

CHAPTER 5: TRAIL PLANNING PROCESSES

"It (planning) is a demanding process ... and without complete understanding and a disciplined approach, planning may fall far short of our expectations. The point is that planning is not an automatic thing. It may result only in wasted time, for difficulties abound in its implementation" (Knezevich, 1973:35).

The statement above applies to ecotourism trail planning as well, especially when it aims at facilitating environmental education. Trail planning is a complex process and involves not only the physical construction of the trail, as most current trail planning processes discussed in this chapter maintain. Although some of the processes discussed do consider the specific purposes of a trail, such as education, as part of the planning process, none proceeds further to say how education should be incorporated into the complete trail planning process. In recognising the environmental education responsibility of ecotourism the time has come for ecotourism trail planning processes to incorporate environmental education principles into the planning process. This can primarily be done by using the trail planning principles in Table 4.2 that apply to both ecotourism and environmental education.

The principles postulated in Table 4.2 and the environmental education needs of the agents form the theoretical framework against which current trail planning processes will be analysed and compared. Similarities and differences between existing trail planning processes are pointed out. A theoretical but flexible ecotourism trail planning framework that will facilitate environmental education is presented. The framework classifies the planning principles postulated in Table 4.2 into four trail planning phases and indicates the agents involved in the planning. The classification is an attempt to ensure consistency and coherence but, yet, retain a flexible procedural system. According to Harvey (1969:327) a framework can be altered to meet the needs of a given situation and environment. The trail planning framework postulated in this research should therefore, not be

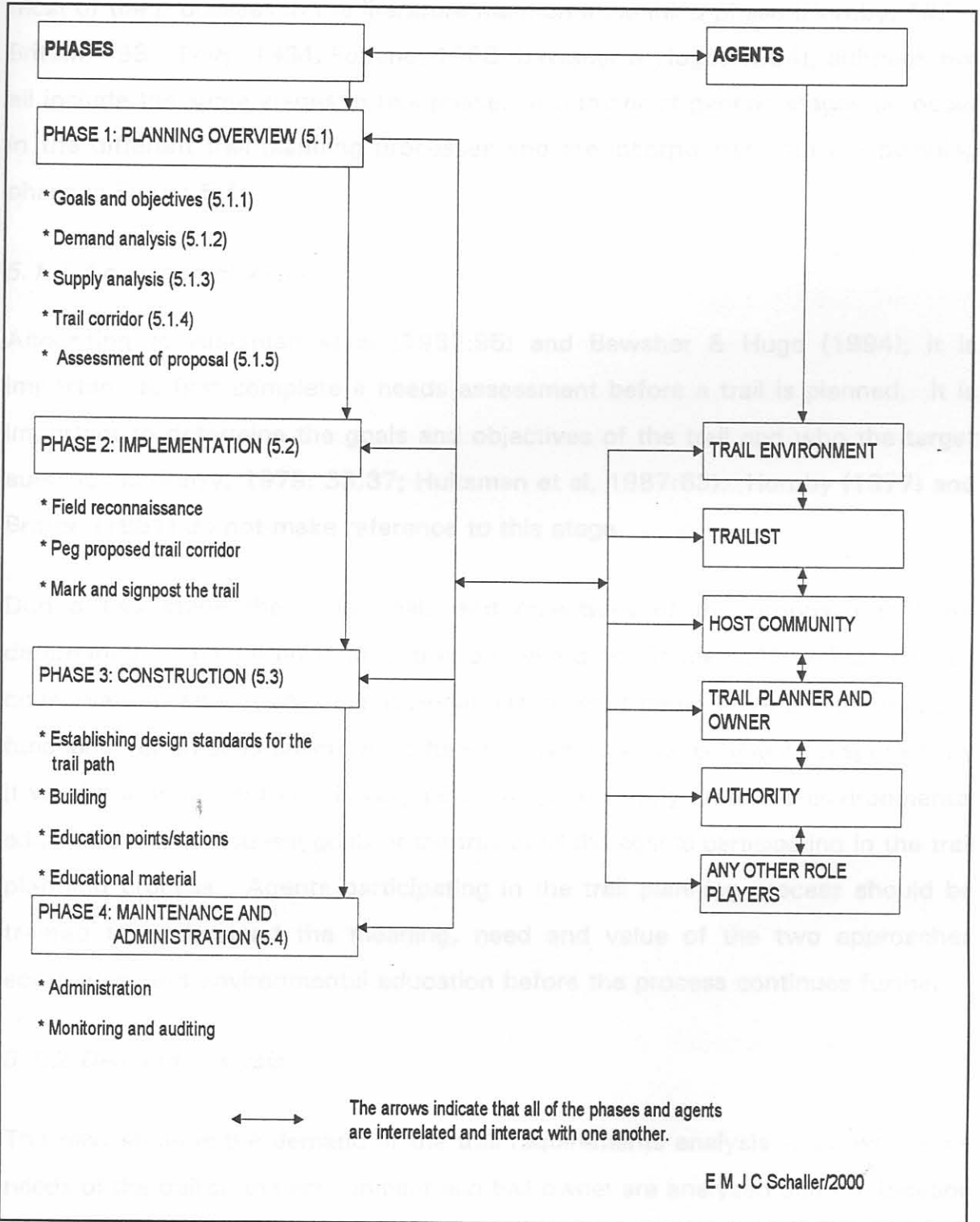
seen as an absolute complete framework to be followed in a rigid way.

After an extensive literature search for ecotourism trail planning processes not one specifically applicable to ecotourism trails and environmental education was found. Only seven trail planning processes were found during the literature study. Thus, these seven trail planning processes were considered, namely; Hornby (1977), Kerry (1979), Britton (1981), Levy (1984), Hultsman et al (1987), Fouche (1988), Bewsher & Hugo (1994). The trail planning processes of Hornby, Britton, Levy, Fouche, Bewsher & Hugo are South African while Kerry's is from England and Hultsman et al are from the United States.

These seven trail planning processes all consider only development within nature and no reference is made of criteria for a trail designed in built environments like a museum or a city. This is a serious shortcoming of current trail planning processes when applied to ecotourism trails which facilitate environmental education, because these two approaches adopt a much wider understanding of the environment than just nature, as is presented in Figure 3.4. After a theoretical analysis of the seven trail planning processes in the literature, it is deduced that the trail planning process can be structured and organised into four main trail planning phases. Figure 5.1 illustrates these phases, namely; the planning, implementation, construction and maintenance phases. Each of these phases again has a number of stages under it. Of the seven trail planning processes reviewed, the comprehensive trail development model of Bewsher & Hugo (1994) (Appendix 2) contains all the basic aspects of trail planning and is adapted as the general framework into which the other six processes can be organised. Bewsher & Hugo's (1994) model is also South African and the case studies selected for the research are thus South African.

The trail planning process deduced from the literature is summarised in Figure 5.1 and will form the structure and order in which the trail planning process is discussed.

FIGURE 5.1 THE TRAIL PLANNING PROCESS



5.1 Phase 1: Planning overview

Most of the processes in the literature mention a planning phase (Hornby, 1977; Britton, 1981; Levy, 1984; Fouche, 1988; Bewsher & Hugo, 1994), although not all include the same stages in this phase. A number of generic stages do occur in the different trail planning processes and are incorporated into the planning phase in Figure 5.1.

5.1.1 Goals and objectives

According to Hultsman et al (1987:95) and Bewsher & Hugo (1994), it is important to first complete a needs assessment before a trail is planned. It is important to determine the goals and objectives of the trail and who the target audience is (Kerry, 1979: 33,37; Hultsman et al, 1987:63). Hornby (1977) and Britton (1981) do not make reference to this stage.

During this stage the main goals and objectives of the proposed trail are determined. The purpose of a trail according to Goodey (1974:2.2) can be conservation, education, or enjoyment/leisure or it could have a multi-purpose function. For an ecotourism trail to fulfil its environmental education responsibility it would be important at this very initial stage to clearly state the environmental education and ecotourism goals of the trail to all the agents participating in the trail planning process. Agents participating in the trail planning process should be trained to understand the meaning, need and value of the two approaches ecotourism and environmental education before the process continues further.

5.1.2 Demand analysis

The next stage is the **demand or the trail requirements analysis** stage where the needs of the trailist, the environment and trail owner are analysed and the location of the trail developed (Britton, 1981:2-5). The Bewsher & Hugo (1994) model refers to *ecological, emotional and physical* requirements while Britton (1981:3) refers to this stage in the planning phase of the trail as the *feasibility study*.

Factors like practicality, expected use, development potential and potential environmental impact are investigated. This demand analysis should include conservation and sustainability demands which are inherent to the empirical domain of this research, namely, ecotourism and environmental education.

Ecological/environmental considerations can include type of soil surface, vegetation, gradient, path surface, soil properties, erosion resistance, landforms, climate, geology, soil, water, plants, animals, current and predicted land-use patterns (Britton, 1981:8-9; Levy, 1984; Wahl & Hugo, 1995:2,3). The environmental education and ecotourism goals set in the previous stage must be linked closely during this stage to the environmental education and ecotourism needs of the different agents. Gustke & Hodgson (1980:53) point out that aesthetic enjoyment on a trail enhances the education rate and proposes that predictability of experiences and education points should be low. An element of surprise must be present.

The environmental education needs of all the agents must be identified because the trail environment is seen in a holistic manner. It is necessary to establish who the intended trailists will be because the environmental education needs can be different for children and adults (Hultsman et al; 1987:93,94). For education purposes the needs will be different for the formal, informal and non-formal education sector (Chapter 4). This study focuses only on the formal education sector.

None of the processes in the surveyed literature refer to financial requirements and considerations as part of this feasibility stage of the trail planning process. Financial demands, benefits and costs to the trail owner and host community are important aspects to be considered for ecotourism development as well as for community improvement and upliftment which are responsibilities of ecotourism and environmental education.

During this phase the trail planner should also look at possible causes for trail deterioration so that it can be eliminated during the planning of a new trail (Britton, 1981:6-7). This corresponds to the carrying capacity analysis referred to by Levy (1984). Carrying capacity is defined by Levy (1984:2.3) as "*the maximum number of trail users allowed per unit trail length, per unit time, without deteriorating the environment or interfering with the user's optimal recreational experience*". Macdonald et al (1998:45) defines carrying capacity in a similar way. They define it as "*The number of recreationists that can be accommodated in a specific area based on ecological, physical, facility and/or social factors*". Both the definitions consider the trail environment as a resource as well as the trailist as the human element. The resource element that these definitions include emphasises the conservation principle of ecotourism and environmental education. The human element emphasises the enjoyable and enlightening experience that an ecotourism trail wants to facilitate. Based on past experiences Levy (1984:2.3) suggests twenty trailists per kilometre of nature trail to facilitate a successful enlightening experience.

When the emotional needs of the trailist are considered, design psychology aspects like the *entrance zone* of the trail, *eliminating contact* with other users and *visual variety* can be investigated (Hultsman et al, 1987:79-81). These aspects are important to enhance the trailist's experiences, be inviting and make them feel comfortable in the trail environment.

Involving all the agents from the actual domain that will participate in the real domain of the trail event is important. None of the trail development processes surveyed make reference to host community involvement during this demand analysis phase. It is an important criteria for ecotourism trails that the needs and expectations of the community be established during the planning phase if the trails want to facilitate environmental education. The community's environmental literacy level can be determined by assessing aspects such as: the people's awareness of the natural and built environment of which they are part, their

awareness of the natural resources they are directly or indirectly dependent on, their conviction of their individual responsibilities for the health of the land they live on, their stimulations into positive environmental action in their daily life and their concern with developing or maintaining a quality of life acceptable to the majority of the community (Clacherty, 1992:26). Depending on their level of environmental literacy and environmental awareness the host community's specific role in the trail planning process can be marked out. Indigenous knowledge can be identified and documented during this stage as well.

5.1.3 Supply analysis

During the supply analysis stage the *collection of ad hoc data and information*, takes place. Information is gathered from host communities, landowners, interest groups, researchers and historians regarding the possible trail environment (Fouche, 1988; Bewsher & Hugo, 1994). Data can be collected regarding aspects such as existing buildings, access roads, places for exit, paths and other trails in the area, places of interest, swimming areas and places with a scenic view.

Kerry (1979:32,33) terms this the discovery stage when local geographical knowledge and professional judgement are used to identify some possible trail sites. This corresponds with Bewsher & Hugo's (1994) planning stage. The research and initial writing stage of Kerry's (1979) model would be part of this stage during which the environment is surveyed and a possible trail guide or sets of study notes are drafted. Kerry (1979:32) regards the input of local experts as important during this stage. This utilisation of indigenous knowledge is an important ecotourism and environmental education principle. It is during this stage that seasonal variations should be considered and documented and the different possible experiences recorded that can be unlocked for the trailist during different seasons. It is important to take seasonal aspects into account because seasons can affect the vegetation and sighting of specific animals and birds.

During the supply analysis stage possible environmental education teaching and learning points are identified along the proposed trail corridor. The quality of possible historical, cultural and natural features must be evaluated. This process necessitates that the trail be developed with the assistance of subject specialists such as geologists, botanists, environmental educators, ecotourists and zoologists, trail planners and host communities. The expertise of these persons can be used to identify features along the trail that can be interpreted and incorporated into the physical layout of the trail corridor. In identifying these features consideration must be given to the fact that although an ecotourism trail allows for physical exercise it should avoid excessive physical challenge if its primary function is education and at the same time aim at providing the trailist with an enjoyable experience (Hultsman et al, 1987:93-94).

Bewsher & Hugo (1994) approach this discovery and research stage by *identifying parameters*. This involves the evaluation of the terrain on which the proposed trail is going to be developed. Primary and secondary parameters to establish the limitations of the proposed trail site are identified. Vegetation and geomorphology serve as primary parameters and water points, roads, gradient and scope of vision can be secondary parameters. A value system is used to determine the suitability and importance of these parameters. The value of each terrain is expressed as a percentage suitability to identify terrains with high and low suitability values for trailing. No educational parameters and associated value systems are mentioned for the model but once identified could be included in this stage. After identifying the parameters the *determination of ecological terrain* is done by superimposing the primary and secondary parameters from the previous stage on one another using the overlay method. Potentially ecological better or less suitable terrains for a trail can then be identified.

Also part of the supply analysis stage is the *identification of sensitive terrains*. Sensitive areas can include endangered species, steep areas, sensitive vegetation and places of archaeological interest that have the potential to be damaged and

disturbed by exposing them to people. Features that need special attention because of the value placed on them by the host community can also be included as sensitive areas (Macdonald et al, 1998:16). An ecotourism trail that facilitates environmental education needs to consider other sensitive aspects such as dangerous areas like the unexpected appearance of cliffs and poisonous plants that are not safe for the trailists and can hamper the enlightening trail experience.

5.1.4 Trail corridor

After the supply analysis stage the *trail corridor* is determined, or as referred to by Hornby (1977:13-16), *route selection and trail zoning* is done. A base map is drawn using all the information from the previous stages. A tentative trail corridor is determined. Bewsher & Hugo (1994) grade the trail corridor according to its level of difficulty using a computer software programme called "Stapgrad".

Britton (1981:10-12) uses the conventional overlay method to determine the *trail corridor* which allows the trail planner to identify the most suitable area through which the trail should go. During the zoning phase of trail planning it is important to consider the *function or functions of the trail* (that are determined in the earlier stages of the planning phase), *consider how the trail relates to other trails in the area and consider how the trail relates to other facilities in the area* (Hultsman et al, 1987:77-79). During this phase the trail planner looks at functions and facilities that are compatible with one another.

In this regard Levy (1984:2.1.1) makes special reference to specific requirements regarding route selection for educational trails. Educational trails should start at the visitors centre, museum, camp site or entrance gate and should, in a nature area, pass educational features like plants, geomorphological structures, water and historical sites. Some trails can have a single thematic approach and focus on one of these features while others can be multi-thematic and focus on a number of these features.

It is suggested that an educational trail should go through a diversity of areas and can be either a circular, single directional or two directional trail. Gustke & Hodgson (1980:53,56) suggests that educational sites be placed after discontinuities in the trail environment when there are changes in the environment and the trailists are exposed to new sensory experiences. These points of discontinuity are useful in the presentation of important environmental concepts and principles. The circular trail (one-way loop) that starts and ends at the same point is better suited for educational purposes. An alternative to the circular trail is to have a main circular trail that focuses on a theme and describes a variety of features or identifies specimens of plants and animals. Side trips on spur trails that loop off the main trail can focus on one aspect of a theme like tree names, plant ecology, flower and herb identification, soil and water relations, wildlife habitats, geology, forestry practices, a plant nursery or local history (Levy, 1984:2.1.1; Knudson et al, 2000:4). These spur trails investigate specific themes in-depth. Levy (1984:2.1.1) suggests a walking time of one to one and half hours (0,5 to 1,5 km) for educational trails. Spurs off the main trail that can be shorter or longer in distance and duration can be added to the main trail.

It is important at this stage to decide on which of the above formats the trail corridor will be based. The trail can also be planned incorporating a combination of the following three options. It can focus on a single theme or topic like vegetation or geology and expose these sequentially so that it makes sense to the trailist. The trail can also adopt a multi-thematic approach where a number of related topics such as vegetation, fauna and flora and geology are investigated. A further format the trail can have is, as mentioned by Levy (1984) and Knudson et al (2000), a main trail with either a single or multi-thematic approach with short spur trails focussing on specific aspects of the theme or themes of the main trail.

5.1.5 Assessment of proposal

Bewsher & Hugo (1994) build in an **assessment stage** between the planning phase and implementation phase. This is the stage when the ecotourism trail planner considers whether the planned trail looks right and decides whether to continue with the rest of the trail planning phases or not. It is not clear what basis is used for the assessment because during the previous stages only the suitability of the trail is established and a possible corridor identified. Financial implications like cost analysis of the planning phase of the trail, maintenance cost and income projections are not mentioned during the assessment phase. Finance is an important aspect if the trail is an ecotourism development which aims at financial benefits for the host community, trail planner and trail owner.

Environmental impact studies should be done. Furthermore the proposed trail should be evaluated by possible trailists, the host community, subject specialists and any other agents participating in the trail planning process. At this stage environmental educationists should decide whether the proposed trail corridor contains sufficient environmental education possibilities or not. An important aspect that should also be assessed is the direction in which the trail goes because for environmental education purposes it is important that a theme or landscape is revealed to the trailist in the correct order. The trail should also reveal education points on a slight down slope to give the trailist an opportunity to look around because when walking uphill the trailist tends to look down. Other aspects that should be assessed for environmental education purposes are the location of overnight huts for viewing stars, the direction of the sun for taking photographs and visibility of Bushman drawings. Sighting of birds and animals is best in the early morning and late afternoon which, if included in an environmental education programme, will influence departure times for environmental education groups.

5.2 Phase 2: Implementation

The implementation phase takes the information and maps of *the provisional trail within the trail corridor* that was identified in the planning phase (Britton, 1981:21-22) and investigates it in the field. The trail is pegged out and assessed so that the final trail can be marked. Only after this phase is completed can the construction of the route begin.

According to Bewsher & Hugo's model (1994) trail construction, compiling brochures and maps, and administration are all simultaneously developed during this phase. According to this model the trail can then be opened. It is noticeable that there are no trial hikes before the final construction or opening. Kerry's (1979:32,33) laying out stage forms part of this implementation stage. This is when guide posts or information boards are sited. The wardening stage Kerry (1979) mentions follows hereafter. During the wardening stage the study area is walked over regularly, changes noted and accounted for. Intended target groups and agents should be part of this stage. After this follows the trial stage when written material is given to pilot groups of trailists to assess the accuracy and suitability of the content. The written material and notes can then be improved and corrected for the final documents.

The model of Bewsher & Hugo (1994) does not make a distinction between different types of brochures for different seasons or trailists. This is an important facet of an ecotourism trail that wants to facilitate environmental education. A trail that is not aimed at one specific trailist group should state it clearly and provide for a diverse group of trailists and their specific environmental education needs. This has significant implications for the development of brochures because it will have to cater for the broader user group. Where there is only one target trailist group the brochures should be developed accordingly. Targeting a number of trailist groups also has implications for the implementation and administration of the trail because control will have to be exercised over who will use the trail,

where and when. Decisions must be taken whether it will be used at specific times by certain groups or whether different groups will use different parts of the trail or walk in different directions.

5.3 Phase 3: Construction

Part of the construction phase is *establishing design standards* according to which the final trail will be constructed. These construction standards for trails are well documented (Hornby, 1977:17-28; Britton, 1981:13-20; Levy, 1984:3.2-3.12; Hultsman et al, 1987:81-85; Fouche, 1988:5-39). Generic standards for the physical construction of trails are clearly stated in these documents namely; gradient, slope of the path, drainage, switchbacks, tread width, tread surface, crossings (river, fences, roads, etc.), back slope or embankment, overnight huts, clearing height of path, trail entrance, trail exit, erosion, signing placement, trail markers, barriers (fences) and retaining walls. According to Hornby (1977:29-31) other aspects such as car parks, ablution blocks and interpretive centres must also be investigated during this phase.

Currently standards given for trail construction do not make specific reference to environmental education trails. Some trail planning guides such as Levy (1984) and Hultsman et al (1987) do give standards for nature trails which can be applied to education trails because of their suitability for education purposes. Britton (1981) and Hornby (1977) do not give specific guidance for nature trails. Levy (1984:3.2.1) gives guiding standards regarding the width of nature trails that can be used for educational purposes which relates closely with the design specifications Hultsman et al (1987:84) give for interpretive/educational trails. A guided trail should be 2 to 2.5 metres wide and longer trails about 1.5 metres. Hultsman et al (1987) specifies 1,83m (6') for a single lane and 2,44m (8') for a double lane, a clearing height of 2,44m (8 feet) and tread width of between 0,6m (2') and 1,83m (6'). Maximum gradient of a nature trail used for interpretation purposes should be less than 10% so that trailists do not become too exhausted

and miss the environmental education experience (Knudson et al, 2000:3).

Levy (1984:3.5.2) has further suggestions regarding the tread surface of the nature trail. It is preferable to use material like wood chips, fine shale and gravel. Hultsman et al (1987) agree with this suggestion but propose that gravel not be used because it makes a noise which can interfere with and detract from the trail experience. In wet or sensitive areas a boardwalk can be constructed and slippery areas can be covered with netting or a light coat of tar and fine chips. The boardwalk should follow gentle curves so that it is compatible with natural features. This relates to the protection and conservation principle of ecotourism and environmental education and preventative maintenance measures should be built into the trail construction to minimise maintenance after the trail is built and used.

Host communities can participate in different trail construction aspects. This creates job opportunities for them and provides an income. Participating in this way can stimulate their interest in the trail project and contribute to capacity building. Host community involvement is an aim of both ecotourism and environmental education. The host community can also assist with the naming and design of information signs.

Another aspect that is important during construction is the diversity of environments. The trail should go through different environments. The length of the trail should also be considered. On a longer type of trail like a hiking trail different distances can be covered on different days. A difficult and long section should be followed by a shorter and easier section (Fouche, 1988:2-5).

Hornby (1977) and Britton (1981) make no detailed reference to the interpretive material that accompanies ecotourism trails that facilitate environmental education such as maps, brochures, videos and audio cassettes. Levy (1984:3.11) mentions that marked stations along the trail must be linked to descriptions in an

accompanying leaflet or guidebook, written descriptions and illustrations in a trail guide or booklet, wayside (trailside) panels with descriptive text and sound guides and message repeaters. Trail booklets can be general, seasonal or aimed at different age levels. What is noticeable about the type of interpretive material described by Levy (1984) is that it is informative and descriptive. This format of educational material provides environmental education in and about the trail environment. To extend this experience further and educate the trailist for the environment, material should be developed from a discovery and participatory approach which can give the trailists the opportunity to discover the information themselves and relate it to their own environment at their home destination. This can motivate the trailist to start considering the relevance and importance of different environments and start caring for the environment. It can be debated whether the trailist in a non-formal education setting will voluntarily do this.

Knudson et al (2000:2) further suggest that stations and interpretive points must not be placed at a walking link between two busy places. The pathway must not be blocked and signs should be placed out of reach of the casual walker. Such placement implies that a larger typeface should be used. A technique that can be used to mark objects corresponding to signs and text in the brochure is to place a white paint spot on the object referred to in the text.

An aspect that is lacking in these trail planning processes is criteria that should be looked at when the overnight huts are designed and placed on ecotourism trails. The processes also do not mention where stations along the trail should be placed or where an educational experience should be accommodated. Gustke & Hodgson (1980:62) suggest that these educational points should be placed immediately after a discontinuity in the environment. Knudson et al (2000:4) suggest that on a nature trail used for interpretation these education points should be scattered along the trail in such a way that they provide effective and connected interpretation. Knudson et al (2000) propose a 15 to 60m (50 to 200 foot) interval between points and suggest 10 to 20 principal interpretive stops for a

0.8 km (0.5 mile) trail loop.

5.4 Phase 4: Maintenance and administration

Following the construction phase is the maintenance and administration phase. This final phase of trail planning includes aspects like *maintenance, patrolling, reservations, fire control and general management of the trail* according to Hornby (1977:32-33). It also includes other aspects such as enquiries, reservations, fees, cancellations, arrival, feedback from trailists and visitor database.

Levy (1984:4.1) identifies under the maintenance phase aspects like the *condition of the trail, alleviating of problem areas and the utilising of trail guards*. Hultsman et al (1987:85-87) include in this phase *the naming of the trail, signing the trail and developing trail brochures*. However, these are seen as part of the construction phase by the other authors and are placed there in this study.

Kerry's (1979) last four stages can be grouped under this maintenance and administration phase. The four phases are the improvement and correction of material, dealing with the planners to make recommendations and suggestions for changes and improvements, keeping of records so that annual reports can be produced and finally looking ahead, planning for future changes and anticipating possible effects of events on the trail.

Except for Kerry (1979), the trail planning processes surveyed exclude from the maintenance phase the evaluation of the trail by the trailists, trail planner and owner, host community and authority. These are aspects that are important if an ecotourism trail wants to successfully fulfil its lifelong environmental education purpose because needs can change over time and should be catered for.

Bewsher and Hugo's (1994) monitoring and auditing stage is part of this final stage of the trail development. In their model, during this stage the trail is

checked through internal and external environmental audits. Monitoring in the context of environmental education implies that the trail, as a complete unit and the educational stations along the trail as part of the real domain, be evaluated regularly. The accompanying maps, brochures and worksheets should also be evaluated.

The evaluation of the trail as real domain should be done by as many of the agents that are part of the actual domain and should include the trailist, trail owner, trail planner, host community, authority and any other local role players. Monitoring and auditing is important if the trail wants to sustain its ecotourism responsibility and facilitate environmental education. In this way it can be determined whether the trail is still fulfilling the original purpose as set out in the planning phase or whether the purpose has to be redefined. Possible evaluators identified by Kerry (1979:33,37) are representatives from the local authority's planning and education staff, the main trail consumer groups, volunteers from local wildlife organisations and communities, and experienced professionals. Together with report forms observation can be used to determine the trail planner, trail owner, administrator and trailist's level of satisfaction and their changed needs.

The essential purpose of this phase in the framework is to determine to what extent the objective of the implemented planning procedure has been achieved, namely to apply an ecotourism approach to trail planning and facilitate environmental education. During this phase aspects such as trail deterioration and its general condition, the user pattern, the trail user satisfaction and the host community satisfaction must be investigated. Such a process might seem simple but it is important to realise that the initial objectives involved in the planning framework might have changed as the trail has been used over time. It is therefore important that all the role players remain active participants in the framework to enable continuous evaluation of the process from the different perspectives. That is why the framework has to be open and flexible in order to accommodate any change.

5.5 Proposed ecotourism trail planning framework to facilitate environmental education

The proposed ecotourism trail planning framework put forward in Table 5.1 tries to bring together environmental systems from the real domain and social systems from the actual domain into a single conceptual structure in the empirical domain.

The framework in Table 5.1 takes the deduced trail planning process from the theory described in sections 5.1 to 5.4 and places the deduced ecotourism planning principles in Table 4.2 in it. The principles from Table 4.2 are placed under the four different trail planning phases suggested in Figure 5.1 namely planning, implementation, construction, and maintenance. The principles can be placed in more than one phase for more than one of the agents. The reason for such multiple placements is that the framework functions as a dynamic whole because of the interrelatedness, interaction and feedback that exists between phases, agents and environments that are part of such a complex trail planning framework.

Table 5.1 in effect brings together four key features. Firstly, it brings together the trail environment, trailists and the plant and animal world within a single framework thus being monistic (Harvey, 1969:468). Secondly, the framework is structured in a more or less orderly, rational and comprehensible way in the four planning phases. These four phases do not operate in isolation from one another but rather interact. Thirdly, the framework is functional in that there is a continuous flow of processes which involves people. Lastly, it is an open system which allows for change and flexibility, true to the realism philosophy in which this research is placed. The trail planning framework tries to remain realistic and pragmatic within the context in which it is used and must work. The framework highlights important trail planning principles that should be considered at specific points in the planning process raising an awareness rather than providing answers to trail planning questions.

The planning principles in Table 5.1 can be used as a checklist when engaging in the development of ecotourism trails that facilitate environmental education. How well a trail that concerns itself with ecotourism and environmental education is planned will depend on how well the following issues are understood: the specific host community and trailist that will be affected, the trail environment and the proposed environmental education activities affecting the trailist and host community. The phases and principles outlined in Table 5.1 should help trail planners to become familiar with these issues.

Every trail project is unique and not all the detailed steps and principles in Table 5.1 will be relevant to each project. It is important to adapt the list to each situation.

TABLE 5.1 ECOTOURISM TRAIL PLANNING FRAMEWORK FACILITATING ENVIRONMENTAL EDUCATION

PHASE 1: PLANNING (0-6 MONTHS)

Principle	Principle	Principle
1. Consider the needs of the host community and the trailist.	2. Identify the environmental and social issues that will be affected by the trail.	3. Identify the environmental and social issues that will be affected by the trail.
4. Consider the needs of the host community and the trailist.	5. Consider the needs of the host community and the trailist.	6. Consider the needs of the host community and the trailist.
7. Consider the needs of the host community and the trailist.	8. Consider the needs of the host community and the trailist.	9. Consider the needs of the host community and the trailist.
10. Consider the needs of the host community and the trailist.	11. Consider the needs of the host community and the trailist.	12. Consider the needs of the host community and the trailist.

TABLE 5.1 ECOTOURISM TRAIL PLANNING FRAMEWORK FACILITATING ENVIRONMENTAL EDUCATION
PHASE 1: PLANNING OVERVIEW

STAGES	TRAILIST	TRAIL PLANNER AND OWNER	HOST COMMUNITY	TRAIL ENVIRONMENT	AUTHORITY
* Goal & objectives	* Inform the trailist of the goal of the trail namely ecotourism and environmental education	* Develop the goal of the trail within the realm of ecotourism and environmental education * Educate and train developers in what ecotourism and environmental education entail, using workshops. Emphasise that the environment should be utilised and developed responsibly and be sustainable	* Inform the host community that the goal of the trail is environmental education and ecotourism. * Educate and train the community in what ecotourism and environmental education are using workshops. Develop their environmental knowledge, skills, values and awareness * Create realistic expectations	* Assess the broad trail environment when developing goals and objectives for the trail	* Determine how the goal of the trail fits in with existing plans and policies for the area. Identify complementary aspects and possible clashes
* The target audience	* Create a profile of the main kind of trailists who are likely to use the trail * Consider whether the trail will be used by one type of trailist or more	* Identify subject specialists such as botanists, historians and geologists to participate in the holistic planning of the trail	* Identify who from the host community wants to participate in the planning process (community leaders, non-governmental organisations, businessmen, teachers)	* Identify environmental aspects that can be considered in the trail planning process	* Identify departments or persons within the local and provincial authorities who can participate in the project
DEMAND ANALYSIS: * Needs analysis	* Determine the ecotourism and environmental education needs (ecological, emotional, physical) of the trailists	* Find out the trail owners ecotourism and environmental education needs e.g. financial and conservation	* Determine the ecotourism and environmental education needs of the host communities. Obtain their inputs and ideas via forums, meetings and workshops.	* Identify sensitive vegetation areas, political and social issues	* Find out what the needs of the authority are for the area in which the trail is planned
* Feasibility study/scoping	* Consider the emotional, physical and social impact of the trail on the trailist * Determine if the presence of the trailist will have a low impact on the area (carrying capacity) * Determine the number of trailists that can be accommodated on a trail at a specific time and over a period of time	* Determine the development potential, cost and financial benefits of the trail for the trail owner	* Consider the social, cultural and financial scoping of the trail on the community. It must respect their way of life, social values, systems and privacy * Determine if the trail will enhance the host community's quality of life and ensure stability	* Assess the development potential of the environment from an ecotourism and environmental education perspective * Evaluate the environmental impact of the trail. It must have a low impact * Assess whether the trail is sustainable * Identify causes of possible trail deterioration	* Find out whether the authority considers the trail to be feasible

STAGES	TRAILIST	TRAIL PLANNER AND OWNER	HOST COMMUNITY	TRAIL ENVIRONMENT	AUTHORITY
SUPPLY ANALYSIS: Planning parameters	<ul style="list-style-type: none"> * Identify activities that will provide an enjoyable participatory experience to the trailist * Determine the difficulty rating of the trail for trailists 	<ul style="list-style-type: none"> * Gather and document information about the trail site from landowners, researchers, historians and other interest groups 	<ul style="list-style-type: none"> * Let the host community identify education points that can be used on the trail (cultural, historical, tribal, etc.), acknowledge and incorporate their indigenous knowledge and environment 	<ul style="list-style-type: none"> * Assess the primary and secondary parameters of the trail * Identify seasonal features * Evaluate the trail terrain and identify environmental discontinuities, diversities and educational points (historical, cultural, natural) * Identify sensitive terrain such as cliffs, wetlands, dangerous areas, steep slopes 	<ul style="list-style-type: none"> * Obtain inputs on aspects the authorities would like to include in the planning parameters
TRAIL CORRIDOR	<ul style="list-style-type: none"> * Identify environmental education activities that will enlighten the trailist, develop their skills, values and attitudes and can be facilitated along the trail * Determine the suitability of the trail length for trailists 	<ul style="list-style-type: none"> * Establish the compatibility of the trail with other trails, facilities and activities in the same area * Draw a map of the trail using the information gathered during the previous stages * Decide whether the trail will concentrate on a single theme or more and identify them * Decide whether it is a circular, open-ended or a circle with spur trails * Identify a starting point of the trail where pre- and post-activities can be presented 	<ul style="list-style-type: none"> * Obtain the community's input, ideas and indigenous knowledge on the proposed trail corridor 	<ul style="list-style-type: none"> * Encourage the conservation, protection and respect of the environment 	<ul style="list-style-type: none"> * Obtain inputs from authorities on the proposed trail corridor
ASSESSMENT OF PROPOSAL	<ul style="list-style-type: none"> * Decide whether the proposed trail corridor can facilitate an ecotourism and environmental education experience 	<ul style="list-style-type: none"> * Determine the financial viability and cost of the proposed trail * Determine what facilities are available on the trail * Decide whether to continue with the trail development 	<ul style="list-style-type: none"> * Decide whether the host community will benefit from the trail development 	<ul style="list-style-type: none"> * Determine the environmental impact of the trail and whether it will conserve, protect and respect the environment 	<ul style="list-style-type: none"> * Determine whether the authority supports the proposed trail

PHASE 2: IMPLEMENTATION

STAGES	TRAILIST	TRAIL PLANNER AND OWNER	HOST COMMUNITY	TRAIL ENVIRONMENT	AUTHORITY
Field reconnaissance	<ul style="list-style-type: none"> * Obtain inputs from trailists by letting them walk along the provisional trail corridor and record their comments and suggestions (pilot the trail) 	<ul style="list-style-type: none"> * Survey the provisional trail with all the participating agents * Document changes that have to be made after the agents have given their inputs 	<ul style="list-style-type: none"> * Obtain the community's inputs on the path by letting them walk along the provisional trail and give their inputs. Incorporate their indigenous knowledge where possible * Survey the area with them and identify restricted, sensitive and private areas 	<ul style="list-style-type: none"> * Survey the environment for possible education aspects that could have been missed in the planning phase and add points of interest, educational value and wilderness areas * Identify problem areas such as slippery, steep areas or issues related to heat and distance that could have been missed in the planning phase 	<ul style="list-style-type: none"> * Obtain inputs from authorities when taken on the provisional trail
Peg proposed trail corridor		<ul style="list-style-type: none"> * Trail planner pegs/mark the proposed trail path 	<ul style="list-style-type: none"> * Involve community members in pegging the trail path and provide them with economic incentives 	<ul style="list-style-type: none"> * Take note when pegging the trail path that the environment is not damaged by the pegging or the proposed path 	
Mark and signpost the trail (placing guide posts and information boards)	<ul style="list-style-type: none"> * Place markings and signposts where they are clearly visible 	<ul style="list-style-type: none"> * Use material that is durable and environmentally friendly * Keep the signs short and non-technical * Ensure that the signage on the trail corresponds with the text in the brochures, on tapes, maps 	<ul style="list-style-type: none"> * Use the community to help make the markers and information boards 	<ul style="list-style-type: none"> * Use environmentally friendly material that will not damage the environment and spoil the aesthetic views 	

PHASE 3: CONSTRUCTION

STAGES	TRAILIST	TRAIL PLANNER AND OWNER	HOST COMMUNITY	TRAIL ENVIRONMENT	AUTHORITY
Establish design standards for the trail path * Width * Tread surface * Gradient Establish design standards for huts and environmental education centres	* Apply the appropriate standards depending on whether the trail is used by blind people, elderly or people in wheelchairs	Apply the appropriate construction principles * 1,5m to 2,5m wide * wood chips, fine shale, gravel, sand, board walks for sensitive areas * gradient of less than 10 %		* Apply preventative maintenance measurements	* Incorporate design standards from authority if any are applicable
Building * Trail path * Overnight facilities * Interpretative centre	* Check that all signposts are clearly visible to users * Plan the facilities and educational materials (brochures, videos, cassettes, information boards, etc) that it provides an enlightening experience and give the trail user value for money	* Build the trail path keeping in mind the trail width, surface, etc. * Build the overnight facilities * Build the information centre * Apply environmentally sensitive strategies at all time	* Use members from the local community to help with the building of the trail, designing and building of the overnight huts and information centre. This contributes to their social and economic upliftment and allows them to take ownership of the development	* Build the trail keeping in mind the general trail building principles such as gradient, drainage, crossings, sun position etc. * Use environmentally friendly building material * Use products from the environment to build with, without damaging the environment	
Education points/stations	* Ensure that the marked distances are correct and that educational points are not too far from one another	* Place them at turnouts and at discontinuities * Place signs out of reach of casual walkers	* Let the host community identify possible points on the trail that provide an environmental education experience	* Place them directly after discontinuities in the environment	

STAGES	TRAILIST	TRAIL PLANNER AND OWNER	HOST COMMUNITY	TRAIL ENVIRONMENT	AUTHORITY
<p>Educational material (seasonal, general and for different age groups)</p> <ul style="list-style-type: none"> * Design pre- and post-trail activities * Identify persons to manage the trail and train them 	<ul style="list-style-type: none"> * Design informative discovery and participation type of activities on the trail * Develop different brochures for different user groups * Introduce the trailists to a pre-trail programme to inform them and orientate them to the goal of the trail and the intended experience * Implement post-trail programmes to assess the trailists experience * Train organisers such as teachers in environmental education and ecotourism before they bring learners to use the trail 	<ul style="list-style-type: none"> * Develop an environmental education plan * Appoint environmental education officers to facilitate the programmes * Keep the brochures short and non-technical for the general public * Compile specific brochures for specialist groups and different seasons 	<ul style="list-style-type: none"> * Identify community members that can manage the offices or education points along the trail * Train the community leaders as tour guides and for other positions * Use the community to present the activities and share their culture * Use the community in compiling the material, naming the trail etc. 	<ul style="list-style-type: none"> * Use environmentally friendly material * Keep seasonality in mind when developing the material 	<ul style="list-style-type: none"> *Ensure that education programmes fit into the formal education learning programmes of the Department of Education

PHASE 4: MAINTENANCE AND ADMINISTRATION

STAGES	TRAILIST	TRAIL PLANNER AND OWNER	HOST COMMUNITY	TRAIL ENVIRONMENT	AUTHORITY
Administration	<ul style="list-style-type: none"> * Keep a visitor database and comments book 	<ul style="list-style-type: none"> * Appoint an environmental education officer to administer the environmental education groups 	<ul style="list-style-type: none"> * Use people from the host community to do the bookings and other administrative tasks such as enquiries and arrivals 		
Monitoring and auditing	<ul style="list-style-type: none"> * Use evaluation forms that the trailist must complete after being on the trail. This helps determine the trailist's satisfaction and whether the demand has changed. This active participation in the maintenance of the trail gives them a sense of responsibility. 	<ul style="list-style-type: none"> * Determine whether the trail is financially viable * Work recommendations and suggestions into the trail corridor * Improve and correct materials used on the trail 	<ul style="list-style-type: none"> * Use volunteers from the community to patrol the trail for damage * Determine the host community's satisfaction on a regular basis through forum meetings. Changed needs and problems can then be identified 	<ul style="list-style-type: none"> * Monitor the condition of the environment and pay attention to deterioration, fire control and conservation issues * Make use of internal and external environmental audits 	<ul style="list-style-type: none"> * Let the authority assess the trail * Obtain formal accreditation of the trail