





Use of sustainability indicators in communitybased ecotourism in Southern Africa.

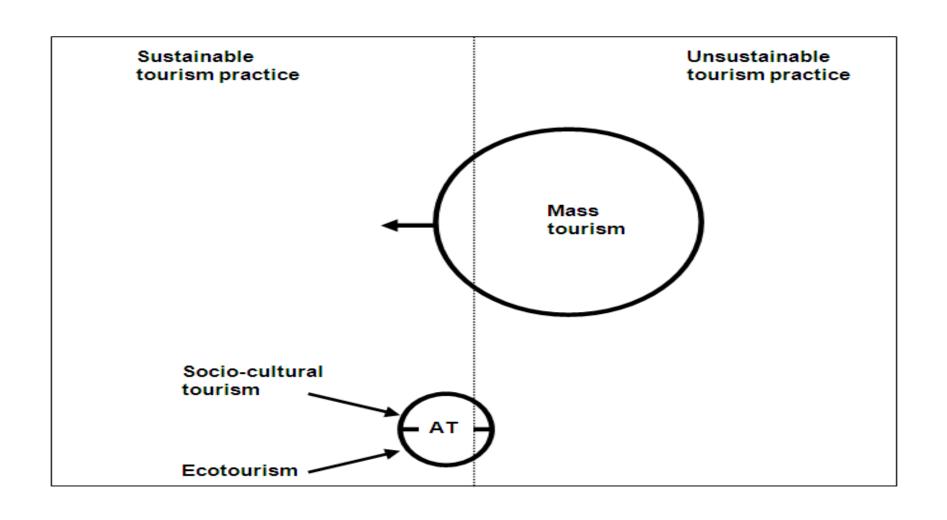
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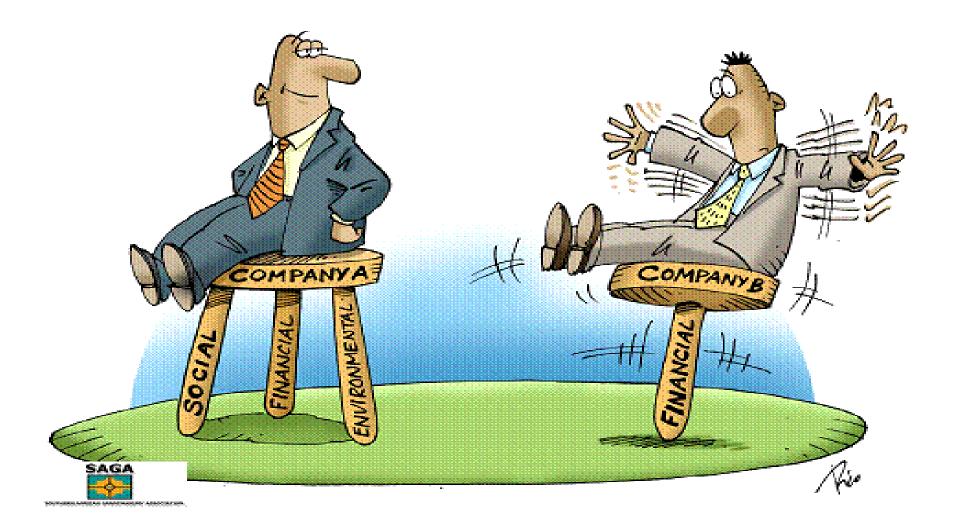


Sustainable Development has taught us

Four important lessons from the emergence of the concept of sustainable development.

- First, sustainable development is not a social, economic and environmental problem but a combination of all three and, as a result, requires interdisciplinary modes of enquiry.
- Second, complex systems such as those involved in sustainable development are inherently unpredictable and therefore require approaches based on non-linear science.
- Third, because of the evolutionary nature of sustainable development, policies and actions need to be continually modified and adapted to evolving conditions.
- Fourthly, in order to reduce the vulnerability of the Earth system to abrupt change, monitoring is required from local to global scales, enhancing systems knowledge and extending human foresight.





SOUTH AFRICAN NATIONAL STANDARD

Responsible tourism — Requirements



List of indicators

Indicator 1: Local satisfaction with tourism	Social (S)
Indicator 2: Effects of tourism on communities	Social (S)
Indicator 3: Education and awareness	Social (S)
Indicator 4: Community decision making	Social (S)
Indicator 5: Community benefits	Social (S)
Indicator 6: Cultural	Social (S)
Indicator 7: Sustaining tourism satisfaction	Economic (Ec)
Indicator 8: Tourism seasonality	Economic (Ec)
Indicator 9: Economic benefits of tourism	Economic (Ec)
Indicator 10: Energy management	Environmental (Env)
Indicator 11: Water availability and conservation	Environmental (Env)
Indicator 12: Drinking water quality	Environmental (Env)
Indicator 13: Sewage treatment	Environmental (Env)
Indicator 14: Solid waste management	Environmental (Env)
Indicator 15: Controlling use intensity	Environmental (Env)
Indicator 16: Biodiversity and conservation	Environmental (Env)

Sub indicators - Social

Indicator 1: Local satisfaction with tourism
1.1 Local satisfaction with tourism
1.2 Local community complaints
Indicator 2: Effects of tourism on communities
2.1 % who believes that tourism brings new services
Indicator 3: Education and awareness
3.1 Education of community
3.2 Training and skills development
Indicator 4: Community decision making
4.1 Community decision Making structures
Indicator 5: Community benefits
5.1 Community benefits from tourism
Indicator 6: Cultural
6.1 Cultural appreciation and conservation

Sub indicators - Economic

Indicator 7: Sustaining tourism satisfaction

- 7.1 Level of tourist satisfaction
- 7.2 Perception of value for money
- 7.3 % of return visitors
- 7.4 Perception of sustainability
- 7.5 Tourist complaints

Indicator 8: Tourism seasonality

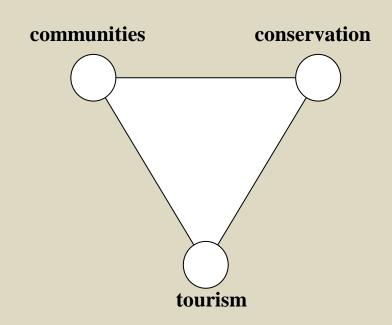
- 8.1 Tourist arrivals
- 8.2 Occupancy rates for accommodation
- 8.3 % of tourist industry jobs which are permanent or full time

Indicator 9: Economic benefits of tourism

- 9.1 Number of local people employed
- 9.2 Revenue generated

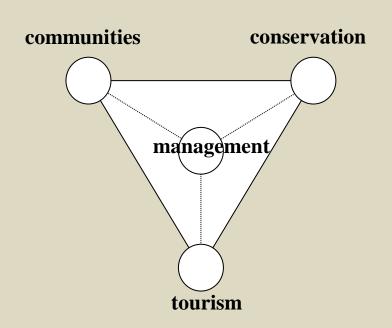
What is community-based Ecotourism?

- Communities
- Conservation
- Tourism



What is community-based Ecotourism?

- Communities
- Conservation
- Tourism
- Management











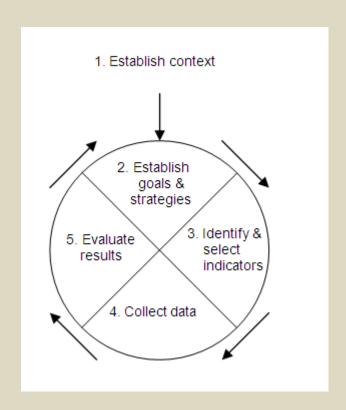






Utilising Sustainable Tourism Indicators

- 1. Establishing context
- Establish goals and strategies.
- 3. Identify and select indicators.
- 4. Collect data
- 5. Evaluate results
- 6. Repeat 2-5.



Issue 1: Local satisfaction with tourism	Indivi Opera	ited	орега		Inform Joint Ventu	re	Formal Joint Venture		Triple Joint Venture		Organ. operated	
	Aba-H Camp		Kaziik Shane		Malea Lodge		Dama Camp	raland	Tembe Eleph Lodge	ant	!Khwa	ttu
1.1 Local satisfaction with to	urism											
Staff and community												
responses	SI	CI	SI	CI	SI	CI	SI	CI	SI	CI	SI	CI
Is tourism good for the community												
Do you want more or less tourism in your area?												
1.2 Local community complai	nts											
Staff and community												
responses	SI	CI	SI	CI	SI	CI	SI	CI	SI	CI	SI	CI
Is there anything that bothers you about tourism in your community?												
Do you know of any complaints received from local residents regarding tourism?												

Issue 1: Local satisfaction with tourism	Individ Opera		Comn	nunity ted	Inform Joint Ventu		Forma Joint Ventu		Triple Ventu	Joint re	Organ opera	
	Aba-H Camp		Kaziik Shand		Malea Lodge		Dama Camp	raland	Tembe Eleph Lodge	ant	!Khwa	ttu
1.1 Local satisfaction with tou	rism											
Staff and community responses	SI	СІ	SI	CI	sı	CI	sı	СІ	SI	СІ	SI	СІ
Is tourism good for the community												
Do you want more or less tourism in your area?												
1.2 Local community complai	nts											
Staff and community responses	SI	CI	SI	CI	SI	CI	SI	CI /	SI	СІ	SI	СІ
Is there anything that bothers you about tourism in your community?												
Do you know of any complaints received from local residents regarding tourism?												
										/		

Issue 2: Effects of tourism on communities	Indivi Opera		Comn opera	nunity ted	Inform Joint Ventu		Forma Joint Ventu		Triple Ventu	Joint re	Organ opera	
	Aba-H Camp	site	Kaziik Shand	treka	Malea Lodge		Dama Camp	raland	Tembe Eleph Lodge	ant	!Khwa	ttu
2.1 % who believes that tour is	sm bring	gs new :	services									
Staff and community responses	sı	СІ	SI	CI	SI	СІ	sı	СІ	SI	СІ	SI	CI
Does tourism help the community obtain services?(eg. schools, clinics)												
2.2 Other effects of tourism o	n the co	mmunit	ty									
Staff and community responses	SI	СІ	SI	CI	SI	CI	SI	CI	SI	CI	SI	CI
Does tourism employ local youth?												
Increase the prices of local goods?												
Does tourism increase crime in the area?												
Does tourism change the behaviour of the community (e.g. Eat, drink, dress, buy, language, want?)												
Does tourism damage or destroy nature?												
Does tourism use the resources people need like firewood and water?												
Are there areas that people cannot access because of tourism?												
Can the local community visit/use the tourism facility?												

Issue 2: Effects of tourism on communities	Indivi Opera		opera		Inform Joint Ventu		Forma Joint Ventu		Ventu		Organ opera	
	Aba-H Camp	site	Kaziik Shane	dreka	Malea Lodge		Dama Camp	raland	Temb Eleph Lodge	ant	!Khwa	ttu
2.1 % who believes that tour is	sm bring	js new :	services	•								
Staff and community responses	SI	-cı	SI	СІ	SI	CI	SI	СІ	s	CI	SI	GL.
Does tourism help the community obtain services?(eg. schools, clinics)								(
2.2 Other effects of tourism o	n the co		ty									
Staff and community responses	SI	СІ	SI	СІ	SI	СІ	SI	СІ	SI	CI	SI	CI
Does tourism employ local youth?												
Increase the prices of local goods?												
Does tourism increase crime in the area?												
Does tourism change the behaviour of the community (e.g. Eat, drink, dress, buy, language, want?)												
Does tourism damage or destroy nature?												
Does tourism use the resources people need like firewood and water?												
Are there areas that people cannot access because of tourism?												
Can the local community visit/use the tourism facility?												

Issue 4: Community decision making	Indivi Opera		Comn opera	nunity ted	Inform Joint Ventu		Forma Joint Ventu		Triple Ventu		Organ operat	
	Aba-H Camp	site	Kaziik Shane		Malea Lodge		Dama Camp	raland	Tembe Eleph Lodge	ant	!Khwa	ttu
4.1 Community decision mak	ing stru	ctures										
Staff and community responses	SI	СІ	SI	СІ	SI	СІ	SI	СІ	SI	CI	SI	CI
Does the community have control over tourism?												

Issue 5: Community benefits	Indivi Opera Aba-H Camp	ited luab site	Comn opera Kaziik Shane	ini &	Inform Joint Ventu Malea Lodge	re lea	Form: Joint Ventu Dama Camp	re raland	Triple Ventu Temb Eleph Lodge	e ant	Organ Opera !Khwa	ted
5.1 Community benefits from	tourism	1										
Staff and community responses	SI	CI	SI	СІ	SI	СІ	SI	СІ	SI	СІ	SI	CI
Do you personally benefit from tourism?												
Does anyone else in your household benefit from tourism?												
Does the broader community benefit from tourism?												
Does tourism create jobs for local people?												
Does the money spend by tourists remain in the community?												

Issue 4: Community decision making	Indivi Opera		Comm opera	nunity ited	Inform Joint Ventu		Form: Joint Ventu		Triple Ventu	Joint re	Organ opera	
	Aba-H Camp	site	Kaziik Shan		Malea Lodge		Dama Camp	raland	Temb Eleph Lodge	ant	!Khwa	ttu
4.1 Community decision ma	aking stru	ctures										
Staff and community responses	sı	SI	SI	СІ	81	CI	sı	CI	SI	CI	SI	СІ
Does the community have control over tourism?												
33												

Issue 5: Community benefits	Aba-H Camp	ted luab	Comn opera Kaziik Shane	ini &	Inform Joint Ventu Malea Lodge	re Iea	Form Joint Ventu Dama Camp	re raland	Tripk Vent Teml Elept Lodg	e nant	Organ Opera	ated
5.1 Community benefits from	tourism	1										
Staff and community responses	SI	СІ	SI	СІ	SI	СІ	SI	СІ	sı	Ch	SI	Ch
Do you personally benefit from tourism?												
Does anyone else in your household benefit from tourism?												
Does the broader community benefit from tourism?												
Does tourism create jobs for local people?												
Does the money spend by tourists remain in the community?								(

Issue 7: Sustaining tourism satisfaction	Individual Operated	Community operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated
7.1 Level of tourist satisfaction						
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ
Enjoyment sub-indicators				_		
l enjoyed my experience						
[Destination] provided a good variety of experiences						
I would recommend [destination] to my friends.						
Access sub-indicators						
The state of the roads made travel easy.						
The state of the signage made travel easy.						
It was easy to get to {destination} for my visit						
Environment sub-indicators						
l found (destination) to be clean.						
I was bothered by noise.						
l was bothered by solid waste.						
The state of the natural environment was good.						
[Destination] has an interesting and varied landscape.						
Service sub-indicators						
The quality of the local cuisine was good.						
The quality of accommodation was good.						
The level of service provided was high.						
Service staff was competent and helpful.						
Safety sub- indicators						
I felt safe and secure during my visit.						

Issue 7: Sustaining tourism satisfaction	Individual Operated	Community operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated
7.1 Level of tourist satisfaction		<u>'</u>	<u>'</u>	<u>'</u>		
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ
Enjoyment sub-indicators						
l enjoyed my experience						
[Destination] provided a good variety of experiences						
I would recommend [destination] to my friends.						
Access sub-indicators						
The state of the roads made travel easy.					>	
The state of the signage made travel easy.						
It was easy to get to {destination} for my visit						
Environment sub-indicators						
l found (destination) to be clean.						
I was bothered by noise.						
l was bothered by solid waste.						
The state of the natural environment was good.						
[Destination] has an interesting and varied landscape.						
Service sub-indicators						
The quality of the local cuisine was good.						
The quality of accommodation was good.						
The level of service provided was high.						
Service staff was competent and helpful.						
Safety sub-indicators						
I felt safe and secure during my visit.						

Issue 7: Sustaining tourism satisfaction	Individual Community Operated operated		informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated
	Aba-Huab Campsite	Kaziikini & Shandr e ka	Malealea Lodge	Damaraland Camp	Tembe Elephant Lodge	!Khwa ttu
7.2 Perception of value for me						
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ
I feel I received good value for money.						
7.3 % of return visitors						
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ
% of return visitors	0	30	10	10	50	33.3
would visit [destination]						
again.	60	63.6	50	80	80	58.3
% that intend visiting again	60	63.6	50	00	00	50.3
Ave. No of nights stay next time	1.83	2.14	3.4	2.5	4.38	2.25
7.4 Perception of sustainabili	ty					
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ
Do you perceive (destination) as sustainable?						
7.5 Tourist complaints						
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ
What could be done to improve your visit?						
Staff member responses	SI	SI	SI	SI	SI	SI
Do you know of any complaints received from tourists?						

Issue 7: Sustaining tourism satisfaction	Individual Operated	Community operated	informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated					
	Aba-Huab Campsite	Kaziikini & Shandr e ka	Malealea Lodge	Damaraland Camp	Tembe Elephant Lodge	!Khwa ttu					
7.2 Perception of value for money											
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ					
I feel I received good value for money.											
7.3 % of return visitors											
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ					
% of return visitors	0	30	10	10	50	33.3					
I would visit (destination) again.											
% that intend visiting again	60	63.6	50	80	80	58.3					
Ave. No of nights stay next time	1.83	2.14	3.4	2.5	4.38	2.25					
7.4 Perception of sustainabili											
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ					
Do you perceive [destination] as sustainable?											
7.5 Tourist complaints											
Visitor responses	VQ	VQ	VQ	VQ	VQ	VQ					
What could be done to improve your visit?											
Staff member responses	SI	SI	SI	SI	SI	SI					
Do you know of any complaints received from tourists?											

Issue 8: Tourism seasonality		Individual Operated	Community operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. Operated
		Aba-Huab Campsite	Kaziikini & Shandreka	Malealea Lodge	Damaraland Camp	Tembe Elephant Lodge	!Khwa ttu
8.1 Tourist arrivals (o	vernight	tourists)					
Ave overnight tourists		869.60	209.87	1447.62	307.35	338.13	489.81
8.2 Occupancy rates	for accor	mmodation					
Ave occupancy							
		18.96%	6.6%	42.26%	48.53%	30.86%	18.8%
8.3 % of tourist indus	try jobs	which are perm	anent or full tin	ne (compared to	temporary/sea	sonal jobs)	
Permanent jobs	No	15	14	16	28	30	24
	%	100	100	59.3	100	100	82.8
Temporary jobs	No	0	0	11	0	0	5
	%	0	0	40.7	0	0	17.2

Issue 8: Tourism seasonality		Individual Operated	Community operated			Formal Joint Venture	Triple Joint Venture	Organ. Operated	
	Aba-Huab Campsite		Kaziikini & Shandreka			Damaraland Camp	Tembe Elephant Lodge	!Khwa ttu	
8.1 Tourist arrivals (ov	<i>r</i> ernight	tourists)							
Ave overnight tourists		869.60	209.87	1447.62		307.35	338.13	489.81	
8.2 Occupancy rates f	or accor	mmodation				_			
Ave occupancy		18.96%	6.6%	42.26%		48.53%	30.86%	18.8%	
8.3 % of tourist indust	ryjobs	which are perm	anent or full tin	ne (cor	npared to	temporary/sea	sonal jehe)		
Permanent jobs	No	15	14		16	28	30	24	
	%	100	100		59.3	100	100	82.8	
Temporary jobs	No	0	0		11	0	0	5	
	%	0	0		40.7	0	0	17.2	

Issue 10: Energy management		Individual Operated	Community operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated			
		Aba-Huab Campsite	Kaziikini & Shandreka	Malealea Lodge	Damaraland Camp	Tembe Elephant Lodge	!Khwa ttu			
10.1 Per capita consumption of energy from all (per person day)										
Average monthly ene	<i>rgy use</i> KWh	ı	·	·	I	<u> </u>				
Liquid Petroleum Gas	KVVII	3943	1971	16428	5257	11171	1971			
Diesel	kVVh	1867	1899	6402	34678	8963	4802			
Petrol	k/Vh	2850	1099	1900	34070 N	0903	1425			
Grid electricity	k/Vh	unknown	0	1900	529	3362	16815			
Solar power	k/Vh	GHKHOVVII N	27	137	301	27	135			
-										
Total	kvvh	8660	3897	24867	40765	23523	25148			
Energy use per overnight visitor	kVVh	9.96*	18.57	17.18	132.63	69.57	51.34			
10.2 Energy saving m	easures									
Energy saving measur		energy saver lights	Self -igniting gas geysers have been installed	Solar power for lighting in main hall	17 Solar water geysers and power supply for 11 accommodat ion units is solar	Gas off when not in use, energy saver bulbs	Gas off when not in use, energy saver bulbs Bush camp and Bush house use solar power for lighting.			
10.3 % of energy cons	sumptio	n from renewab	e resources							
Solar		0%	0.69%	0.55%	0.74%	0.11%	0.54%			
Solar water heating no geysers	of	None	None	None	17	None	None			
Wood (not quantifiable being used) * Excludes grid electr		Yes	Yes	Yes	Yes	Yes	Yes			

Issue 10: Energy management		Individual Operated	Community operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated
		Aba-Huab Campsite	Kaziikini & Shandreka	Malealea Lodge	Damaraland Camp	Tembe Elephant Lodge	!Khwa ttu
10.1 Per capita consu		of energy from a	all (per person o	day)			
Average monthly ene	<i>rgy use</i> - kWh						
Liquid Petroleum Gas	KVVII	3943	1971	16428	5257	11171	4074
Diesel	kVVh	1867	1899	6402	34678	8963	4802
Petro/	kVVh	2850	1000	1900	3.510	0	1425
Grid electricity	kVVh	unknown	ŏ	0	529	3362	16815
Solar power	kVVh	0	27	137	301	27	135
Total	kVVh	8660	3897	24867	40765	23523	25149
Energy use per	kVVh						
overnight visitor		9.96*	18 <u>.57</u>	17.18	132.63	69.57	51.34
10.2 Energy saving m				4 0. 44 0	10 0, 40 0		
Energy saving measur	es		>1	1.3; 11.3 -	13.6; 13.6<		Gas off when not in
					water		use, energy
					geysers and power		saver bulbs Bush camp
			Self -igniting		supply for 11	Gas off	and Bush
			gas geysers	Solar power	accommodat	when not in	house use
		energy saver	have been	for lighting in	ion units is	use, energy	solar power
		lights	installed	main hall	solar	saver bulbs	for lighting.
10.3 % of energy con:	sumptio	n from renewal	e resources				
Solar		0%	0.69%	0.55%	0.74%	0.11%	0.54%
Solar water heating no	of						
geysers	A A /-	None	None	None	17	None	None
Wood (not quantifiable being used)	DUTIS	Yes	Yes	Yes	Yes	Yes	Yes
* Excludes grid electr	.: _ 14	163	ਾ ਦ	163	163	163	r es

Issue 11: Water availability and conservation		Individual Operated	Community operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated
		Aba-Huab Campsite	Kaziikini & Shandreka	Malealea Lodge	Damaraland Camp	Tembe Elephant Lodge	!Khwa ttu
11.1 Water use (total	water vo	lume consume	d and litres per	tourist per day))		
Water volume consumed per day	litres	5000	10000	15600	10000	3909.1	10000
Water volume consumed per overnight visitor	litres	174.89	1449.28	327.8	990.1	351.58	621.11
11.2 Water saving me	easures						
Measures taken		None	None	Rain water collected	Shower buckets, grey water recycling	None	Dual flush toilets

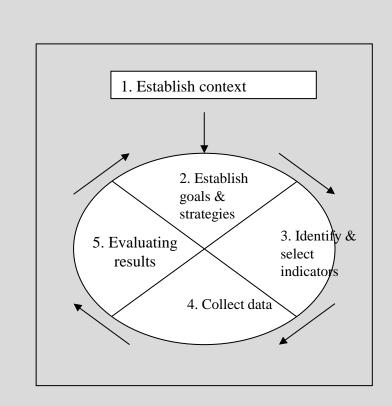
Issue 11: Water availability and conservation		Individual Operated	Community operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated
		Aba-Huab Campsite	Kaziikini & Shandreka	Malealea Lodge	Damaraland Camp	Tembe Elephant Lodge	!Khwa ttu
11.1 Water use (total	water w	olume consume	d and litres per	tourist per day)	,		
Water volume consumed per day	litres	5000	10000	15600	10000	3909.1	10000
Water volume consumed per overnight visitor	litres	174.89	1449.28	327.8	990.1	351.58	621.11
11.2 Water saving me	easures,						
Measures taken		<200; 200-2	250; 250<		Shower buckets, greywater		Dual flush
		None	None	collected	recycling	None	toilets

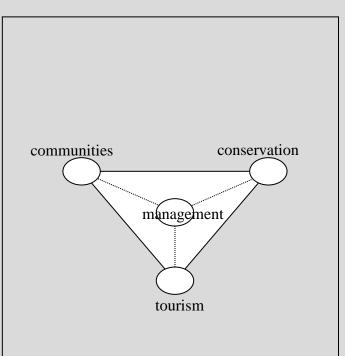
Issue 12: Drin	king wa	ter quality			Individual Operated	Com. operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated
		Class I (recomm. operational limit)	Class II (max. allowable for limited duration)	Class II max. Water con. period*	Aba-Huab Campsite	Kaziikini & Shandreka	Malealea Lodge	Damara- Iand Camp	Tembe Elephant Lodge	!Khwa ttu
12.1 Water tre			al potable st	andards						
Physical char		ics								
pH value	pH units	5.0 -9.5	4.0 - 10.0	No limit	8.0	8.0	7.6	8.1	8.3	8.0
Conductivity	mS/m	<150	150 - 370	7 years	33.2	112	22	99.2	108	46
Dissolved solids	mg/l	<1000	1000-2400	7 years	230	830	172	752	110	327
Chemical cha	racteris	tics (macro	determinan	ts)	•					
Ammonia	mg/l	<1.0	1.0 - 2.0	No limit	<0.3	<0.3	<0.3	<0.3	0.3	<0.3
Calcium	mg/l	<150	150 - 300	7 years	36.7	24.1	25.3	57.0	20.0	24.4
Chloride	mg/l	<200	200 - 600	7 years	9.0	106.0	0.0	106.0	72.0	464.0
Fluoride	mg/l	< 1.0	1.0 - 1.5	1 year	0.3	0.5	<0.2	1.0	0.3	<0.2
Magnesium	mg/l	<70	70 – 100	7 years	9.7	8.0	6.8	11.9	17.0	43.4
Nitrate and Nitrite	mg/l	<10	10- 20	7 years	7.7	<0.3	3.5	15.1	<0.3	6.7
Potassium	mg/l	<50	50 -100	7 years	2.6	13.6	7.6	1.2	2.0	3.4
Sodium	mg/l	<200	200 - 400	7 years	12.3	207.0	0.4	128.0	68.3	231.0
Sulphate	mg/l	<400	400 - 600	7 years	15.0	78.0	8.0	100.0	27.6	69.0
Zinc	mg/l	<5.0	5.0 - 10	1 year	0.23	<0.05	0.27	<0.05	<0.05	0.07
Microbiologic										
Heterotrophic plate count	count/n	Alert leve			0	200	0	0	50	20

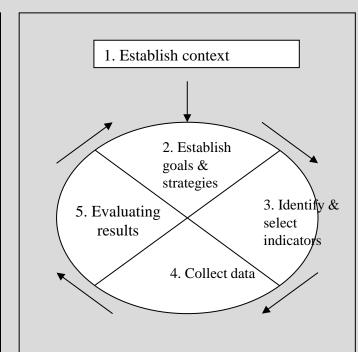
^{*} The limits for the consumption of class II water based on the consumption of 2 litres of water per day by a person of mass 70kg over a period of 70 years (SANS 241:2006 Edition 6.1) (Standards South Africa 2006).

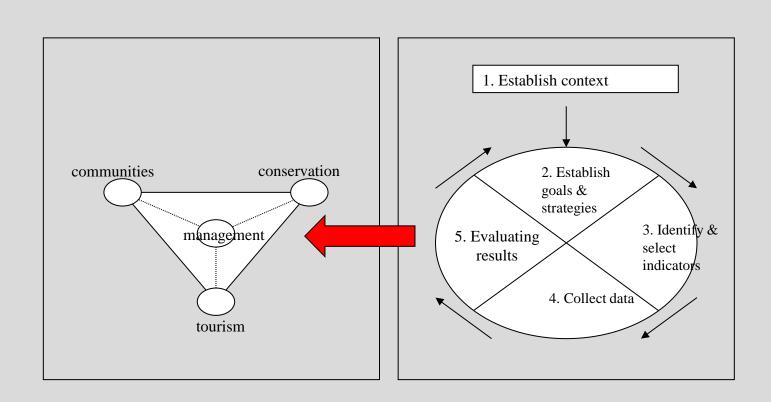
Issue 12: Drin	king wa	ater quality			Individual Operated	Com. operated	Informal Joint Venture	Formal Joint Venture	Triple Joint Venture	Organ. operated
		Class I (recomm. operational limit)	Class II (max. allowable for limited duration)	Class II max. Water con. period*	Aba-Huab Campsite	Kaziikini & Shandreka	Malealea Lodge	Damara- Iand Camp	Tembe Elephant Lodge	!Khwa ttu
12.1 Water tre			al potable st	andards						
Physical char		ics								
pH value	pH units	5.0 -9.5	4.0 - 10.0	No limit	8.0	8.0	7.6	8.1	8.3	8.0
Conductivity	mS/m	<150	150 - 370	7 years	33.2	112	22	99.2	108	46
Dissolved solids	mg/l	<1000	1000-2400	7 years	230	830	172	752	110	327
Chemical cha	racteris	tics (macro	determinant	ts)						
Ammonia	mg/l	<1.0	1.0 - 2. 0	No limit	<0.3	<0.3	<0.3	<0.3	0.3	<0.3
Calcium	mg/l	<150	150 - 300	7 years	36.7	24.1	25.3	57.0	20.0	21.4
Chloride	mg/l	<200	200 - 600	7 years	9.0	106.0	0.0	1000	72.0	464.0
Fluoride	mg/l	< 1.0	1.0 - 1.5	1 year	0.3	0.5	<0.2	1.0	0.3	<0.2
Magnesium	mg/l	<70	70 – 100	7 years	9.7	8.0	6.8	44.5	17.0	43.4
Nitrate and Nitrite	mg/l	<10	10- 20	7 years	7.7	<0.3	3.5	15.1	<0.3	6.7
Potassium	mg/l	<50	50 -100	7 years	2.6	13.6	7.6	17	2.0	3.4
Sodium	mg/l	<200	200 - 400	7 years	12.3	207.0	0.4	128.0	68.3	231.0
Sulphate	mg/l	<400	400 - 600	7 years	15.0	78.0	8.0	100.0	27.6	69.0
Zinc	mg/l	<5.0	5.0 - 10	1 year	0.23	<0.05	0.27	<0.05	<0.05	0.07
Microbiologic										
Heterotrophic plate count	count/	Alert leve			0	200	0	0	50	20

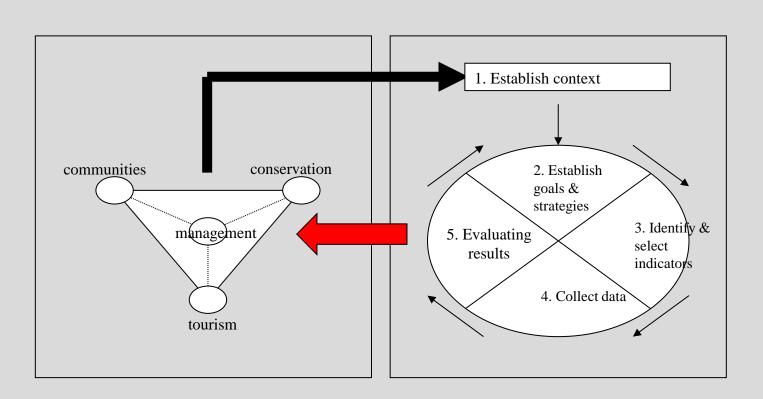
^{*} The limits for the consumption of class II water based on the consumption of 2 litres of water per day by a person of mass 70kg over a period of 70 years (SANS 241:2006 Edition 6.1) (Standards South Africa.2006).











Recommendations: Case study specific

Social

Communication and liaison:

Training and development:

Community benefits:

Economic

Tourism operation:

Tourism offering:

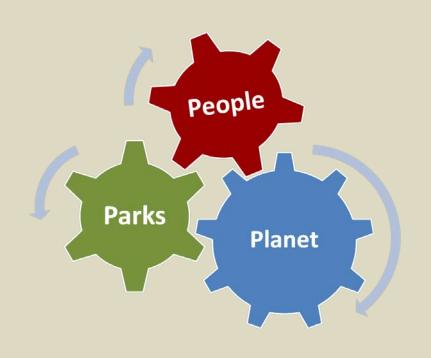
Tourist information:

Environmental

Resource management:

Southern African Specific Products

Continual improvement



Conclusion

The use of indicators serves both an early warning system for potential problems which could occur as well as for a baseline for the future assessment of social, environmental and economic sustainability of tourism ventures.

An inspiring solution?

Nelson Mandela "If you don't have sustainable development around these wildlife parks, then people will have no interest in them, and the parks will not survive."

The success of community-based ecotourism is dependant on the extent to which all the relevant role players are able to take collective responsibility for achieving sustainable tourism in order to create better places for people to live in and to visit.

