the awareness of the geological heritage of the planet - far beyond a geopark's borders. Before the conference posters, education pamphlets and booklets from 58 World Geoparks were displayed at the 1st International Geoparks Fair.

The "*Inaugural Global Geotourism Conference 2008*" was held in, Fremantle, Western Australia, during August 2008. This hallmark event was seen as setting a benchmark for the

tourism industry in relation to the development, management, marketing and promotion of landscapes. All aspects of geotourism were highlighted at this conference and geotourism's status as a conservation tool, educational process and nature-based tourism activity. Case studies which highlighted the issues involved in the management and care of such attractions, and cover topics such as sustainability, impacts and environmental issues were included. Exhibitions to promote geoheritage were placed as important mechanisms to introduce and explain geology to the public and visitors.

Geoheritage interpretation is seen as necessary because geoheritage underpins the landscapes and geodiversity that exists. The most critical aspect is interpretation for visitors and tourists. Some benefits are that interpretation is an effective way of adding value to the experience, of employing more locals and of creating a cultural connection for visitors. Interpretation has the ability to direct people away from sensitive areas and yet to educate them about the need to behave respectfully. It also educates and entertains visitors in a manner that should cause them to reflect about environmental values. The role of interpretation is to make people more aware of what they visit, to provide knowledge that increases their understanding and to promote an interest that leads to greater understanding enjoyment and responsibility.