CGIAR Challenge Program on WATER & FOOD

Andes • Ganges • Limpopo • Mekong • Nile • Volta

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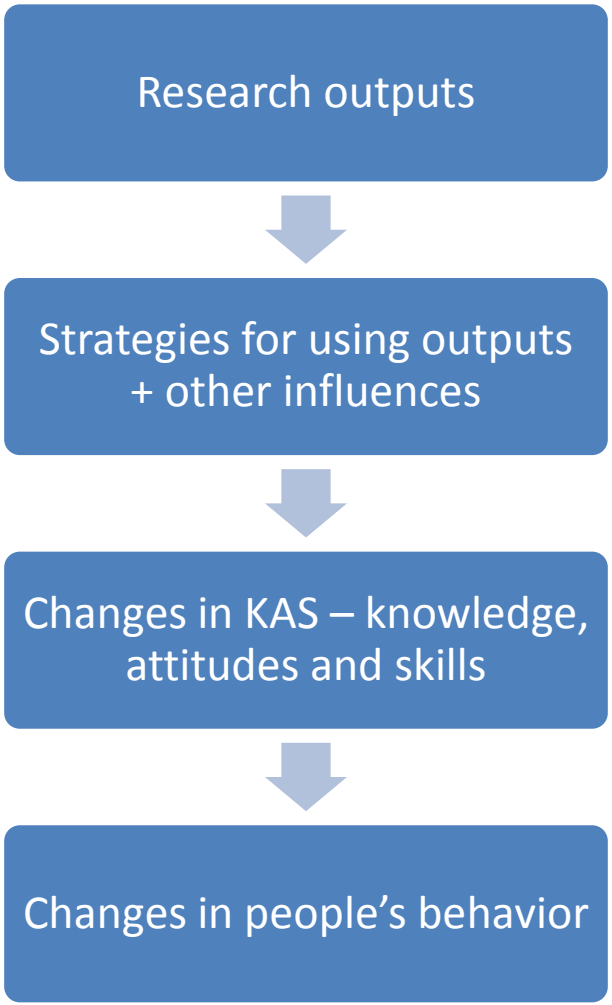
“Planning and facilitating project outcomes”

One or two CPWF case studies

What are outcomes?

- “External use, adoption, or influence of a project's outputs by next and final users that results in adopter level changes which are required to achieve the intended impact” (Walker et al 2008)
- In other words, *changes in peoples’ behavior*
- (My own interpretation) – *self-sustaining* changes in behavior

Outcome logic models (simplified)



The effect of one project can be very difficult to assess

CPWF original design in three phases

Phase 1 (2004-08) Define water and food issues and identify promising innovations

Phase 2 (2009-13) Outcome-oriented research on development challenges in basins

Phase 3 (2014-18) Outputs, outcomes, impacts

Basin Focal Projects – whole basin issues

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Phase 2 projects have an outcome orientation, but not enough time to actually come up with outcomes

Basin	2009	2010	2011	2012	2013
Andes					
Ganges					
Limpopo					
Mekong					
Nile					
Volta					

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Projects leading to outcomes have worked in a 5-10 year time frame
Phase 1 + 2, *or* presence of precusor or successor projects

- Central America: slash and mulch on hillside landscapes
- Peru: benefit sharing mechanisms (BSM)
- West Africa: urban wastewater use
- West Bengal: groundwater and electrification
- Vietnam: land and water use zoning
- Zimbabwe: goats, markets and fodder
- Other outcome stories may be on the way – Bangladesh, Cambodia, Colombia, Mekong basin countries

(Blue font indicates IWMI involvement)

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Prefer to discuss “unfamiliar” examples

- Central America: slash and mulch on hillside landscapes
- Peru: benefit sharing mechanisms (BSM)
- West Africa: urban wastewater use
- West Bengal: groundwater and electrification
- Vietnam: land and water use zoning
- Zimbabwe: goats, markets and fodder (if time allows . . .)
- Other outcome stories may be on the way – Bangladesh, Cambodia, Colombia, Mekong basin countries

(Blue font indicates IWMI involvement)

Peru: benefit sharing mechanisms (BSM) (CPWF Phases 1 and 2)

- Marcela Quintero
- Ruben Dario Estrada
- . . . and many others

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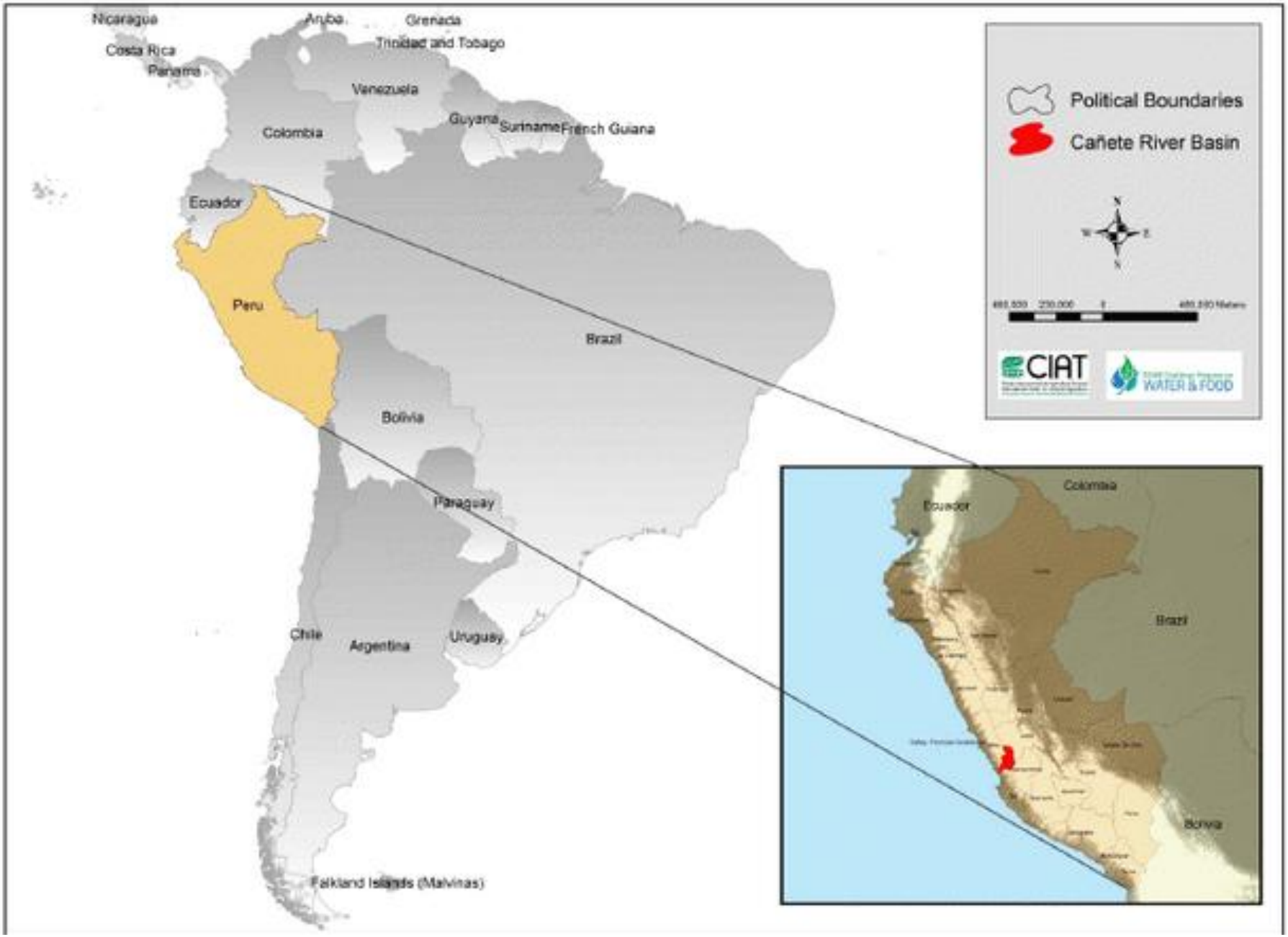
CAÑETE RIVER BASIN (PERU)



In Cañete, different groups want different things

- Downstream
  - Urban dwellers want clean, reliable water supplies
  - Lowland farmers want cheap, reliable irrigation water
  - Tourists want clean, attractive water
- Midstream
  - Hydropower companies want reliable low-silt water without having to invest in large storage reservoirs
- Upstream
  - Highland communities want to live better
  - Citizens want to preserve highland ecosystem services

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Peruvian case study, Canete River watershed – **Current situation**

Water and land users – stakeholders/ partners

Upper basin (4000-5800)

Extensive degrading grazing, subsistence agriculture

Middle basin (350 – 4000)

Hydropower company

Shrimp growers

Lower basin (0-350)

Urban dwellers

Inefficient commercial irrigated agriculture

Tourists (rafting)

Purpose of a benefit sharing mechanism

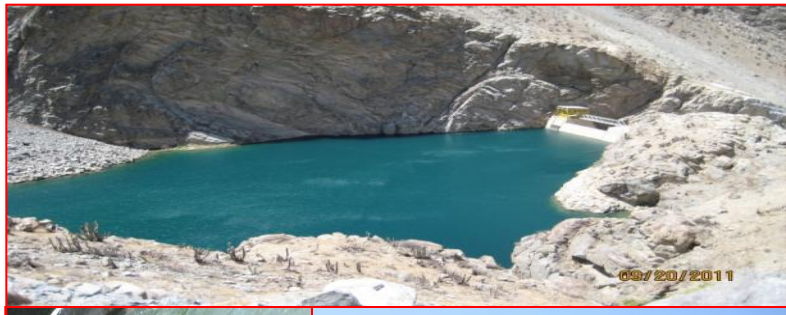
Upper basin (4000-5800

Middle basin (350 – 4000

Lower basin (0-350)

Invest in conservation alternatives

Transfer some benefits, invest in improved land and water management practices



It's important to understand the history . . .

- 2005
  - CPWF-CIAT-GTZ Phase 1 project in Moyobamba, BSM methods developed – high profile because of GTZ link
  - Example of downstream $$ used for upstream investments
- 2008
  - Ministry of Environment (MinAm) created
- 2009
  - MinAm asked CIAT to participate in BSM design for Cañete, designated as official MinAm pilot site for national BSM program
- 2010
  - Cañete study enters CPWF Phase 2 as Andes AN2 project

Time line

- 2010-2011
  - AN2 research on economic valuation and hydrological priority areas
  - Legal feasibility found to be an obstacle to BSM
  - Conservation International joins to work on BSM legal issues
- 2011-2012
  - AN2 identifies intensification practices for highlands
  - Drawing on Cañete experience, AN2 works with MinAm in drafting national Ecosystem Services Law – national application of BSM

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News

- Yesterday's message from Marcela:

- *"I received last Friday an email from MINAM saying that the Law will be sent to the Congress for approval this week. They asked us for support in case there are questions from the Congress regarding technical aspects"*

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2013 and beyond

- Establish Cañete trust fund
- Negotiate specific benefit transfers and uses
- Expand to 30+ other basins in Peru

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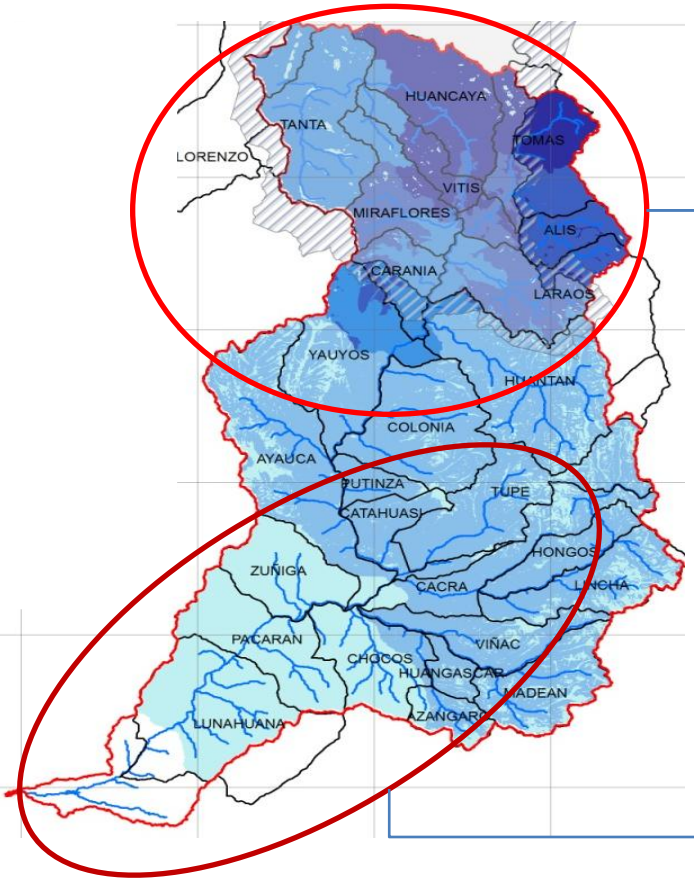
Contributions of AN2 research in BSM design and drafting of legislation



Targeting of payments

Identification of service providing areas using hydrological modeling

Use of payments

Ex-ante assessment of likely eco-efficient land use alternatives; ecosystem conservation measures and social development projects.

Size of payments made by ES beneficiaries

Estimation of economic value of watershed services fo different ES users:

These are reference values to be used for anticipated negotiation processes.

Valuation of water-related ecosystem services*		
Type of downstream water user	**Value of the WES**	**Current price of water**
Irrigated Agriculture (US$ m^3)	0.29512	0.023664
Tourism (US$/ind)	15.75	n.a.
Urban users		
Domestic (US$ mon^{-1})	3.5	3.1 - 15
Commercial (US$ mon^{-1})	5	6.3 - 44.4

Changes

- Changes in knowledge and skills
  - How to target payments to benefit ES producers
  - Water value and willingness to pay by downstream users
  - Alternatives for improved highland land and water management
- Changes in attitudes
  - Willingness of MinAm to press for legislation?
  - Downstream water users - willingness to negotiate and pay?
- Changes in behavior
  - National ES legislation
  - (Future) investments using trust funds

Commentary

- Positioning: research/ policy co-evolved: each influenced the other
- History: unfolding over 8-10 years
- Champions: champions with vision working over extended period (Marcela Quintero, Ruben Estrada, others)
- Evolving research priorities: new expertise recruited for new issues
- Scale: Work required at multiple scales
- Scope: Institutional, policy, legal, technical factors all important
- Partners:
  - Process driven by MinAm
  - Partner selection negotiated, influenced by relevance

Case study: goats, markets and fodder in Zimbabwe

(an example of precusor development projects *that led up to* CPWF Phase 2 work)

Andre van Rooyen

Sabine Homann

Patricia Masikati Hlanguyo

. . . and many others

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Initial location: Gwanda, Zimbabwe

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Goat opportunities

- Goats produced by poor households in marginal areas
- Goat sales important for livelihoods
- Deficit in urban meat supply, (30-50% unmet demand for goat meat)
- National goat population around 3m

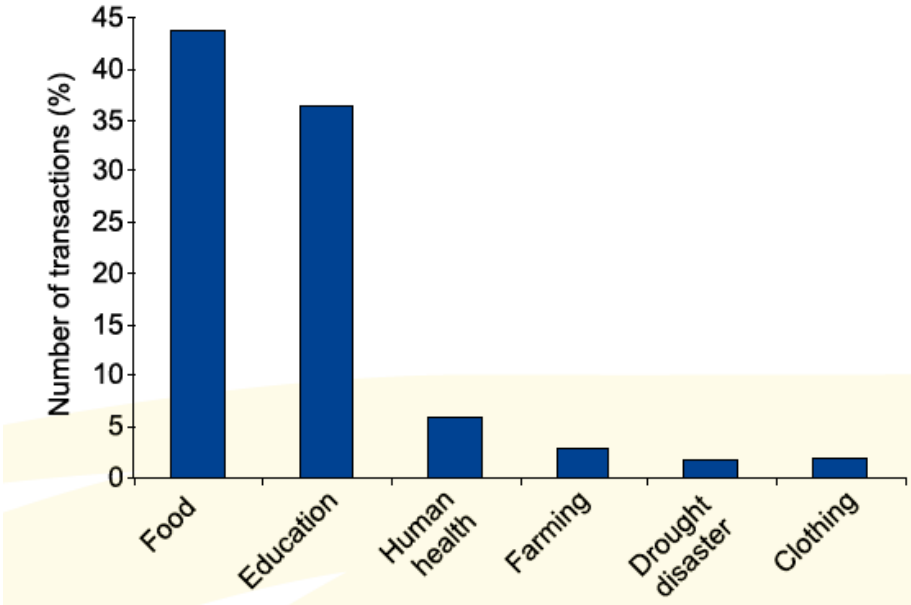

Figure 2. Expenses covered through goat sales.

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Figure: Andre van Rooyen

Goat problems

- Excessive animal deaths (> 20%/ yr)
- Low animal quality
- Few animal sales, largely “distress sales”
- Low prices
- Buyers have to drive from farm to farm

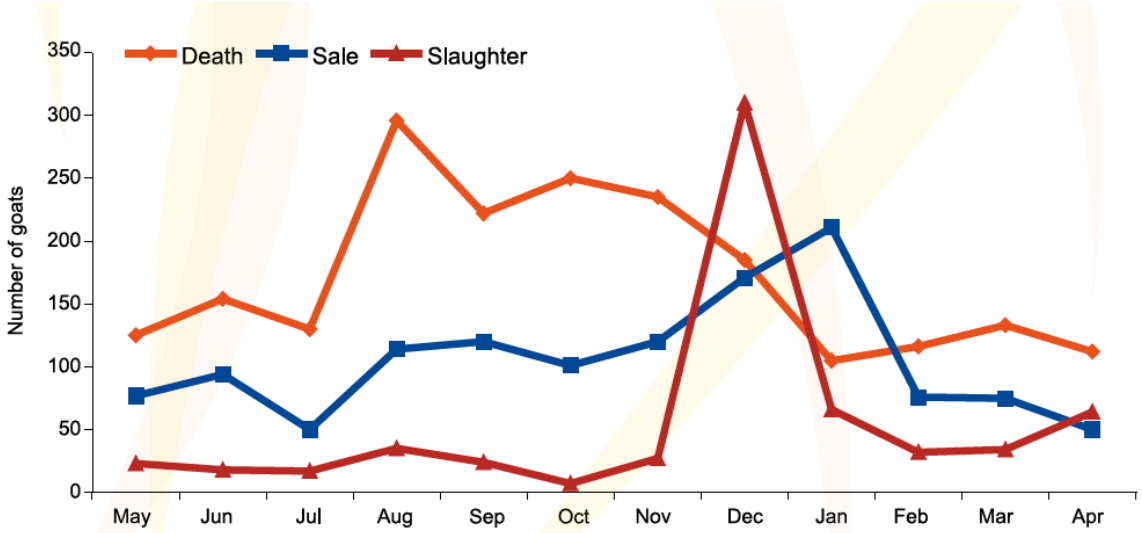

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Figure: Andre van Rooyen

Goat innovations (from innovation platforms)

- Formal auctions with improved sales pens specifically designed for small animals, improved ramps, scales
- Fencing, housing
- Improved feed and fodder especially in dry season

Month	Value of goats sold in US$
January	Not available
February	3958
March & April	3980
May	4267
June	5350
July	2665
August	6365
September	7825
October	9410
November	2985
December	6116
Total	52921

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Data for Nhwali market only, 2009, source: ICRISAT

Auction pens foster intensification

- Buyers' transaction costs reduced
- Prices higher because buyers compete
- Better quality animals command higher prices (500-600% increase)
- Farmers motivated to invest to raise quality, reduce mortality
  - Housing and fencing
  - Commercial stock feed, dry season fodder
- Fewer distress sales, now most sales through auctions
- New private sector investment in goat production and marketing

Note consequences for water productivity in rainfed systems!

New pens being added each year
momentum no longer controlled by projects or donors

Initial auction pen (project)	• Nwhali (Gwanda District)
Additional auction pens set up by projects	• Beitbridge, Insize, Matobo
Additional auction pens set up by NGOs	• About a dozen more so far
Future	• New pens continue to be added

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Changes

- Changes in knowledge and skills
  - How to build and manage auction pens
  - How to reduce buyers' costs
  - How to raise better goats
- Changes in attitudes
  - Buyers willing to attend auctions and compete
  - Farmers willing to invest in goat "commercialization"
- Changes in behavior
  - Farm households now invest own resources in goat housing, commercial feed, dry season fodder
  - Autonomous dissemination of auction pens and increase in market volume (now about 20 pens x 500-600 animals/yr/pen)

Notes

Priorities for CPWF research

- The auction pen story precedes CPWF involvement
- CPWF work was based on existing platforms, existing development processes
- CPWF project L2 focuses on dry season fodder

Commentary

- Same few champions working on goat marketing since early 2000s – Andre van Rooyen
- Time frame about 10 years
- Technical and institutional change both needed
- Research priorities evolved – dry season fodder became an issue only after goat value increased