Monitoring the costs and benefits of ecotourism is vital to the success of a tourism development strategy based on the equitable distribution of benefits between all actors. Such a strategy must be built on the will of the international, national and local public sector agencies to support a tourism development approach based on ecotourism principles as well as on strong (i.e. profitable) tourism firms for which ecotourism is not just a slogan but a means of ensuring the sustainability of their activities and of developing new opportunities for growth.

1 – ISSUES DISCUSSED

Ecotourism encompasses all forms of tourism focused on nature where the principal motivation is to observe and appreciate nature and traditional cultures living in natural areas. Therefore, ecotourism is generally organized for small groups and involves an element of education and interpretation. It must provide positive impacts on the natural and socio-cultural environment, and any negative impacts must be limited and controlled.

Thus, the measurement of economic, ecological and social costs and benefits of ecotourism is different from that of traditional tourism. The ratios used in these measurements, particularly those evaluating economic profitability, must go beyond merely measuring financial profitability and take into account the impact on the local population’s income, activities, and social conditions.

1.1 - Measuring economic costs and benefits of ecotourism

The measurement of the economic costs and benefits of traditional tourism is based on a ratio of estimated profitability of the tourism investment using a methodology of market surveys and of load factor/occupancy determination. Calculating the appropriate coefficient of occupancy determines the profitability of tourism investments. Therefore operators aim to achieve and exceed a breakeven occupancy to ensure return-on-investment and maximum profit.

The Gross Operating Result (GOR) is the basic indicator used to measure the economic costs and benefits of tourism investments. The decision to go ahead with a tourism project will be made by comparing the budget available for financing the investment and with the total amount of the investment without taking into account the environmental costs or the social impact of the project.

For ecotourism projects, this type of economic and financial analysis is not generally sufficient. The cost benefit analysis of ecotourism projects cannot be just calculated in terms
of potential profitability but must also take into account costs and benefits for local populations.

The many examples of cost benefit analyses of ecotourism projects presented during various regional seminars show that even with an accommodation occupancy rate of only 20%, local population income increases substantially, and often provides more than double the income derived from agriculture.

Yet traditional financial analysis would indicate that such occupancy rates would be too low compared to the norm and therefore the investment would be abandoned. Based on the conclusions of these regional seminars, in particular those in the Seychelles, Mozambique and Belize, it is recommended that whilst profitability is vital the measurement of economic costs and benefits must be taken into account. The following factors must be considered:

in term of economic costs as for instance:

- The cost of energy infrastructure (existence or lack of renewable energy sources)
- The cost of transport infrastructure and access to ecotourism sites (roads and access roads)
- The cost of providing drinkable water
- The cost of waste treatment (solid and sewage)

in term of economic benefits, as for instance:

- Increased income benefits for the local populations
- Tax receipt benefits for the national public authorities
- Royalties and access right benefits for the local public authorities

1.2- Measuring ecological costs and benefits of ecotourism

The measurement of the ecological costs and benefits of tourism projects is a keystone of ecotourism development. Indeed, ecotourism development is one of the rare forms of tourism development, which under certain conditions can support the protection of the natural zones through conservation programmes that it may initiate and finance.

The instruments used to measure the ecological costs and benefits are mainly composite indicators to determine the pressure and intensity of use on ecotourism sites. The WTO defines three composite indicators particularly well adapted to measure ecological costs and benefits:

- **Carrying capacity:** this composite indicator determines the maximum number of tourists that a site can hold, particularly during intensive use in peak period. This indicator can be calculated using indices of protection of the natural sites and indicates the capacity of the site to support different volumes of visitors.

- **Site stress:** This composite indicator measures impact levels on the site taking into account its natural and ecological characteristics. Despite all precautions
taken to limit damage to the natural environment, ecotourism still produces some negative impacts, this indicator measures the extent of these negative impacts and signals when action must be taken to minimise these.

- **Attractiveness**: This measures the ecological characteristics of the site that are attractive for ecotourism and which may change over time and with increasing intensity of tourist visits. This is a qualitative indicator, which plays a very important part in ensuring the sustainability of ecotourism investments.

These indicators contribute to the efficient ecological monitoring of ecotourism products and provide an overall vision of the various products created in the same geographical area by all the different operators.

1.3 - The measurement of social costs and benefits of ecotourism

The measurement of social costs and benefits of ecotourism projects indicates the extent that ecotourism achieves one of its principal goals, i.e. the equitable distribution of benefits between all the actors. The conclusions of the majority of the regional seminars on the subject, in particular those in Brazil, Kazakhstan and Maldives, clearly show that one of the main priorities of ecotourism is to provide local populations with economic and social benefits.

However, ecotourism may also have social costs, which are rarely taken into account. It is not just sufficient to measure the tourist/resident ratio; the degree of local population satisfaction must also be evaluated. The following indices are used to measure this:

in term of social cost:

- Disturbance to the rate/rhythm of the local population’s working lives (time of work related to tourism compared to normal schedules of work);

- Disturbance to the traditional use of space by the local population because of the routes used by the ecotourists;

- Disturbance of the local population’s eating habits and everyday life as a result of contact with tourists

in term of social benefits:

- Creation of employment and new activities related to ecotourism

- Improvement in comfort, living conditions and social services (electricity, access to healthcare and education, etc.)

- Measurement of the local population’s degree of satisfaction through surveys.

These indicators provide the tools to evaluate the potential and real impacts of ecotourism and its contribution to nature conservation.
1.4 - The contribution to nature conservation and evaluation of the impact of ecotourism on the environment, society and culture

Ecotourism contributes to nature conservation by providing economic benefits to host communities, and organizations and administrations in charge of environmental protection and natural areas. As such, ecotourism not only creates jobs and provides local populations with sources of income, but it also creates awareness amongst both inhabitants and tourists of the need to preserve the natural and cultural capital.

As frequently emphasised by participants at regional conferences the assessment of potential and real impacts of ecotourism on the environment, society and culture and the need for evaluation tools are vital. Thus, the Tourism Satellite Account (TSA) model could be adapted to measure the impact of the ecotourism on the environment and society.

The TSA implementation project published by the WTO in 2001 states clearly that the conceptual framework of the TSA can be widened to integrate a sectoral and spatial focus to include environmental and social costs of tourism as well as economic benefits. Therefore, the TSA could become the most appropriate tool to measure the impact of tourism, in particular:

- the cost of employment lost in agriculture caused by the increase in tourism activity
- the damage caused to the ecosystem
- the damage to biodiversity
- goods and services which become too expensive for the local population because of inflation as a result of demand by tourists and their suppliers

TSA are based on Input/Output tables (I/O) which show the relationship between different sectors and activities of production and how benefits are used and redistributed. The impact of ecotourism could be compared with that of other forms of tourism development using TSA I/O tables.

However, because of the qualitative aspects linked to culture, the impact of ecotourism on culture requires specific analysis. Thus a case-by-case approach must be adopted.

Tourism activities in rural communities should be conceived as complementary to traditional economic activities. This needs to be so for two main reasons: firstly, to multiply the linkages of ecotourism with other, traditional economic activities, such as agriculture, fishing, handicrafts and others; and secondly, to avoid overdependence of the local economy and jobs on tourism alone.

2 – RECOMMENDATIONS

Adopting precautionary measures at the local, national, regional and international levels: The objective of precautionary measures is not to discourage the development of ecotourism, but to ensure efficient coordination between the local, national, regional and international levels in order to guarantee the sustainability of ecotourism sites. However, as reported in discussions during the regional seminars, in particular those in the Seychelles,
Algeria and Greece, the total cost of the environmental protection of ecotourism destinations may exceed the financial benefits.

In this case applying the principle of the "polluter pays" and the principle of the "user pays" may not guarantee that all the costs of environmental protection will be covered and it is the responsibility of the public authorities to make up the rest. Five types of measures may be considered:

- **Increasing the resistance of sites.** With international assistance, national and local authorities in charge of the environmental protection of natural sites can artificially increase their resistance by protecting them with barriers and routings that prevent direct visitor access to in the most sensitive zones where conservation problems may occur, as is the case in small islands.

- **Varying ecotourism activity in time and space** so that visitors are not always directed towards the same places at the same time, for example in arid and desert regions. This requires precise coordination between local and national authorities.

- **Strictly reducing the number of visitors admitted to certain sites**, in particular mountain sites, even (and especially) in high tourist season. This measure can cause conflicts between international, regional, national and especially local partners because of the economic stakes involved.

- **Regulating the amount of time allowed for visits to the sites as well as schedules** according to the frequency of visitation and the period of the year, in particular in certain islands of the Mediterranean, which receive a large number of ecotourists.

- **Restricting access according to tourists groups and their sensitivity toward the protection of sites.** This measure can be implemented by imposing guides with competencies specific to the sites visited. It also requires tight coordination between national and local authorities, particularly in the case of wildlife conservation parks in Africa, as mentioned during the seminar organized in Mozambique.

3 - CONCRETE PROPOSALS

**Integrating monitoring and evaluation methods: concrete proposals**

Evaluation methodology must be based on the constant monitoring of ecotourism activities in order to ensure that they are meeting the required objectives. This entails the use of environmental, social and economic evaluation indicators as the most appropriate tools for monitoring.

3.1 – Integrating monitoring

A selection of indicators that can be used to evaluate projects and ecotourism activities include:
- Local resident per capita budget allocated by government to nature conservation and the management of the environment
- The surface area of protected zones expressed as a percentage of the country’s or area surface area in which ecotourism projects are developed.
- The number of rare species in the ecosystems of ecotourism destination
- Number of tourists in proportion to the number of residents
- Number of tourists by surface area of the protected zone
- Trend in number of firms in the area over time
- Number of tourist firms using an ecolabel
- Impact on local production indicator
- Development control indicator
- Mechanisms to reinvest ecotourism receipts for site protection

3.2 – Evaluation methods

Selecting the appropriate indicators to be used in the evaluation and monitoring of ecotourism projects can be problematic. Indeed, for greater effectiveness, it is advisable to determine distinct quantitative evaluation criteria or at least a range as standards for each type of tourism or area. These standards for the selected indicators must be elaborated in co-operation with the national and local authorities responsible for tourism so that they become operational in each country and in each area.

- Quantitative and qualitative liquid and solid waste processing indicators with a system adapted to process waste produced by tourists
- Cultural impact indicator
- Training indicator
- Job creation indicator
- Water and energy consumption indicators (use of renewable energy)
- Indicator of visits by the local population
- New technology usage indicator

These can be used as references by the authorities in charge of tourism development and are an effective method to check whether the objectives of sustainable tourism planning are being met by private tourism development projects and whether these projects should be encouraged to be continued or held back.

The proposed ratios for the evaluation indicators must be balanced according to their perceived importance for each area or tourist zone. Furthermore, it has been suggested at the regional conferences and seminars that monitoring itself is not sufficient without responsive measures and management actions, and that it must be accompanied by mechanisms to recover the capital invested in ecotourism projects to benefit ecological projects and nature conservation, so that the development of ecotourism is truly compatible with better protection of natural zones.
3.3 - The need for studies and evolutionary management systems

To ensure accurate monitoring of the costs and benefits of ecotourism, an equitable distribution of these benefits and to guarantee long-term success a management system based on public/private sector partnership is vital. Evolutionary, management systems for ecotourism are based on an institutional framework comprising long-term policies to facilitate the development of tourism investments. This framework should include a consultation mechanism with operators and the local population to review the design and implementation of ecotourism projects. Local people should participate more as entrepreneurs and decision-makers in tourism and not only as employees as now is often the case. Small scale, locally owned tourism is considered the most appropriate means to achieve this given that benefits could flow directly to the local populations. This often requires appropriate support and mentoring together with training opportunities.

The framework should also comprise a strict control system for tourism investments to ensure that the projects that are developed respect environmental protection criteria for the area.

From the discussion and recommendations arising from Theme D of the preparatory meetings and regional conferences, the main issues related to monitoring ecotourism’s costs and benefits and to ensuring an equitable distribution among all stakeholders can be highlighted.

POINTS FOR FURTHER DEBATE

The following issues could be discussed at the World Tourism Summit

- Devising new ecotourism cost/benefit evaluation methods which would highlight the social and economic benefits for local populations, as well as the limitations of the financial benefits generated compared to other forms of tourism, notably mass tourism.

- Finding appropriate legal and institutional mechanisms to facilitate and make effective the systematic participation of local communities in the overall ecotourism process, including policy definition, planning, management and monitoring.

- Establishing financial and fiscal mechanisms to ensure that a significant proportion of the income generated from ecotourism remains with the local community or serves conservation purposes.

- Researching methods to ensure the permanent control of impacts through the adaptation of carrying capacity methodologies to ecotourism development, including the definition of damage warning indicators and disturbance gauges for protected sites and other natural areas.

- Putting in place distribution mechanisms to share the benefits of ecotourism development in order to reinvest a proportion of the revenues generated in the protected areas.
• Understanding and measuring social costs, benefits and change (i.e. changes in the behaviour and habits of the local population) so as to limit the negative consequences, maximising social benefits for host communities and to improve attitudes, awareness and respect towards the protection of the environment.

• Researching specific management and monitoring procedures for different types of ecotourism sites, (i.e. desert zones and islands), concerning such aspects as water and waste management, the management of scarce resources, and others.

• Determining appropriate price levels to ensure sufficient returns for firms, suitable redistribution in favour of local populations and that correspond to the purchasing power of tourism demand.

• Ensuring that the principles of “polluter pays” and “user pays” will ensure genuine protection of the environment whilst guaranteeing ecotourism development.