CHAPTER 6: EVALUATING THE PROPOSED ECOTOURISM TRAIL PLANNING FRAMEWORK USING CASE STUDIES

"A case study is an examination of a specific phenomenon such as a programme, an event, a person, a process, an institution, or social group" (Merriam, 1991:9).

The domain of this research is in the field of Human Geography and deals with two approaches in the empirical domain, namely, ecotourism and environmental education. The two approaches operate within a specific space, the trail environment. The research is true to the case study approach in that it is contextual and deals with a specific phenomena in the real domain of realism, namely, ecotourism trails. The study focuses on a specific process: the planning of ecotourism trails to facilitate environmental education because such a process does not exist in the literature and is the problem investigated by the study.

A theoretical analysis, based on a literature review, of the three domains of the research, namely; the real (trail event), actual (agents) and the empirical (ecotourism and environmental education experiences) is done and culminates in a detailed and idealistic theoretical ecotourism trail planning framework in Table 5.1. It is an idealistic framework because it is imbedded on one side in the ambitious and idealistic agenda of ecotourism that strives for progressive educational travel that conserves the environment and benefits host communities. On the other hand it is imbedded in environmental education that strives to equip the learner, in this study it can be the trailist, trail owner, trail planner, host community or the authority, with knowledge as well as environmental attitudes and values reflecting awareness of the surrounding trail environment and acceptance of the responsibility for actions.

The overarching principles contained in the framework in Table 5.1 can arguably be applied with varying degrees of ease to different trail environments. Therefore, the theory postulated by other researchers in the literature is subjected to the observation method and researcher participation[5] in a real world situation using case studies. The value of the researcher participating in different ways in the case studies is that it helps to provide structure and focus to the case studies. Furthermore, the researcher gains access to events and groups, such as forums and meetings otherwise inaccessible to the investigation. In the process the researcher becomes an "insider" rather than an "outsider" which makes it possible to call meetings with host communities, learners and educators. These meetings can increase community participation levels in the trail planning process. In practice trail planning is an objective one-sided scientific process where the trail planners do the planning on their own. The reason is that the trail planners consider themselves the only experts.

Case studies in this study do not take on the normal purpose, namely, to test a model. The case studies are used as part of the development of knowledge. The possible application possibilities of the seven theoretical principles, proposed in the framework, in practice is determined using the case studies. This approach results in changing the set of seven principles to nine principles.

6.1 Case study selection

The selection of trails is based on accessibility to, and own judgement of the researcher whether the trails would be suitable for addressing the problem of this study. The primary criteria used to select the case study trails were that all the trails indicated that education is their aim. This approach can be criticized for being subjective and not offering proof of how representative the sample of trails is of the

5. Tables 6.2 to 6.5 in Appendix 3 contain the ways in which researcher participation is achieved in each of the case studies as well as the purpose of the participation.

population of ecotourism trails.

To overcome subjectivity, Tswaing is selected as the primary case study together with three other secondary case studies. The Tswaing trail project is selected as the primary case study because it is set in a larger project environment that is very suitable to the problem of this study. It would be simplistic and quasi-scientific to determine the applicability of the proposed planning framework only in the context of one trail environment, namely, Tswaing.

Three secondary case studies, namely; Northcliff, Rustenburg, and Windy Brow are selected for comparison purposes. In adopting this approach the researcher overcomes the problem of possible biased interpretation and idealisation that could lead to circular argument. Criteria that were considered to help make the case studies more representative of a wider variety of micro trail settings are:

- trails of different duration (a few hours, 1 day, 2 days)
- trails at different stages of development (new or existing)
- trails in different biophysical environment settings (urban and rural)
- trails set in different host communities
- trails involving different agents such as trail owners, trail planners, trailists, environments and host communities
- different trail owners/management (provinces, private and public)

6.2 Case study description

The trail locations are marked on the map in Figure 6.1. Table 6.1 summarises the characteristics of the four trails in the context of the different agents.

FIGURE 6.1 LOCATION OF TRAILS USED AS CASE STUDIES

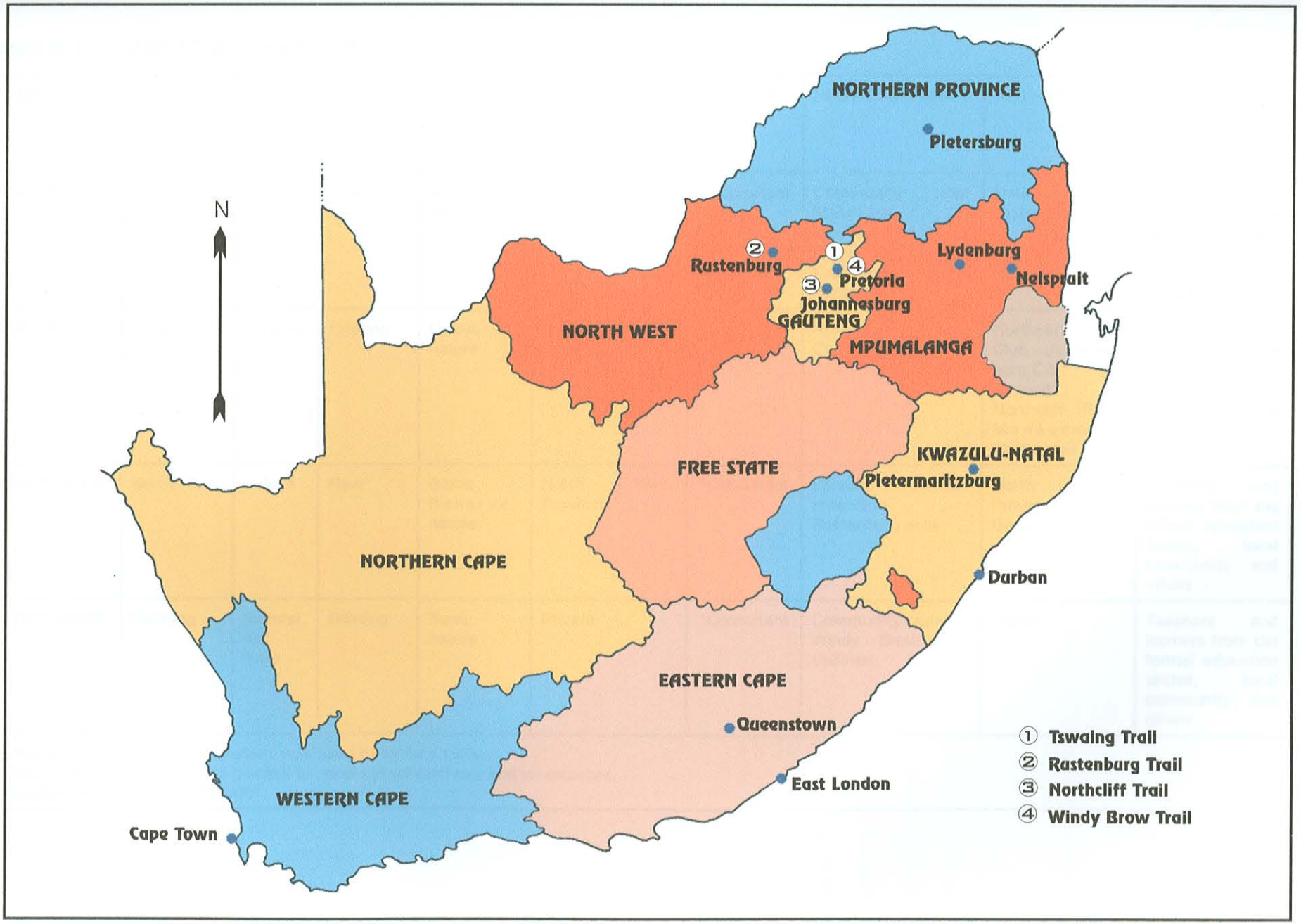

TABLE 6.1 CASE STUDY CHARACTERISTICS

TRAIL	LOCATION	DURATION	STAGE OF DEVELOPMENT	ENVIRONMENT	OWNER	PLANNER	HOST COMMUNITY	AUTHORITY	TRAILISTS
TSWAING	Gauteng	3 hours	New	Rural, nature	National Cultural History Museum	*Consultant	Community from Mabopane, Winterveld, Soshanguve, Kromkruil, Nuwe Winterveld	National Cultural History Museum	Teachers and learners from the formal education sector, local community and others
NORTHCLIFF	Gauteng	2 hours	Existing	Urban, nature	Johannesburg City Council	*Consultant	Northcliff Ridge Community	Northcliff Rotary Club, Johannesburg City Council, Northcliff Ridge Management Committee	Teachers and learners from the formal education sector, local community and others#
RUSTENBURG	North West	2 days	New	Game Reserve, nature	North West Province	*Consultant	Persons outside reserve in Rustenburg area	North West Provincial Government	Teachers and learners from the formal education sector, local community and others
WINDY BROW	Gauteng	Several day trails	Existing	Rural, nature	Private	*Consultant	Community around Windy Brow and Cullinan	None	Teachers and learners from the formal education sector, local community and others

* The same trail planning consultant was used by all four trails.
# The Northcliff trail is also accessible to people in wheelchairs and on crutches.
Compiled by EMJC Schaller/2000

6.2.1 Tswaing Trail

The Tswaing trail (Appendix 4) is developed in the natural environment of a 220 000 year old meteorite impact crater in a rural area 40km north-northwest of Pretoria. The trail is 7km long and the duration of the trail is about 3 hours. The trail is developed in two phases. The first phase started in 1995 and continued into the second phase from 1997 to May 1998.

The vegetation of the crater relates directly to the geology associated with a meteorite impact crater. The area is rich in woodland areas and shrubveld. Almost all large animals have disappeared. Nearly 300 bird species have been recorded at Tswaing. The Tswaing Crater is situated between formal and non-formal settlements such as Soshanguve (south and east) and Nuwe Eersterust (east). Informal settlements such as Kromkuil (north) and Winterveld (west) are also in the area and create a large demand for firewood and grazing.

An important feature of the Tswaing trail is the soda and salt industry that operated between 1912 and 1956. Some of the remnants of the industry such as foundations of buildings, machinery platforms and boreholes can be found along the trail.

6.2.2 Rustenburg Trail

The Rustenburg trail (Appendix 5) is situated in the Rustenburg Nature Reserve in the North West Province which, at the time of the research, went through a change of government structures from the old Boputhatswana to North West. The Rustenburg trail is made up of two trails. Each of the trails is two-days long and passes through different natural environments. The Summit Route passes through a high lying area which includes a wetland area. The Baviaanskrans Route passes through a low lying area of the reserve.

Since it is a nature reserve there is abundant animal and bird life. The trail passes through interesting metamorphic rock features and a variety of vegetation types such as grass, shrubs and trees is present.

6.2.3 Northcliff Trail

The Northcliff trail is an existing short 2.7 km nature trail on the Northcliff Ridge 12 kilometers from downtown Johannesburg. It is situated on a quartzite ridge with distinct geological structures. It is in an urban environment and in close proximity to residential areas.

The ridge on which the trail is found provides a 360° panoramic view of surrounding areas and hosts a variety of trees, shrubs, flowers and grasses indigenous to the area. A rich bird life is also present. 17th century Tswana iron-age settlements have also been identified on the ridge.

6.2.4 Windy Brow Trail

The Windy Brow trail (Appendix 6) is an existing nature appreciation trail. The trail is made up of a network of three short trails, namely; the ecology, archaeology and geological trail. The trails are situated on a farm that formed part of the bigger farming unit of Elandsfontein where the famous Cullinan diamond was discovered. Windy Brow is situated 27 kilometers east of Pretoria.

A special feature of Windy Brow is the presence of fourteen species of game. Other features include the bird life, the quartzite koppie, view of the Cullinan diamond mine and the remains of old African settlements dating from the 1650s. There are traces of old Sotho and Ndebele kraal formations. On the farm forty-five tree species have been identified.

6.3 The application of the proposed planning principles

It is important to realise that no case study follows a set design. The scope of the study and the depth to which issues are pursued are at the discretion of the researcher. What is important is that, due to the selected research approach and the emphasis on qualitative descriptive research, the researcher documents the primary case study, Tswaing, in more detail. The other three case studies are being used to support or contradict evidence where applicable.

For an understanding of the process to follow, it is necessary to note that the seven broad planning principles in Table 4.2 are reviewed one by one in the context of the four trail planning phases postulated in Figure 5.1 and the agents involved in the trail planning process, namely; the trail planner, trail owner, trailist, environment, authority and host communities. This integrated planning approach is supported by McCool (2000:6) who emphasises that tourism planners should start thinking in terms of appropriate frameworks of *"tourist-environment-community"* interactions.

According to McCool and Stankey (1993) in McCool (2000:6) an adequate framework for tourism should *"recognise* (that) *the interface between tourism and the environment involves primarily social questions as opposed to biotechnical ones, avoid the excessively reductionistic and limited perspective provided by a carrying-capacity-based approach, and include the wide range of stakeholders affected by tourism development choices in the planning and management processes"*. The proposed ecotourism trail planning framework in Table 5.1 applies this approach to tourism because the approach applies the ecotourism and environmental education principles in Table 4.2 deduced from the literature.

Through the comparison of the trails the researcher can relate the applied principles to the literature and try and arrive at general applicable ecotourism trail planning principles that will facilitate environmental education.

6.3.1 Planning principle 1: The total trail environment

Principle one states that the total trail environment, namely; the biophysical (natural and built), social (cultural, economic and political), behavioural and physiological environment should be included in a holistic, interdisciplinary and balanced ecotourism trail planning procedure.

At the Tswaing trail this first planning principle manifests itself in a theoretical format in the mission and educational goals formulated in the assessment stage of the trail planning process. The Tswaing trail was developed as part of a larger project at the Crater Museum conducted by the trail owner, the National Cultural History Museum. The implication is that the trail had to fit in with the mission statement formulated by the trail owner and the education goals of Tswaing. The mission statement for Tswaing is:

"Tswaing Crater Museum is a non-aligned independent people's project for the conservation and utilisation of the environmental (natural, cultural, human) resources of the Tswaing area. Resources will be provided for environmental management and education, training, research, tourism and recreation. This is done in a democratic, participatory manner in order to enrich the quality of life of people in a healthy environment" (Moolman & de Jong, 1995:28).

The educational goals formulated for Tswaing and the environments implied by them are:

- *"Interpret the significance of the site in a holistic manner for the visitors in order to broaden their knowledge and enhance their quality of life* (behavioural and physiological environment)
- *establish a concern for the environment within the communities surrounding the museum* (biophysical environment)
- *promote job creation* (economic environment)

- *adhere to the Tbilisi principles in developing the educational programmes* (educational environment)
- *give preference to participatory methods* (behavioural environment)
  be an example of an organisation that is environmentally sensitive (political environment)
- *involve all the senses in the outdoor learning experience and give a real **African** experience* (cultural environment)
- *encourage a positive and respectful attitude towards man and the uniqueness of the world and the environment"* (behavioural environment) (Moolman & de Jong, 1995: 33).

The above mission statement and educational goals incorporate a number of sectors of the trail environment as understood from Figure 3.4. The mission statement and goals of Tswaing form the theoretical framework for the identification of the purpose of the trail and the intended trail users and their needs during the assessment and demand analysis stage of the trail planning process.

The lack of existing information on the environmental education possibilities of Tswaing made it necessary for researchers, the trail planner, museum staff, educators and community members to visit the trail. The purpose of the visit was to assess the environmental education possibilities of the trail and identify specific sites that could be used to facilitate environmental education for trailists. During this stage it became clear that education as a parameter was not considered by the trail planner when parameters were identified to determine a suitable trail corridor. The fact that this parameter was not included in the initial set of parameters that focused on vegetation and geology, created the impression that the environmental education component was added onto the original planning idea, although the mission and goal statements of Tswaing did include it. It can also be argued that education as a parameter is abstract, difficult to measure, and is not defined in existing trail planning literature. In ignoring the full extent of principle one, namely, the total environment, the educational dimension of the behavioural

environment is overlooked. The result is that education points are spaced far from one another and the complete three-hour trail is too long for school learners.

Principle one also implies that when information is gathered about the proposed trail site during the supply analysis stage of the framework, the information for the total environment should be obtained. Types of information can include knowledge about the built environment and amenities such as existing huts, roads and paths. Knowledge about the social environment can include relevant cultural, political and historical features such as ruins and battlefields. Information about the natural environment should also be obtained.

At Tswaing the amount of information available on the history, vegetation and geology is extensive. This is due to the fact that a great deal of research has been done by other researchers on issues such as the geology, vegetation, animals and the salt factory at Tswaing. The information is well documented by the Museum and is in many research articles. Tswaing's environmental education potential is not as extensively researched and the only document available is the report entitled, *"The contribution of SITE Museums to the conservation and interpretation of the environment with special reference to the Tswaing Crater Museum"* by Moolman & de Jong (1995). The resources are readily available to researchers for background information. A list of these resources is contained in Appendix 7.

In assessing the theoretical general objectives formulated for the Rustenburg trail it is clear that these objectives mainly focus on the biophysical and behavioural environment and neglect the cultural, political and economic environment. The general objectives formulated for the Rustenburg trail are:

- *"To answer possible questions users might have about the environment in which they are*. (behavioural environment)
- *To contribute to the environmental education of users*. (behavioural environment)

- *To convey certain environmental facts to users.* (behavioural environment)
- *To create a love and appreciation of nature in users.* (behavioural and biophysical environment)
- *To familiarize the user with plants and animals in the reserve.* (biophysical environment)
- *To make the user aware of micro climatic variation.* (biophysical environment)
- *To allow the user to observe and experience vegetation, soil and animal changes.* (biophysical environment)
- *To guide the user's observation and sensoric experiences.* (behavioural environment)
- *To give the user opportunity to express his/her thoughts, experiences and observations verbally or in writing.* (behavioural environment)
- *To stimulate the user's critical and creative thoughts.* (behavioural environment)
- *To develop the problem-solving ability of the user.* (behavioural environment)
- *To enable the user to conduct certain experiments practically in the field.* (behavioural environment)
- *To make the user aware of the need for nature conservation.* (biophysical environment)
- *To create a love and interest in the user for the environment around him/her.* (behavioural environment)
- *To stimulate the user to enquire.* (behavioural environment)
- *To make the user more environmentally literate."* (behavioural environment) (Rustenburg trail brochure, 1998).

At the Rustenburg trail the behavioural environment receives detailed consideration. Unlike the other trails, specific environmental education objectives

are formulated for the Rustenburg trail. These objectives are grouped under four headings according to the core syllabus for environmental education in South Africa developed by the Council for the Environment in 1993. These objectives are:

"* *Objectives concerning life*

- *To promote an awareness of place and surroundings.*
- *To develop personal values for place.*
- *To gain an awareness of relationships within the community.*
- *To promote an awareness of the interdependence of living and non-living systems.*
- *To promote an awareness of the need to protect water and land ecosystems.*
- *To promote an awareness of the food chains of life.*
- *To promote an appreciation of changes in nature.*

* *Objectives concerning resources*

- *To promote an awareness of human uses of natural environments.*
- *To gain an awareness of the origins of natural resources.*
- *To promote an awareness of human dependence on natural resources.*
- *To promote an awareness of the sustainable use of resources.*
- *To promote an awareness of the consequences of exhausting resources.*

* *Objectives concerning life skills*

- *To learn co-operative teamwork skills.*
- *To promote creativity in thinking.*
- *To promote effective communication skills in decision-making.*
- *To promote inquiry learning skills.*
- *To promote problem-solving skills in local contexts.*

* *Objectives concerning personal values*

- *To promote an awareness of personal values systems as they relate to the environment.*
- *To promote an awareness of other cultural positions.*
- *To promote an appreciation for different positions and perspectives from our own.*
- *To promote a positive attitude towards others and the earth which sustains life."* (Rustenburg trail brochure, 1998)

Unlike at Tswaing and Rustenburg, no objectives are formulated for the existing Northcliff and Windy Brow trails. At Northcliff the initial purpose and target audience of the existing trail are revisited to facilitate environmental education as well. For the new Northcliff Ridge Community project, of which the Northcliff Trail is part, the following objectives are formulated:

- *"Develop a safe and natural viewing platform.* (behavioural environment)
- *Develop the 2.7km nature trail on the Ridge, (accessible to the disabled).* (physiological environment)
- *Allocate and enhance the specific area for rock climbing.* (physiological environment)
- *Recreate the 17th century Tswana Village as a tourist and educational attraction.* (cultural and behavioural environments)
- *Organize educational trails for schools and special interest groups.* (behavioural environment)
- *Create opportunities to view bird life and small animals.* (biophysical environment)
- *Re-establish the original ecology of this unique Ridge.* (biophysical environment)
- *Establish a visitor information centre illustrating the history;*

and natural features of the Ridge." (cultural and biophysical environments) (Northcliff Sponsorship brochure, 1998)

These objectives, as at Tswaing, encompass a broad environment and include the biophysical, physiological, behavioural and cultural environments.

When the purpose of Windy Brow was expanded to include environmental education, a set of environmental education goals was formulated. These goals and the environment they refer to are:

- *To promote a conservation ethic*. (biophysical environment)
- *To enhance in the students an awareness, understanding and concern for the environment and associated problems.* (behavioural environment)
- *To motivate people to take positive action*. (behavioural environment)
- *To provide opportunities for outdoor recreation (fun).* (physiological environment)
- *To promote a sustainable living motto:"think globally, act locally"* (behavioural environment) (Windy Brow promotional flyer, 1997).

The above set of theoretical goals, formulated for Windy Brow, attempts to include a broad environment as proposed in principle one. However, the biophysical environment received primary attention and motivated the original thematic trail development that took place around aspects such as geology and vegetation. The economic, political and cultural environments are neglected in these goals.

In determining the application of principle one to the different case studies it can be concluded that the trails in theory strive to keep the total environment proposed by ecotourism and environmental education in mind when formulating goals and objectives. In practice though it does not realise. Planning principle one furthermore seems to have specific relevance to the assessment and demand analysis stages of the trail planning framework (Table 5.1). At this stage the host community should be involved in attaining the environmental education and ecotourism goals for the total trail environment and be involved in initiating the trail project.

6.3.2 Planning principle 2: Responsible and sustainable planning

According to this principle, **ecotourism trail planning must be done responsibly and sustainably in terms of all agents that are role players in the planning process. Current and historical environmental aspects should be considered in the planning to instil an ethical responsibility in the agents.**

This principle was applied during feasibility studies done in the demand analysis stage of the Tswaing trail. Aspects such as practicality, expected use, developmental potential and environmental impact were investigated. These aspects were addressed at the Tswaing trail through visits and surveys done by environmental educationists[6]. During the visits it was determined whether it was practical to use the trail for environmental education and what the environmental education development potential of the trail is. The trail planner[7]. who did the physical planning and layout of the proposed trail was part of the trail survey process. The trail's potential for environmental education was determined using

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6. Specialists from the Cultural History Museum in Pretoria and the researcher did the assessment.

7. Paul Bewsher (1995)

the deduced links between ecotourism and environmental education principles in section 2.3. The result is that the decision was taken that the trail could facilitate environmental education purely based on the theory at hand.

Principle two was further addressed at Tswaing during the demand analysis stage by investigating the physical and ecological demands the trail site has. The trail planner identified potential areas of deterioration. Mechanisms to alleviate deteriorations were built into the building standards applied to the trail. At Tswaing principle two further manifests itself in the Integrated Environmental Management procedure (IEM) that was adopted for the planning process (Moolman & de Jong, 1995). Adopting the IEM procedure as a sustainable management strategy at Tswaing implies that the term environment is used in its broad sense as is suggested in the literature. Environment encompasses the biophysical and socio-economic components as proposed in Figure 3.4. Therefore the trail development had to keep in mind the broad general IEM principles that underpin the Tswaing project namely:

- *"Informed decision-making.*
- *Accountability for information on which decisions are taken.*
- *Accountability for decisions taken.*
- *A broad meaning given to the term environment.*
- *An open, participatory approach in the planning of proposals.*
- *Consultation with interested and affected parties.*
- *Due consideration of alternative options.*
- *An attempt to mitigate negative impacts and enhance positive impacts of proposals.*
- *An attempt to ensure that the social costs of development proposals (those borne by society, rather than the developers) be outweighed by the social benefits (benefits to society as a result of the actions of developers).*
- *Democratic regard for individual rights and obligations.*

- *Compliance with these principles during all stages of the planning, implementation and decommissioning of proposals.*
- *The opportunity for public and specialist input in the decision-making process.*" (Moolman & de Jong, 1995:27-28).

The IEM principles correlate strongly with the revised trail planning principles deduced from the literature and proposed in section 3.3. These principles not only address planning principle two but also overlap with other planning principles such as, a broad meaning be given to the term environment (principle one), planning be done in an open and participatory manner (principle seven), consultation take place with all the affected role players (principle five), negative effects be minimised and positive impacts enhanced (principle four), the social costs to the community be minimised and the social benefits be enhanced (principles two, five and six), the community's democratic rights be respected and considered (principle two), both the community and specialists provide inputs in the planning process (principle five), and that all the principles be considered in all the stages of planning (principle seven).

With all the IEM principles theoretically in place and consultation taking place through community forums at Tswaing, problems were still experienced during the implementation phase of the trail. Large groups of learners (up to 300 at a time) of different age groups arrived at Tswaing. The teachers were unprepared for the visit and have no set outcomes, or selected activities and themes for the visit. Rheeder (1992:17) suggests that teachers make pre-trail visits to the site to determine how the trail environment can be integrated into the curriculum. The educational officer did not have sufficient resources to facilitate the groups on the trail in practice. The trail planning at Tswaing neglected to apply planning principle two which emphasises the need for responsible and sustainable planning. Applying the principle would have assisted in identifying the need to train the teachers and the educational officer to facilitate the environmental education programmes on the trail and ensure the sustainability of the programmes.

The result is that the National Cultural History Museum has to reassess the first phase of the environmental education project and make adjustments that will limit these problems. The intended broad target audience was narrowed down to focus mainly on the formal education sector, school children and teachers around Tswaing in the second phase of the trail development. The trail developer took on a more focused responsibility and a new set of 57 activities was developed. However, the adjusted programme again illustrated that conceptual understandings of the two approaches by the host communities and trail users were different to the understandings of the developers and researchers. Programme developers (1998) participating in the second phase commented at a review meeting of the pilot programmes that the "learner's concept of environment only linked to the natural environment" (Appendix 8).

Principle two, emphasising responsibility and sustainability, suggests that careful consideration be given during the trail corridor planning stage of the framework to the length of the trail. In conventional trail planning models set standards exist. For trails that need to facilitate environmental education different suggestions are given in the literature. To establish the correct distance would require taking pilot groups from the targeted trail user groups on the intended trail corridor to determine their level of distance acceptance. Distance is experienced differently by different people. Distance is a personal physical experience that needs to be researched in conjunction with the learning experience to determine acceptable distances for different levels of learning. None of the trails specifically addressed this issue and at Tswaing it resulted in changes being made to the trail to accommodate acceptable distances for different learner groups. At Windy Brow the format of the trail, namely, short interlinking sections, made it possible to facilitate learning experiences on a variety of distances.

Principle two further implies that a trail be sustainable over time. At Tswaing, sustainability has been hampered by regular staff changes subsequent to the opening of the trail. The consequence is that the implementation and running of

environmental education programmes has not taken place without problems. The result is that the initial teacher's manual has had to be restructured in a different format. Staffing problems have also created a lack of continuity in the programme implementation and environmental education workshops that were conducted with the local communities in and around Tswaing. One of the staff from the Cultural History Museum has suggested that *"There is a need for a full-time educational officer to apply and upgrade the programmes over time"* (Minutes of meeting 18/03/98, Appendix 8). Tswaing even opted for the service of an outside person to facilitate the environmental education groups in the formal education sector.

The application of principle two to the case studies is complicated by the fact that at Tswaing sustaining the environmental education programmes over an extended period of time has been difficult owing to staff changes, lack of staff training for environmental education and the arrival of large groups of learners. At Rustenburg and Northcliff the environmental education programmes are not sustained at all. Windy Brow is the only trail where environmental education programmes have been sustained over a period of time.

6.3.3 Planning principle 3: Enlightening and educational experience

This principle suggests that **an enlightening and educating experience must be provided to all the agents that are part of the ecotourism trail planning process to increase an awareness and an understanding of the total trail environment.**

The proposed framework incorporates principle three during the supply analysis stage and suggests that educational themes be identified and linked in an order that would contribute to unlocking the space through which the trail passes in a logical way. It is important that environmental education sites and points be identified during this stage through site visits before a final decision is taken on the trail corridor.

At Tswaing, the trail corridor had already been identified by the time the trail was assessed from an environmental education perspective. The result was that environmental educationists and other subject specialists only identified environmental education points along the already identified trail corridor. A further result was that the trail direction had to be changed after visits by teachers, learners, researchers and host communities. The change in direction has become necessary because the learning experience is not unlocked sequentially and the total distance of the trail is too tiring for learners. The fact that the host community was not involved in identifying educational sites has resulted in indigenous knowledge not being built into the education experience along the trail. This is not only a shortcoming in applying principle three but also principles two, five and seven. These principles together suggest representative and active participation by all agents to ensure that planning is done in a responsible and sustainable manner.

In determining the extent to which the existing Windy Brow trail applied principle three it is clear that the layout of the Windy Brow trail proves to be more open to facilitating environmental education. It is possible to select, from the network of shorter trail links, different distances for different user groups depending on their age and fitness. The result is that more than one group with different environmental education needs can be accommodated on the trail. Programmes for the different trail sections can link a number of diverse environmental aspects or concentrate on one theme. It is important to note that although each of the shorter trails focuses on a specific environmental aspect, for example geology it is not possible in any environment to isolate one aspect. The different environmental aspects remain part of the interconnected web of environmental features along the trail environment. The Windy Brow trail format makes it possible to design a variety of environmental education programmes for different sections. Possible themes and points are identified by environmental educationists along the trail that could be used to facilitate these environmental "education programmes". Host communities were not asked for their inputs.

The application of principle three at the Northcliff trail is apparent in the fact that the trail environment includes special features such as a unique habitat of indigenous flora and fauna and it is an important archaeological site. The trail has the potential to become a major recreational amenity serving the environmental education needs of a wide community. The result is that trailists can enquire into the environment through which the trail passes, become aware of the bird and animal life on the ridge, the panoramic view, study the geology of the ridge and simply enjoy nature. Such an enlightening experience can contribute to the physical and mental well-being of society. Further applications of principle three can result in archaeological discoveries being displayed and explained at an exhibition centre and research opportunities being created for local educational institutions such as schools, universities and technikons. Research information can be used to develop environmental education programmes that will educate trailists along the trail, about the environment which can enrich trailists for the future.

The trail planning framework suggests that when principle three is applied to the trail corridor stage, a place for pre- and post-trail activities should be identified. At Tswaing and Rustenburg the trails start at the visitor centres. The result is that pre- and post-trail activities can be presented at the centres.

At Tswaing, principle three was realised during the construction phase through the development of three types of educational resources. A teacher's guide, tour guides and an activity manual have been developed. The teacher's guide has been compiled to give the teacher enough physical information about Tswaing, obtained from previous research reports and articles. It also includes instructions on how to use the guide, giving detail on the trail and indicating possible activities (Appendix 9) that could be engaged upon along a specific section. Preliminary and follow-up activities are included. Rheeder (1992:18) regards pre-trail lessons as important because these lessons supply background information on the place to be visited, the purpose of the visit, what trailists should look out for and what

follow-up work will be done.

The teacher's guide contains safety hints, materials needed for the activities, techniques to be used on the trail, examples of worksheets and lists of fauna and flora found in the vicinity of Tswaing. Teachers could, for example, select activities from the teacher's guide or they could design their own programmes for their students. In conjunction with the compilation of the teacher's guide, a programme was structured and tour guides from the local community were trained to assist teachers in facilitating the school groups on the day of the programme. Training local tour guides is a means of creating jobs in the local community, the main focus of any community project.

During the monitoring and auditing stage at Tswaing, the teacher's guide was reassessed by the National Cultural History Museum. The result was that at the end of 1996 a more structured approach was adopted for the environmental education project. In the middle of 1997 the Project Manager of the trail development approached an environmental education specialist to set up a team of educationists to help with the development of specific environmental education programmes at Tswaing[8]. This was subsequently done and individuals from different tertiary institutions and staff of the National Cultural History Museum met to start the process. Important decisions taken at this, and subsequent meetings, were the following:

- Programmes should adhere to the new Outcomes Based Education system.
- The crater should form the focal point of the programmes.
- The whole education system should be covered (all the phases and all the learning areas).

8. The Project Manager was Mr Kobus Basson. The chairperson of the educational committee was Prof Callie Loubser. The tertiary institutions involved were University of South Africa, Vista University, the South African College for Teacher Education.

- The community at Tswaing should be consulted and included in the development of programmes, true to the philosophy at Tswaing.
- The programmes will operate along the trail.

At a meeting of the Tswaing Forum, a chairperson for the educational committee was elected and commissioned to proceed with the development of programmes. The educational committee was extended to include: The Gauteng Department of Nature Conservation, teachers of the area and community members (Appendix 10). The committee explored the trail at Tswaing twice before starting with the revised programme. The result was the identification of 16 educational sites (Minutes of meeting 18/03/98, Appendix 8).

At Rustenburg only a draft brochure has been designed (Appendix 11). It was not piloted by the time the case study was documented. Northcliff also has no specific educational material and no educational points were identified by the time the case study was documented.

Windy Brow does not have specific educational material except for an information brochure briefly explaining the features that can be found on the different loops on the trail. At Windy Brow the developer coordinates the environmental education programmes but uses external persons from tertiary institutions such as Pretoria Technikon and Vista University to develop and implement the programmes. Some schools design and run their own environmental education programmes on the trails.

With regard to principle three, what transpires from the case studies is that although ecotourism trails should contain an education component they also have the potential to facilitate specialised environmental education. If an ecotourism trail is to facilitate specialised environmental education an additional administrative task needs to be added. This task entails the appointment of a trained environmental education person to help facilitate this specialist purpose of a trail.

This appointment is crucial especially for organised environmental education programmes for the formal education sector because this sector of trailists should be actively involved in diverse learning experiences on the trail. They should be given opportunities to evaluate certain environmental situations, be provided with decision-making opportunities based on study and be given an opportunity to apply prior knowledge to new learning. This level of trailist requires the expertise and experience of a well-trained person.

6.3.4 Planning principle 4: Conserve and protect total environment

Planning principle four proposes that **the total trail environment that is utilised as the resource must be conserved and protected. Environmental sensitivity and the symptoms, causes and complexity of environmental problems during the ecotourism trail planning process should be emphasised and negative impacts should be minimised.**

Principle four, focusing on conservation and protection issues according to the framework, needs to be applied during the trail corridor stage and construction phase when design standards are established for trails. The principle has been applied by all four trails for the biophysical environment because generic trail construction standards exist regarding the natural environment through which the trail passes. Specification for biophysical aspects such as drainage, gradient and trail widths exist in the literature. However, no clear standards are given in the literature for the cultural, economic and political aspects of a trail.

Behavioural standards, such as educational standards do not exist and are not applied. The teacher's manual for Tswaing and the brochure for Rustenburg are therefore designed without set specifications. The compiler has relied strongly on practical and research experience and guidelines from literature. In the case of the Tswaing teacher's manual the compiler had to decide whether or not to take a thematic approach to the activities. In an attempt to make the activities relevant

to the users, teachers have been invited to give inputs into the manual. The environmental education officer at Tswaing and community members also gave their inputs. Appendix 10 contains a list of persons who gave inputs on the Tswaing teacher's manual and fifty seven activities. The fifty seven activities took notice of Rheeder (1992:17) and Schulze's (1994:166) suggestion that comprehension, discussion, note-making, application, analysis, synthesis, evaluation, problem-solving, experimentation, case studies, debates, brain storming, projects, survey and role play type of activities should be included on the trail.

At the Rustenburg trail, careful consideration has been given to environmental impact and an eco-hut has been designed for overnight purposes (Appendix 12). The eco-hut is designed to fit in with the natural slope and vegetation of the surrounding trail environment. The structure is covered in rocks, soil and plants from the area. The Windy Brow and Northcliff trails also apply ecological design standards that exist in the literature. As at Tswaing and Rustenburg, specific educational standards are not applied.

The lack of consideration given to principle four further resulted in the fact that the outdoor environmental education facility built on the Tswaing trail for environmental education groups was not environmentally aesthetic and was an intrusion rather than a resource. The result is that the aesthetic environment has not been conserved and protected because no clear design standards exist for such structures. The facility had to be removed. If clear specifications regarding outdoor environmental education facilities had existed, the cost and effort of building the structure could have been correctly applied.

What is evident from all the case studies with regard to principle four is that existing generic standards for the biophysical environment have been applied to all the trails. Definite educational design standards do not exist therefore little consideration is given to the requirements environmental education places on the

total trail environment. Environmental education design standards that have emerged, especially from the Tswaing trail, are that:

- the distance between educational points on the trail needs to be taken into account,
- the sequence of education points must correlate with the trail direction,
- the design and placement of outdoor facilities must be investigated,
- the total distance of the trail and where and how indigenous knowledge will be incorporated into the trail experience must be investigated, and
- the discontinuities in the environment, where environmental education points can be placed, identified.

6.3.5 Planning principle 5: Inclusion of all the agents

Principle five states that **all the agents such as the trailist, trail planner, trail owner, host community, authority and the total environment should be part of the ecotourism trail planning process and especially the host community must benefit. Local, national and international inputs and contributions should also be recognised.**

At Tswaing, principle five was applied in the assessment stage via the Tswaing Forum. *"In October 1993 the Tswaing Forum was established in order to involve the interested and affected parties in the planning and decision-making"* (Moolman & de Jong, 1995:26). The Tswaing Forum is made up not only of the trail owner, trail planner and host community as well as a number of other interested parties. *"Serving on the Forum are representatives of local communities, specialists like museum scientists, botanists, zoologists, business people, geologists, educators, agricultural scientists, and representatives from various non-governmental and community-based organisations"* (Moolman & de Jong, 1995:26,27). The Forum structures were functioning positively and the trail project could make use of them rather than try to establish new links and associations with host communities.

Through these structures, the host community had already been made aware of the purpose of the project, what their role was in the project, and which of their needs it would attempt to address. The fifth planning principle has been applied more specifically through two of the four working committees from the Tswaing Forum, namely; the Tourism, and Education and Training committees.

The intended users of the Tswaing trail had also already been determined by the Planning Forum of the developer of the trail, the National Cultural History Museum. These users included the local formal education sector, namely; *"schools (pre-primary, primary, secondary, tertiary),"* and *"people that are conscious of the environment, people that prefer the environment as method of relaxation e.g. bird clubs, habitat and conservation clubs, hikers, etc., environment specialists (researchers), tourists (South African and international), and local communities and business communities"* (Moolman & de Jong, 1995:31). Thus, at Tswaing the intention has been to involve as many agents as possible in the planning process of the ecotourism trail that facilitates environmental education.

The Rustenburg trail differs from the Tswaing trail in that it did not in theory state who the agents were during the assessment stage. The Rustenburg trail mainly targets the communities around the nature reserve where the trail is located. The trailists targeted by the Rustenburg trail include the formal education sector which demands curriculum relevant activities and programmes, as well as the non-formal education sector which includes communities in and outside the local area of the trail.

During the demand analysis stage at Tswaing, principle five was addressed by determining the broad needs of possible trail users. According to Moolman & de Jong (1995:28) *"The Planning Committee has compiled a list of the needs of the interested and affected parties. These needs comprise intended activities at and around Tswaing, and the necessary facilities. The needs cover a wide variety of aspects, such as conservation/environmental management, recreation,*

education/training/research, tourism, and regional community needs." The result at Tswaing is that although in theory recognition is given to the fact that agents have different needs these are not clearly formulated in the demand analysis stage in the context of environmental education and ecotourism. The lack of specifying these needs has resulted in different understandings of the concepts environmental education and ecotourism by the teachers and learners who have used the trail. Environmental educationists piloting programmes also *"encountered problems with language, background knowledge, translation, graphics and experiments"* (Minutes of meeting 18/03/98, Appendix 8).

The lack of applying principle five and consequently not identifying the environmental education needs of all the agents participating in the trail planning process during the demand analysis stage, impacted on the trail corridor stage at Tswaing when the tentative trail corridor was identified using all the information obtained during the previous stages. The result was that the direction in which the trail had to be walked had to be changed to unlock the trail environment in a logical order for the trailist. A further result was that shortened sections of the trail had to be identified for environmental education activities because the user groups from the formal education sector found the complete route too long for a satisfactory experience.

The lack of applying principle five in earlier stages of the planning process at Tswaing resulted in problems during the building stage of the trail facilities when the trail itself, overnight facilities, ablutions and reception were built. Local community involvement should have been established by getting local community people to build the trail path and upgrade the ablution facilities at the start of the trail. At Tswaing, the trail was completed before pilot groups, community members and environmental education specialists were invited to walk it. The result is that distances relevant for educational experiences were not considered which made it necessary to divide the original trail corridor into shorter sections. Shorter interlinking loops on the trail were not originally planned.

At Windy Brow, the fifth planning principle of including all the agents in the planning process was not fully applied. Trailists, teachers and communities were not included in determining suitable educational themes and sites. The reason was that the initial trail purpose was recreation and it only changed later to include environmental education. Furthermore, the Windy Brow trails are on a private farm and there is no large host community living on the farm except the farm workers. There could therefore not be extensive host community involvement.

As at Windy Brow the initial recreation and leisure purpose of the Northcliff trail was reassessed by the developer, Northcliff Rotary Club. The Club wanted to develop the trail as an ecotourism resource and environmental education facility. The expanded purpose for Northcliff stems from the fact that the Northcliff Ridge on which the trail is situated is public property with uncontrolled access from the surrounding urban area. The free access results in extreme cases of littering, vandalism and graffiti on the trail. Ecotourism and environmental education are seen as a way in which the rich geology and the natural site can be conserved but at the same time be used as an ecotourism and environmental education resource by the public. Community representation is achieved via the Rotary Club. Other agents involved in the assessment stage of the existing trail were the trail planner and an environmental educationist.

At Rustenburg, Windy Brow and Northcliff no needs analysis was done in the demand analysis stage for ecotourism and environmental education with the intended trailists. This means that no broad participation was facilitated during this stage and principles one and five were not applied. The result is that the focus of the trails is based on general trends rather than specific needs of the host communities and intended target audiences contextualised in a specific environment. At Windy Brow and Northcliff the developer wants the existing trails to become focused on the formal education sector as their target market and should have involved these agents at that stage in the re-planning of the trail. The lack of broad participation and ownership of all possible agents in the Northcliff

project did not take place and can be seen as a contributing factor to the fact that the Northcliff trail had not developed further during 1999. Montford (1991:31) is of the opinion that environmental education projects must lead to involvement otherwise empowerment cannot take place. At Windy Brow environmental education programmes were developed for schools based on the developer's own educational experience, the inputs from the researcher and Pretoria Technikon Nature Conservation students.

As at Tswaing and Rustenburg, the trail corridors at Windy Brow and Northcliff were already built. Inputs from the wider group of agents as suggested in principle five, were not obtained.

At Rustenburg, as is the case at Tswaing, the two trail corridors were already identified by the time the researcher was asked to provide guidance regarding environmental education aspects of the project. The two trails, each two days long, pass through two different environments namely the Summit area and the Baviaanskloof area (Appendix 5). As is the case with Tswaing, the two trail corridors were identified by the trail planner without inputs from local communities, environmental education specialists or intended users.

Both abstract and physical information were included in the development of the teacher's guide and the training of the tour guides at Tswaing through close consultation with the parents, teachers, school children and subject specialists[9] via regular forum meetings and training sessions. Their local inputs shaped both these elements of the project. The participation by different agents in the compilation of the guide proved valuable in that it guided the researcher where changes had to be made regarding walking distance, time spent on activities and providing activities more suitable for the different school phases. The programme development group found that *"The expectations of different phases are different"*

9. Subject specialists from Geography, Geology, History, Botany, Zoology, Environmental Education were used.

(Minutes of meeting 18/03/98, Appendix 8).

Determining the applicability of principle five to the different case studies reveals that a diverse group of agents can participate in the trail planning process. The presence of a variety of agents supports the importance and relevance of planning principle five in the framework that requires that the intended users be clearly defined in the context of their ecotourism and environmental education needs. What is noticeable is the prominent role the ideas of the developers play in determining the purpose and goals of the trails. These purposes and goals are formulated in the assessment stage of the trail by the trail owner and planner in most cases with little or no input from trailists and host communities.

A further result that stems from applying principle five is that in the formulation of a purpose, goals and objectives, it is important to state that ecotourism and environmental education approaches form the basis for the trail. Including ecotourism and environmental education as part of the purpose from the start helps to structure and focus the trail planning process. Adding this as an additional principle to the proposed framework would be appropriate.

With regard to principle five, it appears from the different case studies that a needs analysis is seldom undertaken for environmental education or ecotourism. Personal interpretations and generalisations are used to direct the trail planning process once the developer decides that the trail should facilitate an environmental education experience. The trail planner appears to determine the feasibility of the trail without consulting the other agents in the process. In practice there is very limited participation from the agents during the demand analysis stage of the trail planning phase of trails.

The case studies surveyed indicate that principle five, namely involving all agents in identifying environmental education themes and sites on a trail as a planning parameter, is important. This can assist in eliminating subjective interpretation of

the trail environment and prevent the exclusion of indigenous insights and understanding of environmental education.

Theoretically the community is recognised as an important agent during the assessment stage, but host community participation is absent during the demand analysis stage. The host community is not asked to express their understanding of, and needs for, ecotourism and environmental education. This is a typical trend in existing trail planning methods. Although trail owners, trail planners and other external role players, in theory at least, have the intention of involving all role players, they enter the planning process with predetermined purposes and ideas and preconceived needs for the agents.

The case studies show that decisions as to "whether to continue or not" (Assessment of proposal stage, Figure 5.1) is a subjective decision taken by only two of the agents in the planning process, namely the trail planner and the owner. Other agents remain passive and uninvolved in this phase of the trail planning process which contradicts true ecotourism development and environmental education.

6.3.6 Planning principle 6: Economic benefits

This principle states that **economic benefits must be provided to all the agents participating in ecotourism trail planning.**

Principle six is a principle that did not receive much attention in any of the case studies. The only trails that applied the principle to an extent are Tswaing and Rustenburg. At Tswaing and Rustenburg, economic benefits have been carried through to the host community via job creation initiatives. People from the host community were employed to peg and construct the trails. At Tswaing women from the host community were used to chop out the invader sickle bush (an invader plant which takes over the veld when overgrazing takes place). These

women were paid for their services and the Museum then sold the bundles of wood to the local community for firewood. Tour guides from the community were also trained and appointed. The guides are paid for their services.

Windy Brow, according to the owner, also used local labour to construct new buildings and do maintenance work on the trails.

In general, the case studies do not show that this principle was broadly applied. Except for attempting to create different job opportunities for the host community, little consideration was given to finances by the trail planner or trail owner.

6.3.7 Planning principle 7: Participatory and interdisciplinary experience

Planning principle seven states that **a participatory and interdisciplinary experience must be provided to all the agents participating in the ecotourism trail planning process. Agents must be provided with practical, first-hand experiences on the trail and opportunities to plan their learning experiences must be provided for them.**

This principle should be applied during the field reconnaissance stage of the implementation phase of the framework. The framework suggests that pilot groups from the different trailist groups be asked to walk the trail and give inputs. This would help to increase active agent participation.

At Tswaing, three trial groups of school children (grades 1 to 6, 7 to 9 and 10 to 12) went on the trail only once the complete trail was built. The trial groups of learners were assisted by teachers and trained tour guides. The result was that certain group dynamics could be observed in the different age groups of learners. Cultural and language differences also became significant influencing factors. Different environmental features meant different things to different groups. The different language groups had different names and uses for the same plant or

feature and had a variety of folk stories to tell about certain objects. After the piloting exercise these aspects were incorporated into the activities in the teacher's manual. This exercise helped to enrich the project by increasing its indigenous value. It also allowed prospective trailists to shape the educational experiences intended for the trail. Moreover, it enabled the tour guides that come from the areas surrounding Tswaing to point out that groups could represent up to nine different language groups. The tour guides suggested that individuals in the group be used as interpreters which also increases learner participation.

During the revised trail project at Tswaing, a further pilot run of the fifty seven structured activities in six programmes was done over four days. On day one the activities were piloted for the foundation phase (grades 1 to 3), day two the intermediate phase (grades 4 to 6), day three the senior phase (grades 7 to 9) and day four grades 10 to 12 that form part of the further education phase of the National Qualifications Framework. The learners used were invited from schools in the local area together with their teachers to ensure that the target community helped to shape the programme and a true learning process be established. Including the teachers was an attempt to have a familiar person in the group and to facilitate communication.

It took a while for both groups to be comfortable with the programme presenters because they were unfamiliar with their faces, methods and approaches. Once the learners settled down, the piloting exercise was experienced positively by the learners as well as the teachers. The result of the second pilot at Tswaing was that activity developers learned a great deal. Further planning principles emerged that had to be kept in mind when developing an environmental education programme for a specific community and environment.

Aspects that emerged included the following:

- The teachers and learners were not familiar with the environmental education concept and did not perceive it in the same way as the project developers.
- The background knowledge of learners was not at the level assumed to exist by the environmental education programme developers.
- Language and terminology differences existed.
- The mastery of specific skills required repetition.
- The environment was perceived mainly as biophysical by the learners.
- Time was a factor and the trail was too long.
- Cross-curricular activities were new to the teachers and learners. (Minutes of meeting 18/03/98, Appendix 8)

The first five aspects could have been resolved if they had been addressed in the assessment stage of the planning phase of the trail. The time factor could have been addressed if the intended users (learners and teachers) had been included in the trail corridor stage of the planning phase of the trail.

These aspects reiterate that it is necessary to do an intensive situation analysis of the community with which developers are planning to work. Projects need to be contextualised within the social, political, cultural, educational and economic environment in which the project takes place. Project developers can then design activities to accommodate above-mentioned aspects. At Tswaing, the redeveloped activities (examples in Appendix 13) have been compiled into a publication which is used by the environmental education officer at Tswaing to facilitate different school groups for environmental education on the walking trail.

At Rustenburg the brochure (example in Appendix 11) that was compiled was not piloted on the trail. This was the result of change of ownership and authorities, from Boputhatswana to North West Province. At Northcliff no piloting took place. At Windy Brow, programmes were presented by independent environmental

education presenters. These programmes were not piloted. The result was that programmes were not assessed and adapted before implementation. Considering that the same schools return every year for these programmes at Windy Brow, it can be assumed that they fulfil the needs of the trailists and are fulfilling the aims put forward by the teachers.

Principle seven can further be applied during the stage when the proposed trail is pegged out. Host community participation at this stage at Tswaing and Rustenburg was achieved by employing people from the area to put pegs in or markers on trees and bushes to mark the proposed trail corridor.

Principle seven that proposes participation during all stages was not applied during the marking and signposting stage of the trail at Tswaing. The developer had already made the decision on the material to be used and the type of information that should be on the information boards. These information boards were placed at specific information points predetermined by the developer. The lack of applying participatory planning procedures resulted in not obtaining inputs from the host community, environmental educationists and prospective trail users on the type of information they would like and whether they wanted it in formats such as information boards, brochures, on tapes and via guides. The result is that once the information boards were installed and the trail walked, it was noted that the direction markers on the boards were facing in the wrong direction. Walks a few months later on the trail showed that the boards were already deteriorating from sun exposure and had been vandalised by persons scratching on them with rocks. No indigenous knowledge was included on the boards.

The type of information contained on the boards at Tswaing did not apply principle seven that suggests participatory activities. The result is that factual information is written on the boards and no discovery or participation by the trail user is encouraged. When comparing this with the type of signage used on the Minnamurra Rainforest Boardwalk in Australia, it is information requiring a passive

response. On the Australian trail, short discovery questions such as *"How many different leaves can you spot on the ground around you?"* and sketches of possible leaves that can be found are placed on the sign boards along the trail to actively unlock the surrounding trail environment and move the trailist to discover elements of the environment[10].

At Tswaing, the application of principle seven during the construction phase was not achieved when identifying specific education sites. In an attempt to increase active participation by teachers the choice of sites was left to them. The teachers could choose activities from the teachers' manual that complied with their educational aims for the learners. The literature suggests that discontinuities in the environment be used to introduce learning experiences to the trail user. The result however has not been positive. The teachers that utilised Tswaing did not have the skills or experience to utilise the manual independently. This resulted in the application of a more structured approach. Sixteen special features on the trail were selected by environmental educationists and grouped together into 10 stations. These special features were further refined into 6 possible programmes that could be conducted along sections of the longer trail. Small teams worked on the development of these programmes keeping in mind the different phases and learning areas of the new outcomes based curriculum, adaptability and exchangeability, and the guides that had to be trained to facilitate the programmes. Local teachers participated in the development of the activities and indigenous knowledge was incorporated into the activities. Informal discussions were held with members of the community to obtain any additional information that might have been left out in the other resources such as articles and reports (Appendix 14).

Applying a more structured approach to the learning experience of the trailist can be contradictory to the principle of ecotourism and environmental education that

10. Personal visit by the researcher to the Minnamurra Rainforest Boardwalk trail during 1997.

asks for participatory planning and discovery experiences. However, as was pointed out this specific programme along the trail served a very specific audience namely the formal education sector around Tswaing.

Principle seven has also not been applied correctly at Rustenburg. The education points in the draft brochure were selected by the person compiling the brochure. Activities and questions that the trailist can complete are included in the brochure. Windy Brow uses persons from tertiary institutions[11] to develop environmental education activities on request for specific groups using the trail.

In determining the application of principle seven by the case studies it can be concluded that selective participation takes place by the different agents during different stages of the trail planning process. Continuity in participation from one stage to another is also lacking. Where case studies used pilot groups the exercise *"was a positive experience for all"* (Minutes of meeting 18/03/98, Appendix 8).

6.4 Generic planning issues

Determining the application of the seven proposed trail planning principles using case studies results in the identification of generic issues that should be considered by similar projects using an event such as ecotourism trails as the real domain. Generic issues can include the host community of the trail, the training of tour guides or educational officers and teachers, the development of specific stations and the compiling of educational materials.

11. Students from Pretoria Technikon and lecturers from Vista University are used.

6.4.1 The host community

The case studies support the idea of Knapp & Goodman (1983:53-54) that the host community should be involved in the trail planning process. It transpired that with regard to the host community which is an important agent in the actual domain of the trail event, it is necessary to:

- keep in mind the way in which the host community interprets the local and wider environment because of indigenous abstract information that is not known to the developer (Kerry, 1979:32);
- use the host community in as many aspects of the programme development as possible to ensure that they are participating in the development of the direction and context of the programme;
- utilise the host community to physically construct the buildings and structures and pay them for their service thus contributing to the well-being of the community, to tell stories on tape, be tour guides, simply to be involved;
- keep in mind the host community's indigenous background knowledge and their understanding of environmental education, in line with the constructivist approach which finds it important to recognise prior learning when trying to practise environmental education and exploring what they know (Robertson, 1994:23).
- keep in mind language and terminology differences of the host community and incorporate the different languages and terminologies into the programme which then provides a programme that incorporates the community's background.
- use persons from the host community to give live interpretations along the trail. This provides an opportunity for self expression and fulfilment. On the other hand it creates a high level of communication, an effective medium for the event message, easy monitoring of quality, a pleasant experience and an opportunity for

creative involvement with the visitor (Sharpe, 1976:179).

These aspects, that emerged from the case studies as important planning issues and are all pointed out as important to ecotourism and environmental education in the literature, thus support the problem of the study and are included in the proposed planning framework in Table 5.1. These issues also correspond to the supporting objectives of Goal five of the White Paper on Environmental Management (South Africa, 1998:36) in South Africa which brings the framework in line with local policy.

6.4.2 The trailist

Regarding the trailist as an agent of the actual domain of the trail event the case studies illustrate that it is important to:

- develop pre-trail activities for the trailists to familiarise themselves with the purpose of the programme and obtain information from the trailists that can influence the progress of the programme;
- develop post-trail activities for the trailists to help the developer and community to assess the success of the activity;
- keep in mind language and terminology differences of trailists and incorporate these differences into the programme thus providing a programme that incorporates the community background.

6.4.3 Training

The case studies illustrate that a further aspect contained in the proposed framework, namely providing training, is important. This facet of the trail planning process is necessary to help eliminate possible misunderstandings between the trail developer and the host community. Strategies that are important to apply are:

- To inform trail developers of the customs, traditions, fears, literacy of the local host community in which they are about to plan a trail;
- To train local tour guides and/or educational officers to help with facilitating programmes;
- To train local teachers in the fields of ecotourism and environmental education and on how to use the educational programmes on the trail, if the formal education sector is targeted specifically;
- To train staff using programmes to understand ecotourism and environmental education and the principles underlying it;
- To provide training in outcomes based education for teachers and tour guides or educational officers, when the formal education sector is targeted, because the participatory and discovery approaches to learning are part of environmental education and ecotourism;
- To provide sufficient background information to all the agents that are part of the trail planning process otherwise misconceptions and misunderstandings can occur; and
- To use community leaders to assist with the training process to localise and contextualise the programme.

6.4.4 Educational points and resource material

The Tswaing case study illustrates that if an ecotourism trail uses specific educational points to facilitate environmental education it is important that the following points be considered:

- Use people from the host community to do construction work as and where needed and to build tool boxes and equipment needed at the points, this helps the community to participate actively in the project and provides them with a needed income.

- Use those points that are relevant to the specific trail users' requests.
- Keep safety aspects in mind when working with school groups.
- Incorporate local indigenous information into activities, use local persons to tell stories thus incorporating local customs and traditions into the trail experience.
- Give the educational points locally accepted and understood names rather than numbers, it creates an indigenous and familiar environment.
- Focus only on a limited number of features, rather than on too many, otherwise the learning experience becomes too intense and the trailist loses interest.
- Provide facilities such as water, toilet points to facilitate the physical needs of the trailists using the programme.
- Establish recycling and waste programmes at the starting point of the trail.
- Use people from the host community to assist with compiling activities and in this way eliminate biased interpretations by users and developers and the loss of indigenous information to the area. This approach will help to incorporate local interpretation(s) and terminology into the activities.
- Allow for freedom of interpretation and flexibility when programmes are used by different groups and communities.

In conclusion, even though the case studies are set in unique environments and communities, they have the same trail planning procedures in common and so it is possible to evaluate the extent to which the proposed theoretical principles in the ecotourism trail planning framework can be applied. A criticism that can be made against the selected trails as case studies is that all the trails are planned by the same trail planner using the same trail planning process (Bewsher & Hugo, 1994). The strength of having the same trail planner ensures comparability and

makes the analyses of the case studies easier in that all the trails are planned using the same process and go through the same phases and stages. This helps to provide structure to the case study analyses bearing in mind that the Bewsher & Hugo (1994) trail development model is the only scientific trail planning model being used in South Africa.

It can, however, be argued that this makes it difficult to decide to what extent the principles that are suggested in the end be accommodated into other trail planning processes. Using different case studies reveals that the trail planning principles can be applied to different ecotourism trail developments in different communities. It is important to realise though that the trail planner has to understand the real domain of the community in which a trail event is planned. The trail planner also has to take cognisance of the actual domain of the trail event namely the participating agents in the trail development which include the trailist, trail owner, trail planner, host community, authority and the space/environment in which they operate (Bird, 1989:113). The implication of this is that the principles formulated should be seen as theoretical principles to be used and adapted to the context in which they are applied. What the proposed framework allows for is, the flexible application of the principles contained in the framework that can be adapted to specific trail environments and integrated agents where the trail is being implemented, in order to make it workable. Adopting this approach strengthens the argument of the research that a theoretical trail planning framework would provide guidance to all trail planners planning ecotourism trails to facilitate environmental education and should be a flexible and open system rather than a closed model.