


# IS INTENSIVE BREEDING OF COLOR VARIATIONS IN GAME ACHIEVING TRIPLE BOTTOM LINE PROFITS FOR ALL?

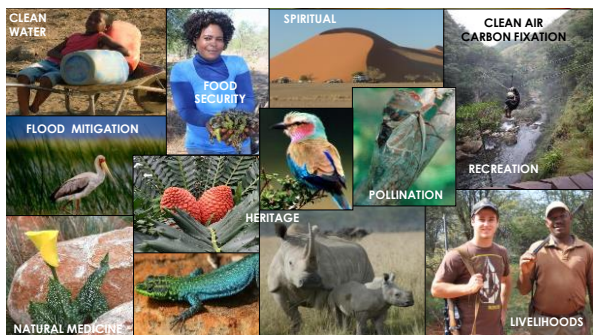

## 8<sup>th</sup> International Wildlife Ranching Symposium

Estes Park, Colorado  
7-12 October 2014

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South African Hunters and Game Conservation Association



- 1949
- 37 500 members
- 73 branches - Namibia
- Hunting & Conservation
- 200 000 local hunters
- Game farmers
- 2013 - \$ 574 mill
- ± 48% for game – Wildlife Mngt
- Employment: 140 000

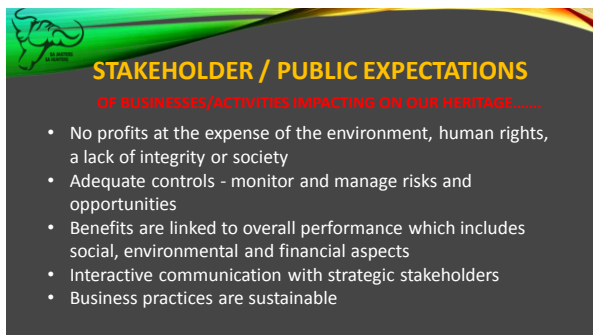
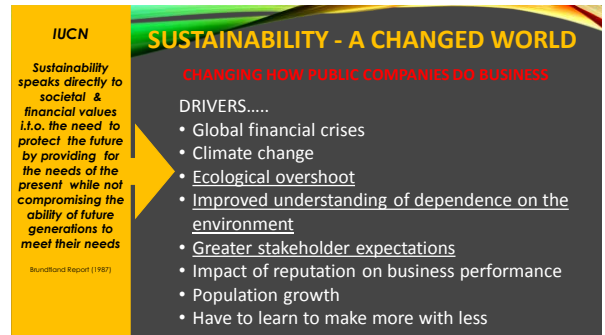
## THE NON-NEGOTIABLE...

### CONSTITUTION - SECTION 24 - Environment

Everyone has the right-

- to an environment that is not harmful to their health or well-being; and
- to have the environment protected for the benefit of present and future generations, through reasonable legislative and other measures that-

- prevent pollution and ecological degradation;
- promote conservation; and
- secure ecologically sustainable development and use of natural resources while promoting equitable economic and social development.





COLOUR MORPHS		
Species	Varieties	Names*
Springbok	4	Black, White, Copper, Coffee
Impala	6	Black, Saddled, Black-backed, Grey, Black nosed, White-flanked
Blue wildebeest	2	Golden, King
Blesbok	8	White, Yellow, Copper, Skilder, Woolly, Red, Speckled, Top Deck
Kudu	4	White, Black, Brown, Zebra-striped
Eland	1	Skilder
Red hartebeest	1	King
Gemsbok	4	Skilder, Gold, Cardinal, Scimitar
Plains zebra	1	Golden
Klipspringer	1	Spotted

\* Unlike livestock colour variants not accurately described

lan Rutherford E2: KZN Wildlife 2014

40% (10/26) commonly traded antelope species have colour morphs

69% (18/26) commonly traded antelope have been genetically manipulated

## WHAT IS SELECTIVE BREEDING ??????

**Definition selective breeding:** Deliberate selection of and breeding for selected animal traits, usually in controlled conditions.

Coat colour & pattern, horn & body size

- Simple inheritance, recessive genes, more predictable (e.g. coat colour)

Quantitative features, complex inheritance (e.g. horn length, body size)

- E.g. German Shepherd hip dysplasia

## IS IT CONSERVATION ??????

**CBD:** The fundamental **requirement for the conservation** of biological diversity is the **in-situ conservation** of ecosystems and natural habitats and the maintenance and recovery of viable populations of species in their **natural surroundings**.

**DOMESTICATION:** (Latin domesticus: "of the home") the process whereby a population of living organisms is changed at the genetic level, **through generations of selective breeding**, to accentuate traits that ultimately benefit the interests of humans.



## SUMMARY OF BIODIVERSITY RISKS

**DIRECT**

- Genetics
- Habitat Loss
- Habitat fragmentation
- Predator persecution
- Animal Welfare

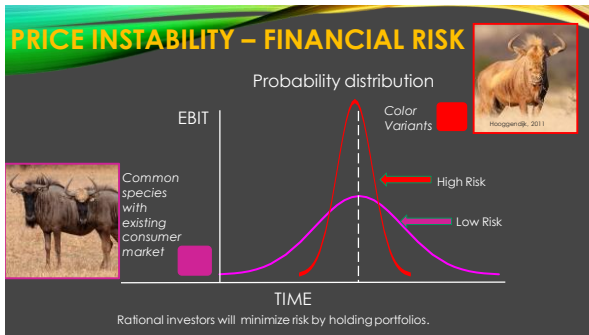
**INDIRECT**

- Domestication
- Loss of parasite/disease resistance
- Disruption of evolutionary processes
- Diversion of scarce conservation resources
- Veterinary risk

## GENETIC RISKS

- **Reduced heterozygosity** - Captive stock & Species if conservation only happens inside PA's
  - Selective breeding generated low genetic diversity compared to randomly bred pig breeds. Meeting some productive requirements comes at the cost of diversity. *QU Kai-Xing et al. 2011*
  - Performance Improvement of industrial breeds at cost of loss of genetic resources *C.R. Biol. 2011*
  - The efficiency of modern selection methods successfully increased the production, but with a dramatic loss of genetic variability. Many industrial breeds now suffer from inbreeding, with effective population sizes falling below 50. *Taberlet P. et al. 2008*
- **Impact on integrity of wild populations**
  - Breeding for traits (size, growth rate), escape or release back into systems
  - current stocking practices have the potential to significantly alter the functional genetic make-up of wild populations
  - stocking with a domestic strain affects the genetic integrity of wild populations (change in diversity, homogenization of population structure, increased individual genetic admixture) not only at neutral markers, but also at coding genes. *Fabien C. Lamaze, et al. 2012.*
- **Founder effects**
- **Loss of rare alleles/allelic diversity**
- **Impact related to size of wild population e.g. roan**

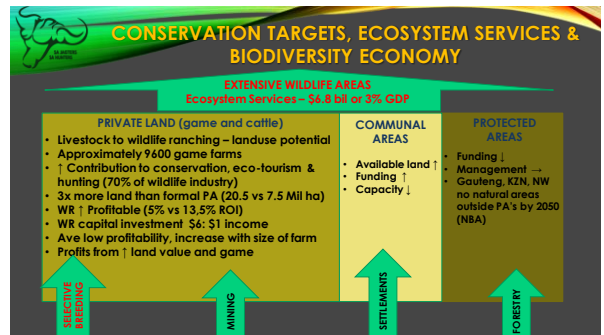
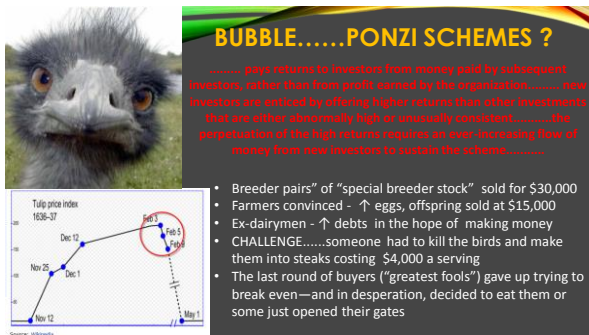




### CONSUMERS & BENEFITS ?

- Local hunters – cant afford it, price of common game ↑
- Trophy hunting – insignificant demand  
SAHGCA – 37 000 members ↓ CIC, SCI, Roland Ward– ↓ Do not support colour variations and selective breeding for exceptional trophy qualities
- Reputational concerns for Hunting Industry:
  - Put and take – not hunting
  - Trophy integrity
  - Canned shooting - reputational impact on SA
- Eco-Tourism one of three economic pillars - impacts on product offering
- Hunting and economic expert - selective breeding “bubble”

**Real risk to hunting and eco-tourism - Hunting 67% contribution**





## CONCLUSION



- Face of the Wildlife Industry changed
- Wildlife - financial commodity
- Responsibility – constitutional and moral
- Wildlife Industry can play a huge role in conservation and the GREEN ECONOMY
- Challenge ....converting the value of wildlife resources into positive land use outcomes contributing to biodiversity conservation and economic development in a socially responsible manner that will benefit current and future generations

## WHERE TO FROM HERE.....

- Make sure its about triple bottom line profits for all
- Improve profitability models for extensive areas
- Incentives for achieving national conservation targets
- Investigating a premium game meat export system
- Promote as driver in the biodiversity economy
- Highlight risks impacting on extensive wildlife systems
- Green certification for extensive systems and hunters

# THANK YOU

**South African Hunters and Game Conservation Association**