

# ATER/SCAPCITY Ographs by Rudi Dundas

## Photographs by Rudi Dundas and Daniel Roca

Access to safe drinking water remains one of the largest problems faced by undeveloped societies today and one of growing concern as climate change increases the number of regions affected by water scarcity. Throughout the last century, water use has grown at a rate twice that of population increase as both natural and humanmade causes deplete and spoil the earth's limited freshwater supply.

A fine art photographer focused on social change and environmental issues, Rudi Dundas spent five years traveling and documenting communities grappling with water scarcity. Seen here are her images of the tribal people of Sub-Saharan Africa, communities forced to abandon centuries-long ways of life in the face of government-sanctioned programs. In Myanmar's Dala township, a lack of government intervention has led to the exhaustion of the area's only freshwater source, forcing a tightly rationed system on citizens, seen here in photographs by Daniel Roca, a freelance photographer.

The works of Dundas and Roca are a striking reminder that the continued negligence of those who overuse water—whether through waste, pollution, or mismanagement—sentences one fifth of the world's seven billion people to disease, labor, poverty and missed opportunity.

For the past five years Rudi Dundas has t raveled to over 15 countries making portraits of people affected by lack of clean water, including the Samburu in north Kenya, whose portraits here bring a human face to the story of how each person has been affected by the water crisis. We found Evelyn pumping water from their new well at Lbaa Onyokia, and she told us that she was so pleased to be able to have clean clothes for the first time in her life in the dry season. The dry season is seven months long. Before the well, she often had to walk five to six hours a day for water.

**Photo by Rudi Dundas** 





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Joanna Lipper. From Seaweed Famers, Zanzibar, SDN. The thin thread that connects seaweed farmers in Zanzibar to the global economy is growing more fragile by the day as poverty levels rise and environmental and economic activities like seaweed farming become increasingly unsustainable.

abundant but unfit for human consumption—most often due to pollution, eutrophication, and salinization—are considered economic water scarcity.

## **SUB-SAHARAN AFRICA FACES** UNIQUE CHALLENGES

water security drains communities' resources, forcing them to exhaust financial and human capital in pursuit of safe water. Hours spent carrying 40 lb. jerry cans of water or lost to sickness can be hours spent in a classroom learning to read and write, to breaking a circle of poverty fueled by

pronounced than in Sub-Saharan Africa, a crossroads of political instability, widespread poverty, and extreme climate. According to the World Bank, only 58% of its population had access to safe drinking water in 2005 and every But no matter its cause, lack of hour, 115 African people die from diseases linked to poor sanitation and contaminated water, Bv 2025, the World Bank projects that at least a half of the countries expected to face water shortages will be African with 48% of Africans living in either water-scarce or water-stressed

## A CONTINENT STRUGGLING TO ALLOCATE OUR MOST PRECIOUS RESOURCE TO 1.2 BILLION PEOPLE

Water scarcity is both a cause and a consequence of poverty.

> —Daniela Peis International Water and Sanitation Centre

e clean with it and cook with it, drink it and flush it away. And an average American family of four uses 400 gallons of it each day. But for the 1.2 billion people lacking access to it, clean drinking water is a precious and often unattainable commodity.

Experts divide water scarcity into two categories. The first, physical water scarcity, applies to cases where the necessary water supply simply isn't enough to meet demand, like in areas affected by desertification or overpopulation. Instances when water is in fact inadequate access to clean water and sanitation. Water scarcity largely characterizes areas afflicted by poverty. But with it comes a host of additional problems, such as increased disease and decreased agricultural development, which in turn decreases societies' productivity.

"Water scarcity is both a cause and a consequence of poverty," says Daniela Peis, a program funding officer for the International Water and Sanitation Centre.

Nowhere are the devastating conditions inflicted by lack of water access more

This all comes at a cost not only to individuals but to the continent's overall wealth. Annually, 5% of Africa's GDP is lost as a direct result of poor water sanitation and infrastructure. In Sub-Saharan Africa alone, each year citizens spend 40 billion hours collecting water, the equivalent of a year's worth of labor by France's entire workforce.

While in other areas of the world a few specific and thus more manageable factors affect water insecurity, Africa faces a multitude of both manmade and natural challenges. Although the continent's

## Every hour, 115 African people die from diseases linked to poor sanitation and contaminated water.

---World Bank

annual rainfall is comparable to that in temperate regions like Europe, higher evaporation rates mean precipitation replenishes only 20% of renewable water sources. Additionally, receding wetlands, salinization caused by over-pumping, industrial and agricultural waste, and the eutrophication of lakes choked by invasive plant species pollute above-ground freshwater, suggesting the continent's water scarcity problem is an economic, not physical one.

Africa boasts 17 major rivers and over 160 large lakes. A recent study by the



Kenshiro Imamura. From Water Security Action Team by JICA Volunteers

British Geological Survey estimates that total groundwater storage in Africa is as much as 660,000 km<sup>3</sup>, almost 30 times the total volume of North America's Great Lakes, the Earth's largest freshwater body. "Largely, it's an issue of development and exploitation, not natural environmental conditions," says Mohamed El Azizi, director of the African Development Bank Group's water and sanitation department. "We have the resources but not the tools and ability and so they go unutilized."

The U.N. estimates that Africa's three major water consumers—agriculture, communities, and industry—tap into just 3.8% of total annual renewable resources. This figure underscores the underlying problems afflicting Africa: infrastructure, development, and government cooperation, not supply.

## DISTRIBUTION, NOT AVAIL-ABILITY, IS THE PROBLEM

Of these the most crucial obstacle hindering Africa from becoming water secure may just be Africans themselves. Characterized by a strained and tangled web of relationships among its 47 countries, the continent's political atmosphere poses difficulty in coordinating regional responses. The Nile River basin alone encompasses ten countries, and 80 of the continent's rivers cross international boundaries. Nearly every country shares water resources with at least one other, but many, like Guinea which is intersected by 12 international rivers, share multiple.

"National interests outweigh shared interests," says Azizi. "With water scarcity projected to increase in the coming years, many expect political conflicts to intensify as well."

With potential for magnified conflict, an opportunity for international cooperation among countries arises as well, and with a handful of such successful models already paving the way, teamwork may just be the likelier outcome. Thirteen countries in the Southern African Development Community region have ratified a Protocol on Shared



Jake Belvin, From Clean Water for Better Health, SDN, A Maasai boy open ates the rope pump in his village

Watercourse Systems to "improve cooperation to promote sustainable and coordinated management, protection, and utilisation of transboundary watercourses." Other similar albeit smaller programs like the Nile Basin Initiative, the Lesotho Highlands Water Project, and the Kornati Basin Project signal the potential for partnership as the norm rather

For every \$1 invested in water and sanitation there is an economic return of upwards of \$34.

---World Health Organization

than the exception.

"Solving a problem of such epic proportions would require an equally tremendous investment," says Patrick Alubbe, regional director in east Africa for the nonprofit Water.org. "A sustainable, economic, and reliable system [in Africa] isn't just a matter of building a well but of providing infrastructure that accounts for the future and is adaptable to climate change as well as economic and population growth."

Putting in place the necessary infrastructure to supply

Africa with adequate water access would demand an annual contribution of \$50 billion for the next 20 years and an additional \$30 billion annually for the 30 years following that. However, considering the World Health Organization's estimate that for every \$1 invested in water and sanitation brings an economic return of upwards of \$34, water scarcity may just be a problem worth solving, one with the possibility of immense returns in not just economic but human capital.

## FOR MORE INFORMATION

International Water and **Sanitation Centre:** 

Africa Development Bank Group: www.afdb.org

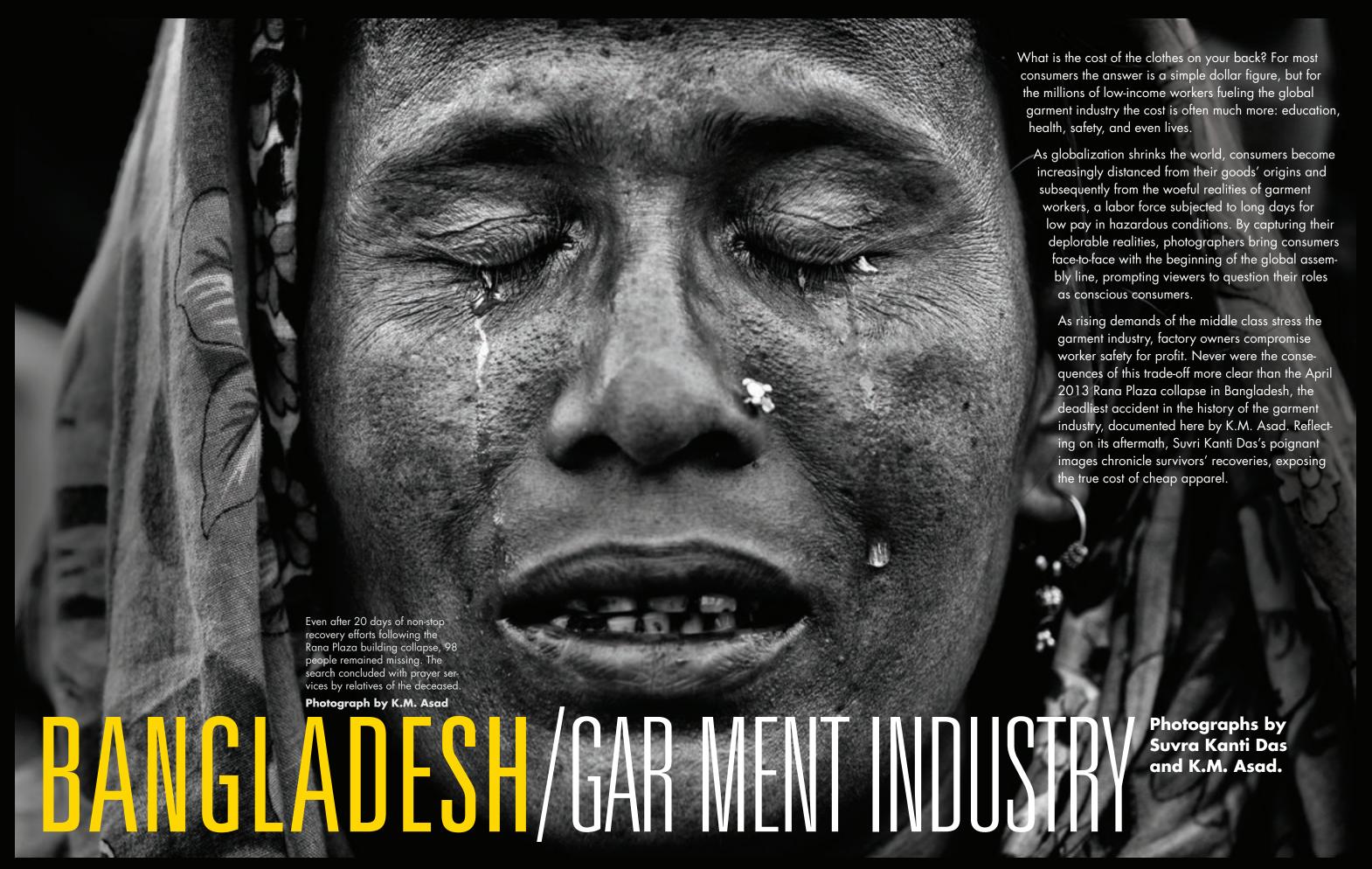
Water.org: www.water.org

World Bank:

www.worldbank.org

World Health Organization: www.who.int

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A survivor from Rana Plaza collapse tells Asad, "I will never work again for any garment factory." A total of 17 survivors of the Rana Plaza collapse took vocational training at the Centre for Rehabilitation of the Paralyzed (CRP).

## thousand people and injuring another twenty-five hundred.

But the accident, the deadliest in the history of the garment industry, was only unique in its magnitude. The factors contributing to it—disregard for workers' rights, sweatshop conditions, and negligence fueled by a focus on profit by global fashion giants—prevail throughout a sector industry experts valued at \$1.7 trillion in 2012.

## THE BANGLADESH GARMENT INDUSTRY

Today the garment industry employs 40% of Bangladesh's population and accounts for Manufacturing a shirt costs just \$0.11 in Bangladesh, the world's lowest unit labor cost.

and employment, a position it has continued to hold to this day.

The country's cheap labor and low production costs draw producers from around the globe with guarantees of a high profit margin.

Manufacturing a shirt costs just \$0.11 in Bangladesh, the world's lowest unit labor cost. But since the Rana Plaza collapse, the industry has suffered severe criticism for what

Although Bangladesh houses 5,600 other garment factories, it lacks a comprehensive inspection system. Regulatory bodies are divided amona a number of independent agencies, making enforcement of safety and labor codes difficult and susceptible to corruption. This negligence can result in deadly consequences as it did with the Rana Plaza building, the top four floors of which were constructed without a permit. The building as a whole was authorized only to house apartments and small businesses, not multiple factories.

## VICTIMS OF THE GLOBAL FASHION INDUSTRY

reduced lung function.

From there, material must be

cut and sewn using industrial

machinery which can snag

hair, pierce fingers, and cause

fires. Many garment workers

suffer from "brown lung," a

caused by inhalation of cotton

dust. Formally known as byssi-

nosis, it's marked by asthma-

like symptoms and long-term

chronic respiratory disease

As fashion's true victims, they endure a disproportionately high-level of risk for pay. Government mandated minimum wage for garment industry workers in Bangladesh is just above \$66 dollars a month, the lowest rate in the world. Additionally, loosely enforced regulation means factory owners cheat the majority of workers. A 1998 survey showed that 73% of females employed in Banaladesh aarment factories (over 80% of the sector's labor force) bring back earnings well below minimum wage, compared to 15% of their male counterparts.

High-profile brands like the Children's Place, WalMart, Benetton, and Mango were among the 29 fashion companies connected to the Rana Plaza collapse. their involvement igniting a frenzy of worldwide disapproval. The intense scrutiny put unprecedented pressure on the fashion industry as consumers questioned the true costs behind the price tags. This posed a paradox for the sector: keep manufacturing in Bangladesh and invest in improved conditions or face a public relations disaster by transferring production to other countries.



Garment workers in Savar industrial area near Dhaka, Bangladesh, eat traditional lunch in a tiffin box delivered directly from their home during meal time.

Some parties involved chose the former, responding to the accident with dona-

## Government mandated minimum wage for garment industry workers in Bangladesh is just above \$66 dollars a month, the lowest rate in the world.

tions for worker compensa-

tion funds and widespread

efforts dedicated to improving worker safety. Today, one third of the Bangladeshi textile industry has signed the Accord on Fire and Building Safety in Bangladesh, a five-year legally binding agreement between labor organizations, NGOs, and fashion retailers. "It's an agreement inclusive of workers and the industry," savs Phil Robertson of Human Rights Watch. "The goal is to bridge that divide, setting up a balanced relationship that can become the standard for the industry."

He acknowledges the global nature of today's apparel market makes coordination and navigating shared interests difficult, but the Bangladeshi representatives who've joined the Accord—which requires a pledge to

maintain minimum safety standards, enforced inspections, and establishing funds for factories to update facilities—are already taking steps in a better direction.

At a cost of as much as \$500,000 per factory, ensuring fair wages and a safe working environment no doubt comes at a price. But for multinational corporations like WalMart, whose annual net sales are more than four times greater than the entire gross domestic product of Bangladesh, the financial cost is much lower than the costs in human lives and negative publicity if these changes were not made.

# WHOSE GARMENTS

## THE RANA PLAZA COLLAPSE AND THE TRUE COST OF CHEAP FASHION

You have systematic abuse of an uneducated workforce who have no other viable option.

—Ineke Zeldenrust Clean Clothes Campaian

Photography by K. M. Asad

n April 24, 2013, thousands of Bangladeshi workers filed inside an eight-story complex of garment factories, small shops, and apartments. The fractured structure, its cracks and defects prompting authorities to indefinitely prohibit its occupation just the day before, succumbed to the increasing weight of factory workers filing in for their morning shift. At 8:57 a.m., followed instantly by the collapse of its top floors, the rest of the building buckled. Less than a minute later, a mountain of rubble and brick lay where Rana Plaza minutes ago had stood, killing over a

80% of its export revenue. The country's beginnings as a garment manufacturing giant trace back to 1974. That year, legislation of the worldwide textile and aarment industries established an export quota system. Manufacturing leaders like South Korea, their domestic output limited by quota caps, began "quota hopping" to unregulated markets like that in Bangladesh where, that same year, a revolution drove public policy away from socialist ideals and toward privatization. By 1980, the garment industry had become Bangladesh's main source of trade revenue



Workers at garment factory wearing aprons and masks to protect against potential hazards.

many consider its practices of modern-day slavery.

"You have systematic abuse of an uneducated workforce who have no other viable option," said Ineke Zeldenrust of the Clean Clothes Campaign, a workers' rights advocacy group. "[The collapse] shocked people, made them think of the human toll behind profits."

lows for] workers elbow-to-elbow jammed in over-capacity, filthy buildings cluttered with machinery and supplies, few exits, improper ventilation," describes Bent Gehrt of the Workers Rights Consortium. "It's a wonder something like [the Rana Plaza collapse] doesn't happen daily."

"The disorganization [al-

At each stage of garment production, workers face a multitude of threats to their safety and health. The manufacture of a single shirt first requires thousands of yards of fabric to be chemically treated with dyes and sealants, exposing workers to carcinogens such as potassium dichromate, tanning acid, and formaldehyde.

## FOR MORE INFORMATION

Clean Clothes Campaign: www.cleanclothes.org

Human Rights Watch:

Workers Rights Consortium: www.workersrights.org

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Photographs by Dario De Domenicis and Tiana Markova-Gold

Rio de Janeiro's winning bid to host the 2016 Summer Olympic Games has drawn both praise and much criticism as citizens question who exactly the games will benefit. The communities that stand to lose the most are favelas, their stereotype as dangerous, overcrowded urban slums considered by many a stain on the city's otherwise handsome image.

Italian documentary photographer Dario de
Dominicis transports viewers to Providencia Hill,
Brazil's oldest favela. His images detail this vibrant
and complex community, nearly a third of whose
homes are slated for removal to accommodate proposed
construction for the upcoming Olympics. Among Providencia
Hill's most vulnerable population are women whom poverty,
unemployment, and disease affect at disproportionally high
rates. Tiana Markova-Gold documents Centro de Estudos a Ação
Excola, a training program certifying 20 women annually as beauticians. By providing essential health and counseling services, it's one
place advocating empowerment and cultivating long-term positive change
for the favela's women.

In an effort to improve security ahead of the 2014 World Cup and 2016 Summer Olympics, the city established permanent police presence, the Pacifying Police Units (UPP), within 174 of Rio's communities. The move intended to neutralize gang authority within areas like Providencia Hill, but critics claim gangs continue dominating from the shadows.

Photograph by Dario De Dominicis

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## WHAT'S NEW!

## TRENDING PHOTOGRAPHERS ON SDN

Of the hundreds of exhibits submitted to SDN each year, these four stand out as exemplary and deserving further attention.



Nadia Sablin: Aunties (Russian Federation). Photographs detailing the lives of two unmarried sisters living in a Russian village. Alevtina and Ludmila are in their seventies, but carry on the traditional way of life, chopping wood for heating the house, bringing water from the well and making their own clothes. Vegetables they harvest in the fall and berries they gather in the summer supplement the meager pensions on which the elderly subsist in Russia.



**Liz Hingley:** The Jones Family (UK). Liz set out to create a body of work which speaks about the experience of deprivation within the context of a wealthy country. The Jones family—two parents and seven children—live in a three-bedroom council house in the industrial city of Wolverhampton, UK. This is the first house that the family has lived in for three generations; the mother and father were brought up in caravans, as were their parents.



Mariette Pathy Allen: TransCuba (Cuba). Most people who transition from male to female in Cuba have to work as prostitutes as Cuban law limits the kind of work they're allowed to do. Thanks to the work of Mariela Castro, a sexologist and president Raul Castro's daughter, and The National Center for Sexual Education (CENESEX), the organization she runs, HIV treatment of LGBT people is improving.



**B.D. Colen:** Liberian Schools (Liberia). A decade after Liberia's civil wars ended, the nation still has an unemployment rate as high as 85%, 80% of the population lives in poverty, the nation's power grid has yet to be rebuilt, and about 40% of Liberians are illiterate. Despite all the barriers they have to overcome, Liberia's youth understand that learning and literacy are the foundation upon which all other forms of personal and national progress are built.

## Interview

## WITH ED KASHI

## by Caterina Clerici

SDN's Caterina Clerici talks with Ed Kashi about his most recent work in Nicaragua, crowd-funding, and new directions in photojournalism

Ed Kashi—photojournalist, filmmaker, educator, and member of VII Photo—has dedicated his career to documenting social and political issues all over the world. In 2013, Kashi traveled to Nicaragua to document the epidemic of Chronic Kidney Disease of Unknown origin (CKDu) that has been decimating sugarcane workers in the country for the last few decades. He then went back in 2014, after successfully completing a crowd-funding campaign with the purpose of expanding his photographic work on the topic and adding a video component, and recently started documenting the issue in El Salvador. We talked to him about his work on the CKDu epidemic in Central America, his first crowd-funding campaign and how he sees photojournalism changing—from Instagram to other opportunities, and challenges, lying ahead.

Caterina Clerici: Can you talk about your project in Nicaragua with sugarcane workers and how you got started with it?

**Ed Kashi:** It's about an epidemic of kidney disease among sugarcane workers in Nicaragua, although the disease has spread to other parts of Latin America as well, with more than 20,000 workers who are either sick or have died. It has now crossed the third-generation benchmark:

their fathers and grandfathers all had the same problems. The project began in January 2013 when I started working with La Isla Foundation, a Nicaragua-based organization that has been trying to figure out what the disease really is and how to cure it. It began as a classic NGO assignment but I immediately got deeply involved and decided to go back.

cc: Mhys

**EK:** I had already generated enough material during the first two trips, but there was more to describe, and I wanted to tell the story more deeply by introducing video because I knew it would have made a more powerful effect. With video one can tell the bigger story: that these families are decimated and no one is doing anything.

CC: This wasn't your first time traveling to Nicaragua for a project. You were there in 1983, after the Sandinista revolution, to witness the struggle against the Contras following the overthrow of the Somoza dictatorship. How was it to be back 30 years later?

**EK:** At the time, it was exciting. I was there as a young photojournalist witnessing what was a proxy fight between the US-backed Contras and the Soviet backed Sandinista government, a typical dynamic of the Cold War in South America. When I went back for the kidney project I was covering a health and human rights issue, not a political struggle. But the issue is still

strongly political: the local media aren't allowed to cover the story because the government is protecting the interests of the oligarchic sugar company. This is the proof that unfortunately nothing has really changed since the revolution.

**CC:** What was one thing that struck you about covering the kidney disease epidemic?

**EK:** As a photojournalist, you sometimes have to look deeply to find your story or it takes some time to figure it out. In this case it was thrown at me: in the town we were in, there was a funeral every day. The evidence was around us. I was doing a series of portraits of people who had sick family members or ones who had died. I was in a neighborhood of Chichigalpa, often called the Island of Widows since one in three men are in end-stage of renal failure. It was like a refugee camp, with wooden run-down houses and no running water. I thought of the similarity, and then I thought 'Wait a second, these people live here, they work here, this is unacceptable, it's not supposed to be like a refugee camp.' The injustice is appalling.

**CC:** You decided to "crowd-fund" your way back to Nicaragua. How did that work?

**EK:** The idea came through the Photo Society, which supported the project. I was one of their three "guinea pigs," together with Amy Vitale and Catherine Karnow (also members of the Photo Society). I launched

Continue on page 43.



Family and friends gather for the funeral procession and burial of a former sugar cane worker, 36, who died of Chronic Kidney Disease of unknown origin (CKDu), after working in the sugar cane fields for 12 years in Chichigalpa, Nicaragua. Photograph by Ed Kashi; VII.

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