

**Table 1: Community/Area, State/Regional Characteristics, and Assets' Inventory for Carrying Capacity Analysis**

**A. Natural Tourism Resources: Status and Characteristics**

- ▶ Area/trail characteristics
- ▶ Specific scenic features
- ▶ Forest conditions and characteristics
- ▶ General land use and characteristics
- ▶ Protected lands and areas (national parks and conservation areas)/wildlife (animals, birds, etc)
- ▶ Vegetation and unique flora
- ▶ Waterfalls/lakes/rivers/caves, etc
- ▶ Other
- ▶ List the most critical resources and their characteristics
- ▶ Climatic conditions and convenient seasons for visiting

	High Season	Between Seasons	Low Seasons
Ave.temperatures			
Relative humidity			
Rainfall			
Sunshine			
Prevailing winds			
Air quality			
Other specifics			

**B. Socioeconomic, cultural/heritage resources**

- ▶ Settlement characteristics
- ▶ Population of immediate area and region
- ▶ Existing economic opportunities and production
- ▶ Social and economic infrastructure
- ▶ Ethnicity and unique cultural elements
- ▶ Historical building/sites/monuments
- ▶ Archaeological sites or collections
- ▶ Folklore and traditions
- ▶ Festivals
- ▶ Handicrafts

- ▶ Visual, performing, and fine arts
- ▶ Heritage of scientific and technical interest
- ▶ Other
- ▶ List (and characteristics) of most critical resources

### C. **Infrastructure**

- ▶ Transportation and access
- ▶ Road/trail network
- ▶ Energy sources (conventional/modern and intensity of use)
- ▶ Water sources (quality and quantity)
- ▶ Sanitary facilities (including management of solid waste and litter)
- ▶ Camping grounds and facilities
- ▶ Markets
- ▶ Communication facilities
- ▶ Medical emergency and other facilities
- ▶ Other
- ▶ List the most critical infrastructure gap

### D. **Accommodation and Related Services**

- ▶ Accommodation (number, quality of facilities)
  - hotel/lodges with bed capacity
  - Camping grounds/sites (capacity)
  - homestays, small inns
  - food services
  - local guides
  - recreation/entertainment
  - shopping/marketing (product specialities and convenience items)
  - sports (spectator/participation)
- ▶ Labour pool for tourism-related work (status need, availability, training)
- ▶ Potential impacts of tourism on economic activities and production structure
- ▶ List the most critical services' gap

Source: Adapted from WTO 1993

**Table 2: Environmental Impact Assessment:  
Evaluation of Tourism in a Locality/Area/Route**

	Type of Impact	No Impact	Minor Impact	Moderate Impact	Serious Impact	Remarks (note critical site, area, route of impact)
1	Road traffic					
2	Pedestrian traffic					
3	Noise level					
	- airport					
	- traffic					
4	Trail condition					
5	Littering/solid waste disposal					
6	Camping/picnicking					
7	Visual amenity					
8	Natural vegetation					
	- unique flora					
	- biodiversity					
9	Wildlife					
	- unique fauna					
	- birds					
10	Drainage conditions					
11	Surface water quality (pollution)					
12	Ground water quality (pollution)					
13	Air quality (pollution)					
14	Archaeological/cultural/historic sites					

Note: This is not a complete list. This framework has to be adapted to suit local/regional conditions.

## Table 3: Carrying Capacity - Questions for Discussion

### Physical and Ecological Factors

- ▶ Size of the general area to be impacted by tourists?  
Area and resources available for intensive use by tourists?
- ▶ Seasonal limitations? (Viewing/visitation/impact patterns; are they evenly distributed or concentrated?)
- ▶ What space or use modifications could improve the use?
- ▶ Potential for ecological damage? (Note kind of damages from short-term resident or in transit tourists)

For instance, how fragile is the soil?  
the plant life?  
the animal life?  
other geological features?

- ▶ What facilities or policies could prevent damage? (Consider both wet and dry season patterns)
- ▶ What are the ecological indicators of visitor impact?

flora  
fauna  
other

- ▶ What are the conservation needs of

wildlife?  
plant life?  
aquatic life?

the soil and other geological features? (Carrying capacity will be affected by such factors as diversity and distribution.)

- ▶ Preservation needs of historic or archaeological features?

What places or sites, because of fragility, should be off-limits to tourists? or available only for limited use?

- ▶ Impact of infrastructure (roads, lodges, utilities, etc) on ecology?
- ▶ Who has or should have the responsibility of ensuring that the infrastructure is appropriately built for the carrying capacity of tourism resources?
- ▶ Will an increase in visitors affect the behaviour of animal life?
- ▶ Nature of conflict between competing uses?
- ▶ How can conflict between competing uses be minimised? (consider restricting human visitation to tourist zones.)
- ▶ What volume of tourism can be tolerated without impairing the quality of the environment? (seasonal, daily, etc)

## **Social Factors**

- ▶ Volume of tourism that can comfortably be absorbed into the day-to-day social life of the community?
- ▶ Volume of tourism that can be tolerated without destroying the cultural and social life of the community?

Variations in tolerance levels during festivals, celebrations, religious occasions, or other special events?

Desire or need to modify or limit tourist behaviour or participation in cultural activities?

If so, how might that be accomplished? (consider adequate awareness and interpretive services, as well as dispersal policies.)

- ▶ What traditions could be affected by increased tourist visitation or interaction?

How might this be made positive rather than negative?

- ▶ How will local residents be made aware and educated about the interrelationships among sustainable tourism, the environment, and the rest of the community?
- ▶ What traditional local institutions exist to monitor and manage tourism?

How can such institutions be strengthened?

## Economic Factors

- ▶ Does the community receive satisfactory economic benefits from tourism activities?

How is tourism currently related to enhancing local production?

- ▶ How can it be better and positively related to the production system?
- ▶ How are economic benefits distributed?
- ▶ How can the poorer and disadvantaged groups benefit more?
- ▶ Will the economic benefits be sufficient to motivate the community to protect the environment?
- ▶ What are (or have been) the likely social and economic impacts of tourism on women?

How can tourism impacts be used to enhance the roles and opportunities for women?

- ▶ Is the current volume of tourism providing optimal economic benefits? How can benefits be increased? (Increasing the volume is only one method. Also consider adding value to existing services and products.)
- ▶ Does the tourism industry offer jobs and opportunities for local residents?

Are they reasonably compensated?

Are work conditions acceptable?

Is job skill training available?

Are there opportunities for promotions and advancements?

- ▶ Are there opportunities for local investment in businesses serving tourists?

Or are profits drained off by outside investors?

How can this situation be remedied?

- ▶ Are locally-produced goods available in qualities and quantities sufficient to meet tourist expectations?

What are the needs to enhance the quality and quantity of local tourist-oriented production?

## **Infrastructural Factors**

- ▶ What transportation facilities and services are available?  
How can facilities be provided/enhanced?
- ▶ Are accommodation and utility services, including water, power, sewage, and solid waste disposal, available and adequate for projected use?  
If not, how can they be provided?
- ▶ Are the provisions for health and public safety adequate?

If not, how can they be provided?

- ▶ In terms of infrastructure, what would be the maximum number of visitors (per day by season)?
- ▶ Overall, should the number of visitors be increased? To what extent (per day by season)?
- ▶ What are the critical infrastructural needs for absorbing such increases?
- ▶ Need for monitoring visitor impacts (on environment, culture, economy, infrastructure)?

Who should be monitoring impacts?

Can local/traditional institutions play a role in monitoring impacts? How?  
Training needs?

- ▶ What are the most critical issues of tourism management in the area?  
How can these be addressed?

Source: Adapted from WTO 1993

## **Table 4: Questions for Discussion for the Development of Action Plans Incorporating Carrying Capacity Considerations**

The following questions can be used to stimulate discussion among potential partners and concerned citizens.

### **Natural Resources**

- ▶ How will the various natural resources that are available be used -- both directly and indirectly?
- ▶ How much of each resource can be allocated for tourism development while still ensuring its preservation and enhancement?
- ▶ What are the environmental costs and benefits?
- ▶ What is the cost of environmental degradation if the resource is misused or mismanaged?
- ▶ If the resource is used appropriately, what are the economic benefits?
- ▶ Who receives the benefits?
- ▶ What are the alternative ways of using the resource in order to both benefit from its use and protect the environment?

### **Economic Issues**

- ▶ What are the economic costs and benefits if the proposed tourism development is implemented?
- ▶ What is the economic value of any improvement to the environment that would result from the proposed tourism development?
- ▶ What is the economic cost of preventing any degradation to the environment that might result from the proposed tourism development?
- ▶ How much would it cost to meet local environmental standards?
- ▶ What would be the economic cost of introducing additional environmental controls?
- ▶ How much would it cost to formulate options and alternatives?
- ▶ What would be the economic loss or gain if plans are modified to take the environment into consideration?
- ▶ Are the benefits of implementing tightened environmental standards greater than the costs? Explain.
- ▶ To what extent could profits be used to neutralise or mitigate sacrifices should some environmentally-sound conditions not be met?

## **Socioeconomic Issues**

- ▶ What social costs and benefits will occur if the proposed tourism development is implemented?
- ▶ Which of the costs and benefits will affect economic output? and which will affect social and individual welfare?
- ▶ Do any of the social benefits override the potential economic benefits of the development? If so, which ones?
- ▶ What compensation would the proposed tourism development offer to those who experience social distress related to that development?
- ▶ How do different segments of society value the social costs and benefits? the environmental costs and benefits?
- ▶ Who receives the benefits? and who bears the costs?
- ▶ What segment of society is in a position to pay to preserve and protect the environment?
- ▶ How does the proposed tourism development contribute to the satisfaction of basic human needs or alleviation of poverty?
- ▶ How will tourism development impact local production?
- ▶ Has the potential of inflation and land speculation been assessed? If so, how?
- ▶ What will be the effects of the proposed tourism development on the pattern of consumption?
- ▶ Will there be an over-use of public facilities? What will the consequences be?
- ▶ Will over-use be affected by seasonality? If so, how?
- ▶ How does the proposed tourism development address human resource development?
- ▶ To what extent can the local population be trained to benefit from tourism development?
- ▶ What will be the influence of foreigners involved in tourism on the resident community?
- ▶ How are local, regional, national, and international environmental NGOs (non-governmental organisations) participating in tourism development?

## **Sociocultural Issues**

- ▶ How have people living in the development areas participated or expected to participate in the tourism planning process?

- ▶ What ethnic or religious groups could be affected? If so, have they been involved in the planning process?
- ▶ How are women being affected or how are they expected to be affected by tourism development? How can this effect be made positive? How can women be involved in the planning process?
- ▶ How have women been involved in the planning process? Has their welfare been considered?
- ▶ What health and safety issues must be considered?
- ▶ How can drug abuse and prostitution be avoided or controlled?
- ▶ What historical sites would be affected by the proposed tourism development?
- ▶ What would be the economic costs of protecting cultural values in the development area?
- ▶ What can be done about the potential for change (perhaps even a decline) in moral and religious values?
- ▶ What can be done about the potential for a change (perhaps even an increase) in crime?

### **Tourism Market Issues**

- ▶ What are potentially the best areas for future tourism development? Which tourist market should the development be oriented to?
- ▶ What tourism products could be developed? to what capacity? are they sustainable?
- ▶ What occupancy and participation can be expected during each season?
- ▶ What environmental impacts and related restrictions must be considered?
- ▶ How will these impacts and restrictions affect the generating market segments?

Source: Adapted from WTO 1993

## **Table 5: Maximising Opportunities, Mitigating Problems: Checklist for Consideration in Tourism Planning**

Tourism development has many consequences -- both positive and negative. These are briefly described in the chart below in terms of the impact, opportunities, problems, and ways to mitigate problems. This can be used as a checklist for consideration in the tourism planning process.

### **Agriculture, Forestry, Fisheries**

<b>Impact:</b>	Increased demand for products; increased competition for land and water use
<b>Opportunities:</b>	Job creation; competition for labour can improve salaries; technology transfer can improve production methods and result in product diversification; recreational use of fishing boats can augment income; increational uses of forests can prevent over-harvesting
<b>Problems:</b>	Land speculation; inappropriate land uses
<b>Mitigation:</b>	Land use planning and zoning can limit abuses and channel development to benefit local residents.

### **Infrastructure, Buildings and Roads**

<b>Impact:</b>	Increased use of land can be irreversible
<b>Opportunities:</b>	New infrastructure may benefit resident population; local building techniques and designs may be improved; use of local materials can improve the economy; beautification may occur
<b>Problems:</b>	Increased competition, especially for prime coastal or agricultural lands; degradation of landscape and biological resources; blight and overcrowding due to urbanisation;
<b>Mitigation:</b>	Enlightened and participatory land-use planning and zoning; urban renewal programmes can boost the local economy and correct past mistakes.

### **Raw Materials**

<b>Impact:</b>	Increased use, processing and transporting of resources
<b>Opportunities:</b>	Increased demand for resources can boost the local economy; increased demand for value-added products can provide additional work

- Problems:** Depletion of natural resources; deterioration of nature and landscape
- Mitigation:** Restore land for new uses such as converting mine tailings into parks; require reforestation.

### **Land Use Patterns**

- Impact:** Tourism competes with the traditional uses of land
- Opportunities:** Tourism usually offers better economic returns than traditional land use
- Problems:** Displacement and involuntary relocation of residents, agriculture, fisheries, and forestry
- Mitigation:** Integrated planning can provide a holistic approach for those areas where displaced functions and people are relocated.

### **Consumer Activity**

- Impact:** Increased demand for food, water, power, and luxury goods
- Opportunities:** More options for resident population, including more and better restaurants, improved water quality and supply, improved utility systems, greater availability of luxury goods, improved lifestyles
- Problems:** Depletion of resources; waste; dependency on imported goods; disruption of traditional values; potential for inflation
- Mitigation:** Incorporate recycling and use of renewable resources when possible; diversification of local agriculture and food processing; increased regional trade; provide training and education for local people as needed for job, career, and business opportunities.

### **Population**

- Impact:** Tourism is a competitive land user; bringing tourists into an area can attract outside investments and workforces
- Opportunities:** New employment opportunities may reduce an existing pattern of emigration to urban areas or abroad, especially by the younger generation; tourism can offer higher incomes to some; outside investments can include local partnerships
- Problems:** Construction of tourist facilities may cause displacement and involuntary resettlement; influx of foreign labour may

displace local workers; concentrations of local residents around tourist facilities may cause cultural conflict

**Mitigation:** Make affordable housing for workers an early priority; training and education can give local workers a competitive edge; awareness campaigns among both residents and tourist groups can enhance sensitivity and understanding.

### **Levels and Distribution of Income**

**Impact:** Tourism as economic development generates employment and income in a society

**Opportunities:** A wider distribution of income; tourism may generate additional incomes in other sectors because of the multiplier effects; new job opportunities

**Problems:** Changes in income levels may disturb the social structure through an increase in disparities since not all benefit from tourism; in developing countries high incomes generally benefit skilled foreign staff only; seasonable tourism generates income for a limited period only

**Mitigation:** Education and training can open opportunities for residents; targetted marketing can lengthen the season; laws can favour joint ventures and employment for residents.

### **Employment Levels**

**Impact:** Tourism demands a high volume of labour of different skill levels

**Opportunities:** Tourism generates employment, not only in the tourist trade but also in related activities; tourism businesses need a varied staff with different skills

**Problems:** Construction staff are employed for a limited period only; competitive demand between tourism and local trades or industries for workers; untrained labour remains unemployed; in developing countries there is frequently a large influx of foreign workers; employment is often seasonal and thus generates seasonal unemployment

**Mitigation:** Training and education can develop transferable skills; educational programmes and institutions can provide environmental education and hospitality training.

## **Social Structure**

- Impact:** Interaction between host population, tourists, and foreign labour
- Opportunities:** Cultural enrichment; increased possibilities for social mobility
- Problems:** Influx of tourists and foreign labour may disrupt basic social cohesiveness
- Mitigation:** Assist residents in anticipating change through awareness and education.

## **Recreation**

- Impact:** Increased use of recreational resources
- Opportunities:** Development of more new facilities than the community can support on its own, upgrade existing facilities
- Problems:** Fees may exceed local residents' ability to pay; conflict over cultural differences
- Mitigation:** Two-tiered pricing system assures lower fees and costs to residents; community participation in planning may solve problems of cultural conflict; cultural awareness campaign can help sensitise tourists.

## **Cultural Traditions**

- Impact:** Interaction between host population, tourists, and foreign labour
- Opportunities:** Preservation of traditions; local arts and crafts as a tourism product; stimulation of cultural pride
- Problems:** Commercialisation; loss of authenticity of artisan products and traditional artisan skills; modification of traditions to please tourists; erosion of social values
- Mitigation:** Community participation in the planning process may help assure that changes reflect decisions and conscious tradeoffs; awareness and education can enhance self esteem and pride so that traditions can be maintained.

## **Religious Beliefs**

- Impact:** Interaction between host population, tourists, and foreign labour

- Opportunities:** Stimulation and revival of religious traditions through interest by tourists; restoration of places of worship because of funds generated from tourism and pilgrimages
- Problems:** Disturbance of places of **worship** and services by curious tourists; erosion of religious traditions when they become a commodity market to tourists
- Mitigation:** Community can decide which places to share and which not to share and market.

**Archeological, Historical, and Architectural Sites**

- Impact:** Increased use of sites
- Opportunities:** Chance for preservation and conservation; enhance community esteem and awareness of roots; visitor interest and support may finance maintenance and rehabilitation
- Problems:** Litter and vandalism; congestion; desecration; souvenir taking; use may exceed carrying capacity
- Mitigation:** Visitor services including interpretation, transportation, and parking; awareness campaign can help sensitise tourists; increase security and surveillance.

Adapted from WTO 1993

**Table 6: The Multiplier Effect**

The following chart demonstrates how tourism spending flows through the economy may be traced.

Tourists spend for	Second round of expenditures	Ultimate beneficiaries (a partial list)
Lodging	Wages and salaries	Accountants
Food	Tips and gratuities	Appliance repair persons
Beverages	Payroll taxes	Architects
Entertainment	Commissions	Artisans and craftspeople
Clothing	Music and entertainment	Arts and crafts suppliers
Gifts and souvenirs	Administrative and general expenses	Athletes
Personal care, medicines, cosmetics	Professional services	Attorneys
Photography	Purchase of food and beverage supplies	Auto service persons
Recreation	Purchase of goods for resale	Bakers
Tours, sightseeing, guides and local transportation	Purchase of materials and supplies	Bank workers
Miscellaneous	Repairs and maintenance	Butchers
	Advertising, promotion, and publicity	Carpenters
	Utilities	Cashiers
	Transportation	Charities
	Licenses	Cinema and video makers/distributors
	Insurance premiums	Clerks
	Rental of facilities and equipment	Clothing manufacturers
	Interest and principal payments of borrowed funds	Cooks
	Income and other taxes	Cultural organisations
	Replacement of capital assets	Dairies
	Return to government	Dentists
		Department store owners/workers
		Doctors
		Education providers
		Electricians
		Engineers
		Farmers
		Fisherpersons
		Freight forwarders
		Furniture makers
		Gardeners
		Gift shop operators
		Government workers
		Grocers
		Health care providers
		Housekeeping staff
		Insurance workers
		Laundry service providers
		Manufacturing workers
		Office equipment suppliers
		Painters
		Petrol stations
		Plumbers
		Porters
		Printers and publishers
		Recreation equipment, sales/rental
		Resort owners, operators and workers
		Restaurant owners, operators
		Road maintenance workers
		Signmakers
		Transportation workers
		Utilities, providers of and repairpersons
		Waiters and waitresses
		Wholesale suppliers

**Leakage:** When the private or public sector purchase goods or services from sources outside the community, that money is no longer subject to the multiplier effect and the economic benefits leak out of the community.

Source: World Tourism Organisation 1993