

# Akua Addo-Boadu

Investigating human-wildlife conflict management around Kakum Conservation

Area,

Ghana

2010

Akua Addo Boadu from Zambia studied human-wildlife conflict in Ghana in relation to proposed ecotourism development by rural communities fringing national parks. Akua studied Biology and Botany in Ghana, and studied the MESPOM course at CEU, Budapest. She worked with the NGO GEF Small Grants Programme.

Below is Akua's PowerPoint presentation on her research whilst in Ghana.



## Human-wildlife conflict management around Kakum Conservation Area, Ghana

Akua Mwendalubi ADDO-BOADU

June 16, 2010

**Supervisors:**

**Dr. Brandon P. Anthony** – Department of Environmental Sciences and Policy, CEU

**Dr. James K. Adomako** – Botany Department, University of Ghana



**The Lydia Press Memorial Fund**





## Presentation Outline



- General Introduction
- Problem Description
- Thesis Aims and Methodology
- Results and Discussion per Specific Objective
- Long term solutions
- Conclusion
- References



## General Introduction



- **Human-wildlife conflict (HWC)** is “... *any interaction between humans and wildlife that results in negative impacts on human social, economic or cultural life, on the conservation of wildlife populations, or on the environment*” (WWF SARPO 2005).
- **Examples:** livestock depredation on American ranches, human deaths because of Nile crocodiles, crop raiding by primates in Uganda, deforestation in the Amazon, etc.
- **Impacts:** environmental degradation, biodiversity loss, compromised conservation efforts, negatively impact on human health, safety, livelihood, property, culture & recreational activity.
- **Drivers:** Population increase (both human & wildlife)
- **Hotspots:** Protected areas (PA) bordered by poor communities
- **MANAGEMENT TECHNIQUES:** **exclusion** (fences, trenches, natural divides); **deterrence** (guarding, noise-making, booby traps); **repulsion** (disagreeable stimulus to sense organs); **separation** (translocation, resettlement); **elimination** (legal & illegal killing); **tolerance** (education, benefit sharing, compensation, insurance); **combinations** (tailored to local circumstances).



## Problem Description



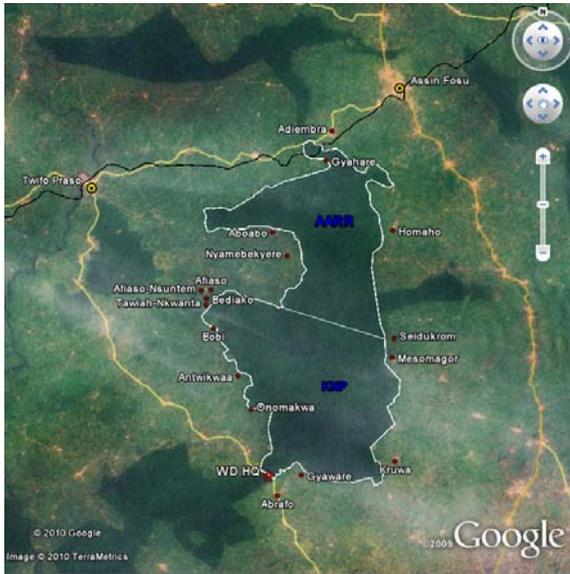
- Ghana's signatory status e.g. ACCNN, CITES, CBD.
- Establishment of 321 PA covering 15.4% land area.
- National wildlife legislation (Act 43, LI 685, LI 710, internal policies).
- Wildlife Division (WD) of the Forestry Commission (FC)
- Implementation barriers (budgetary constraints, understaffing, need for legislative amendment, **HWC around all major PA**)
- Persistent crop raiding at Kakum Conservation Area
  - Pre 1989: **FC** (local hunting, culling)
  - Post 1989: **WD** (guarding, shoot to scare)
  - 2000 to 2002: Elephant Biology and Management
    - Conflicts stemmed from 'a lack of proper landscape management'
    - Advised immediate **short term** mitigation measures to mitigate
  - 2003 to 2005: **FAO-Conservation International** (10 comm.)
    - Pepper fencing & alternative / boundary cropping
  - 2006: **World Bank Small Grant** (20 comm.)
  - 2008 to 2009: **International Fund for Animal Welfare** (20 comm.)



## Thesis Aims and Methodology



- **Primary Aim:** Evaluate the perceived effectiveness (in terms of reduced incidence of HWC) and prospects for long term sustainability of conflict management practices around KCA, with particular focus on new techniques introduced by three projects implemented between 2003 and 2008.
- **Secondary Aim:** Assess the correlation between national wildlife policy and HWC management practice around KCA.
- **Methodology:** Both primary & secondary data sources of information
  - Qualitative data (6 weeks fieldwork)
    - Consultations with relevant specialists (2 weeks)
      - ❖ 25 representatives of government agencies, international & local NGOs, academia
    - Face to face interviews with local stakeholders (4 weeks)
      - ❖ 250 farmers from 18 communities around KCA
  - Statistical analysis using SPSS (18) software



## KAKUM CONSERVATION AREA

- 170 km west of Accra
- 35 km from Atlantic Ocean
- 350 km<sup>2</sup>
- Protect rainforest & promote development
- **Tourism**
  - Canopy walkway
  - 105 sp. vascular plants
  - 500,000 insect sp. including 600 butterfly sp.
  - 300 bird sp.
  - 100 mammal sp.
- **52 major agrarian settlements**

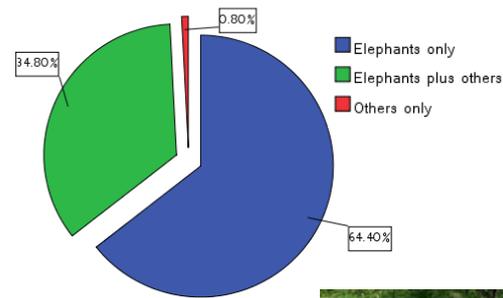
Map of KCA showing district capitals (yellow dots), communities (red dots), WD Headquarters (red star), 1st class roads (yellow lines), railway line (black line) and adjacent Forest Reserves (dark green areas)



**4 field assistants**  
**18 communities**  
**250 respondents**



## Objective 1. Investigate the incidence of HWC around KCA within the last decade



- **99%** had experienced problems with animals
- 17 species involved: **elephants** (99%); rodents (22%); primates (14%); hogs, antelopes, birds, **felines** (< 10% each)
- **Crop raiding** only (86%), crop raiding PLUS damaged infrastructure (12%), **no reported loss of life**
- Cassava, plantain, maize and cocoa were raided > 60%
- Yam, cocoyam, orange, oil palm, other fruits & vegetables < 41%

## Objective 2. Establish traditional management techniques being used



- **98%** of respondents used traditional techniques
- Noise-making, fire/smoke, guarding (63–34%)
- Killing, trap setting, traditional fences, noise from hunting parties or chain-saw operators, scarecrows, boundary clearing < 14%
- Traditional techniques still effective against non-charismatic species but elephants were **habituated** to them

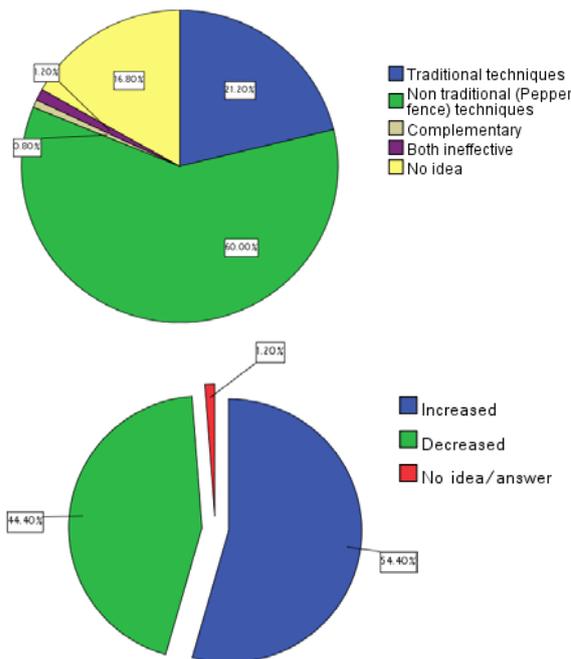
### Objective 3. Determine extent of non-traditional technique adoption

NON-TRADITIONAL MANAGEMENT TECHNIQUES EMPLOYED

		Respondents (%)
Pepper fence	No	62.0
	Yes (of which discontinued)	38.0 <b>25.26</b>
Alternative / boundary crops cultivation	No	70.8
	Yes (of which discontinued)	29.2 <b>52.05</b>

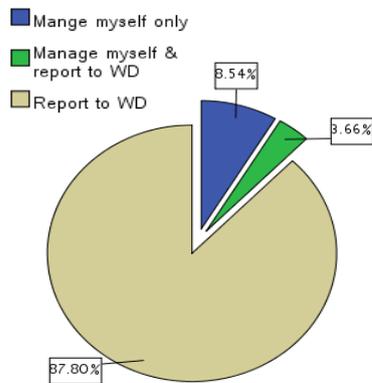
- Non use of pepper fence was because: **method too expensive (24%)**, **lack of sufficient knowledge (23%)**, waiting for external inputs, no need for farm protection, technique was ineffective.
- Reasons for not planting alternative/boundary crops : **ineffectiveness (32%)**, **lack of knowledge (32%)**, lack of space on farms, lack of money for appropriate planting material, crops suggested were inappropriate for locality, no need to protect farm, poor market for alternative crops.

### Objective 4. Assess perceived effectiveness of techniques at resolving conflicts



- **Increasing trend attributed to:** animal population increase, scarcity of wild food, over-protective laws, loss of fear for humans, lack of protective means, preference for farm crops, etc.
- **Decreasing trend attributed to:** effectiveness of pepper fences, increased number of communities closer to the park boundaries, divine intervention.

## Objective 5. Evaluate the long term sustainability of measures in place

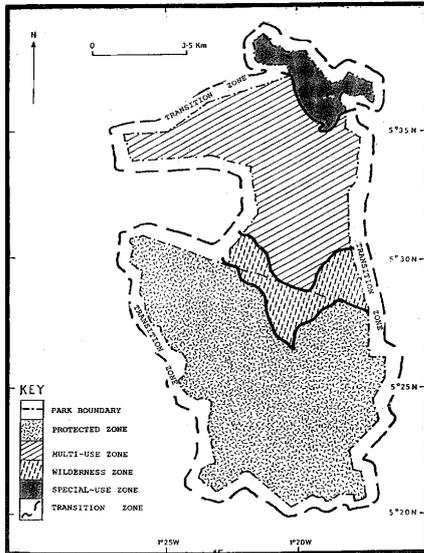


- **Traditional:**
  - Are they legal?
  - Under reporting of non-charismatic sp.
  - Negative health effects
- **Chilli-based:**
  - Problem with capacity-building
  - **TOO EXPENSIVE**
    - Installation cost: \$ 450
    - Maintenance cost: \$ 292 every 3 months
    - Average annual household income: \$ 612
- **General:**
  - Bushmeat trade
  - Lack of compensation and equitable benefit sharing

## Objective 6. Analyze relation between national policy & local HWC management practice



- LI 685 vs traditional techniques
- LI 710 vs poaching
- No compensation policy vs WD / NADMO
- Land purchase / no royalties policy vs revenue sharing
- Vision 2020 vs rural development & HWC



Proposed land-use pattern for KCA

- Land-use plan drafted by WD in 1996 has not been implemented
- Few voluntary farm abandonments (but may lead to mosaic thus increasing HWC)
- Indication that more farms and settlements being established close to boundaries
- Break tradition: grow alternative cash crops



- HWC is a significant problem around KCA
- Mixed indications of technique effectiveness
- Technique sustainability is doubtful
- Policy-practice correlation is not very strong
- Dr. Richard F.W. Barnes: **CHANGE**
  - ‘... how can elephants & people share the land?’ vs ‘... how can elephants & farmers be kept apart?’
  - HWC management: aspirin vs surgery
- **Move from short-term palliative treatments to long-term permanent solutions**

