ICWA
LETTERS

Institute of Current World Affairs
The Crane-Rogers Foundation
Four West Wheelock Street
Hanover, New Hampshire 03755 U.S.A.

JGW-20
SOUTHERN AFRICA

James Workman is a Donors' Fellow of the Institute studying the use, misuse, accretion and depletion of fresh-water supplies in southern Africa.

The Gamey Taste of Virtual Water

Recurring Drought Turns Cattle into Kudu

By James G. Workman

OCTOBER 1, 2003

EDEN CAMP-BUSHMANLAND, Namibia – Crouched at waist level and hurrying over thick sand through the blackthorn acacia, we angled northwest to stay downwind yet cross the path of a broken-horned eland that we were stalking to kill.

The tracker Kamati led, followed by the professional hunter Jamy Traut carrying the shooting stick tripod. Then came me, clutching the sole rifle, a Winchester .308. I had fired it for the first time the day before, aiming through the Lynx scope, shooting at and hitting a piece of paper mounted 130 meters away. But shooting paper was not hunting eland. Animals were not mere targets. Tracking felt different when it might end with a death. I was discovering these distinctions, dry-mouthed and extremely alert, for the first time in my life. Scraped by thorns, I struggled to keep up and catch my breath and calm a thumping heart overwhelmed by a universe of emotion. I had never before attempted to kill any sentient, warm-blooded creature,[1] much less Africa's largest antelope.

Up close, engaged in this predator-prey relationship, I began to appreciate why Bushmen revered this sacred beast, why they carved or painted its image on stone throughout the subcontinent over thousands of years and elevated it to mythical status. At two meters high and weighing one metric ton, an eland had the massive bulk of a Hereford ox combined with the speed and grace of a gazelle. Eland are glorious, but they are even more elusive. We paused and looked through the thickets, but could tell only that they were getting closer, and had not yet detected us, by the eerie, telltale mechanical sound the bulls' knee-joint makes, clearly audible when they walk: *Click*, *click*, *click*, *click*.

Bushmen did not hunt for trophies. Nor, emphatically, did I. They worshipped and to this day highly regard wild eland, gemsbok (oryx), kudu, red hartebeest, springbok, steenbok, duiker and giraffe for basic reasons: survival, instinct, food.

Like other carnivores, *homo sapiens* evolved physical traits and, some argue, human logic[2] in Africa by stalking these fleet-footed grazers and browsers for their protein- and moisture-rich meat. Over 10 million years of harsh aridity, Afri-

[1] That's quite a qualification. To fess up, I have caught and eaten roughly a dozen fish. I accidentally ran over a rat at age 17, a chicken at age 32, and an owl age 35. I used a slingshot to wound a squirrel at age 10. And when I was nine, bored at the dump, I threw a dirt clod at a flock of seagulls and broke the wing of one; my father, rightly, made me put it out of its misery.

[2] Louis Liebenberg made this persuasive case in his *The Art of Tracking and the Birth of Science*. He maintains that the leap from crude instinct to intellectual rationality evolved through natural selection of traits required over 4 million years by our ancestors who tracked and hunted, or perished. Those hunters who used prolonged concentration, skeptical critical attitudes, reasoned debate and creative problem-solving (testing hypotheses about animals *vs* factual evidence on the ground) managed to acquire protein, survive and pass down their genes to their descendents, us.

Walking Forward Into the Past: *Many feel that hunting has become obsolete in today's economy. To me its relevance in an arid, water-scarce region remains inextricably linked to the relevance of the Bushman: food source, ecology, economy, integrity, independence, ritual and core way of life.*

can ungulates developed survival strategies that enabled them to stay alive, even to thrive (and thus support predators, like us, as food). As drought-resistant species, they operated on different degrees and niches of 'water independence.' Some large desert antelope (gemsbok, eland, springbok, kudu) even verge on drought-proof existence.

'Drought-proof' doesn't mean the animals' bodies don't require water. They do, daily, at typically 4 percent of body mass. Yet here's the vital distinction: while African game might drink a rare puddle of surface water when available, they did just fine when, more probably, it wasn't. To cope, they ranged far and wide, alert, fast and wary of predators. They fed at night when even dead grass and leaves grew swollen and heavy with absorbed atmospheric moisture. They licked morning dew. They sought out and dug up succulents, melons, wild cucumber and underground plant structures. They concentrated urine and excreted dry feces. They let body temperature rise up to 13 degrees to avoid evaporative loss. They breathed slower, sought shade and produced metabolic water while grazing. They preferred plants with short life spans, chosen for water content rather than nutritive value. To get their daily 23 liters the eland had been feeding / drinking in just this way when we saw them 20 minutes before and began to stalk them over two-kilometers, matching our steps to their own. *Click, click, click*.

That latent, "untapped" aspect of drought-resistant game had deeply impressed me for the past year. Because drought often led to famine, water-stressed countries had to rethink the potential for growing food. They had to squeeze more 'crop per drop,' more protein out of less water. I wondered if such a skill — producing nutritious meat without needing supplemental water — might make the breeding and preservation of wild game a survival and subsistence strategy, not just for a few thousand 'remnant, backward' Bushmen, but also for 'modern, progressive' southern Africa as a whole.

The potential was there. Over two decades a new kind of animal husbandry called 'game ranching' had been quietly multiplying across the subcontinent until today nations like South Africa had more wildlife on private land than in all its government-protected parks and reserves. Nor was it simply rich, white 'gentleman farmers' driving this new economy; more poverty-level Namibian communal land was being managed for wildlife conservation than all of South Africa's Parks, Swaziland and Lesotho combined. Active (hands-on restocking) or passive (laissez-faire, unfenced) game ranching had become a trans-national, thriving industry en-

gaging tour operators, veterinary consultants, trade magazines, game capture, transfer and relocation experts, even a classic book in its fourth edition. Fogies who bemoan the 'vanished bygone glory days of Old Africa' might be surprised to learn about studies that indicate how in some arid regions, "southern Africa has equal diversity and greater concentrations of game both large and small than it had a century ago."

But why? How? And where? I saw evidence of this dramatic and exciting transformation from Mozambique to Lesotho to South Africa to Swaziland to southern Zimbabwe and Botswana. But only in Namibia could I begin to piece it together.

To be sure, water scarcity was not the initial or only incentive. Overseas visitors taking shots with camera or rifle typically enticed the average landowner to reinvent his ranch as a 'B&B/private wildlife reserve' (glossy photos of dairy cows or wall-mounted 'trophies' of oxen don't have the same cachet with dinner guests back home as snapshots or stuffed heads of wildlife). A wild snorting buck, sold for hunting and meat, earned its owner four times as much as a mooing bull. It also spawned new employees. One study found that wildlife-hunting and tourism ranches generated 1,214 jobs, *vs* 80 for cattle ranching in the same space.

Yet if tourism lured initial investments, the ecology of that 'same space' determined the break-even point and profit margins for game-ranching. Again and again, all across the subcontinent, aridity determined when and where these upstart livestock-to-'wildstock' conversions could knock the long-reigning, heavy-drinking, ring-nosed heavyweight champ out of the increasingly dry ring. Perhaps for good.

For a millennium, cattle had been *the* omnipotent economic, cultural and political force throughout Africa. By converting inedible turf into milk or meat or living commodities that could be possessed, exchanged or inherited, cows laid the solid cornerstones of almost every crude or civilized society in pastoral Africa (notably excluding arid regions or impenetrable rainforest). In such societies, cattle revealed status. Cattle allowed trade. Imagine owning a dozen, edible BMWs or a walking stock portfolio permanently on display. So it would have taken a hell of a lot more than a decade of tourism to transform such a basic relationship to the land. Beef was king. To buck it off the throne, Africa's ungulates had to prove themselves more than curiosities and playthings for the leisure class. Wild things had to feed more, and more demanding, people at a fraction of the cost. In short, game like eland had to become affordable, succulent, mouth-watering meat.

Given steady rainfall above 600 millimeters a year nothing can beat cattle as efficient meat producers. But on arid, highly-variable, drought-ridden landscapes where competition from cities and industries reclaims a bigger share of water back from agriculture, the economic scales tip from cattle to kudu, gemsbok and eland. Eland like those walking 90 meters away from me. *Click, click.*

At Eden Camp, that harsh, unpredictable climate and terrain also affected our pursuit. During the small hours of the previous night an unusual momentary squall had thrown down a thin layer of light raindrops, bracketed by violently gusty winds that broke branches and stripped the last dead leaves off trees.

"At least the tracking should be easy," I commented hopefully that morning, since any prints we saw were guaranteed fresh and sharp in the clean-slate Kalahari sand.

"Yes," Traut answered shortly. "But the game will be extremely skittish from those winds. They will hide even more in the distance. Hunting will be difficult."

"Oh."

"Don't worry," he said, patting me on the shoulder. "They're out there. We'll find them, then it's up to you to take it from there."

That was at dawn. Yet in the long 20 hours since target practice yesterday, I had had no opportunity even to flip off the safety catch. After this one-day window for hunting, both Traut and I would part in opposite directions. Empty handed, from the look of things. Then suddenly, after hours of nothing, we had spotted an eland herd with a one-horned individual, hence unfit for tro-

Portable Slaughterhouse: *In humid lands, we lead tame cattle to centralized assembly lines of industrial meat processing; in arid lands drought-resistant game lead us out to their turf, and require individual tracking, hunting, killing and butchering.*

phy hunting. We hurtled on by Land Rover, then doubled back on foot, stalking them as they moved, growing closer. The eland slowed, stopped their combined feeding/drinking, sniffed the air, and came to a halt. *Click*.

Traut scoped the area with his binoculars and set up the shooting sticks. I braced my rifle against one of them for a steady aim.

"It's moving into the clearing," he whispered urgently. "Can you find it through the scope?"

I looked through until the tawny bulk appeared. "Yes."

"Take it."

Too much of a good thing? *In 1982 northwest Namibia had 5,000 springbok. Now there are 120,000 amid a two-year drought. All thrive on communal lands where livestock starve in droves. Tribes grow inter-ested in managing game as a food source once it sinks in that they own it. Arid (below 6- 700 mm rain) areas show the highest rate of success.*

I moved the sight along the back and down toward the lung and heart 'boiler room' right above its right shoulder. I put my finger on the trigger. It turned to face me. Then I noticed something and paused, whispering. "But this one has two horns."

"That's fine," he hissed. "*Take it*."

In the moment I fumbled to scope it again the eland turned and leapt off. It had sensed us, and a second later the entire herd vanished into the bush. Their knee joints don't click when they flee. The air hung silent. I lowered the rifle and removed the bullet from the chamber.

Eyeball to eyeball, I had blinked. Traut and Kamati were professionals, but could not hide their disappointment after such careful and tireless stalking. "Buck fever," said Traut with a forced smile, as we began the long walk back to the road. "Don't worry. It happens to everyone from time to time, myself included. Better not to shoot at all than take a shot with uncertainty."

I felt I'd let us all down, and tried lamely to explain my hesitation about the two small horns, thinking it was sub-adult. "Well, trust me on these things," said Traut. "Unlike other antelope, when eland get past their breeding prime, their horns actually wear down, get shorter. That one was not trophy quality, just meat. It would have been fine to take."

Would've, could've, should've. Maybe I wasn't yet ready. Maybe I could still back out of this.

The cold sterile logic behind the economics of aridity had led me to carry a rifle, but perhaps reason alone could not bring me to fire it. Thinking with my head, not my heart, I had persuaded my conscience and my traveling companion why it was becoming ethical to hunt and eat — and thus give economic value to more drought-resistant game in a water-scarce region.

But reason has limits. Few friends and family members who know me well would grasp my motives. They might assume I was merely acting out just another goddamn macho Hemingway/Walter Mitty fantasy in Africa. "I see why you are writing about this shift to game, and what's behind it," said my companion before I had set off without her. "But…what I don't understand is this: why do you, you personally, feel the need to take part in the kill? Why must you hunt?"

Running late that morning, I couldn't give her a satisfactory answer. Perhaps, through this story, I finally can.

* * *

By the time we returned to the truck Traut was relaxed and magnanimous, brushing off my apologies for hesitating and doubting his judgment during that decisive second. "We'll try again this afternoon," he said. "Give it a chance to cool down a bit, and let the kudu and gemsbok regain their confidence after the storm and feed again."

I nodded wordlessly. The image of an animal through the scope of my loaded rifle appeared in my mind for the 147th time in the past hour.

Traut read my thoughts. "Don't give the eland another thought. Kudu flee at sound, gemsbok at sight; eland flee for no reason at all, simply if they vaguely suspect anything wrong." Then, deadpan, he sighed deeply and mournfully. "It just means I'll just have to radio ahead to the kitchen and tell them we'll have to eat a lunch that is completely vegetarian."

Completely vegetarian.

Anyone who's been to a modern industrial poultry or beef factory may consider such a diet a marvelous idea.

Anyone who loves animals may oppose killing them, or eating them, as a matter of principle, and turn to soy-based products (see box, page 8). Anyone who shops at supermarkets may oppose fishing and hunting by individuals as pointless, barbaric 'anachronisms' that should be obsolete. Indeed, they may dismiss hunting as cruel and wasteful, a human instinct as irrelevant to our digestive needs as the appendix and removable by instinctectomy as a safety/health risk. I am paraphrasing some of my best vegetarian friends.

Yet some of my other friends are passionate trophy hunters and sport fishermen who consider themselves conservationists every bit as ardent, alert, disciplined and ethical as the most self-righteous, vegan, animal-rights tree-hugger. More so, come to think of it. By hunting they enter nature as participant, not observer. They 'take' only excess individuals while contributing (through fees, jobs, votes, travel and equipment) economically and politically to the aquatic or terrestrial habitat. If needled about "killing helpless animals" or reminded how stone-age hunters drove 33 major families of mammals and birds extinct during the last Ice Age, they may grow testy and accurately point out that modern hunters were the first and earliest conservationists, and it was they — not pricey urban anti-hunting environmental lawyers — who rescued the bison, sable, bontebok, rhino and other rare species from extinction.

Like most people, I suspect, I fall somewhere between these camps. I enjoy meat, red or white. If I can afford to I'll buy 'free-range' or 'organic' meat and poultry with hopes that the animal enjoyed a worthwhile and painless life before arriving on my plate. I fly-fish, albeit clumsily. I don't feel that individual plants and animals should ever have the same rights as humans, but perhaps their integrated wild habitat should. I'm repulsed by the NRA's arrogant spokesmen and think any right to bear arms carries the responsibility to sharply control and regulate them, especially handguns. Other than that, I rarely gave meat or hunting all that much thought.

Then I moved abroad. Dining in Cape Town restaurants I ordered and ate: grilled crocodile tail; BBQ baby warthog spareribs; zebra steak; kudu rump in plum sauce; guinea fowl stew; sautéed ostrich medallions; springbok carpaccio; gemsbok, impala and eland filets with Roquefort, mustard or pepper sauce (ideally washed down with Pinotage, Shiraz or Cabernet) respectively. In addition to feeling that green-smugness about the happy organic life and wildness of the meat, I found venison was healthier, tastier and oddly enough, cheaper than beef. Yet I kept the messy, bloody gut piles of Africa's protein economy locked safely behind a germ-free kitchen door.

Ignorance was appetizing. Yet this fellowship made me obsessive about how water scarcity shaped war, sewage, disease, gender, class, race etc. And underlying it all: food. By getting closer to the raw, exposed nerves of Africa I came to understand that in droughts like those of the last two years, people and animals rarely died of thirst. They starved, sickened, grew misshapen and malnourished without enough vitamins, nutrition and amino acids.

Therein lay a paradox. Three-fourths of all developed river or groundwater in Africa flowed to agriculture, which in arid lands meant livestock farming. Yet despite every possible advantageous development subsidy — water infrastructure, fodder, veterinary services, transport, abattoirs, tax breaks, free land, pesticides, livestock insurance — most cattle still couldn't cut it. I saw live-

stock carcasses litter roadsides and farms, eyes pecked out by an alarming number of pied crows. Rather than cultivated livestock, arid Africa's landscapes only seemed to produce deadstock.

This wasn't my imagination. From March to August, drought killed 100,000 head of cattle in Zimbabwe's Matabeleland South province; the previous dry months killed 170,000 head of cattle in South Africa's Limpopo province. A fourth of Namibia's 1.3 million cattle on communal lands died before they could get to market. Botswana's communal herders couldn't sell their shriveling stock fast enough to avoid watching them sicken and die. Led to artificial water, cattle drank. But they could no longer afford the longer treks to food, and owners could no longer afford the 7 kg of feed to add 1 kg or meat, especially where a 50-kilo bag cost US$23. Rural people couldn't trade cattle for cash to buy basic commodities. Even goats, that fallback 'survival food', struggled: one night in a village I tried in vain to sleep as a four-legged kid lay bleating and dying because its mother could not eat or drink enough to produce milk.

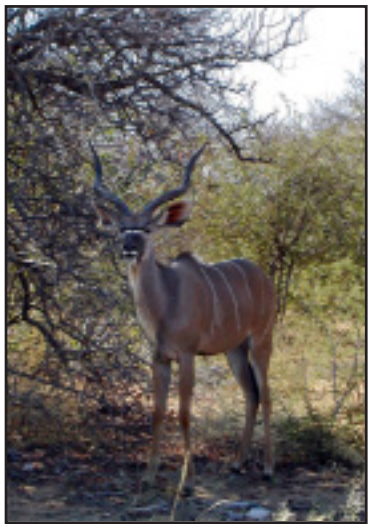
The socio-political effects grew as pronounced as a barren milk cow's rib cage. A fourth of Namibia was reduced to drought dependency, that empathetic perennial human-interest 'global issue' in Africa that seems to Westerners as insoluble and increasingly tiresome as 'unrest over West Bank settlements' in the Middle East.

Both regions were stressed enough when subsidized by cheap water. Now it's scarce and costly. More water goes to cities where jobs are, but where food production ain't. Deprived of this cheap or free supply of H_2O, Africa's livestock potential sinks from marginal to madness. In dry rural areas people grew more dependent, powerless, restless, and fled villages for a capital collapsing under human weight. Hunger shifted pressure to politicians, who blame their upstream neighbors and demand funds and food from the West, which ships it to prevent drought-driven conflict and instability over water.

This vicious circle will continue as long as donors and Africa's leaders blindly consider cattle as the only 'production crop' able to satisfy a nation's legitimate need for 'food security' and quest for 'food independence.' Conversely, they refuse to recognize wildlife as anything but 'bushmeat' they must protect from 'poachers' and 'conserve' for tourists.

Fortunately a few mavericks[3] have begun to cast a hungry eye at game, or venison, as more than a novelty item on the menu. They recognize the limitations of aridity. They register the effects of water scarcity on rural livestock ranching. And they support or tolerate hunting as a necessary means of unleashing rural development, food security and a revolutionary new force known as 'virtual water'

Big Mac Packs a Whopper: *Our innate hunger for animal protein has lifted the world demand for meat each year for 40 consecutive years. World meat production climbed from 4.4 million tons in 1950 to 233 million tons in 2000, double the population growth. Meat intake per person went from 17 kg to 38 kg, rising with income as a sign of development.*



But Fast Food Bucks Back: *A young male kudu, a species challenging sacred cows. Outside state 'protection,' drought-resistant game expands as a multiple crop used for ecotourism, hunting, food, and leather. Arid land economics speeds the conversion.*

* * *

I'll define and explain virtual water in a moment. But let's pick up the story at Eden Camp, where we had just finished that vegetarian lunch and I headed out with Kamati and Traut to resume the hunt. The blackthorn scrub was barren and the only game we saw through binoculars huddled beneath the occasional camelthorn acacia to escape the sun. Alas, they'd spotted us first, minutes earlier.

We stopped on a sand ridge, dismounted and walked down the slope toward a game path used by kudu.

[3] Starting with CAMPFIRE in Zimbabwe but progressing up through individuals like Chris Weaver at the World Wildlife Fund and Chris Brown at Namibian Nature Foundation.

Kamati remained in the truck. After 20 minutes we glimpsed kudu feeding, with gemsbok and zebra in the background. At Traut's signal I dropped to the ground. We advanced on hands and knees, and then lay flat. A gesture from a giraffe, a snort of a zebra, and the herd vanished.

"They're still skittish," said Traut, his hands bleeding from the last approach. "Rather than chase the game in circles all over the place, I think the best thing we can do is find a good place in the shade and stay still to see what happens."

One hundred meters farther we sat down in the dry dirt. A dust devil whirled toward us and we ducked down, hiding our faces. It barely missed us. But breathing coated the insides of our mouths and nostrils with dust, making it hard not to sneeze away any game within a mile.

No, I reflected, Eden Camp did not measure up to its Biblical namesake. It was not green and lush and pristine; quite the opposite. Eden had been the name of a white-owned cattle ranch nearly a century back, when a seasonal river, the Omatako, flowed through. Thirty years ago the government had constructed a dam upstream of the farm to ship the water to Windhoek and other cities in the central region of Namibia. The river duly dried up. The already dry land grew overgrazed by cattle, and the owner had looked for drought-resistant 'crops' that might cut his losses. Enter native wildstock. In the conversion process Eden became among the first and oldest game ranches, an appropriate African microcosm.

It foreshadowed what happens as water dries up, along with government subsidies: first for white ranchers after 1990, then for black livestock owners after 1995, and finally for tribes, traditional authorities and communal conservancies today.

Consider the Herero tribe. As sedentary relatives of the Himba (JGW-18), Herero have been among the most deeply entrenched cattle-cultures in Africa. Even Herero city slickers keep cattle somewhere as absentee landlords or weekend ranchers. But my Herero friend, Josephat, was not alone in his conversion of cattle to game, and trying to persuade his father (admittedly in vain) to break tradition as well.

Or consider the Damara. In Torra Conservancy, half the profits and tribal income came from an upmarket photographic tourism lodge, but the other half came from trophy hunting and the value of food culled from burgeoning populations of springbok, oryx and kudu. Game meat, more than money, most shaped behavior and outlook.[4]

In dozens of these places the problem was not too little game but too much. Eden had donated game meat to its own workers and neighboring families. It shot thousands of antelope to provide meat and biltong for the nearest city, Grootfontein, and it donated live game to restock the Bushmen-managed Nyae-Nyae Conservancy — but still could not keep up with the oversupply.

During a drought that killed more than one million cattle and goats all over southern Africa, these cornuco-

Continued on page 9

Faltering Heavyweight Champ: *The incomes of sheep and cattle farmers, who make up 90 percent of the agricultural sector and 25 percent of the country's foreign exchange (US$100 million), have collapsed during drought. Falling international prices lead to pressure selling. Sheep herds have shrunk from 3 million in the late 1970s to 195,000 today. Livestock have been on life support only due to national and especially European Union price subsidies, which could dry up. Nothing special about southern African beef that wholesalers can't get cheaper from Brisbane, Buenos Aires or Bismark.*

The Comeback Challenger: *Increasingly, raising water productivity is key to further gains in land productivity. Arid-adapted antelope, like kudu, cross the road to offer both. Governments risk a drop in food as aquifers dry up, but if they recognize the 'virtual water' potential of game they can help feed citizens, boost exports and stabilize water tables.*

[4] From a WILD conference on Conservancies "Meating Expectations" and "Wildlife in the Poijke."

Tofu versus *Tragelaphus*:

Can soy-based amino acids 'meat' the high ecological health standards of spiral-horned antelope?

I've likely stirred up enough bile by hunting without also challenging the ecological soundness of vegetarianism. If not, read on. While still 'west of Eden' I considered giving up meat and lowering my diet further down the food chain. After weighing some trusted moral imperatives — eat local (Wendell Berry); if everyone did it would the world be better or worse? (Kant); a thing is right when it maintains the stability, diversity, integrity and beauty of a dry, native habitat (Aldo Leopold) — I had second thoughts.

The biggest threat to wildlife populations in Africa or anywhere is not poaching individual animals for 'bushmeat.' It is loss of habitat, the wild animals' collective home. The most rapid and complete loss of habitat comes through conversion to livestock ranching, plantations and farmland. I had no beef with that while the owners provided food on a level playing field. We all gotta eat. But as agriculture guzzled more and more subsidized water, its 'fair share' began to eat into our other equally viable sources of protein: game, waterfowl, and especially sea-foods that needed rivers to reach the ocean.

Hitchhiking Into The City: *A gun store moved to downtown Windhoek and had to transport wall decorations. Hunting game for meat or trophies like this may be viewed as a distasteful, wonderful or necessary evil, but it tightly links urban and rural economies.*

"The biggest threat to wildlife populations in Africa or anywhere is not poaching individual animals for 'bushmeat.' It is loss of habitat, the wild animals' collective home."

So why not go cold turkey and eat veggie burgers and other soy products? After all, it tasted good. It felt healthy. It provided protein without fat. Best of all tofu required less water than cattle. Indeed 4 cubic meters of water produced one kilogram of soybeans, but 110 cubic meters of water produced the same kilogram of beef. So far, so good, right?

On closer look, 'so bad.' Africa would have to clear more native arable habitat to make room for soybean plantations, and thus fence out, and increase pressure on, or destroy any four-legged sources of protein — steenbok, duiker, springhare, kudu, gemsbok, tsesebe etc. — that had lived there previously.

Second, four cubic meters is better than 110, but it still requires 'mobilizing' additional supplies of water through infrastructure investments, adding another economic and political cost to the equation. A food source like eland or springbok that requires zero cubic metes of pumped water remained far better than one that demanded four.

Third, in a dry land, irrigation water must come from somewhere, and not waterlog, erode, increase salinity or fertilizer-pesticide-herbicide-concentrations in the soil where it gets introduced. That has rarely been the case in Africa.

Fourth, soy products will always be cheaper to produce from wetter lands, which are shrinking around the world as it is. Converting to a soybean plantation removes the only competitive advantage Africa has over the rest of the world as a potential source of wholesome, nutritious, organic, vitamin- and mineral-rich, low-fat, free-range, drought-resistant, mad-cow-disease-free, indigenous population-benefiting protein.

Finally, because they are wild and difficult and expensive to study in a lab, Africa's wildlife will likely be the last meal to become another 'genetically modified organism.'

Hold the tofu kebab, please. Change my order to a Cape buffalo burger.

Intestinal Fortitude: *No part of the game gets wasted; the stomach contents are used as fertilizer, the horns and hoofs are carved by craftsmen into household items, and the guts are eaten by locals, which is why this employee of Eden is smiling.*

pias of protein left a lasting impression.

For me, this reversal of fortune for wildlife was been one of the most dramatic and exciting (and for various reasons unheralded[5]) developments of the last half-century. Its political and economic consequences rivaled the end of apartheid. Indeed, blacks and whites had always been united in their shared prejudice against indigenous wild plants and animals; both set about to conquer, subdue and repopulate the native landscape with introduced crops, especially the domesticated 'crop' they worshipped: cattle.

Now, in arid regions, black and white landowners — private, commercial and communal — were overturning history. First they tolerated wild game. Then they mixed wild and domestic stock. Then they sold off cattle, goats, sheep (3 million in Namibia alone) and pigs and restocked with eland, kudu, springbok, warthog. In places like Eden, they tolerated and even stocked predators like lion, leopard, hyena, cheetah and wild dog. Finally, they removed fences, the final stage in what I'll call the rewilding of arid Africa.

* * *

I considered this epic reversal of fortune through the eyes of Namibia's Bushmen: whose untamed 'wildstock' was shot to make room for domesticated livestock; whose people were shot when they crossed new fences to eat this introduced, thirsty livestock; whose water holes were pumped dry to water the livestock; whose women and children were enslaved to work on those cattle farms until water ran out; whose reservations were given livestock and instructed to raise cattle like blacks and whites were failing to do (so they ate them); and whose newly recognized conservancies like Nyae-Nyae, were at last being restocked with indigenous game species that had been there at the beginning.

War of the Sexes? *I had been curious why female Bushmen enjoyed meat yet did not hunt. They certainly did everything else, from tanning skins, tracking, and providing the bulk of vegetable food. When I asked, women always laughed shyly and did not answer. Only later did I learn that they lacked the physical strength to draw a bow, throw a spear or stretch a snare — the oldest means of obtaining meat. In recent centuries the rifle has bridged that gender-based divide, but perhaps the genetic heritage lingers. For or against, women certainly react to hunting — mine or others — differently from men.*

Nyae-Nyae Bushmen can hunt game traditionally (spear, snare or bow-and-arrow) for food. Or they can profit from outsiders hunting their game with rifles as trophies, whereupon Bushmen still get the meat. For the old, who have managed to survive through all this change, one might expect them to smile dryly and say, "Told you so."

But they didn't. I spent time tracking and hunting with a few old Bushmen in Botswana and Namibia. For them the hunt remained important, not so much for pleasure, or adventure, or cultural and spiritual integrity, or even as a 'coming of age' ritual. It simply remained the most efficient and affordable way of getting meat. They liked the taste of the cattle they were sometimes given by do-gooders. But cows took up too much water, were too stupid to avoid predators or thieves and demanded too much energy to keep alive in the dry land. Wildlife, though harder to track, snare or hunt, had one advantage: it looked after itself. Though game could not be herded, tamed or penned in, it also could not be sto-

[5] Put bluntly, central bureaucracies would lose power through such a shift, and so governments hinder progress rather than facilitate it. From the state's point of view, biodiversity-as-meat is a decentralized development, a centrifugal force, and thus more difficult to control in terms of taxes and accessing profits. In regions where there is only communal-subsistence agriculture and no large-scale commercial enterprises, it is difficult to get anything started. Where there is no capital to deploy and few entrepreneurial or management skills, there is little in the way of nuclei to build on.

len. It knew how to survive in the open wild.

* * *

Which brings me back to arid, dusty barren yet meat-rich Eden. For that's the catch: whatever our diet, humans still must 'earn food through the sweat off our brow.' Since we can't drag drought-resistant meat to urban slaughterhouses to meet our insatiable demand, well, we had to bring the slaughter outdoors into the wild. And game had exhausting demands of its own.

Like most non-hunters, I had previously viewed the hunt as inherently unfair. To some degree it was, given superior human intellect and modern weaponry. But as Traut and I spent hour after hour in frustrated pursuit, I felt these advantages diminish. Big-eyed, big-eared and twitching-nosed Kudu, like other drought-resistant game, had superior sight, hearing and smell. Each of these senses was magnified six times our own, multiplied by five (the average small herd).

In response, we were forced to walk slowly or crawl, stop talking, keep low, smell like the dirt that by now coated us, stay downwind, and move only when the game looked away. As we did so, I felt I had never been so attuned to nature, so connected, so aware and alert of my relationship with it as I was now. A orange-breasted bush shrike squawked, and I realized it wasn't just a bird sound. It was a warning of our presence. In seeking a death, I began to notice each strand in the web of life.

Still, I didn't *have* to be one of the humans who sought a death through sustainable killing, called 'harvesting' or 'culling' or 'cropping' as the hunting euphemisms went. I could instead allow small groups of professional sharpshooters to drive out at night, shine the light in the eyes of prey species, shoot them at the base of their skull in large numbers, slit their throats, haul the carcasses back before dawn, flay and eviscerate and butcher them and ship the best parts to restaurants where I could blithely devour them later that evening.

But the small and exposed world of rural Africa forces you to confront matters more easily ignored in cities. I'd met, spoken to and heard about men (they were all men) who executed this slaughter, or had done it in the past and couldn't stomach it any longer. They did not feel proud of or easily reveal their line of work, and at times even felt ashamed at the lack of challenge or fair chase. A few, ironically like the 'knockers' who ended the lives of cattle in urban slaughterhouses, were haunted by recurring nightmares, became insomniacs, lost their wives, or turned to drink or other diversions to distract the mind.

* * *

Not Traut. He hadn't lost his vivacity or focus. True, in the heat of the afternoon he lay dozing next to me, flat on his back, snoring lightly with his hat over his face, and I was dumbstruck that this could happen in the midst of a heart-pumping, potentially fatal hunt. But I recalled

No Cellophane Wrap or Styrofoam Tray: *Growing up in suburbs I never saw animals slaughtered. When I finally did, here with kudu and eland, I could see where all the various cuts and parts came from, inside out, where meat linked with muscle. The West's changing diets, favoring low-fat, organic and free-range foods may lift the fortunes of wild antelope. But what impressed me most was the soccer-ball size of an eland's heart.*

that he had been hunting since he was 13. Each hunt was different, and important, but after thousands of hunts the novelty had no doubt worn off. He learned to track and to hunt from a Bushman; it seems he absorbed his mentor's perspective.

I had met Traut by chance, out of context. When I spoke of linking food security and water security he trusted my interest enough to tell me what he did, and where, and offered to take me on as the first novice hunter to water the dry, wild garden of Eden.

In turn I trusted his seasoned ethics and patience. Above and beyond the framework of existing laws he was reflective enough to self-imposed further limitations. He felt scorn for 'the brandy brigade' who hunted for fun and male bonding away from the women, and was skeptical of the quota numbers the government used to allow hunting of predators. He could not imagine hunting elephant. He forbade shooting after waiting in hiding at waterholes, or from a vehicle. He explained to me why it was not — as I had assumed — a terrible, mortal sin, to hunt weaker female game when the numbers were so high. However painful it seemed, a greater ethical lapse was to let the game population at large overgraze their

habitat and starve prematurely. The vigor, health and integrity of the herds depended on a balance between food and population. Until Traut could bring back lion to play their role, humans were the sole predators, and I had specifically come here to *not* hunt male trophies, but to help thin the herds of old, sick and weak that would have been naturally killed in the wild.

As I lay there, utterly awake, one aspect of Traut's professionalism unsettled me. While he advised hunters on when and what and where to shoot, Traut did not support any hunter, even a novice, with a 'back up' insurance shot from his own rifle. That meant the burden of responsibility for life or death rested solely with me. I felt prepared to kill, but remained terrified I might simply wound, and thus cause needless suffering for hours.

So, no. No one held a gun to my head. But in this water scarce region I weighed three options: I could eat livestock and speed the ecological decline and dependency of local water-dependent beef, poultry and mutton economies. I could order and eat wildstock and help these rural economies grow at the psychological expense of the men I required to kill game for me. Or I could study, track, hunt, butcher, cook and eat game myself, start to finish, and thus share a small part of the psychological weight and import of the act of killing, yet support what I felt was a more ethical local economy.

* * *

Traut awoke, lifted his head a few inches off the ground, and looked about. "Sit up and get ready," he whispered. "But do so very, very slowly. Think *slow motion*."

I did and saw a small herd of kudu and a solitary gemsbok wander into view. They had not detected us, although they were still way too far out of range to attempt a shot, especially with the diagonal crosswind.

"We'll somehow have to scramble over to that cluster of trees and bush to get close enough for a shot," he whispered. That meant crossing a clearing of 40 meters in the open. The only way to make it undetected was to 'leopard crawl,' flat on the belly, moving only when the game looked away, or began feeding. I felt a sharp neck pain every time I looked up from this position. The sun pressed on my back, squeezing sweat off my face.

As the gemsbok looked over at us, we froze for a long minute, and I relaxed my neck by looking down at the ground an inch from my face. The grains of sand appeared sharp and clear, and in their midst I found a strand of black hair from an animal's tail, probably a gemsbok. I picked it up and put it in my pocket. Moments later we moved on and crouched behind a tree. My lungs felt baked, my mouth parched and thirsty.

* * *

Despite the name, 'virtual water' describes something very much tangible and real: the amount of water that has gone into growing a given food, typically grain. The powerful concepts convincingly explained why arid, growing nations have never, and will not, go to war over food shortages caused by water scarcity.

Two years ago the idea's midwife[6] pointed out the basics. It took approximately 1,000 metric tons of water to produce 1 ton of wheat; importing a ton of wheat is tantamount to importing 1,000 tons of water in a virtual sense. On a micro-level, this meant that at every breakfast you ate a 10-gram bowl of Kellogg's Shredded Wheat you were 'virtually drinking' the 10 liters of water it took to grow it. On a macro level it meant that the same amount of water that entered the Middle East as 'virtual water' in the form of subsidized grain purchases flowed down the Nile each year.

It will always be cheaper for Israel, Syria or Jordan to buy two year's worth of virtual water-embedded grain

Not-so-virtual-water: *Two days after the hunt, beneath a large baobab tree, we marinated the filet and cooked it over the coals of an open fire. I remembered having watched the sentient food minutes before killing it. It was rare enough. And tasty. But I had to chew long and hard before I could swallow.*

[6] Prof. Tony Allan of the School of Oriental and African Studies (SOAS) at the University of London and Councilor of the African Water Issues Research Unit (AWIRU) at University of Pretoria,

than a single F-16 fighter jet to help it seize, say, the Tigris River. Thus trade in grain promotes peace in arid lands.

In southern Africa this kind of trade has tremendous potential. Virtual water becomes a viable coping strategy, and a long-term policy option, for any government (*i.e*. Zimbabwe, Namibia, Botswana, South Africa, Swaziland, Mozambique) whose citizens confront recurring droughts and chronic water scarcity. Best of all, 'virtual water' has the added advantage of being both politically invisible (no water rationing or price-hiking panics) and environmentally sound (no dams, diversions, drained wetlands etc.). Virtual water appeals equally to greens and free-traders as a potent political concept.

In that light, the University of Pretoria's Tony Turton conducted an environmental study of the potential for virtual water to offset tensions of water scarcity throughout the subcontinent. His conclusion: "The water wars that the popular media would have us believe to be inevitable will not be fought on the battlefield between opposing armies, but on the trading floors of the world grain markets between virtual water warriors in the form of commodity traders."

That's a relief. And yet, man cannot live on bread alone. Also, while grain aid and trade could help ease tensions between countries, a danger was water scarcity's imbalances *within* nations. Were there limits to what types of thirst virtual water could quench?

Beyond its role in growing wheat, corn and sugar, I spent some time comparing 'virtual water' in terms of meat. As shown above, hunting game increased the efficiency of water over livestock both in terms of meeting current needs (more crop per drop) and of allocating water among different users (more jobs per drop).

Through virtual water, advocates showed how hydrological systems were subordinate to the international political economies of which they are part. Water scarcity was a local or at best a regional phenomenon: cities, farms, industries and conservation each fought one another for pieces of a shrinking pie. But reversing the development tide — turning abattoir-bound cattle back into hunted kudu — appeared to relieve tensions within nations. It gave rural economies an advantage over the cities. It boosted and decentralized small industrial meat processing. It linked food to conservation in a closed, supportive loop.

Finally, the weakness of importing virtual water — in the form of grain shipments during drought — was that it required something to export back in return. Water-scarce governments in Israel, Spain, Japan, the United Kingdom and Arizona enjoyed advanced industrial economies that allow them to purchase as much grain or meat as they pleased. But as finite gold and diamond mines peter out, what unique commodity will dry, rural Namibia, Botswana, Zimbabwe or even South Africa have to offer the world in return for food rich in virtual water? Nothing, really. Except the most beautiful and diverse and abundant populations of wild game species in the world, waiting to be photographed, hunted or, eventually, eaten.

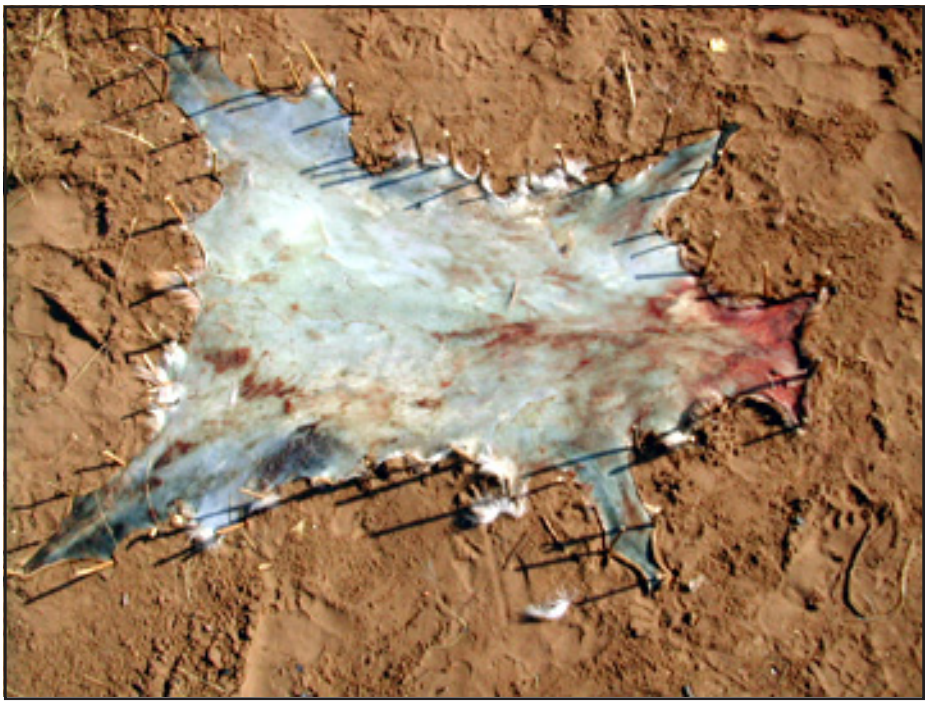
* * *

Traut scanned ahead with his binoculars, then turned to me. "There is one old kudu cow, very light colored. She is barren, no longer fertile. She would be singled out by predators, but still holds plenty of meat. Can you find her?"

I squinted through the riflescope. She crossed right to left, and then turned with her back to me. "Yes."

"Hold on. Don't shoot yet until she's at the right angle."

I took the safety off. I doubt that I would have cho-



Stretching the Fringe Benefits: *Kui, a Nyae Nyae Bushman, had snared this drought-proof steenbok a day earlier. After sharing 'virtual water' meat with his clan, he began tanning it. Beyond food, other goods made from processed native wildlife parts increased their rural econ*

Black and White Food or B&W Photo? *Namibia's livestock budget remains triple its conservation budget, despite dying cows returning a fraction of the tax revenue thriving game does. Even Botswana may kill its golden egg-laying goose, the Okavango Delta, by carving Ngamiland up for money-losing, water-wasting cattle operations. Meanwhile on non-state communal conservancies managed for hunting, tourism and food, drought-resistant zebra have escalated from 800 to 18,000 in ten years.*

sen to hunt had I not spent time with the Bushmen. By talking with them I came to see their relationship with game meat as a central, democratic organizing force in their society. Given natural limits, they took the same responsibility of feeding themselves by conserving and hunting the landscape as they did in finding and using water. Sometimes a successful hunt gave them both meat and moisture.

The gemsbok remained in the distance while the kudu herd ambled about. Then the one Traut had pointed out moved back to the right.

I had spent nearly two years wondering how different I was from the Bushmen, comparing and contrasting their values, their way of life, against my own. There would always be a gap between us, one I could not bridge, nor could they. But what I envied most was their sense of belonging, knowing who they were, their ties to their land and ancestors, their sensual understanding of creation, and their unshakeable sense of place.

Through the scope I watched the kudu's ears pivot like radar dishes, picking up all sounds. Her nose twitched. Her eyes gleamed. I grew enthralled. As I watched her feed on a few last leaves I thought her beautiful, as much a part of the barren landscape as the sand and thorns.

At a sound she turned perpendicular to me, 80 meters away. "Shoot anytime you feel it is right," Traut whispered.

My answer to my lover, as to why I felt the need to hunt? It is complex, but boils down to this. I decided to hunt in order to more completely understand who I am, where I came from, and how I should live responsibly in a finite universe. By deliberately eating what I killed I hoped to appreciate, fully and painfully and intimately, how all life lives on life.

* * *

I squeezed the trigger. A shattering crack resounded. Above the scope I saw the antelope scatter in every direction, including the kudu I had hunted. She had leaped at the sound, turned in a bound and raced off to the east with her herd at a full gallop.

"What happened?" asked Traut. "Did you shake at the last minute?"

"I don't know. I don't think so." I was more panicked now than before. My mouth felt even drier. I was terrified I'd only wounded the kudu and she was suffering immeasurably as a result of me.

"The rifle looked steady, I was watching it. But it was a clean miss. Still, let's double check the site for blood just in case." We stood and began to walk toward where the kudu had been feeding. I felt hollow. "Buck fever again. Happens all the time."

After walking a minute, Traut stopped short. "Whup! I'll be damned." I followed his gaze 100 meters to the right and saw a large form lay crumpled over on itself.

Traut was shaking my hand, congratulating me. Now, in an odd reversal, it was he needlessly apologizing for second-guessing my shot, and I was brushing it off. "Never seen that before," he said. "Usually they clench inward for a moment when the bullet hits, and then run."

His words meant nothing. Game was not general or abstract now, but specific, solitary. I was racing over to the only antelope that mattered. Though dead, she felt warm; I pressed my hand against her neck and felt the blood move beneath her skin. Her tongue, relaxed at last from its need to simultaneously eat/drink, lolled out of

Not elated above; humbled beneath: *I still don't like archetypal hunting photos of men proudly hoisting the 'trophy' they hunted. This was no trophy, simply my first and perhaps last kill, but I should have refused to pose with the 'clean' side of the kudu showing. I tried hard to smile for the camera but could not control my facial muscles.*

her mouth over a row of small teeth. I lifted her once-fleet legs and noticed for the first time how the two hard toes of her feet could move independent of each other. I saw a few ticks in her ears. Her eyes just stared, not at me. Not at anything. All the energy and alertness had gone out of her, all the life and purpose. She was gone, with nothing left but her flesh.

Traut pointed out where the bullet had entered and exited. "It was an almost perfect placement," he assured me. "What happened was she quickly lost a great deal of blood, especially as she ran off like that, but then had no oxygen getting to the brain and collapsed here. The effect was like fainting."

Kamati drove up with the truck and congratulated me as well. I had read somewhere that now, as a hunter, I was supposed to feel elated, a rush of triumphant accomplishment at the kill, but I just sat there with a trembling mouth and overflowing eyes. I lifted her head, felt the weight of her. It was sadness, but not strictly for the death of the kudu. I think I cried for the loss, or death, of something inside me as well.

I wiped away the tears but Traut only nodded. "That's a good sign," he said. "If you didn't feel something like you're feeling, you shouldn't hunt at all, or ever again. You have a good eye, an excellent aim. But without that feeling, you're not a hunter."

We hoisted her into the truck, and slit her throat to drain the blood so it wouldn't coagulate in the muscle. I needed to see her muscle become meat, to watch her transformed. She was flayed, slaughtered in parts and butchered, along with two large eland that another manager at Eden Camp hunted for food.

I thought of the whole process. From rain into roots, roots into leaves, leaves into flesh, flesh into a lean filet. Filet into me. That 'crossing over' in my heart left a deeper impact than the logic in my head, an impression that won't go away. Rather than feel proud or superior above the wildlife, I felt humbled, closer to them. Linked by the same foundation.

* * *

That same day, after the hunt, we went out in the late afternoon to seek gemsbok. Traut knew it was the animal that my Bushman friend in the Central Kalahari had linked me to. My 'totem' animal, as

they called it. Yet I was still coming to terms with my emotions about the kudu, and as it grew too dark to hunt I felt a strange mixture of disappointment and relief. Will I hunt again? I still don't know. Maybe when I again begin to feel too dulled, insulated, disconnected and removed from the union of life and death, from my place in the food chain. Maybe then.

In the weeks since that hunt I have not been troubled by remorse or regret, despite strong words of disapproval, fear and disgust from family and others close to me. "Blood lust," was one phrase I heard. They may never understand my purpose, and that is understandable. Hunting is one of the few activities no one else can do for you, or share with you as a group. For better or worse you are alone. And the act is irreversible.

I take comfort that rational thought preceded my action, and not the reverse. I know it was not motivated by some nebulous instinct or reverie.

And yet. Just the other night I dreamed I was again racing through the thickets, unclothed, unscratched. I remembered glimpsing the harlequin face of the gemsbok, quizzically looking back over its shoulder at me, and then vanishing. It its place I saw a herd of eland moving effortlessly; the eland leapt forward as a single fluid unit impossibly graceful for their size, streaming fast but unhurried through the thorns, boiling over each other in alternating turns and sequences.

In the dream I knew I was in a dream. Yet the eland looked so real I ran after them, chasing them without a weapon. They surged like movement was the one thing they were born to do, raced like wind through dead thorn trees, flowed like water over rock. ❑

Drought-proof 'thoroughbred of the desert': *A year ago this gemsbok emerged outside Metsiamenong in the Kalahari. The Bushmen there said he was old and tired and could be chased on foot. My next visit, they offered me dried gemsbok meat. I did not ask where it came from. I never saw the gemsbok again until he appeared in my dream.*

INSTITUTE OF CURRENT WORLD AFFAIRS
Fellows and their Activities

Alexander Brenner (June 2003 - 2005) • **EAST ASIA**
Alex received a B.A. in History from Yale in 1998 and has just completed a Master's degree in China Studies and International Economics at the Johns Hopkins School of Advanced International Studies. He is preparing for his two-year ICWA fellowship in China with four months of intensive Mandarin-language study in Beijing. His fellowship will focus on the impact of a new government and a new membership in the World Trade Organization on Chinese citizens, institutions and regions both inside and far from the capital.

Andrew Rice (May 2002 - 2004) • **UGANDA**
A former staff writer for the *New York Observer* and a reporter for the *Philadelphia Inquirer* and the Washington Bureau of *Newsday*, Andrew is spending two years in east-central Africa, watching, waiting and reporting the possibility that the much-anticipated "African Renaissance" might begin with the administration of President Yoweri Museveni. Andrew won a B.A. in Government from Georgetown (minor: Theology) in 1997 after having spent a semester at Charles University in Prague, where he served as an intern for *Velvet* magazine and later traveled, experienced and wrote about the conflict in the Balkans.

Matthew Rudolph (January 2004-2006) • **INDIA**
When work toward a Cornell Ph.D. in International Relations is finished, Matthew will begin two years as a Phillips Talbot South Asia Fellow looking into the securitization and development of the Indian economy.

Matthew Z. Wheeler (October 2002-2004) • **SOUTHEAST ASIA**
A former research assistant for the Rand Corporation, Matt is spending two years looking into proposals, plans and realities of regional integration (and disintegration) along the Mekong River, from China to the sea at Vietnam. With a B.A. in liberal arts from Sarah Lawrence and an M.A. from Harvard in East Asian studies (as well as a year-long Blakemore Fellowship in Thai language studies) Matt is also examining long- and short-term conflicts in Burma, Thailand, Laos and Cambodia.

James G. Workman (January 2002 - 2004) • **SOUTHERN AFRICA**
A policy strategist on national restoration initiatives for Interior Secretary Bruce Babbitt from 1998 to 2000, Jamie is an ICWA Donors' Fellow looking at southern African nations (South Africa, Botswana, Mozambique, Zambia and, maybe, Zimbabwe) through their utilization and conservation of fresh-water supplies. A Yale graduate (History; 1990) who spent his junior year at Oxford, Jamie won a journalism fellowship at the Poynter Institute for Media Studies and wrote for the *New Republic* and *Washington Business Journal* before his years with Babbitt. Since then he has served as a Senior Advisor for the World Commission on Dams in Cape Town, South Africa.

ICWA Letters **(ISSN 1083-429X)** are published by the Institute of Current World Affairs Inc., a 501(c)(3) exempt operating foundation incorporated in New York State with offices located at 4 West Wheelock St., Hanover, NH 03755. The letters are provided free of charge to members of ICWA and are available to libraries and professional researchers by subscription.

Phone: (603) 643-5548
E-Mail: ICWA@valley.net
Fax: (603) 643-9599
Web Site: www.icwa.org

Author: Workman, James G
Title: ICWA Letters - Sub-Saharan Africa
ISSN: 1083-429X
Imprint: Institute of Current World Affairs, Hanover, NH
Material Type: Serial
Language: English
Frequency: Monthly
Other Regions: East Asia; South Asia; Mideast/North Africa; Europe/Russia; The Americas

Institute Fellows are chosen on the basis of character, previous experience and promise. They are young professionals funded to spend a minimum of two years carrying out self-designed programs of study and writing outside the United States. The Fellows are required to report their findings and experiences from the field once a month. They can write on any subject, as formally or informally as they wish. The result is a unique form of reporting, analysis and periodic assessment of international events and issues.