

Biodiversity for Society

the benefits and costs of
Protected areas – A focus on the Kruger
National Park



Louise Swemmer

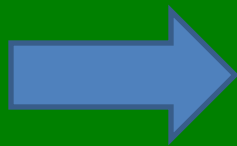
Scientist – Social and Economic Research, SANParks

14th Savanna Science Networking Meeting

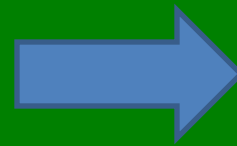
“Protected areas are viewed as a critical component of a life support system, and they are expected to do more – in terms of ecological, economic and social contributions – than ever before”

– UNDP 2010

Preservation,
protection,
visitors



Sustainable use,
including
neighbours



Critical life
support system
society

<p>National Parks Act (Act No. 56 of 1926)</p>	<p>To provide for the establishment of national parks and the preservation therein of wild animal life, wild vegetation and objects of geological, ethnological, historical and other scientific interest, and for matters incidental thereto, to the benefit and enjoyment of the visitor</p>
<p>National Parks Act (Act 57 of 1976)</p>	<p>The object of the constitution of a park is the establishment, preservation and study therein of wild animal, marine and plant life and objects of geological, archaeological, historical, ethnological, oceanographic, educational and other scientific interest and objects relating to the said life or the first-mentioned objects or the events in or the history of the park, in such a manner that the area which constitutes the park shall, as far as may be and for the benefit and enjoyment of visitors, be retained in its natural state</p>
<p>Protected Areas Act (Act 57 of 2003)</p>	<p>The purposes of the declaration of areas as protected areas are (a) to protect ecologically viable areas representative of South Africa's biological diversity and its natural landscapes and seascapes in a system of protected areas; (b) to preserve the ecological integrity of those areas; (c) to conserve biodiversity in those areas; (d) to protect areas representative of all ecosystems, habitats and species naturally occurring in South Africa; (e) to protect South Africa's threatened or rare species; (f) to protect an area which is vulnerable or ecologically sensitive; (g) to assist in ensuring the sustained supply of environmental goods and services; (h) to provide for the sustainable use of natural and biological resources; (i) to create or augment destinations for nature-based tourism; (j) to manage the interrelationship between natural environmental biodiversity, human settlement and economic development; (k) generally, to contribute to human, social, cultural, spiritual and economic development; or (l) to rehabilitate and restore degraded ecosystems and promote the recovery of endangered and vulnerable species.</p>

Benefits?



- *Any impact as a result of an engagement or interaction in or around a PA, that has a **positive** outcome on well-being*



Well-being:
Material
Physical
Social
Spiritual



Conservation of
Biodiversity
(intrinsic/moral)

Conservation of
Biodiversity
(intrinsic/moral)

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graph TD; A([Conservation of Biodiversity (intrinsic/moral)]) --> B([BENEFITS TO SOCIETY]);
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**BENEFITS TO
SOCIETY**

Well-being:

Material, Physical,
Social, Spiritual,
Security, Freedom
of choice

Conservation of
Biodiversity
(intrinsic/moral)



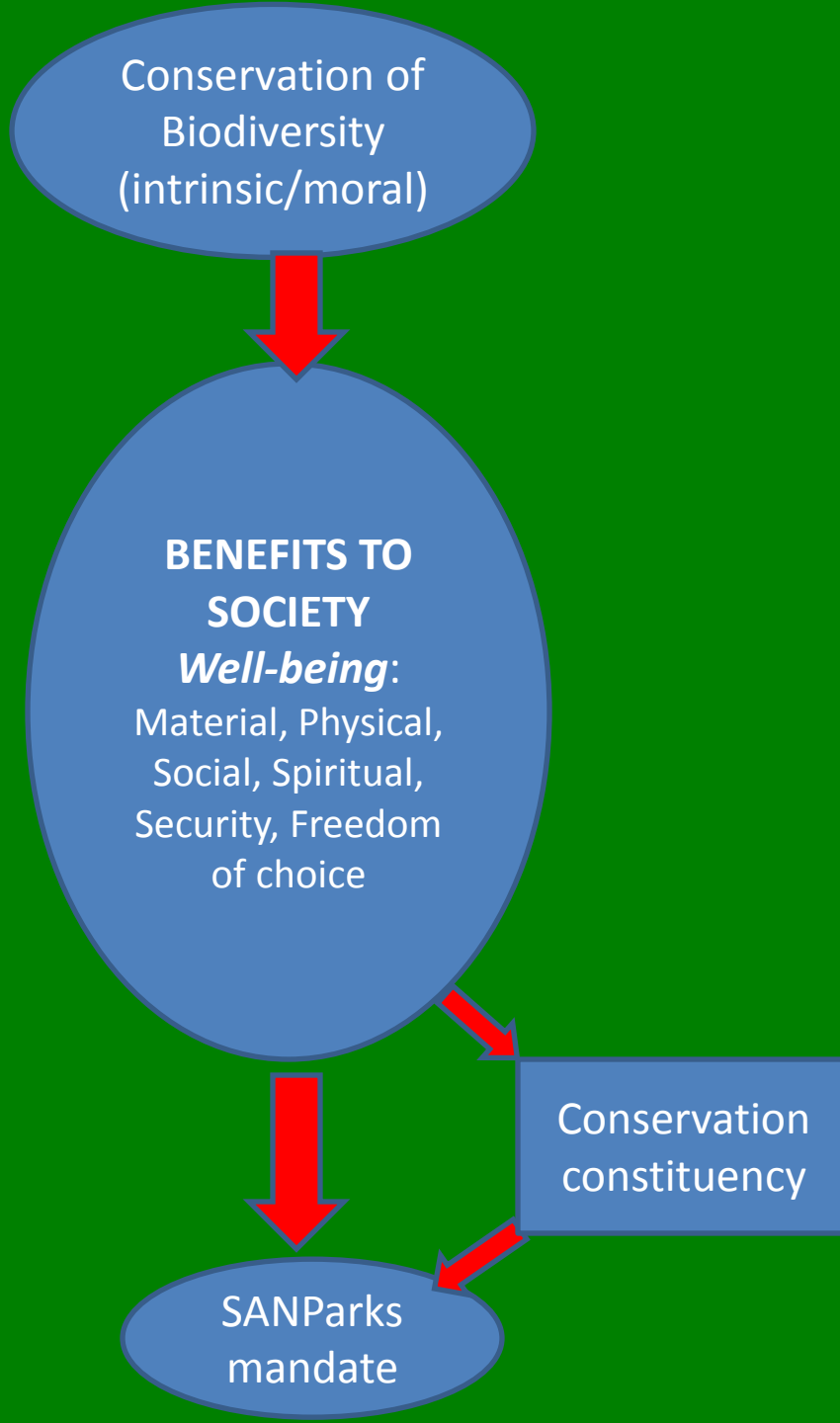
**BENEFITS TO
SOCIETY**

Well-being:

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of choice



SANParks
mandate



Conservation of
Biodiversity
(intrinsic/moral)

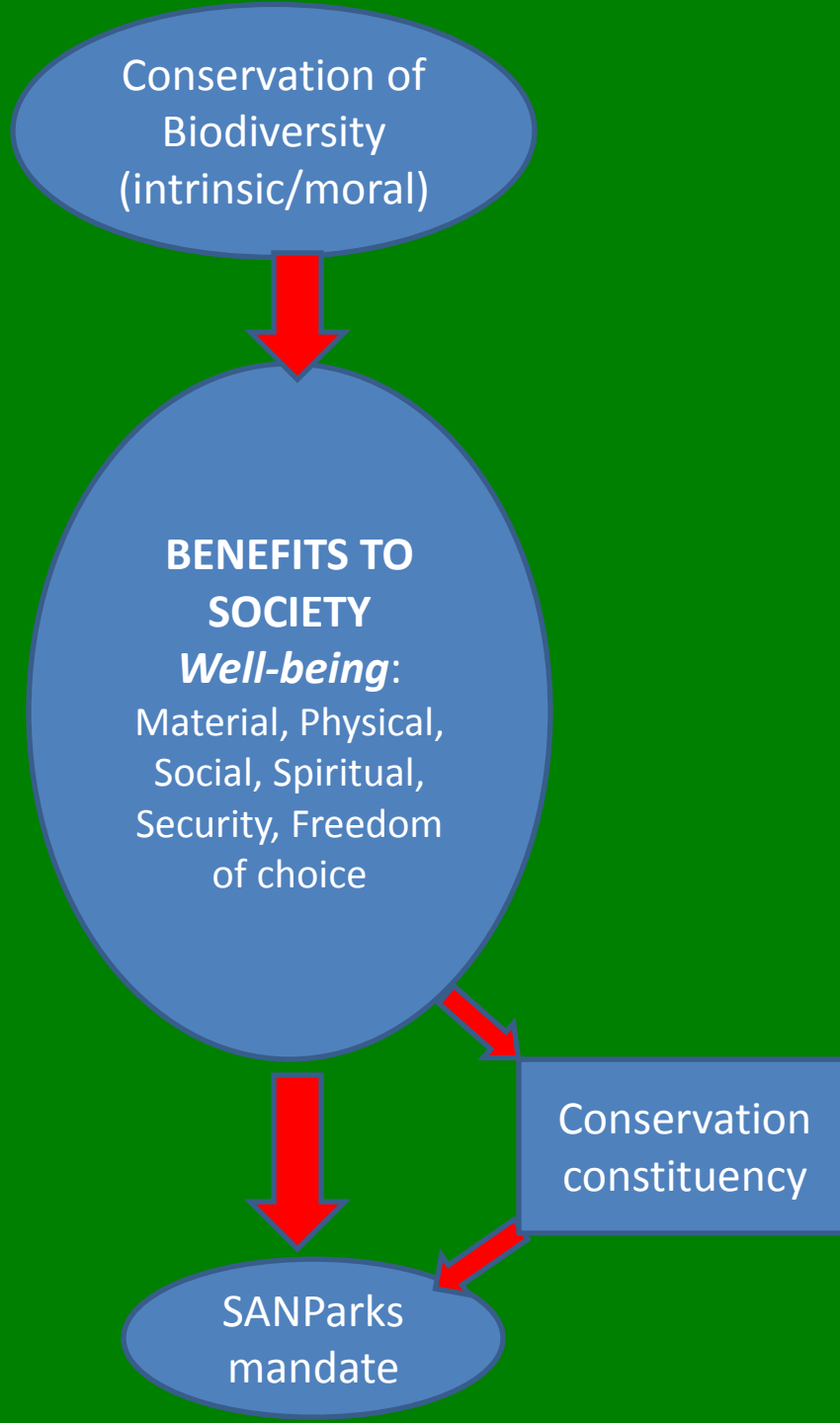
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Well-being:
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Conservation
constituency

SANParks
mandate

**Understand,
manage and
report on
benefits
effectively**



Key elements of a SAM approach

1. Know what you are trying to do?
 - **OBJECTIVE/S**
2. Know how what you are trying to do fits into your broader objectives?
 - **HIERARCHY**
3. How you are going to get there?
 - **IMPLEMENTATION PROCESS (actions and outcomes)**
4. Know if you are achieving what you want to achieve?
 - **MONITORING – INDICATORS**
5. Know how to change what you are doing, in order to better achieve your objectives, or change your objectives?
 - **INFORMATION FEEDBACKS**
6. Fundamental understanding of the system and how it works

Research

Some challenges applying SAM for Benefits



1. Complex history & context (governance)
 - **Consequence:** contrasting perceptions PA value and purpose, ownership, top-down, trust and relationships, governance
2. Difficult to collectively audit all benefits
 - **Consequence:** cant report on what we are doing, cant assess tradeoffs, Audits incomplete:
 - don't reflect impact
 - Misleading (TEEB, ecosystem services)
 - Drive decision making – not based on sound information
3. Assessing and report on **impact** –
human well-being & constituency (outputs v/s outcome)
 - **Consequence:** don't really know if we achieving our objectives, adaptive management

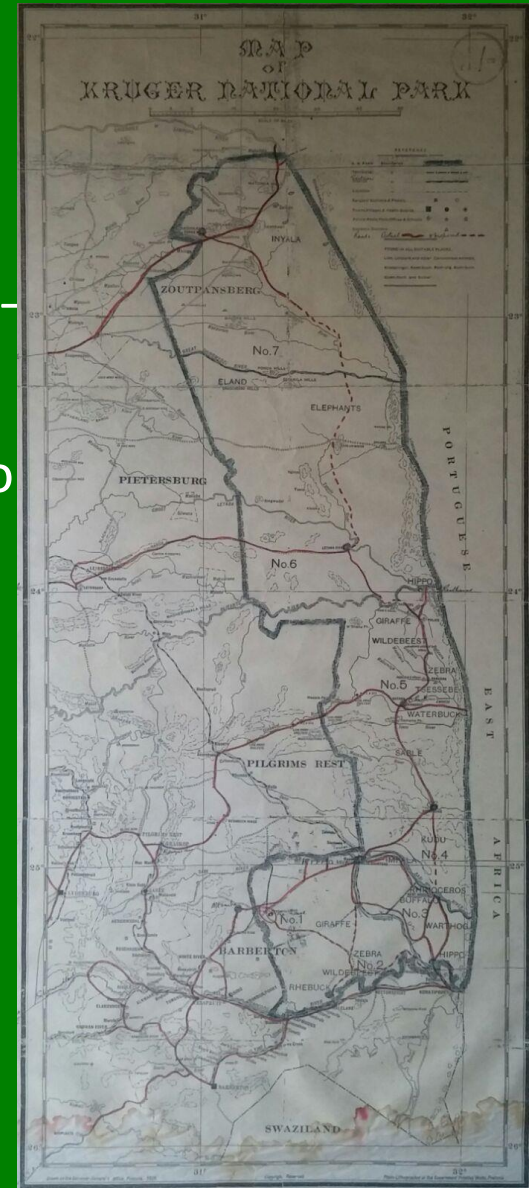
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KNP

1. History matters

- 1900: Lowveld – game numbers decline (colonial hunting, disease)
 - protecting game for hunting (sustainable yield) – access certain sectors of society hunt, revenue generating hubs for future
- 1926 - Protectionist (exclusionary) – facilities for visitors only (white) (local resistance)
- Locals moved out or kept out
- Strict conservation/preservation strategies
- Apartheid: high densities of people
- 1986 – first non-white education groups
- Bushcamps...
- 1994 -

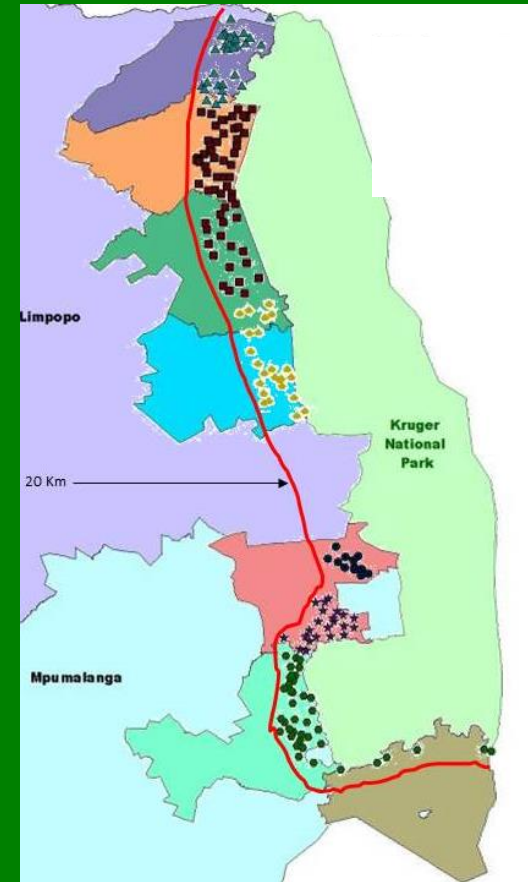


The result...

2 Million ha
35 landscape
types, 400 trees
and shrubs
220 grasses, 1300
others,
ecosystems,
biomes,
wilderness,
tourism



Hard
boundary,
Lots of
people, social
grants and
subsistence
agriculture,
negative
perceptions,
neutral
perception

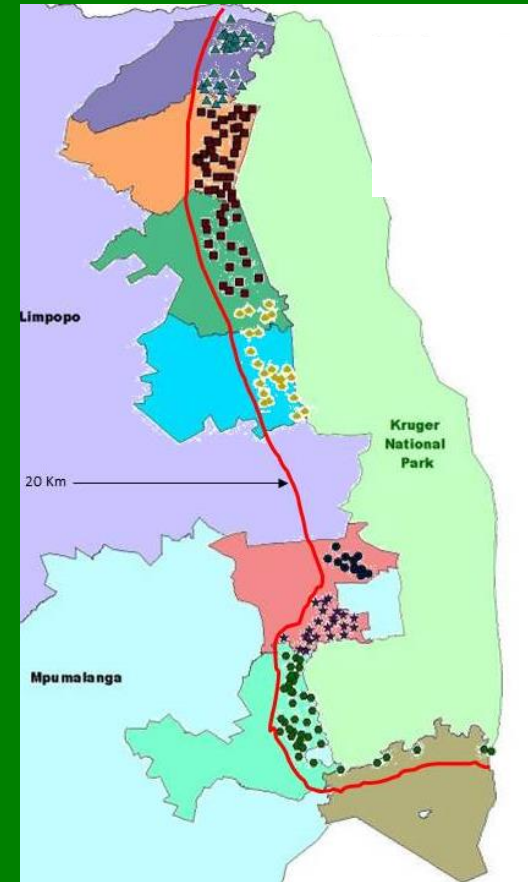


The result...

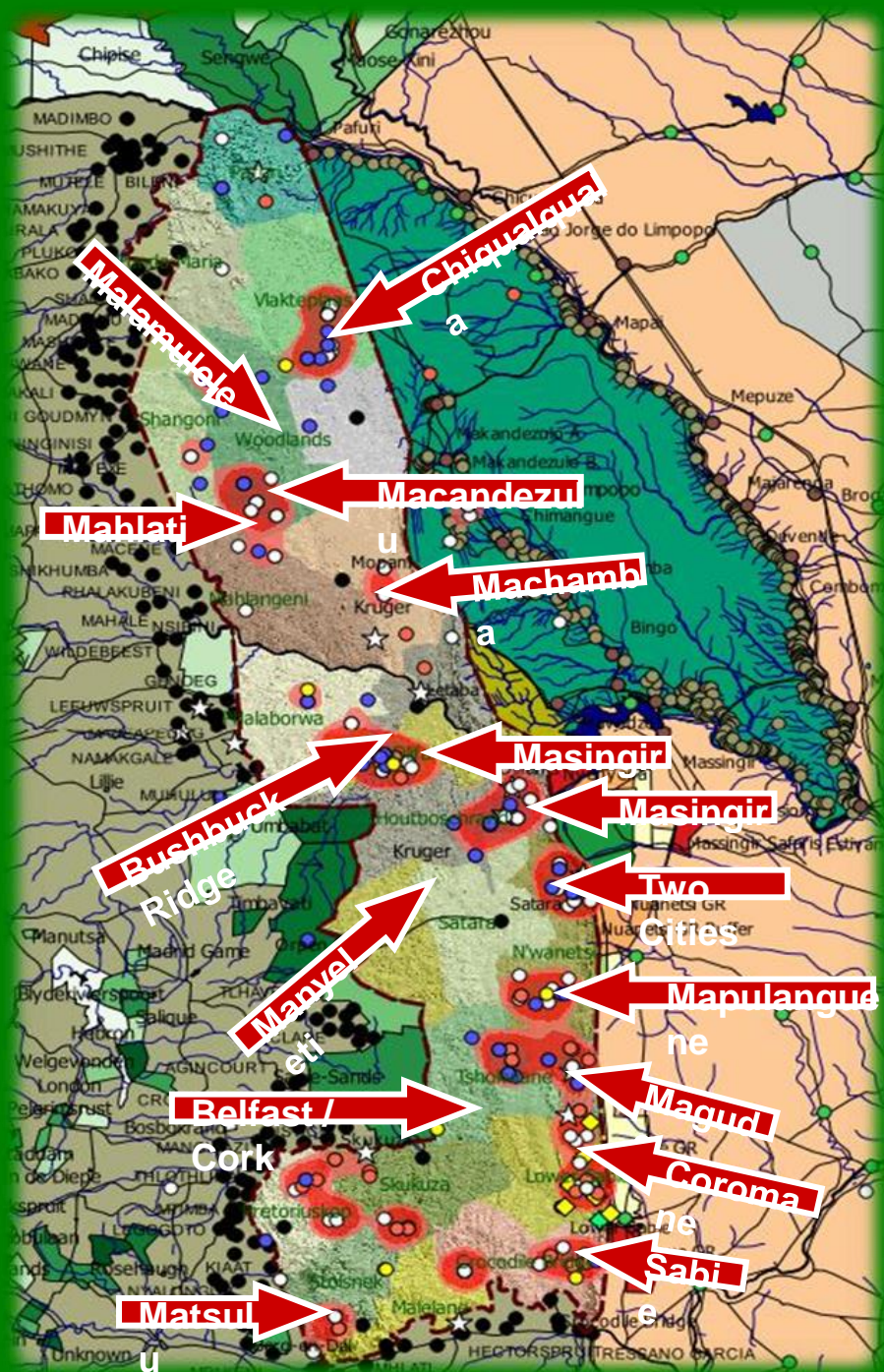
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boundary,
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people, social
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The result...



2. Why is it hard to collectively audit benefits?

Benefits

- Differ: tangibility, value, scale
- Perception based: Stakeholders differ

Value/prioritise benefits differently



Tourists



Politicians



Neighbours

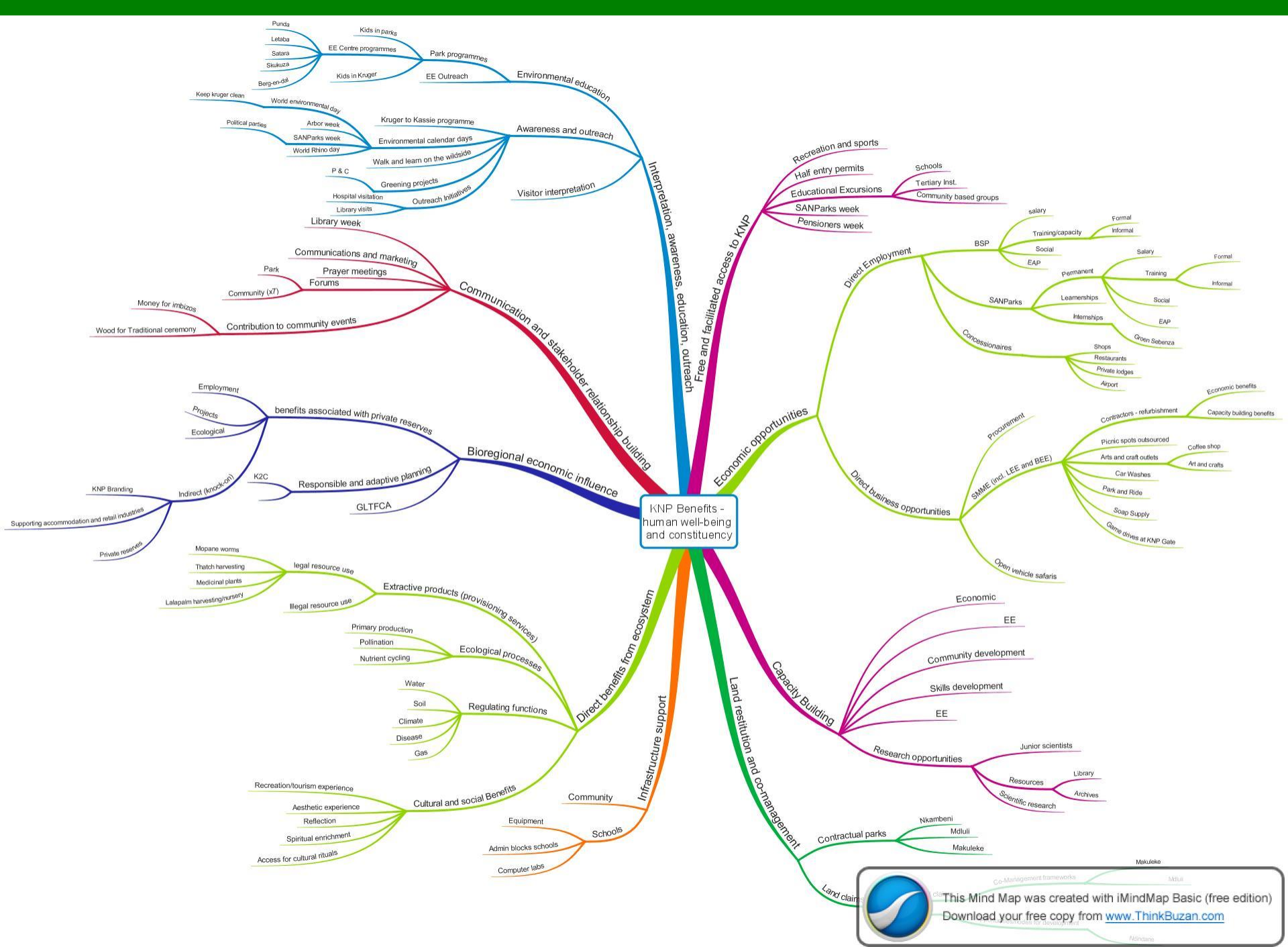
- Benefits to one group – Big 5
- Cost to another group – DCA's



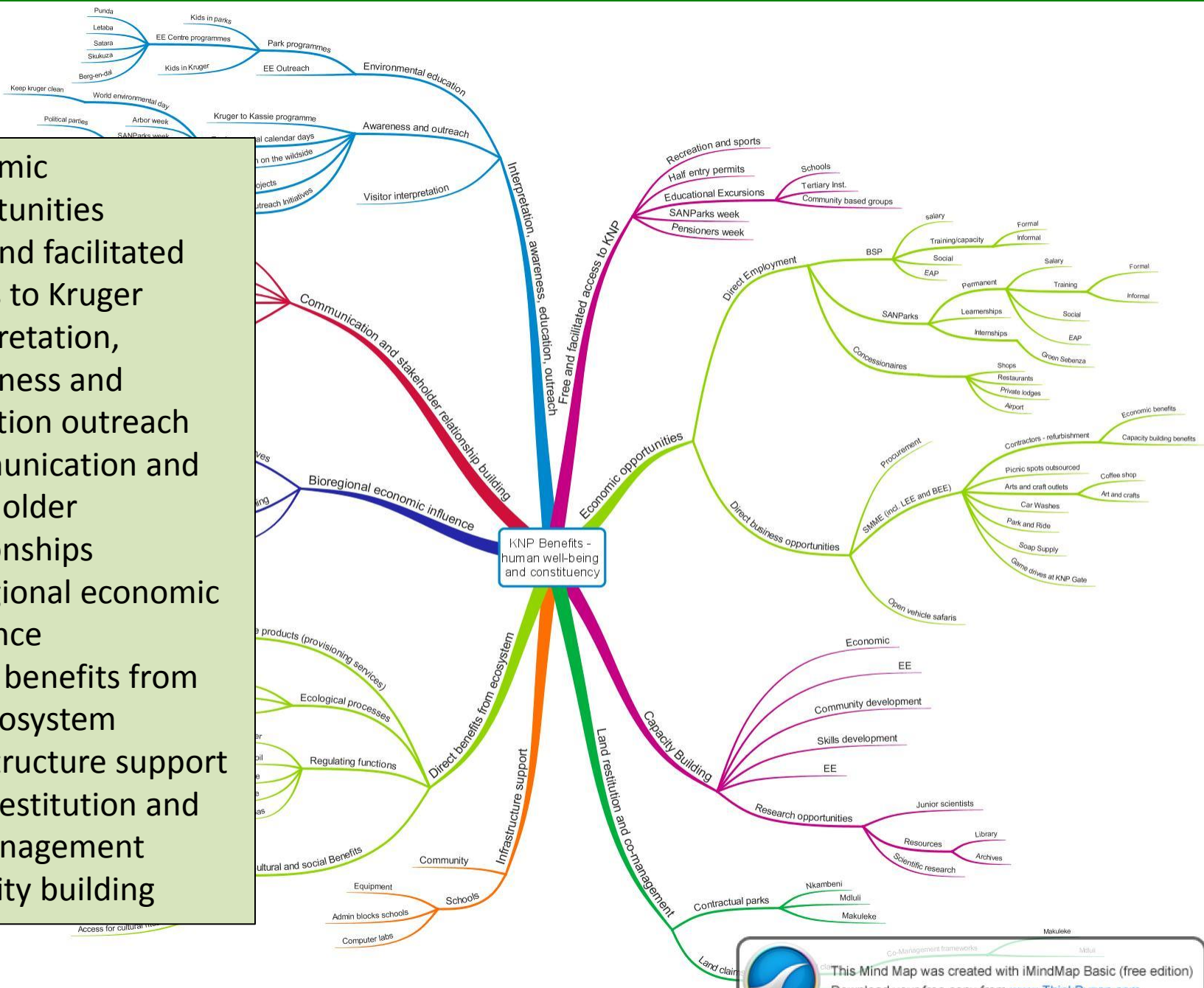
–Tradeoffs
–Apples and pears

Complex SES

Kruger audit process....

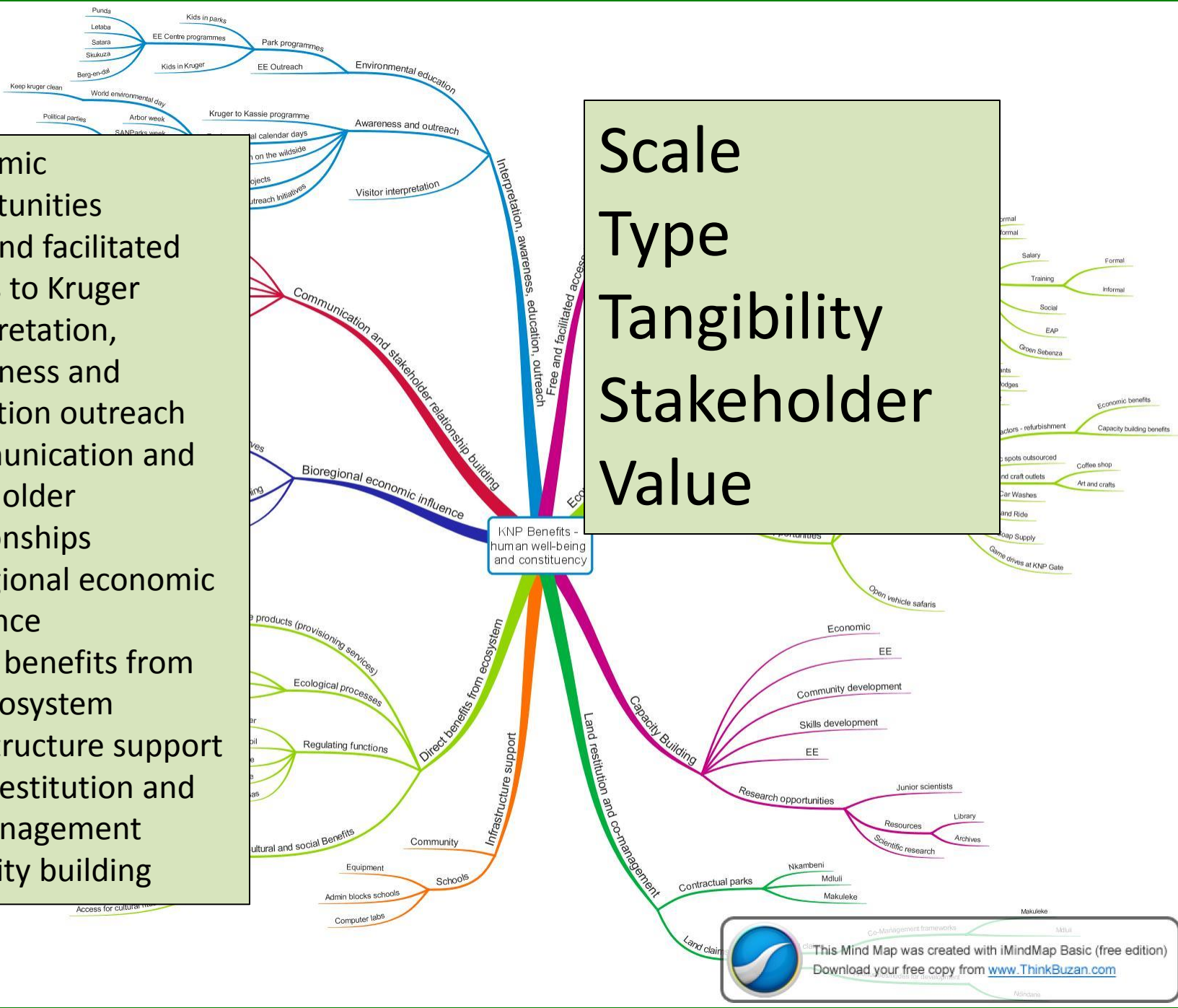


1. Economic opportunities
2. Free and facilitated access to Kruger
3. Interpretation, awareness and education outreach
4. Communication and stakeholder relationships
5. Bioregional economic influence
6. Direct benefits from the ecosystem
7. Infrastructure support
8. Land restitution and co-management
9. Capacity building



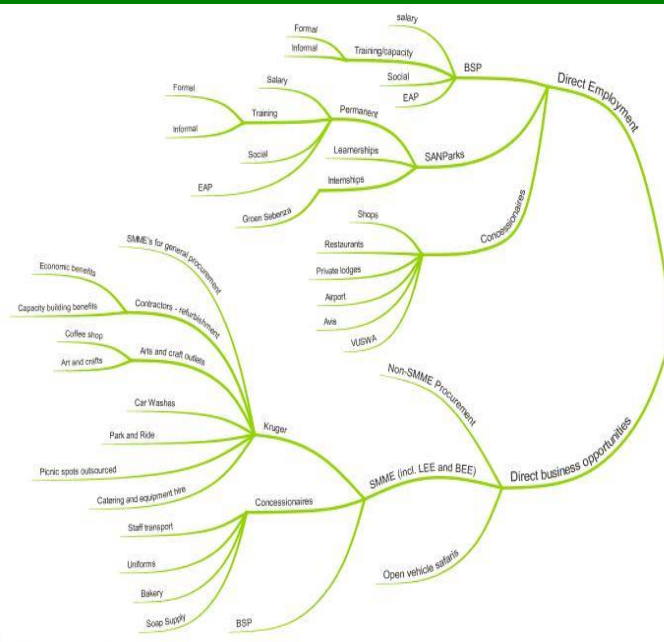
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Scale
 Type
 Tangibility
 Stakeholder
 Value

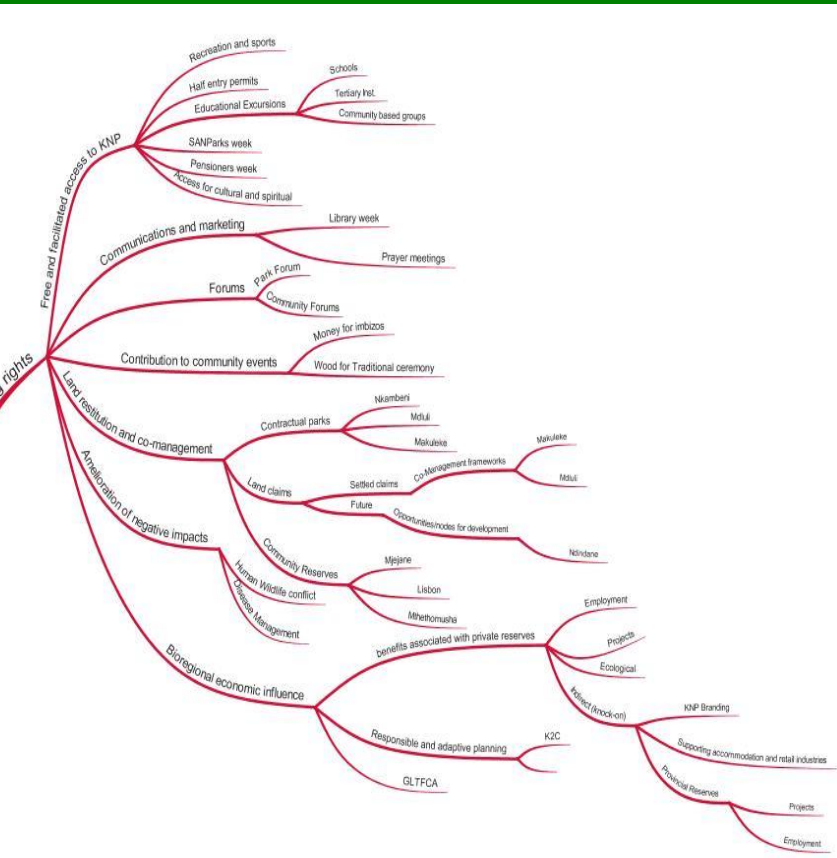


KNP Benefits - human well-being and constituency

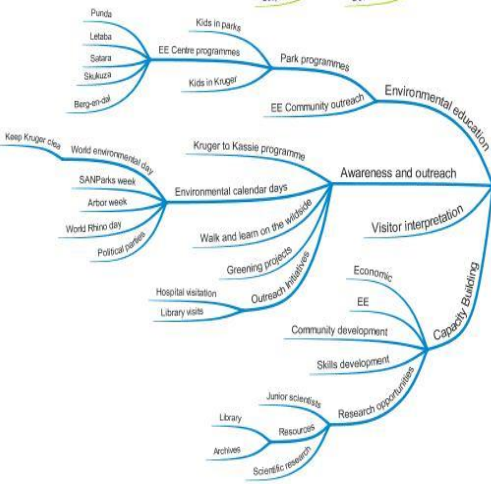
Economic opportunities



Managing relationships and restoring rights



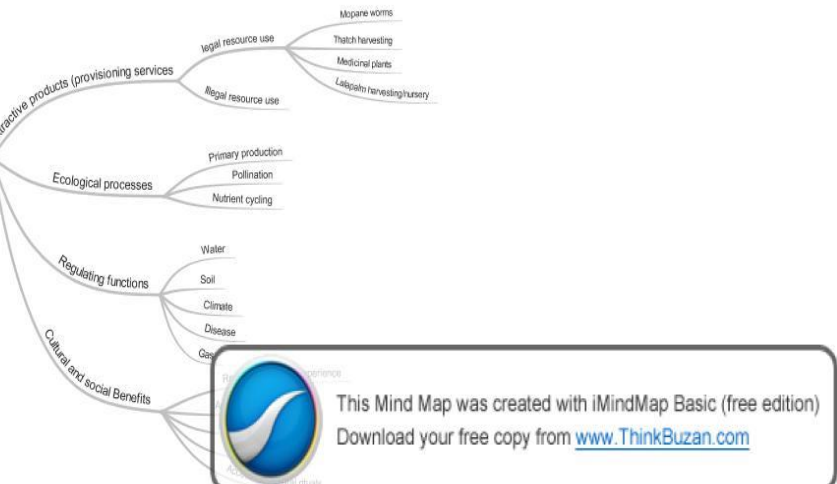
Capacity building, awareness and outreach



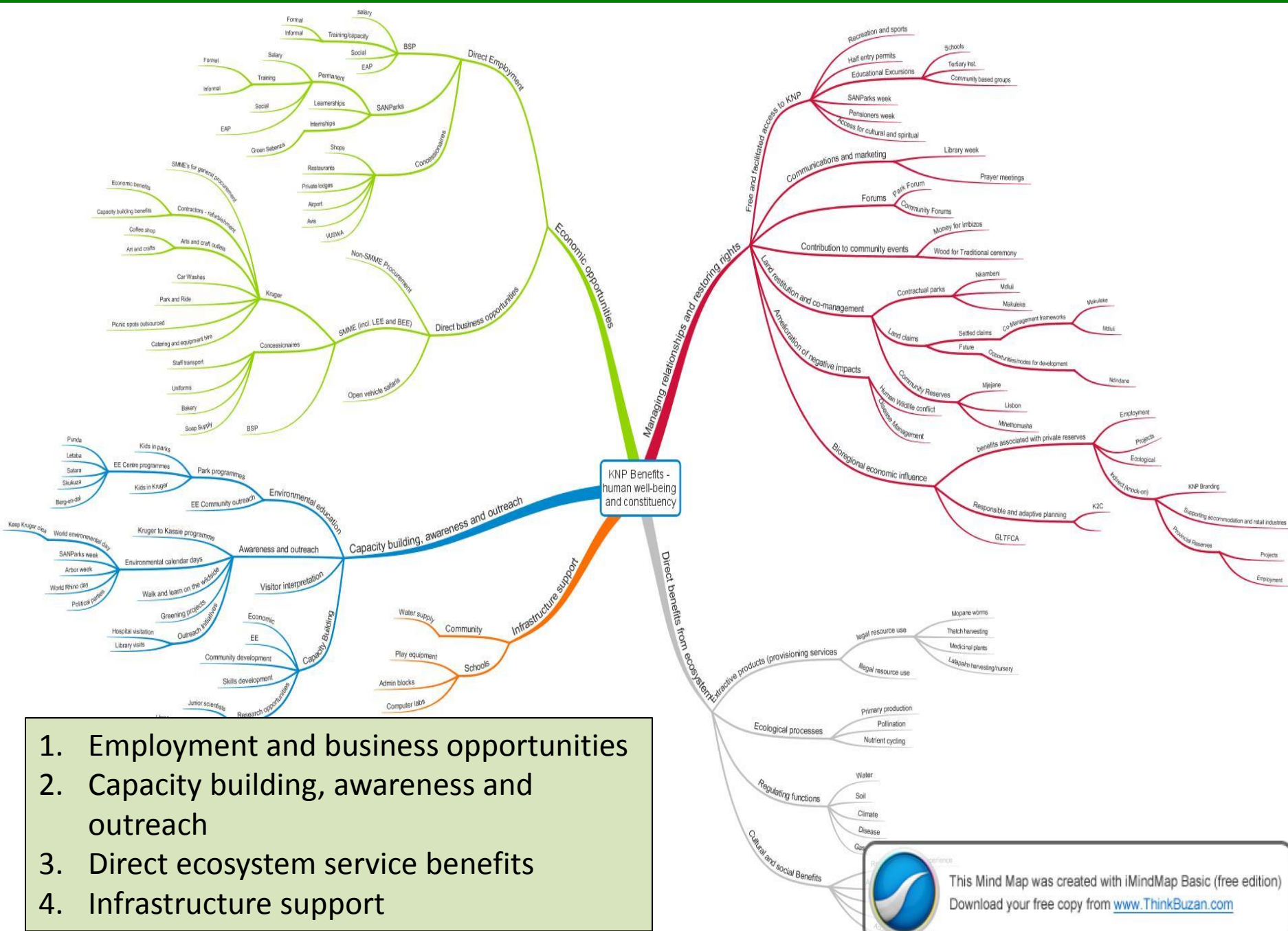
Infrastructure support



Direct benefits from ecosystems



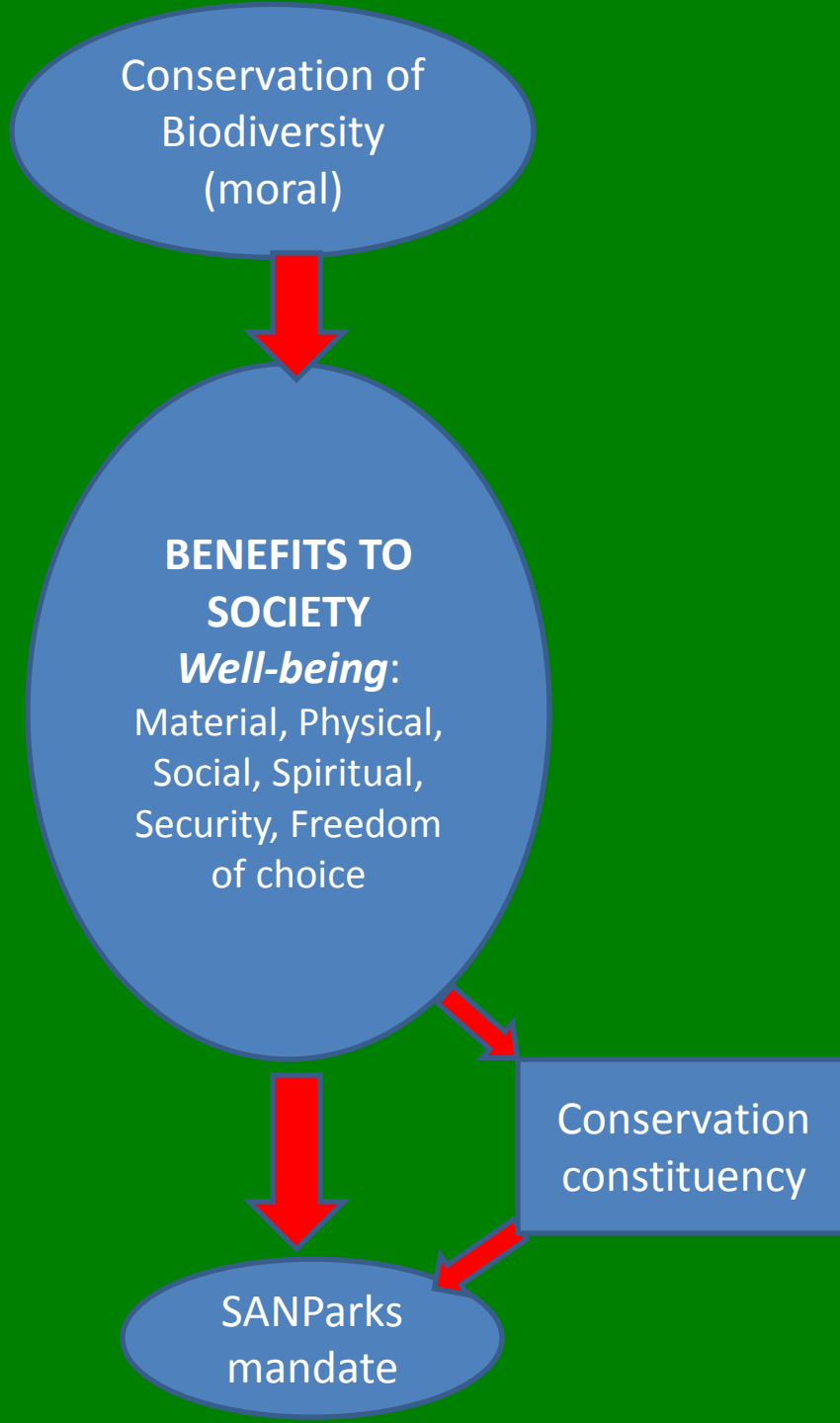
This Mind Map was created with iMindMap Basic (free edition)
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1. Employment and business opportunities
2. Capacity building, awareness and outreach
3. Direct ecosystem service benefits
4. Infrastructure support



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Conservation of
Biodiversity
(moral)

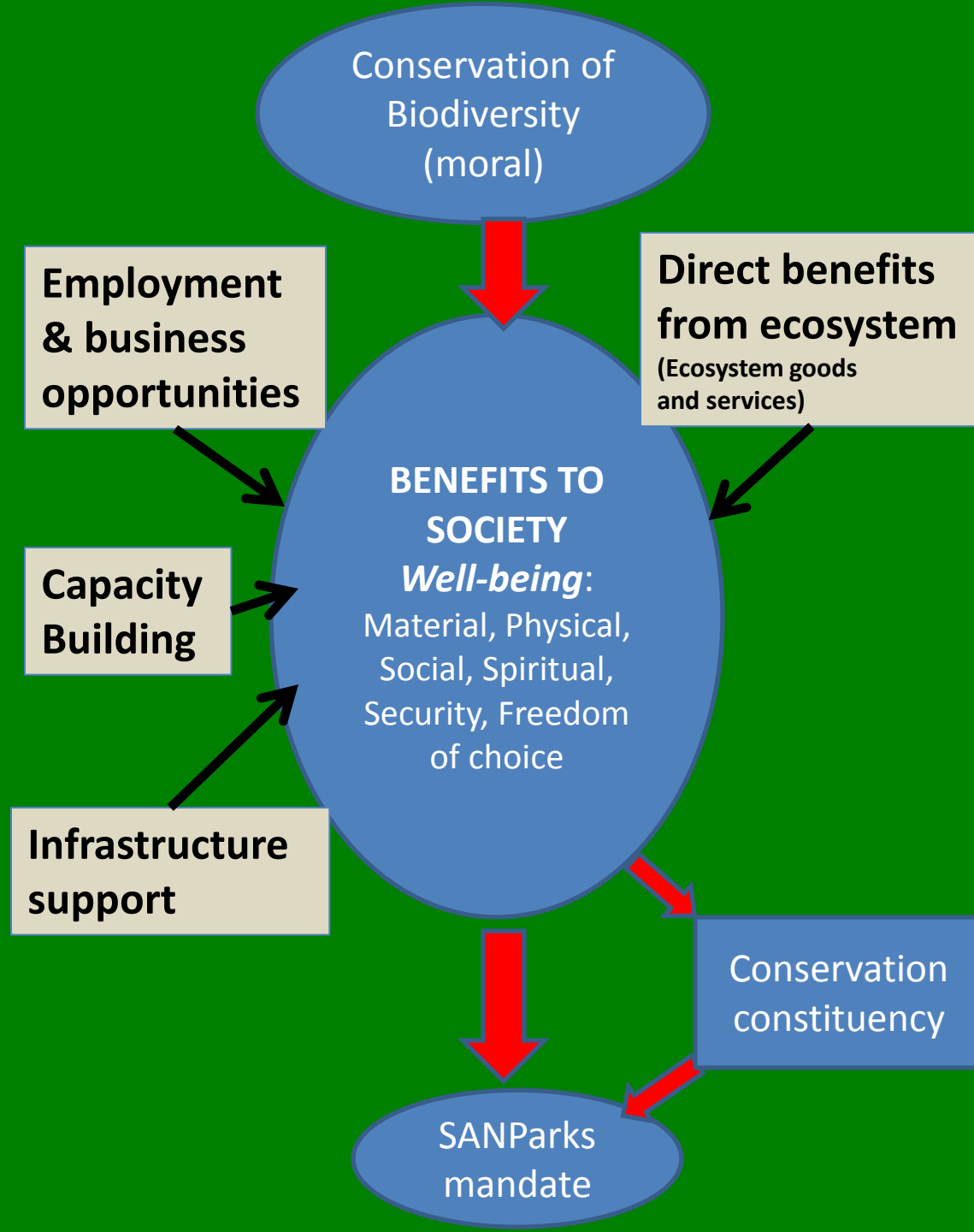
**BENEFITS TO
SOCIETY**

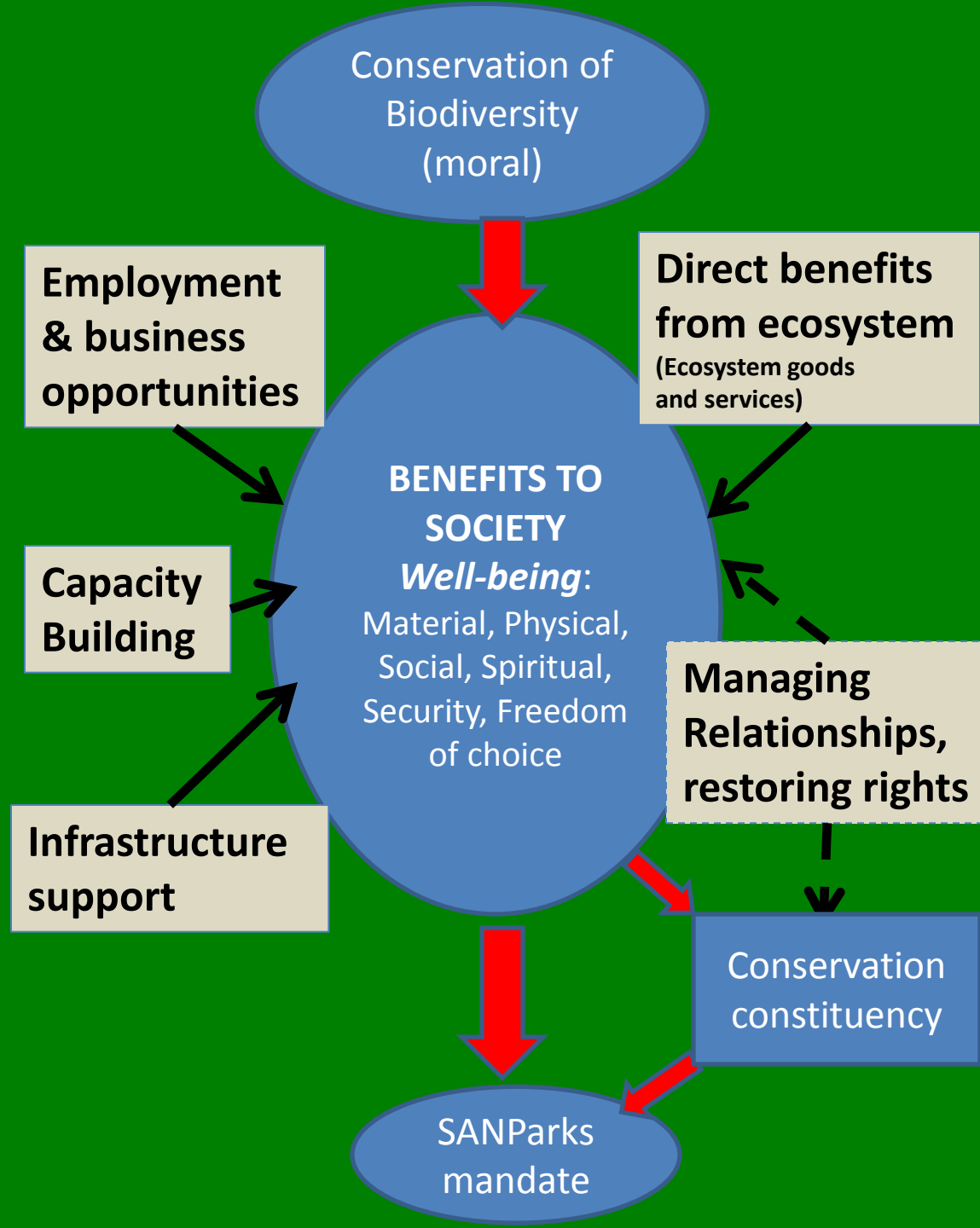
Well-being:

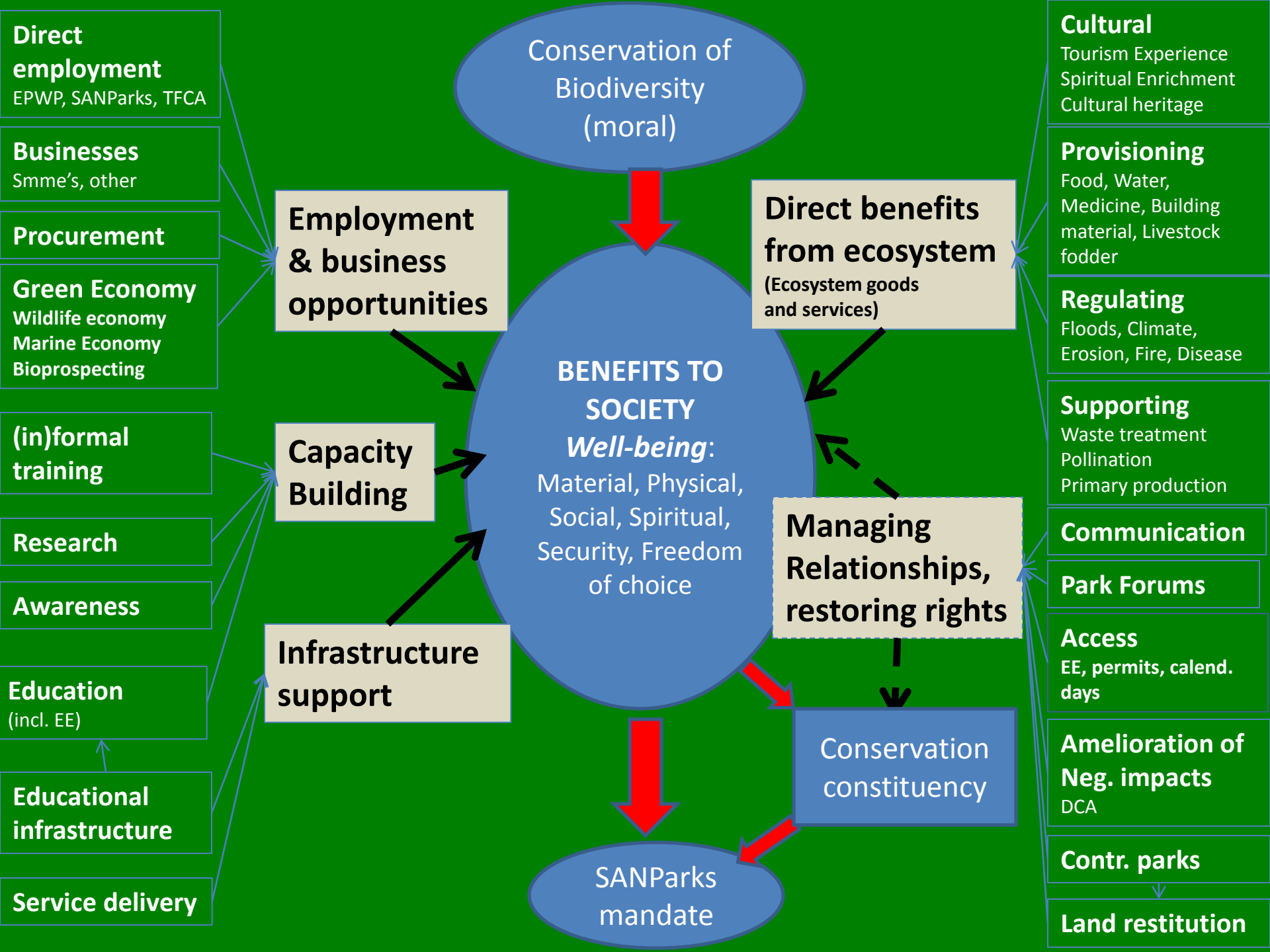
Material, Physical,
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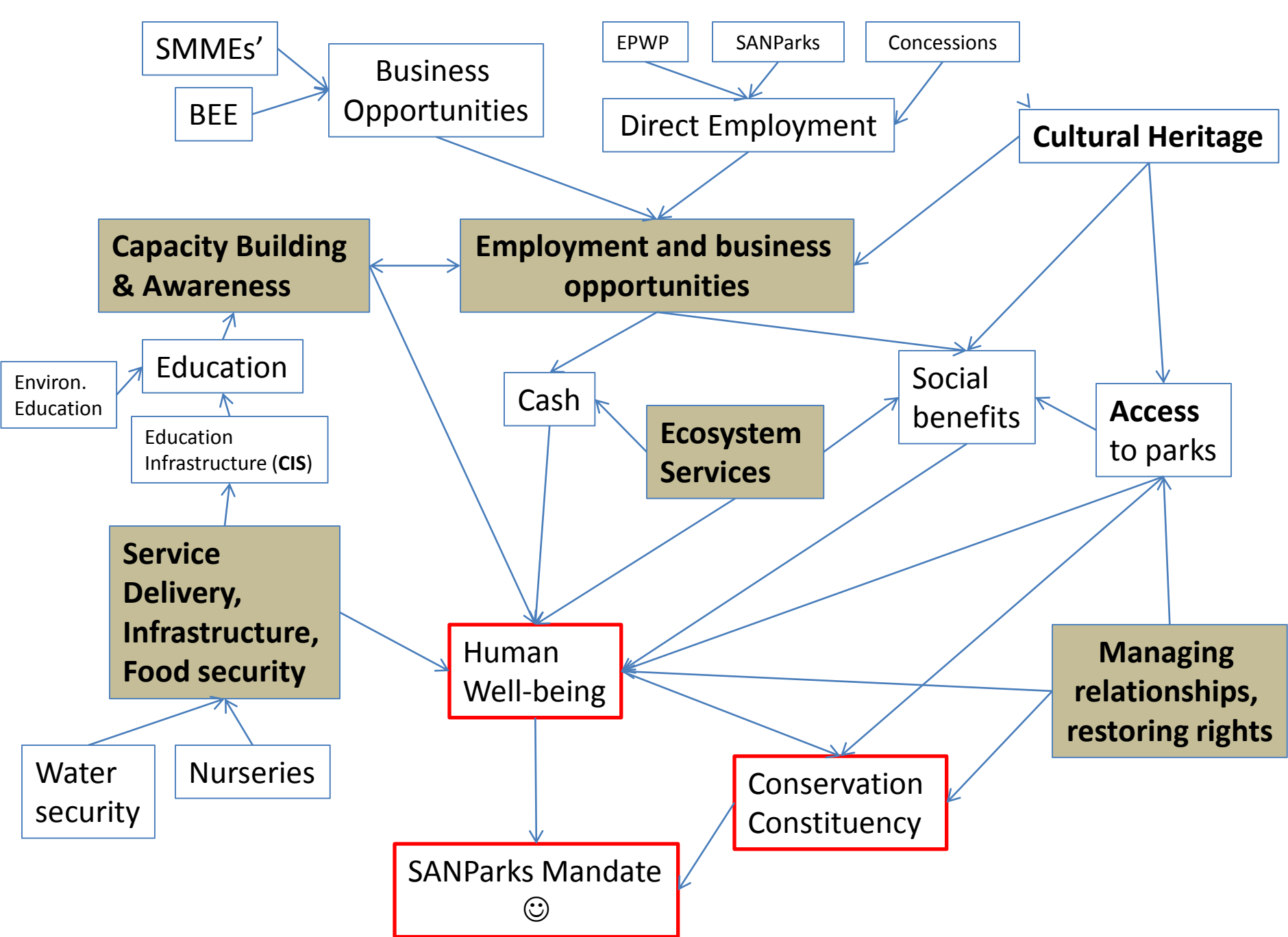
Conservation
constituency

SANParks
mandate



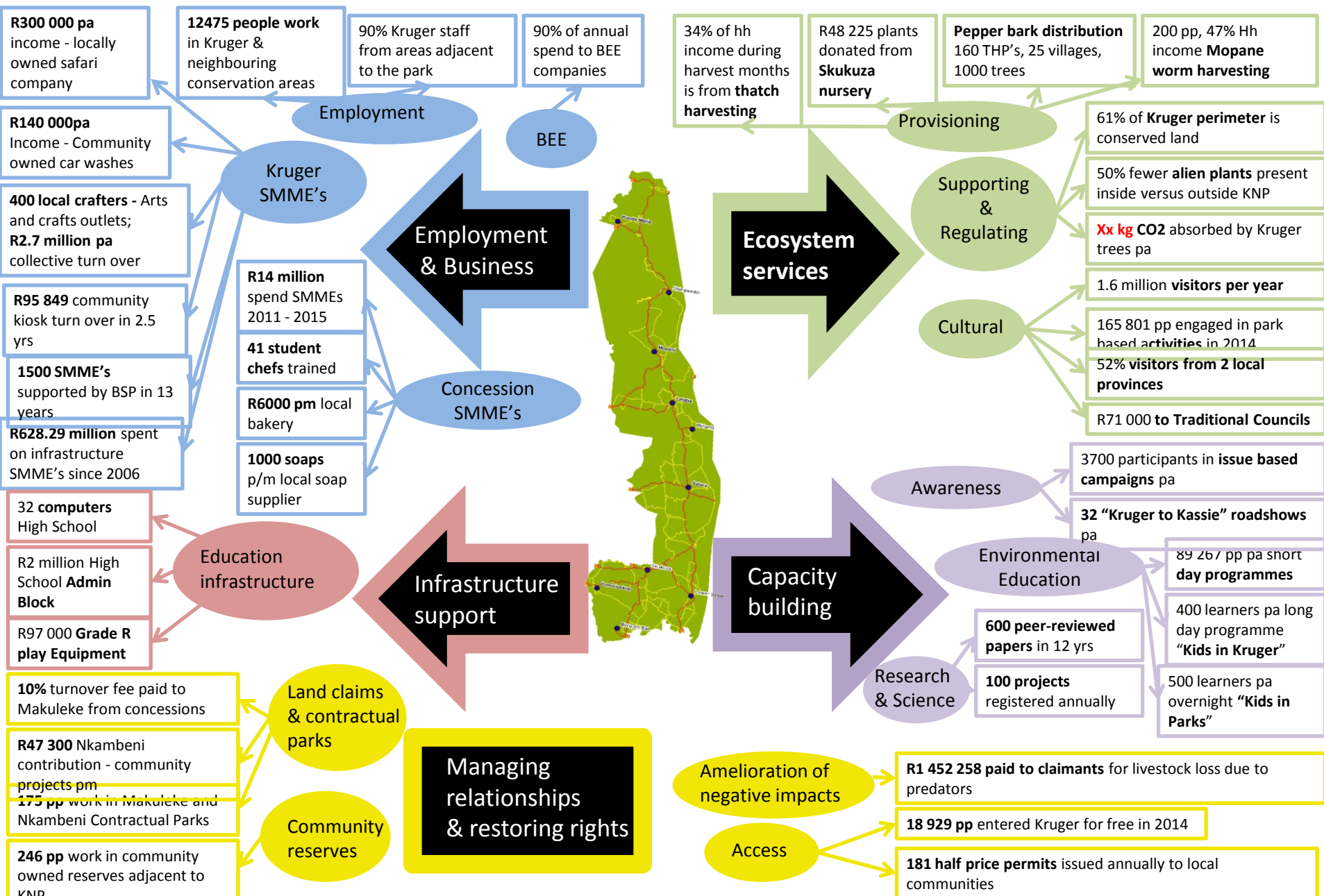




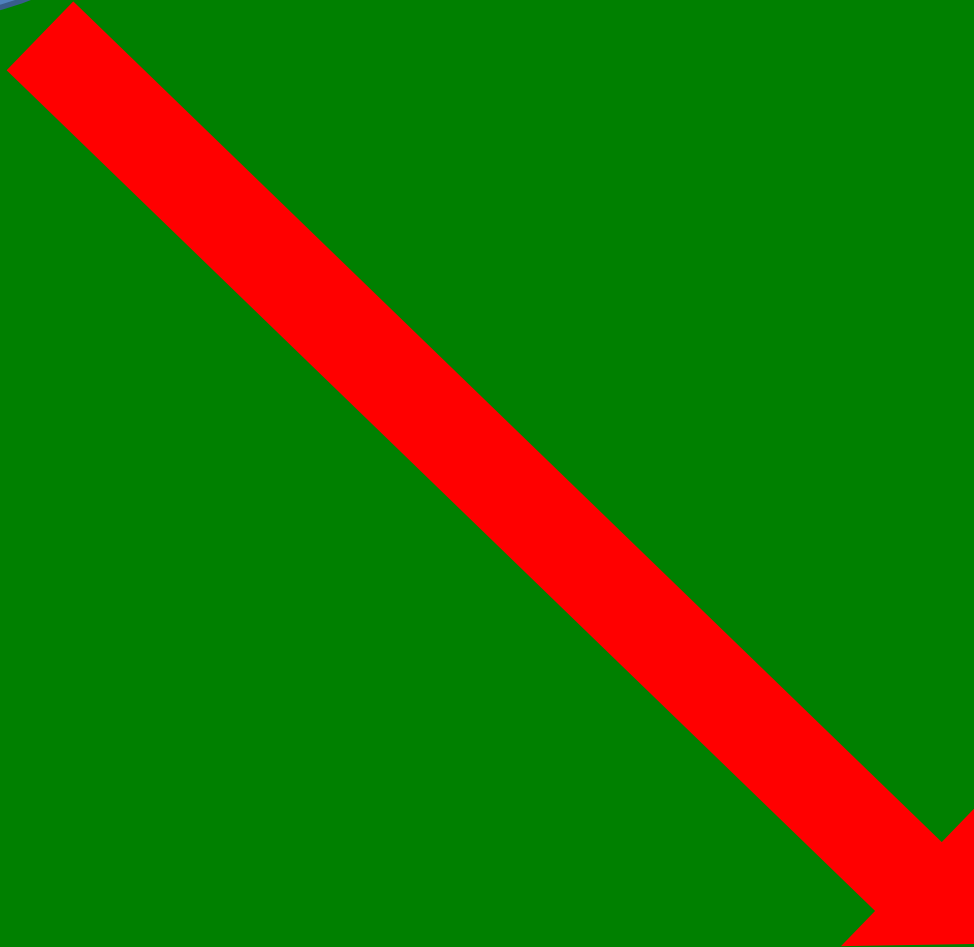


Kruger Benefits

..... at a glance

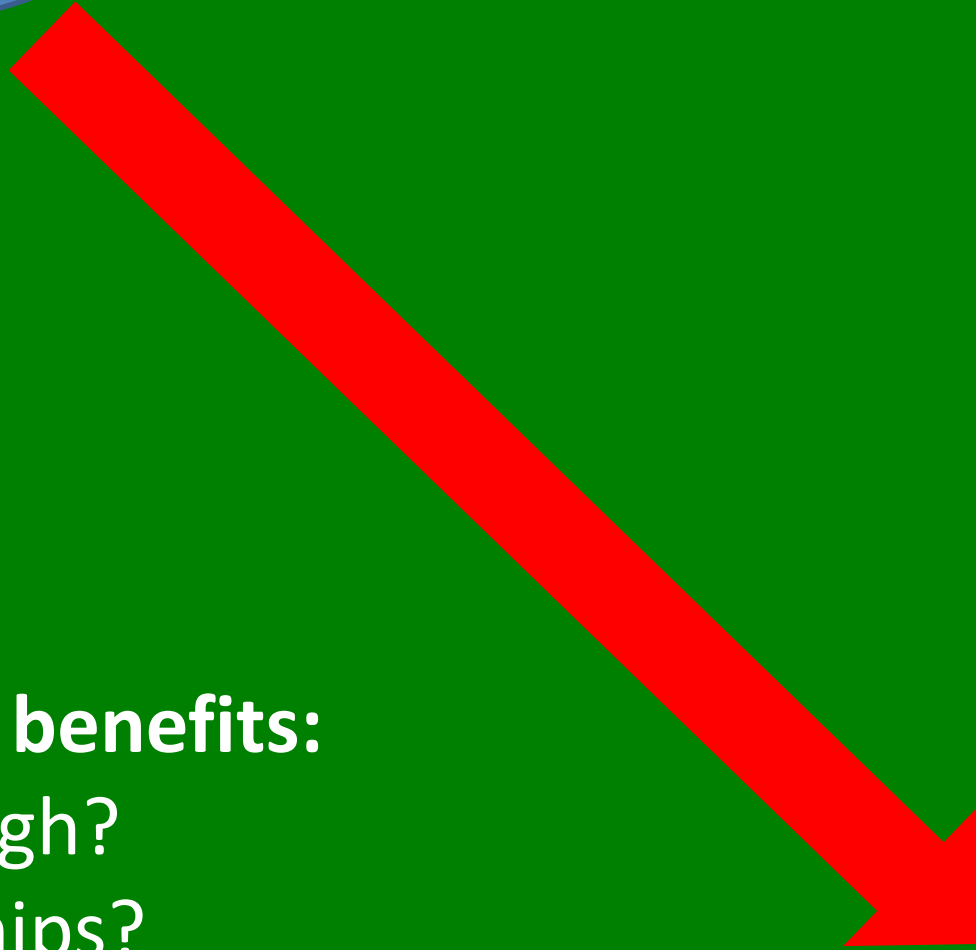


Benefit accrual
from conservation



SANParks Mandate
(Biodiversity and
Benefits)

Benefit accrual
from conservation



Supplying benefits:
fair? Enough?
Relationships?
Conservation related
behavior?

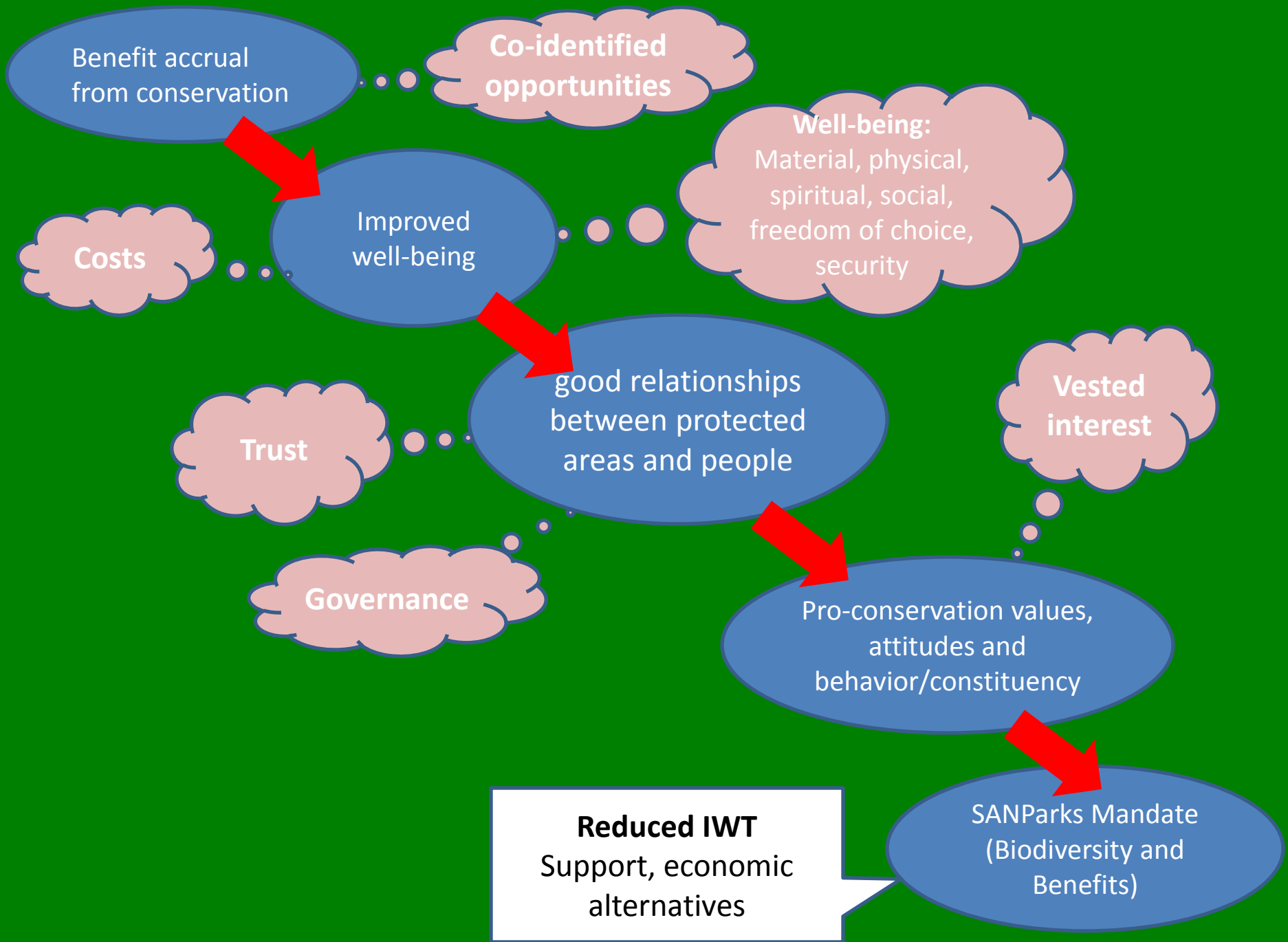
SANParks Mandate
(Biodiversity and
Benefits)

Benefit accrual
from conservation

3. Theory of change and Outcomes assessments

Supplying benefits:
fair? Enough?
Relationships?
Conservation related
behavior?

SANParks Mandate
(Biodiversity and
Benefits)



Benefit accrual from conservation

Co-identified opportunities

Well-being:
Material, physical,
spiritual, social,
freedom of choice,
security

Improved well-being

good relationships between protected areas and people

Vested interest

Trust

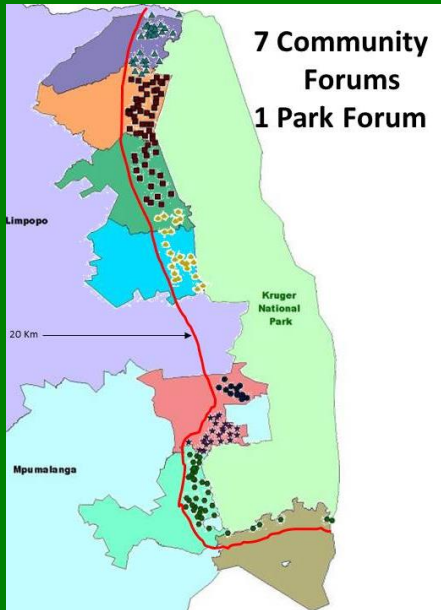
Governance

Pro-conservation values, attitudes and behavior/constituency

SANParks Mandate (Biodiversity and Benefits)

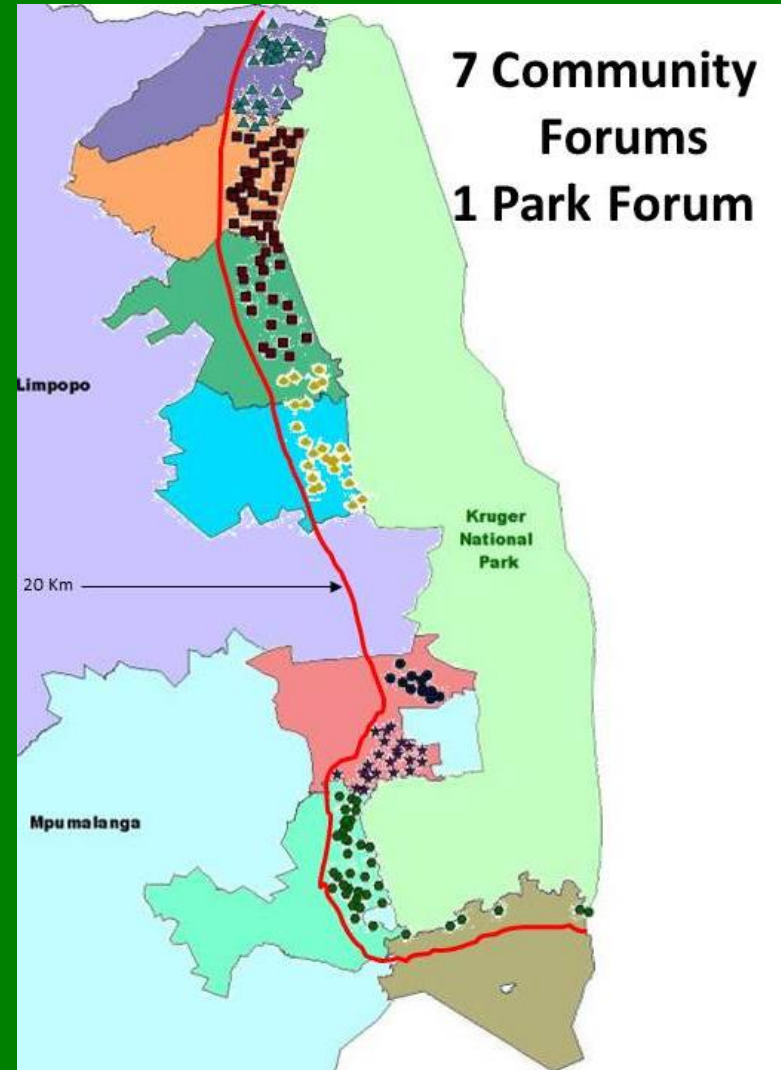
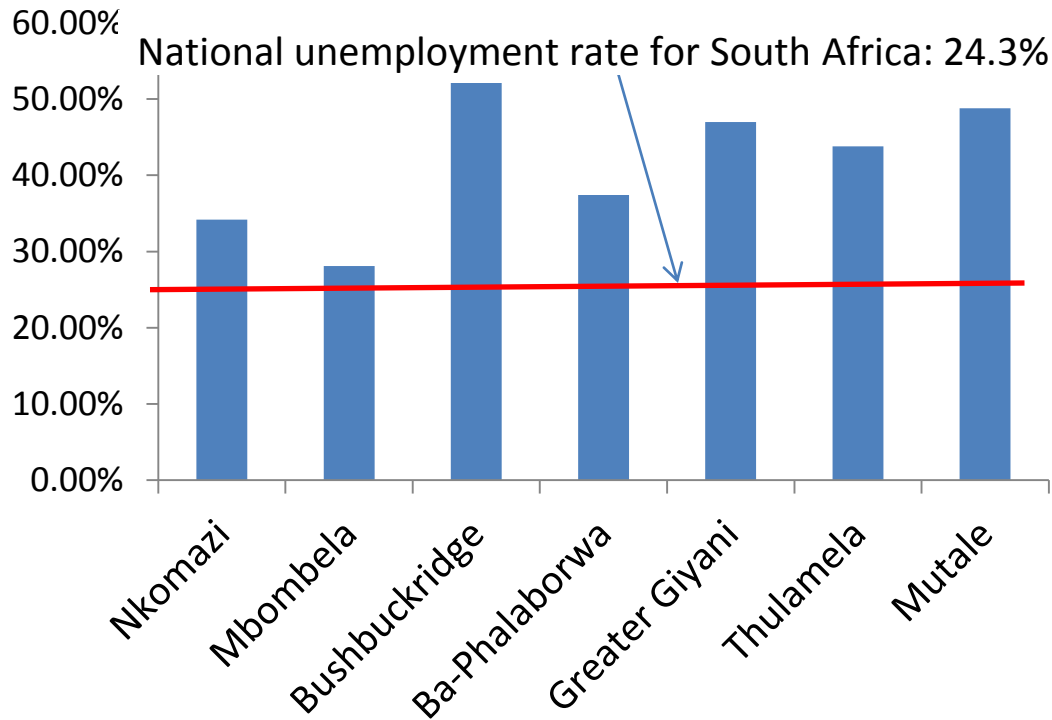
Reduced IWT Support, economic alternatives

**Leverage points?
Feasible,
difference**



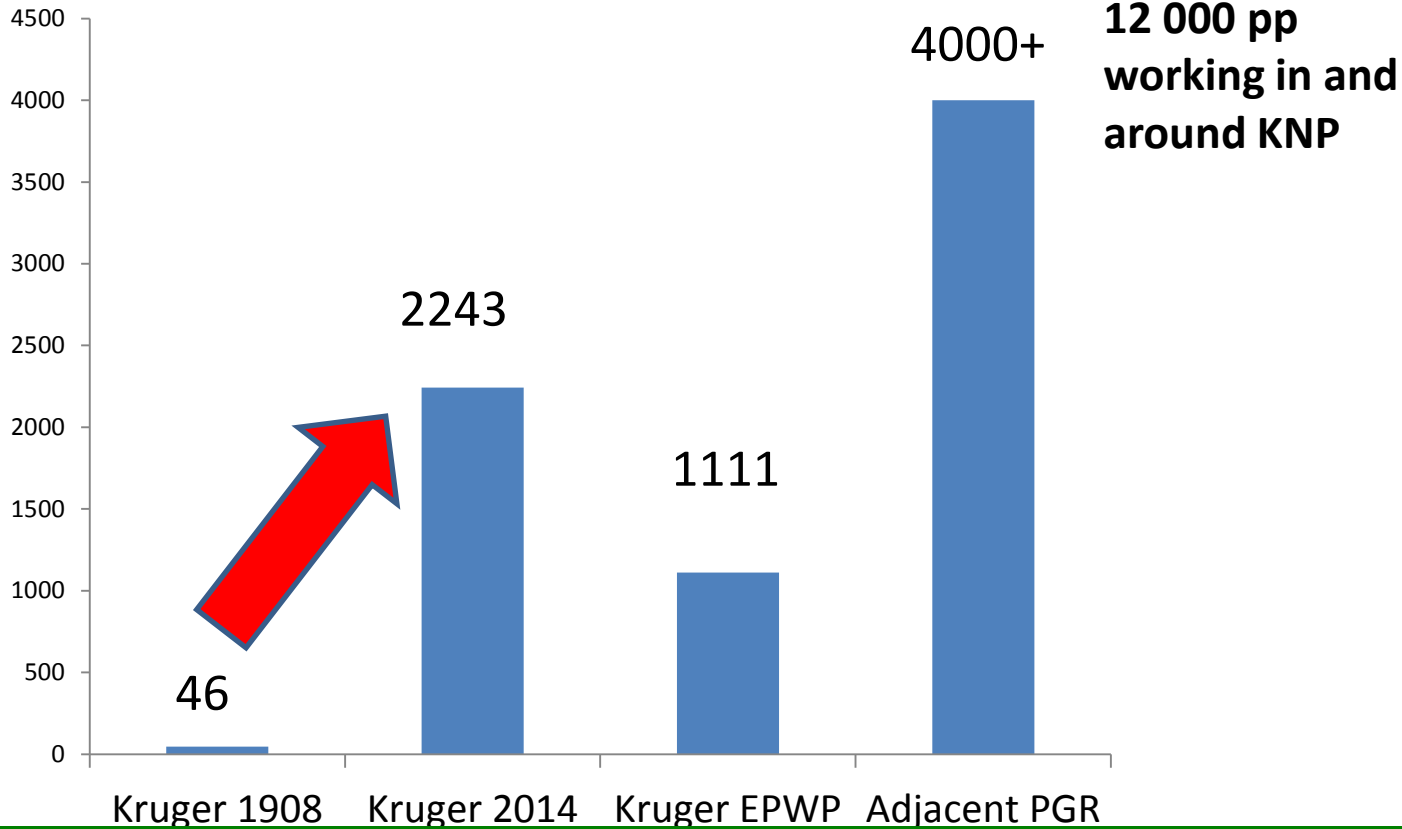
Employment – greatest need

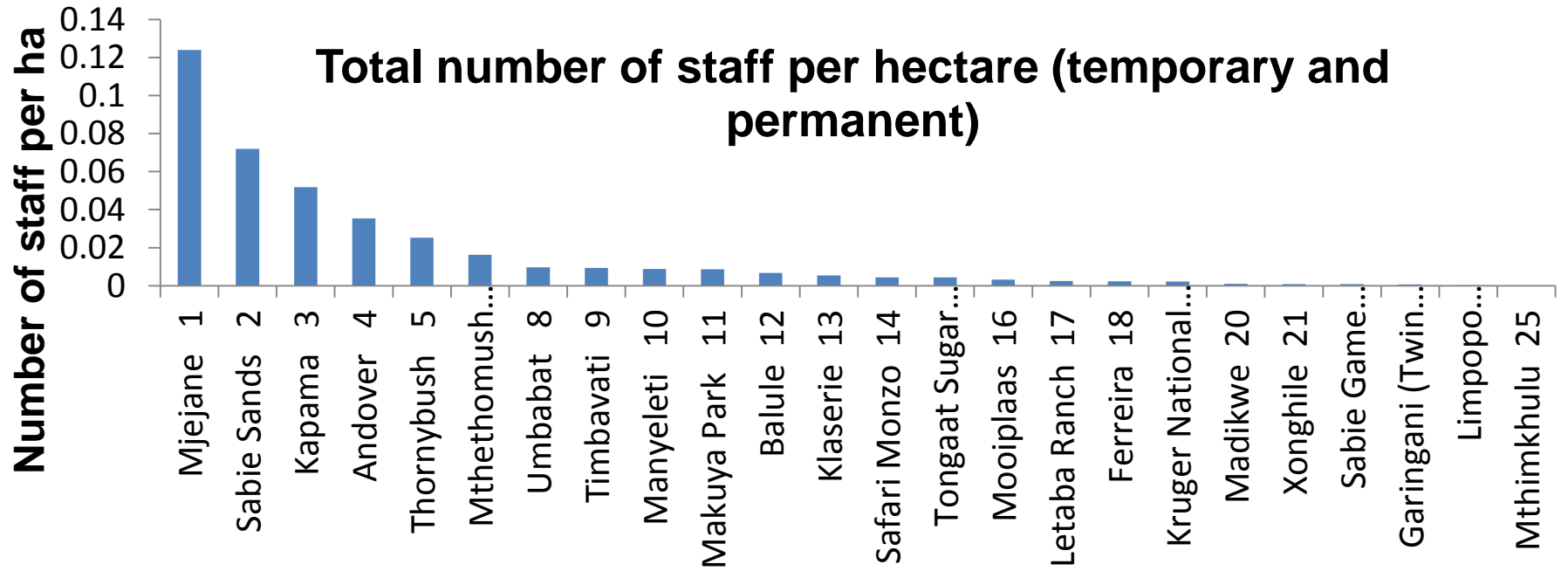
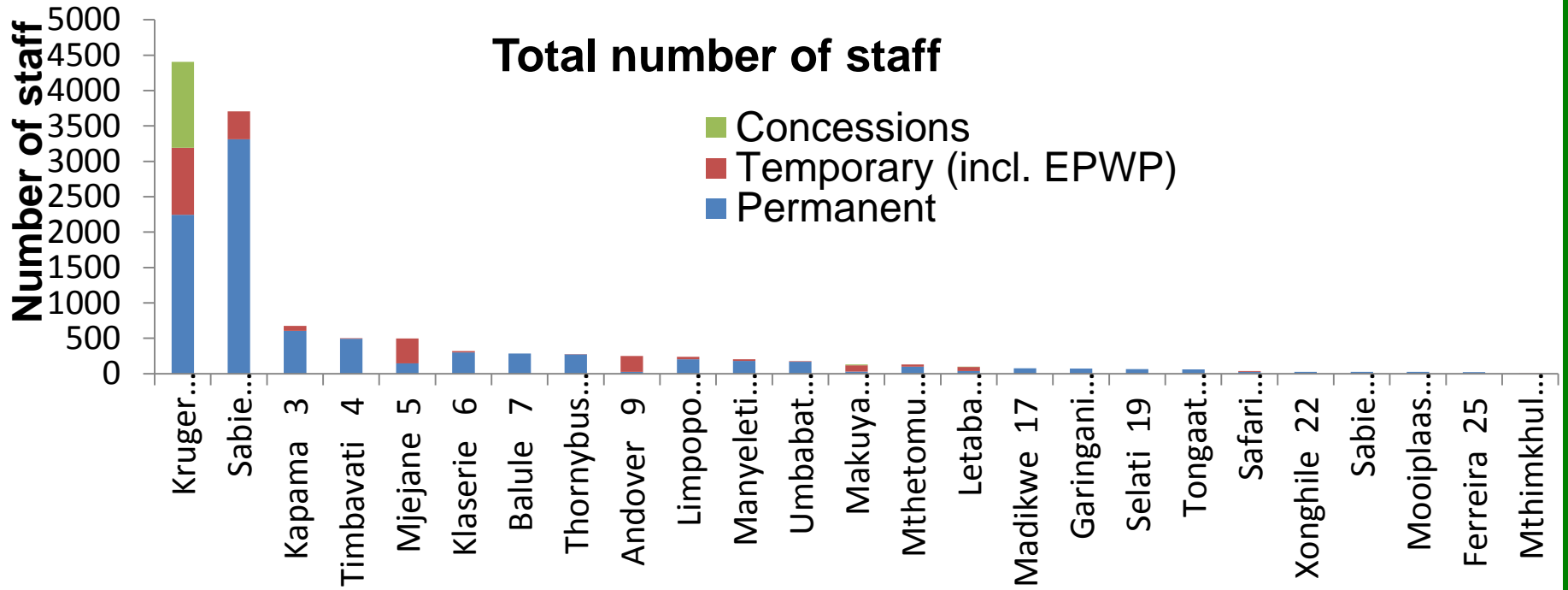
Unemployment rate in Local Municipalities adjacent to the Kruger National Park in South Africa.

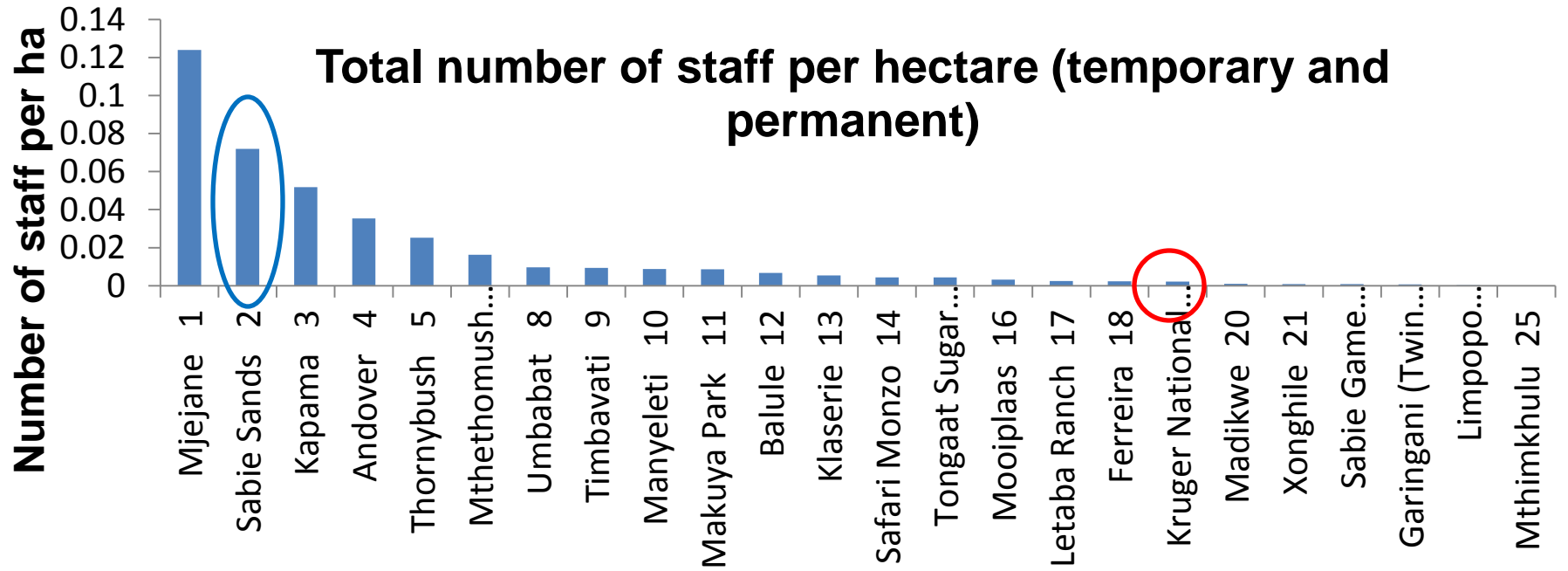
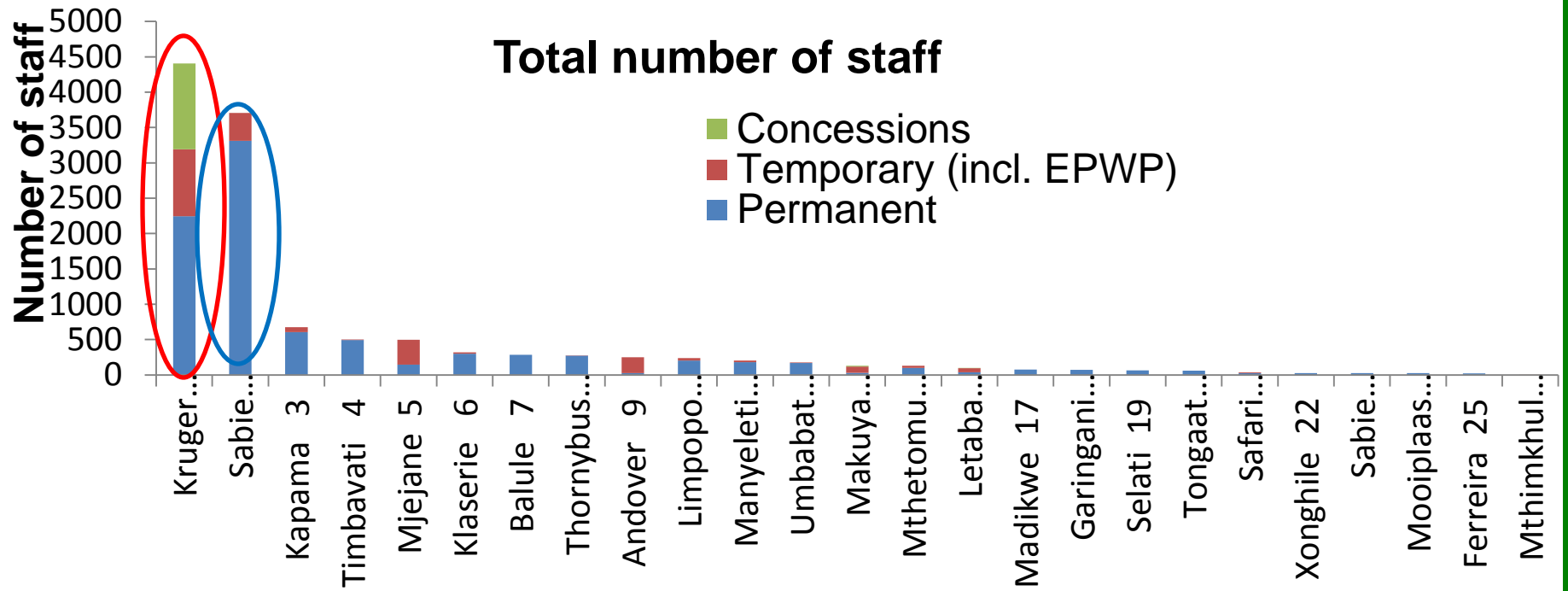


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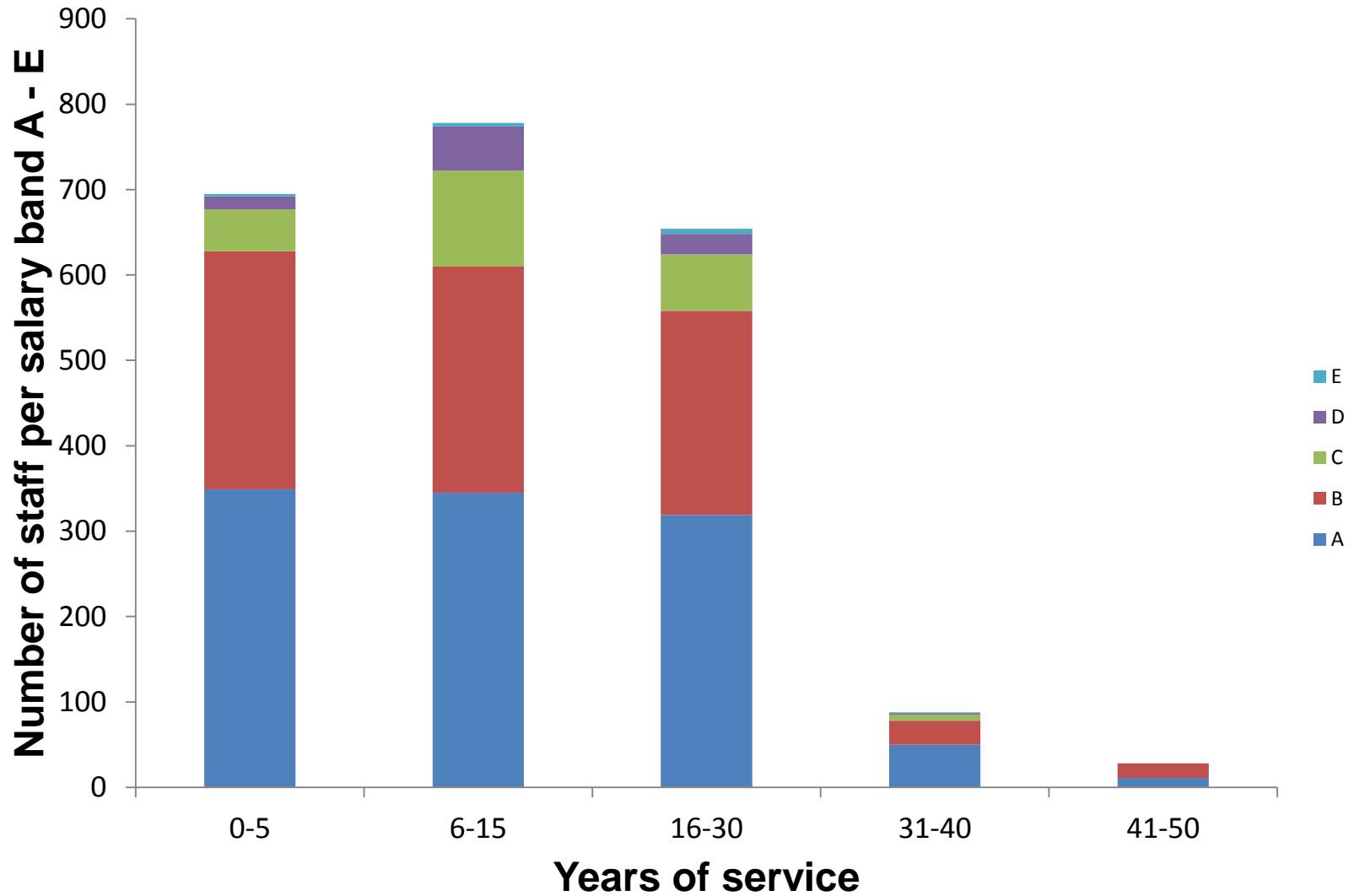
Number of staff







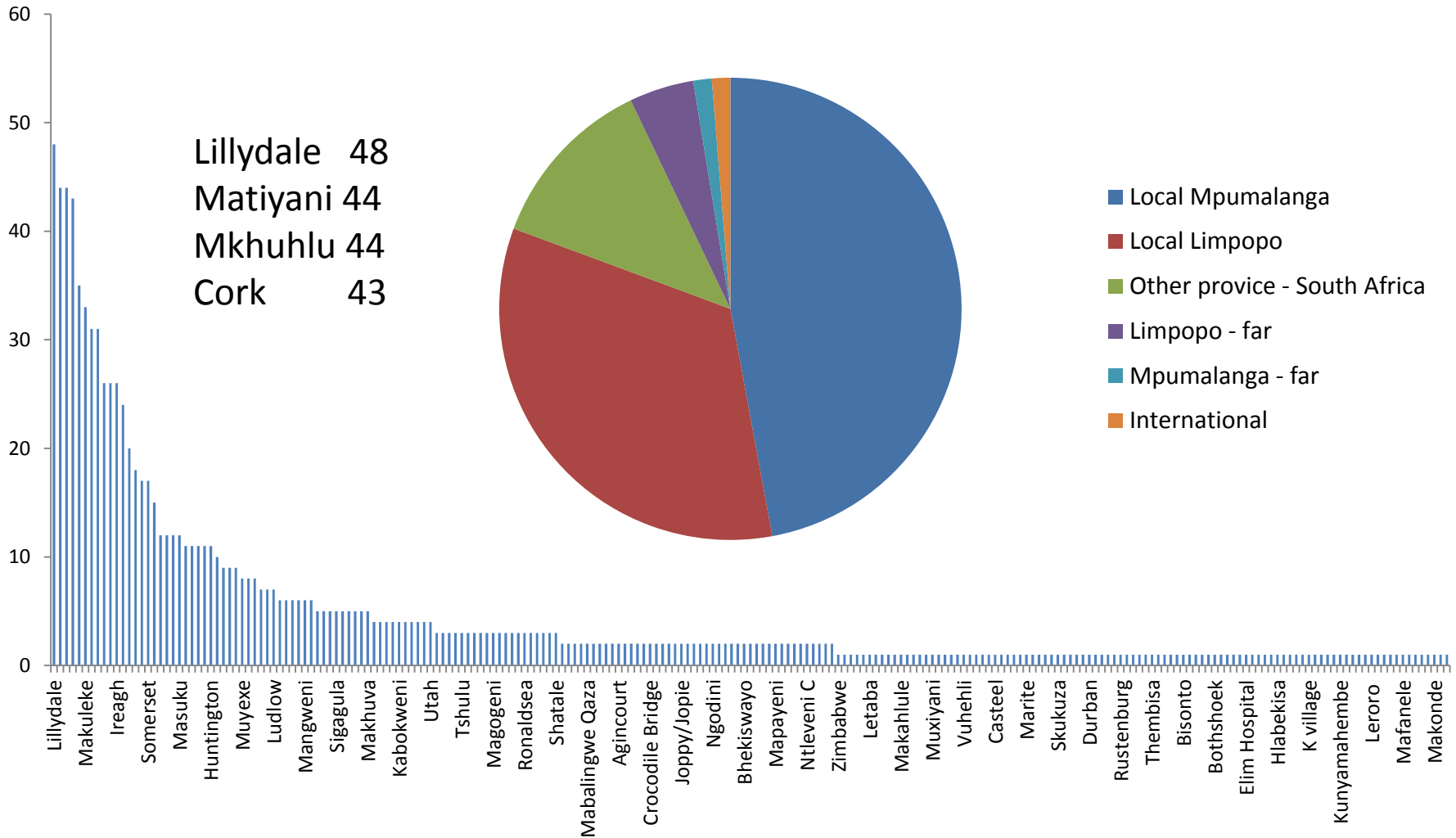
Years of service of current KNP staff



Home towns of Kruger staff

- 274 home towns
- 87% 2 provinces
- 93% within 50km

Number of staff per village/town



How has your job changed your life?

- **Personally**

- 100 % positive responses: Happy, confident, self-respect, not depressed, free

“Able to take care of myself”

“I feel happy and beautiful am no longer depressed”

“I get much respect and feel confident about myself”

Improvements on homes

66%

“I have renovated my mother's house and it has brought joy to heart and hers because it is now beautiful”

“It help us a lots because we have a house to sleep”

“I managed to extend a one room at home and now the is enough space for everyone”

“I extended my house by one room and built a pit toilet”

“fixed a leaking roof”

“Built

myself a house”

“I'm finishing my house”



Business opportunities

BEE

- 90% total spend KNP
R346,858,898.41

SMME's

Community based economic development opportunities

- R328 289 - Catering and equipment hire
2014/2015: (26 companies)
- Contractor Programme:
36 trained, 360 employed

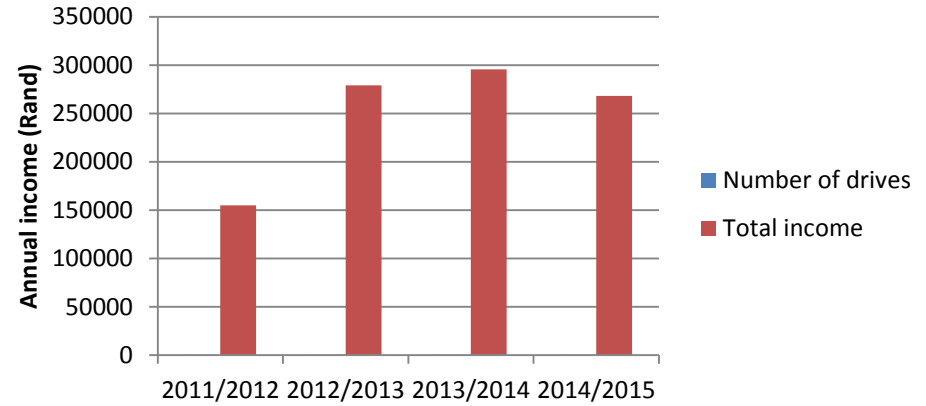


- Community park and Ride



5 members of co-operative, approximately R250 000pa

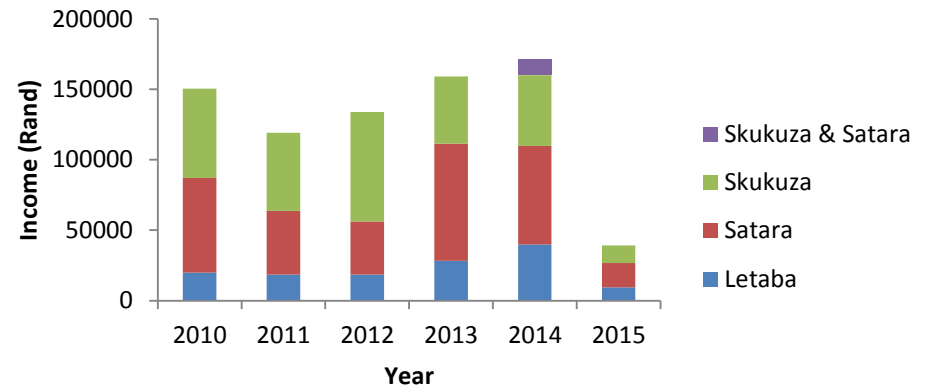
Annual number of drives and income of Kruger Park 'n Ride



- Community car wash



Income from car wash sales in Kruger National Park



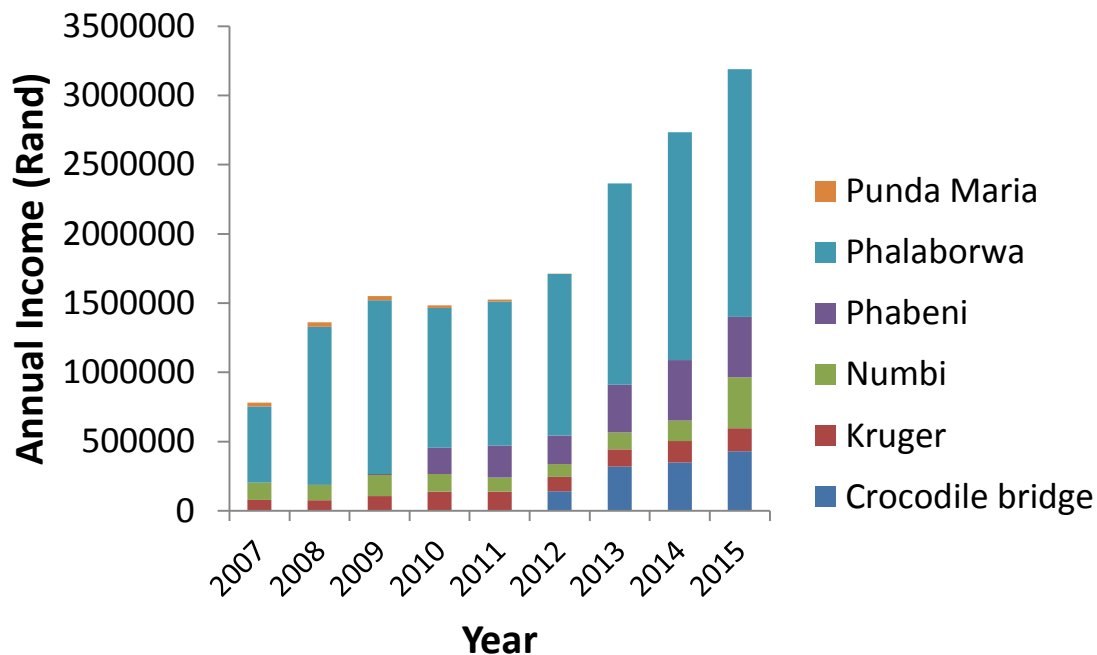
Washed 17 400 vehicles over the last 5 years!

Arts and Crafts outlets:

Phabeni, Numbi, Orpen, Phalaborwa, Punda Maria



Annual income from KNP Community Curio Shops



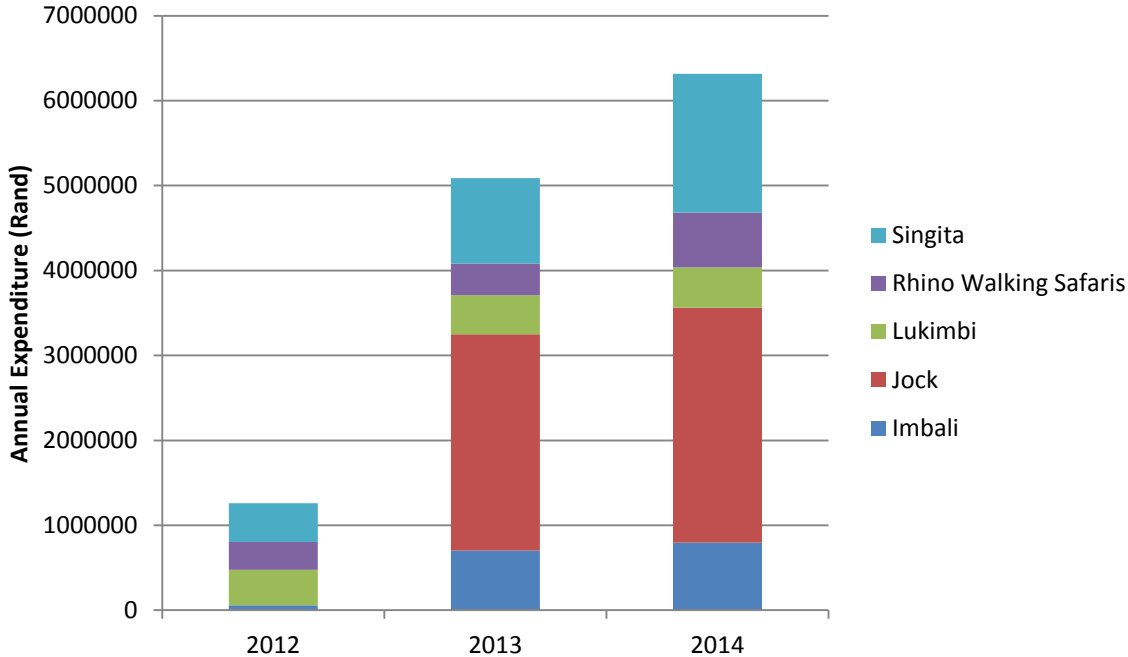
- 2015: R3.1 million
Collective turn-over

Community Kiosks: Pretoriuskop Berg-en-Dal

In the 2.5 years since establishment, the two KNP community kiosks have turned over R95 849!

Concessionaire SMME expenditure

Collective annual Concessionaire Expenditure on SMME's



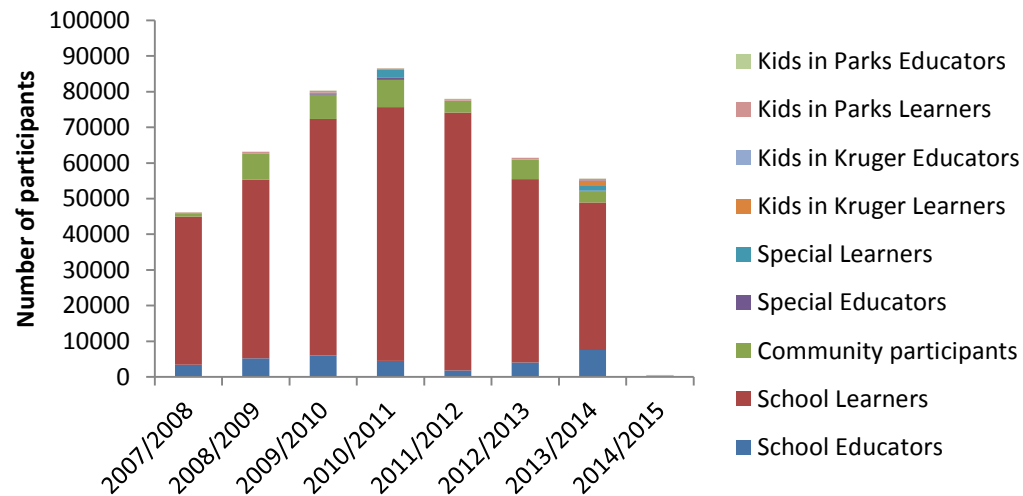
- 7 concessionaires
 - Eco-Tourism
- 2014/2015:
 - 202 local SMME's
 - Ave. R340 988 pm local SMME's.
- October 2011 to March 2015 : collectively spent over R14 million to local SMME's.

Capacity building & Awareness KNP Environmental Education Programme



- 1950's
- Major focus of transformation in 1990's
- 17 staff: 5 x EE centers
 >72 000 learners
- 90% - first time access to KNP

Participants in Environmental Education Programmes
in the Kruger Park between April 2007 and March
2015



Outcome

Intensity of
engagement

Number of
Participants per year

Access & Awareness

1-3 hr
Single
visit

Day programmes

70 000pp

Access, awareness,
Curricula based learning

5-7 hr
Single visit

Kids in Kruger

5000pp

Access, awareness,
Curricula based &
experiential learning

1 -3 nights
single visit

Kids in Parks

500pp

Access, awareness,
Curricula based &
experiential learning,
Science skills
& personal
growth

3-5 nights
Annual visit for 3 years

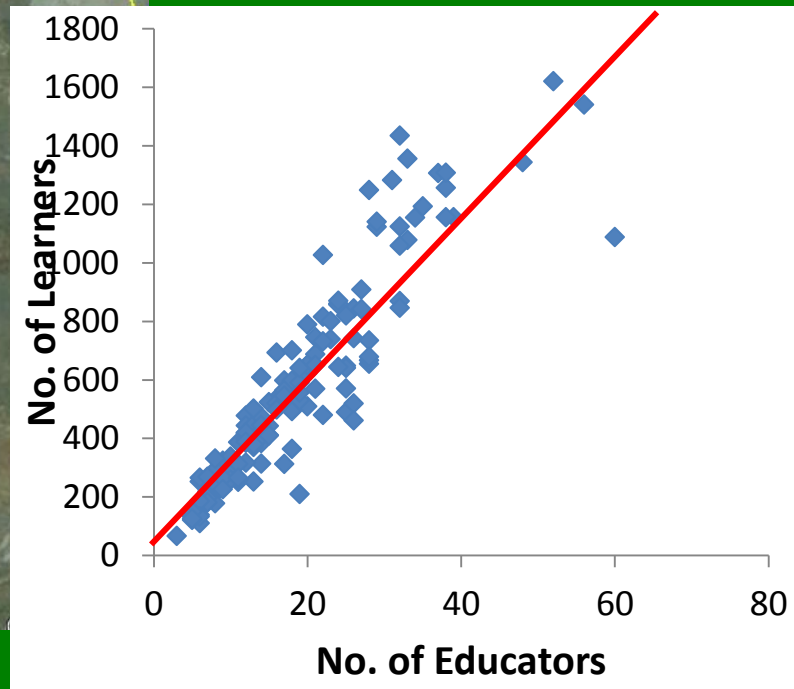
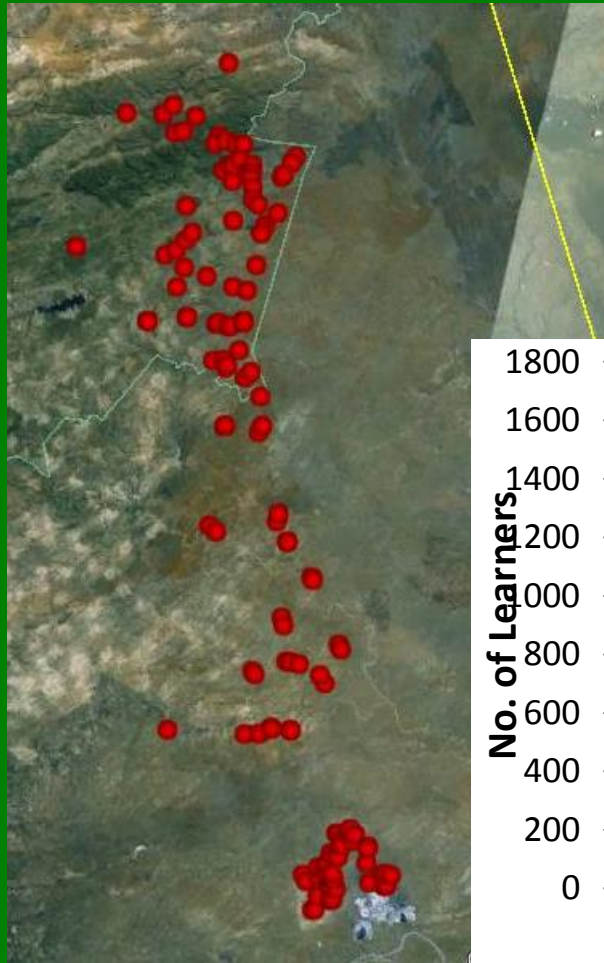
SAEON
Camps
32pp

Tangibility of outcome



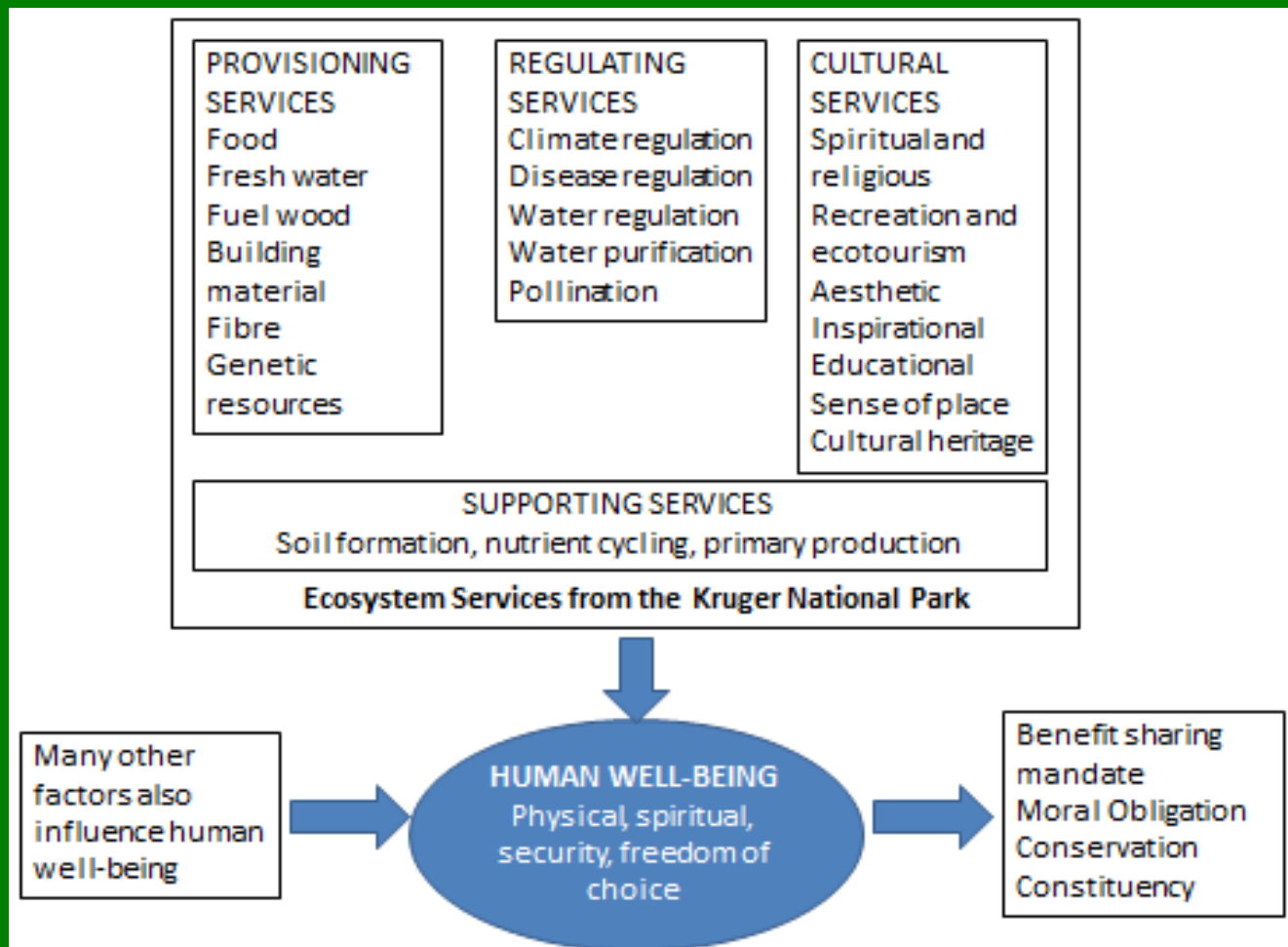
Educational infrastructure

- 300 schools
- Electricity, Water, Ablutions
- 57% no computers
- 60% no library's



Community levy 1%

Ecosystem services



- Ecosystem services from KNP contribute to human-wellbeing in various ways

Harvest basic resources

- **Mopane worm harvesting**

- 200 people, 12 villages
- 4300 l worms

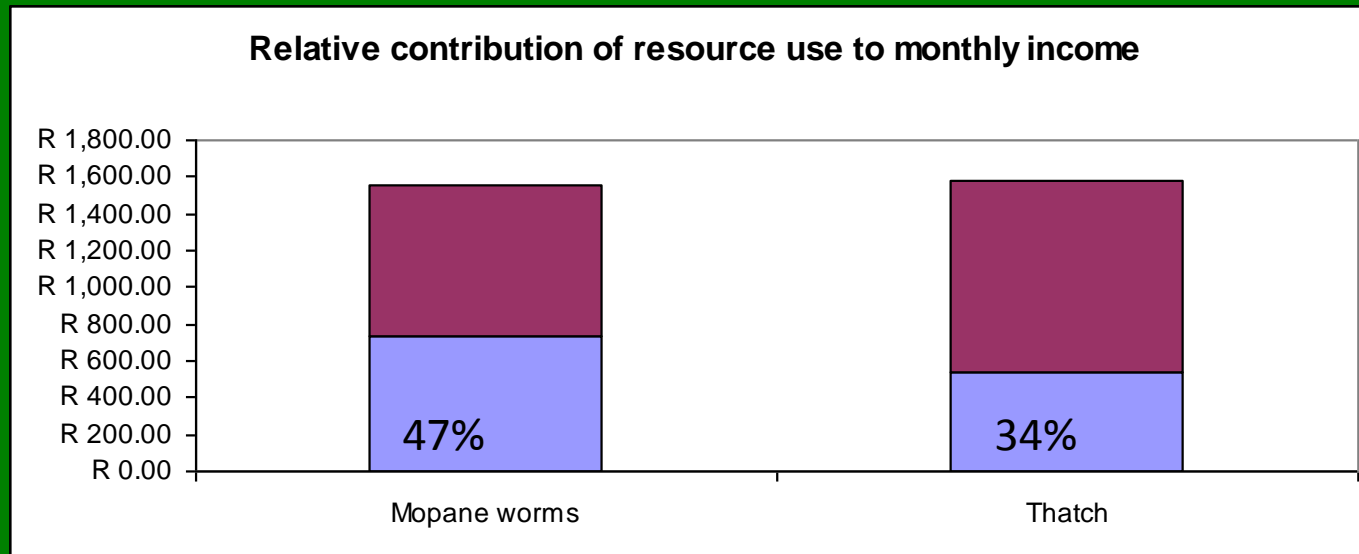


- **Thatch harvesting**

- 30 people p/a



- Low hanging fruit
- Avoids elite capture
 - Supports marginalized hh
- Access
- Low cost
- Doesn't lift out of poverty
- Soft outcomes: interaction with staff relationships
- Illegal subsistence poaching





8 workshops
160 THP's
25 villages
1000 trees





2012

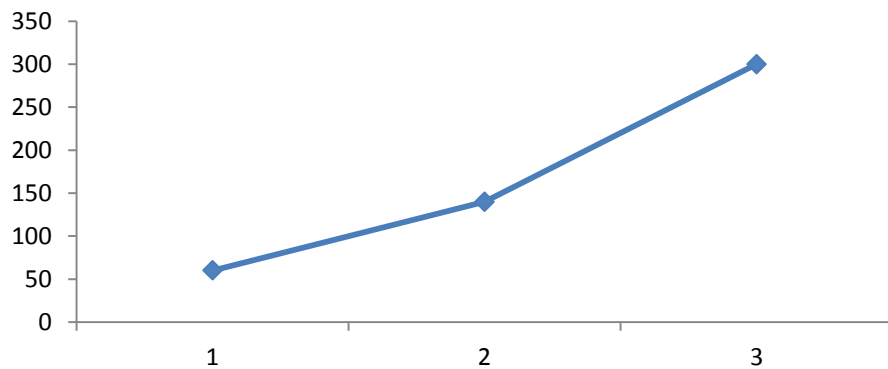


2014

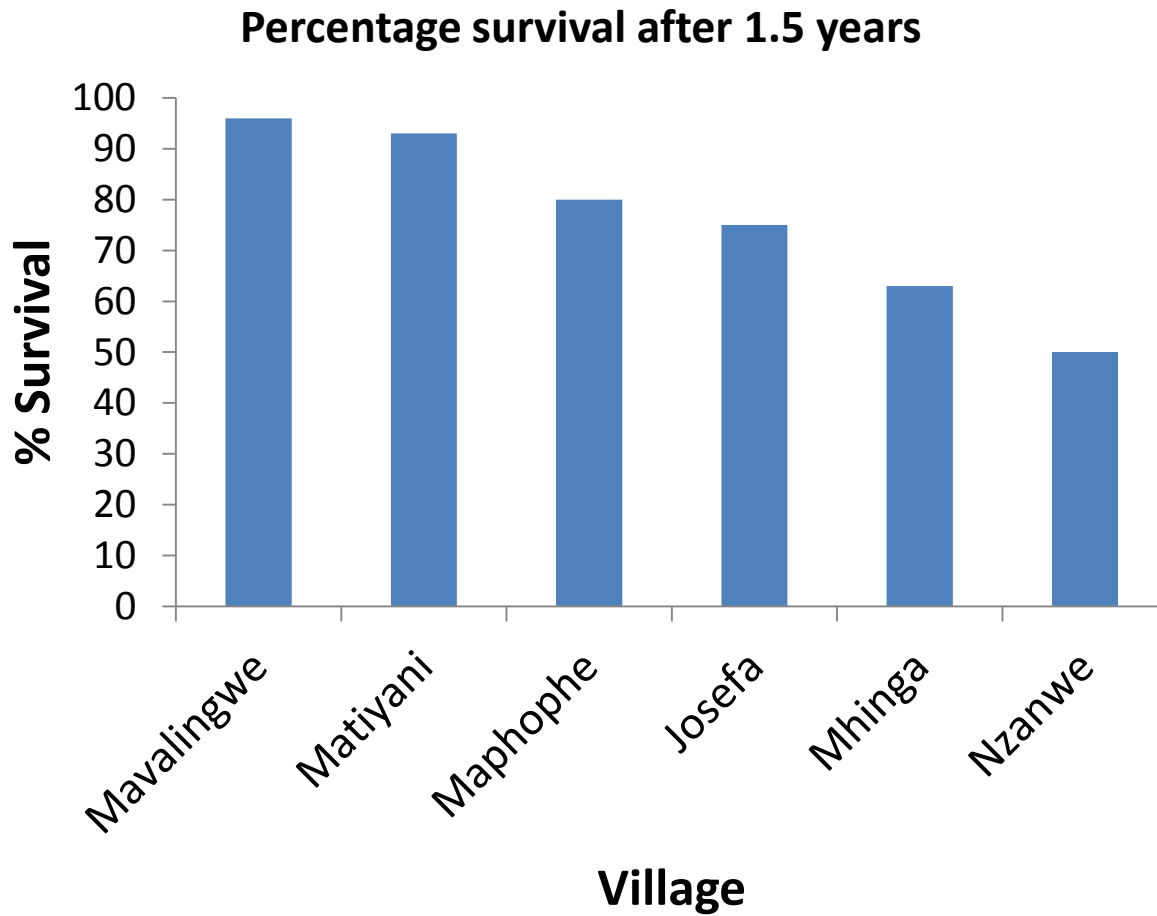


2015

Pepperbark height growth



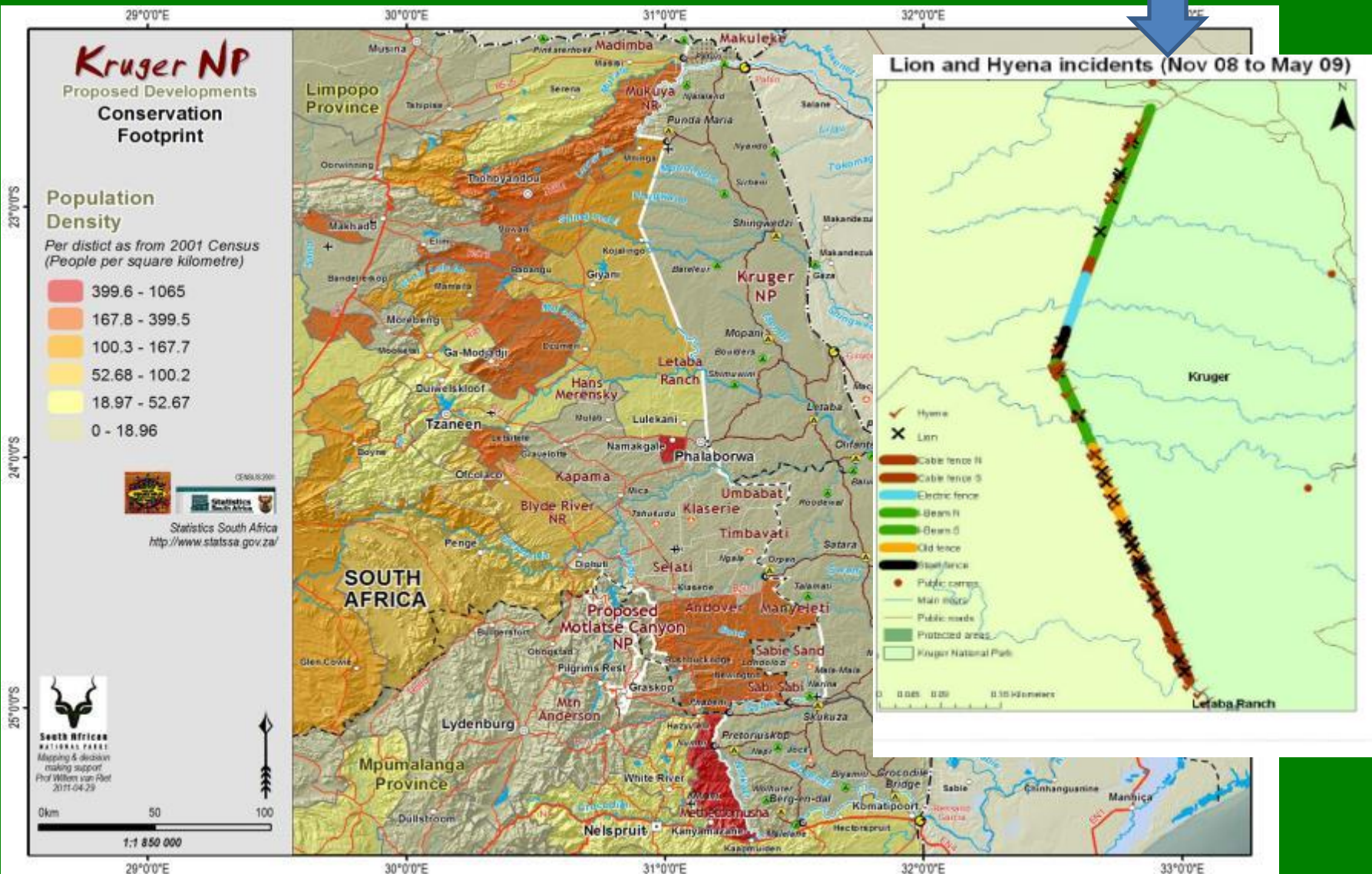
Sapling survival - 2014



Relationships and rights

Permeable boundary

Amelioration of negative impacts HWC



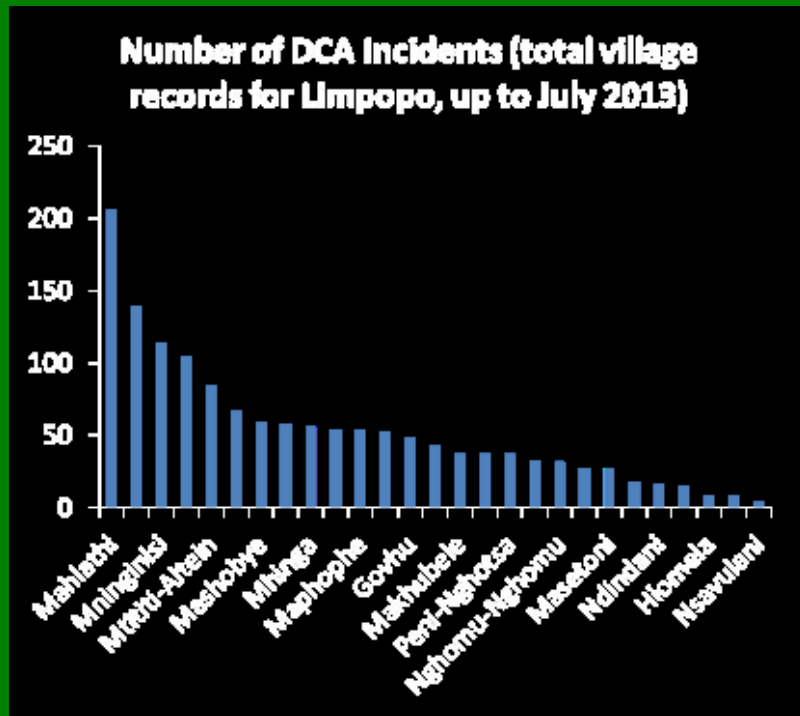
Impact of HWC

Human wellbeing

- Physical (livelihood)
- Psychological Freedom of choice/safety, culture

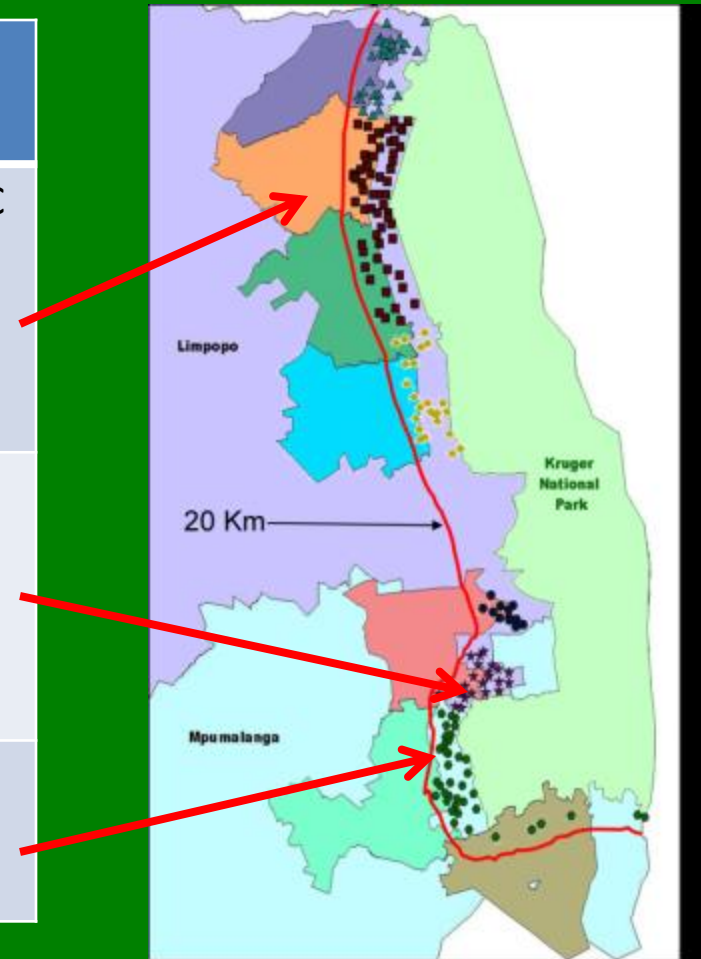
Conservation

- Retaliatory killing, control
- Fence security,
- Resources to manage
- Constituency



Perceptions v/s direct impact

PROVINCE	VILLAGES	PERCEPTION	IMPACT
Limpopo	38 Villages	90 % of dissatisfaction – DCA's and lack of compensation	12.1 % HWC 2002 and 2004
Mpumalanga	Cork and Belfast villages	90 % DCA's major issue btw. Park and people	
Mpumalanga	Makoko Village	56 % DCA's is major disadvantage	



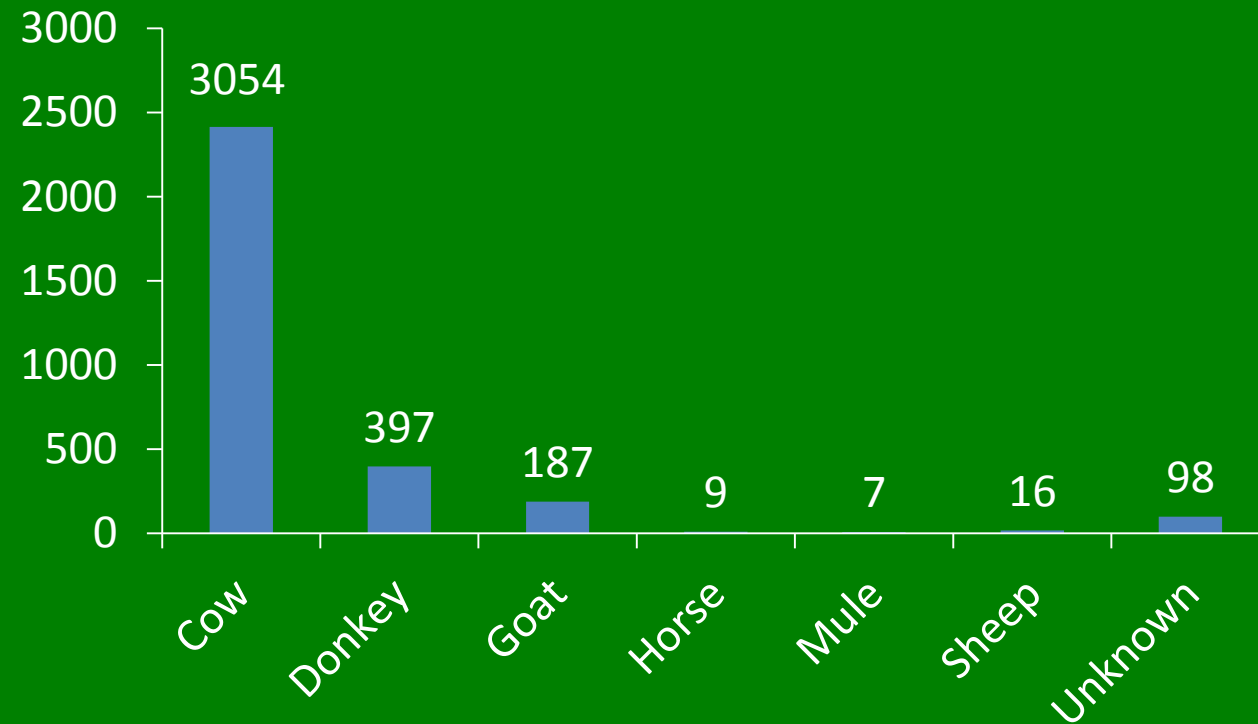
Sources: Rademan 2004, Anthony 2007, Anthony et al. 2010, Munroe 2011, DCA village data 2013

2011 Management decision by SANParks to compensate - livestock

Livestock loss - HWC



Numbers of livestock killed
(Limpopo Province village data, July 2013)



Ave. annually:

50-150 cows

20 Donkeys

15 Goats

<1 horse

<1 mule

<1 sheep

<2 pig

1.5 million tourists

Livestock loss - HWC



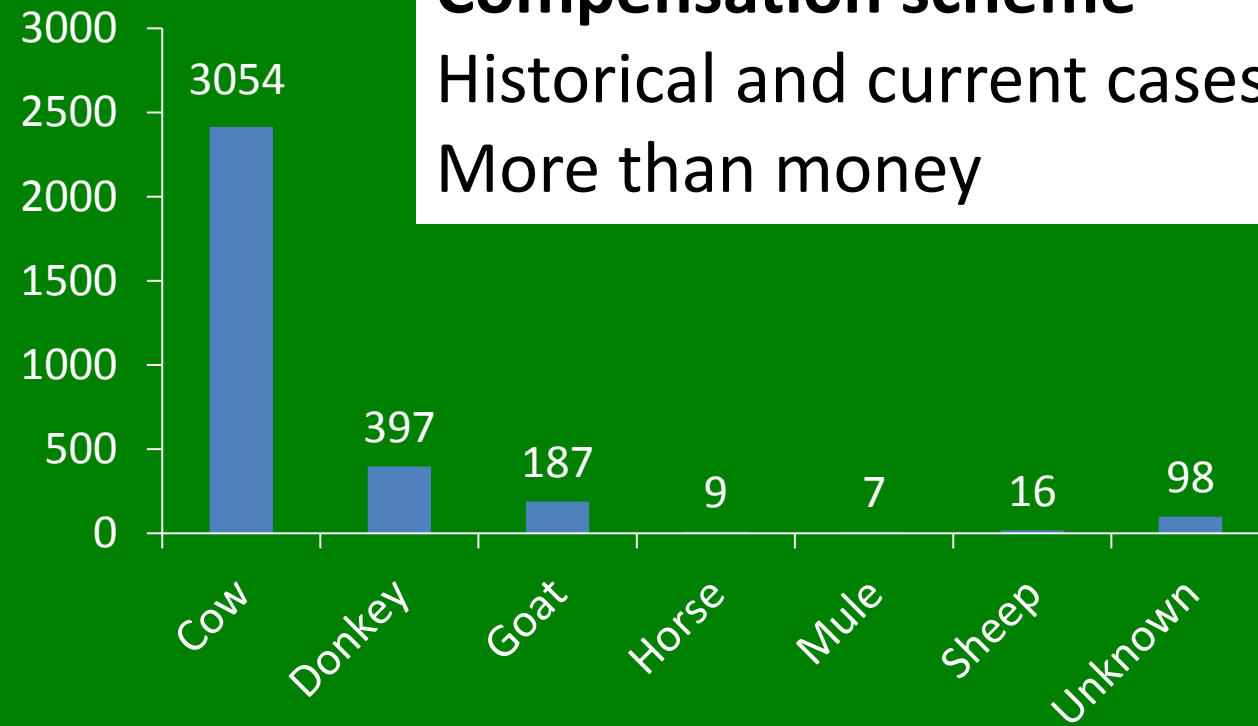
Numbers of livestock killed

(Limpopo Province)

Compensation scheme

Historical and current cases – R1.2 mill

More than money



15 Goats
<1 horse
<1 mule
<1 sheep
<2 pig

1.5 million tourists

In conclusion:

- History and context matters
 - Perceptions, attitudes and values
 - Appropriate benefit sharing opportunities
- Benefit audit framework
- Towards outcome versus output model
 - SAM
 - Well-being
 - Constituency
- Kruger is doing a lot, baggage, can do more
 - Ownership (co-management)
 - Scale of impact – small versus large and what can we say is “working”
- Research cant address all challenges – power and personalities