

REPORTING ON SOLUTIONS INTERNATIONALLY

A TOOLKIT BY THE SOLUTIONS JOURNALISM NETWORK
AND PULITZER CENTER





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Introductory letter from Jon Sawyer,
Executive Director of the Pulitzer Center4

How do I know it's solutions journalism?6

How do I know it's NOT solutions journalism?.....8

Case studies of international solutions stories10

 “Malaria: A Race Against Resistance” (Amy Maxmen).....12

 “Of Fish, Monsoons and the Future: A Push to Save
 Cambodia’s Tonle Sap Lake” (Chris Berdik)17

 “As Bangladesh’s Population Grows, Slum Dwellers
 Struggle for Clean Water Access” (Steve Sapienza).....22

 “An End to Polio in India?” (Esha Chhabra)26

6 tips on reporting about solutions internationally30

5 tips on writing a successful Pulitzer application31

Written and compiled in October 2014 by Sarika Bansal and
Tina Rosenberg from the Solutions Journalism Network

INTRODUCTION

The journalists associated with the Pulitzer Center do hundreds of events each year, presenting their work to universities, secondary and middle schools, and the public at large. They talk about the systemic global issues that are our stock in trade—from food security and fragile states to global health and climate change. The range is broad, the audiences diverse, but there is usually one common thread: Someone will ask, “What is being done to fix this problem?” One answer to that difficult question, for us as an organization, has been our collaboration with the Solutions Journalism Network (SJN).

David Bornstein and Tina Rosenberg, SJN co-founders, write about noteworthy responses to intractable problems with an intellectual rigor and sophistication that is the envy of their peers. The goal of the Pulitzer Center/SJN partnership is to make the tools that SJN has developed available to our own network of journalists, through workshops as well as individual consultations. Not every journalism project is suited to the solutions-oriented approach, but many are. And to the extent that we create successful projects we hope to model the SJN approach, for our journalists and news media partners, and for the educational institutions that follow our work.

The four Pulitzer Center projects highlighted in this guidebook are powerful examples of solutions-oriented reporting—and proof that when done well, such projects get the traction they deserve. For Amy Maxmen, the topic was malaria, new thinking regarding an effective method of malaria prevention that may eventually lead to widespread drug resistance. For Chris Berdik, it was how



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scientists are mapping Tonle Sap, Cambodia’s largest and most threatened lake, so as to devise a plan that protects both jobs and environment. For Steve Sapienza, it was efforts to deliver clean water to the slums of Dhaka, Bangladesh, one of the world’s fastest growing cities. For Esha Chhabra, it was the eradication of polio in India, and the lessons from that experience for other public health challenges.

Conventional wisdom says stories like this disappear, that in the chaotic din of contemporary journalism they sink without an audience. Our experience with these projects has been the opposite, with placements in outlets that range from *The New York Times* and *The Atlantic* to *The Daily Beast*, *Nature*, *Forbes*, and *PBS NewsHour*.

We’re grateful to SJN for showing us what’s possible in the solutions-oriented approach, and how to do these stories while holding true to fundamental journalistic values.

We hope you will find these case studies helpful, as well as the background information on the solutions approach and tips for journalists. We look forward to your feedback.

We are confident that together we can make this approach an important tool for journalism in the years ahead.

JON SAWYER






Executive Director, Pulitzer Center on Crisis Reporting








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HOW DO I KNOW IT'S SOLUTIONS JOURNALISM?

Here are 10 questions to ask yourself when writing/producing a solutions-oriented story. Not every story will address all of these questions, and that's okay — but we hope this will inspire your thinking:

-  **Does the story explain the causes of a social problem?**
A solution should be explained in the context of the problem it's trying to address. Documenting the causes of that problem will clarify the opportunity for a solution to create leverage and impact.
-  **Does the story present an associated response to that problem?**
The acid test: if the story doesn't describe a response, it's not solutions journalism.
-  **Does the story get into the problem solving and how-to details of implementation?**
A great solutions story delves into the how-to's of problem solving, investigating questions like: What models are having success improving an educational outcome and how do they actually work?
-  **Is the problem-solving process central to the narrative?**
Solutions journalism, like all journalism, is about great story telling. It should include characters grappling with challenges, experimenting, succeeding, failing, learning. But the narrative is driven by the problem solving and the tension is located in the inherent difficulty in solving a problem.
-  **Does the story present evidence of results linked to the response?**
Solutions journalism is about ideas — but like all good journalism, the determination of what works (or doesn't) is supported, where possible, by solid evidence. For early-stage ideas, where the only "evidence" may be the assertions of credible observers, the key is to not overclaim.



-  **Does the story explain the limitations of the response?**
There is no such thing as a perfect solution to a social problem. Every response has caveats, limitations, and risks. Good solutions journalism does not shy away from imperfection.
-  **Does the story convey an insight or teachable lesson?**
What makes solutions journalism compelling is the discovery — the journey that brings the reader or viewer to an insight about how the world works and, perhaps, how it could be made to work better.
-  **Does the story avoid reading like a puff piece?**
Solutions journalism is expressly not about advocating for particular models, organizations, and ideas. Journalists pursuing solutions stories are bringing their discernment to explore ideas and methods, not to advance an agenda or make people feel good.
-  **Does the story draw on sources who have a ground-level understanding, not just 30,000-foot expertise?**
Solutions journalism comes alive when it draws on practical how-to insights from people working in the trenches, who are knowledgeable about on-the-ground realities and the details of implementation.
-  **Does the story give greater attention to the response than to a leader/innovator/do-gooder?**
We see a clear distinction between solutions journalism and what is often called "good news." "Good news" stories tend to celebrate individuals and inspirational acts. Solutions journalism is about ideas, how people are trying to make them work, and their observable effects.

HOW DO I KNOW IT'S NOT SOLUTIONS JOURNALISM?

We've found that to explain what solutions journalism *is*, it's often effective to offer examples of what it *isn't*. Here are seven types of **solutions journalism impostors** we've all seen in the media before.

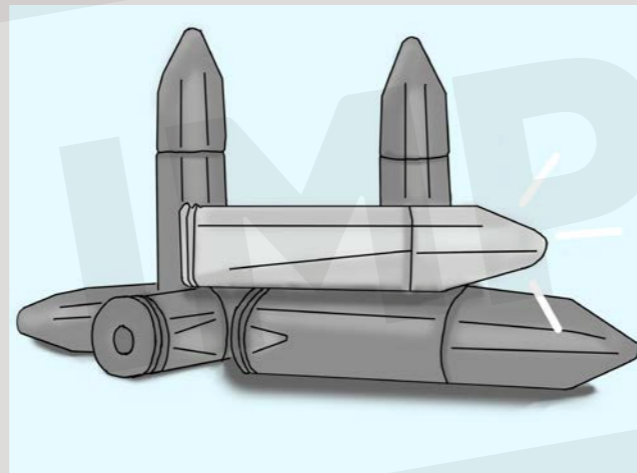


Hero Worship:

These are stories that celebrate or glorify an individual, often at the expense of explaining the idea the individual exemplifies. Instead of talking about the merits of an approach an individual is advancing, the piece will gush about the person's decision to leave a high-paying job to save the world.

Silver Bullet:

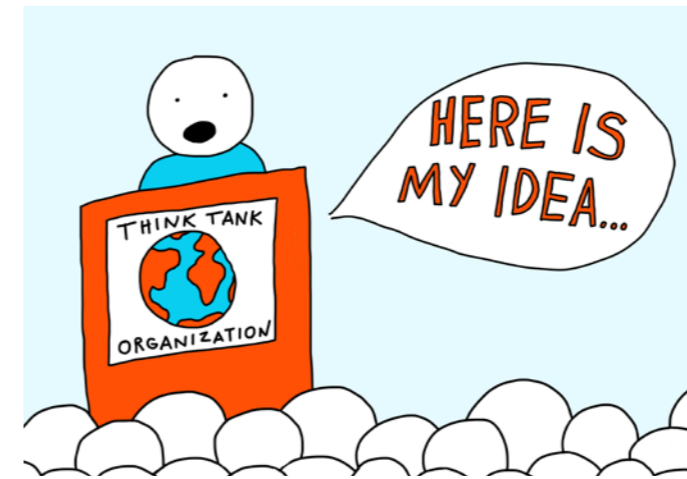
These stories are often seen in the tech and innovation sections. They describe new gadgets in glowing terms, often referring to them as "lifesavers." Also, a note: Money is sometimes considered a silver bullet.



Favor for a Friend:

You can sometimes distinguish this impostor because the sole or predominant voice is that of the organization being profiled. Like the silver bullet story, it doesn't have much in the way of a 'to be sure' paragraph—i.e. the caveats to success—and appears as thinly veiled PR.

Art credit: John Challis and Annie Taylor

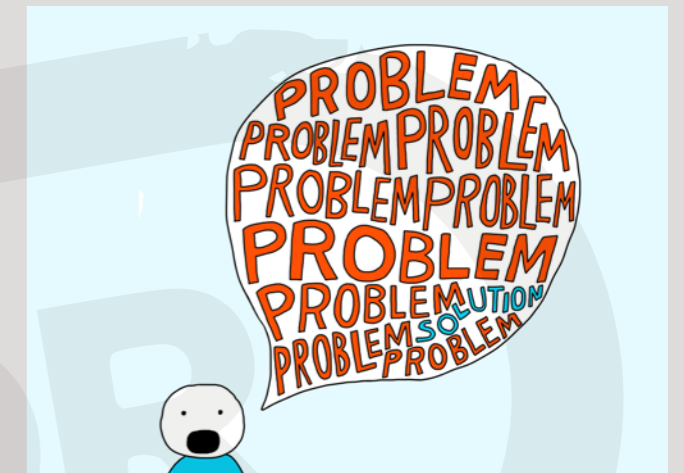


Think Tank:

Opinion journalism can explore solutions if it contains real reporting about existing responses to problems (and the results). But "think tank journalism" refers to journalism that proposes things that don't yet exist.

The Afterthought:

This is a paragraph or sound bite at the end of a problem story that gives lip service to efforts at solving it. The solutions aren't considered with real seriousness, but rather thrown in as an afterthought.



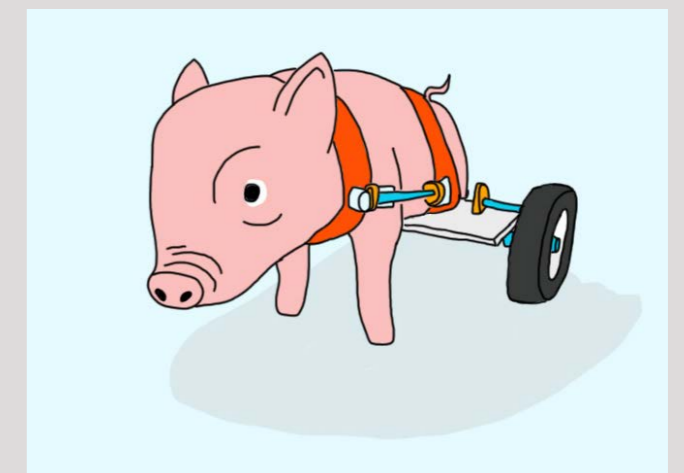
Instant Activist:

A lot of people think, when seeing the phrase 'solutions journalism,' that we're promoting pieces that ask the reader to click a button at the end and give \$5 to a cause. They offer an emotional plea and then ask for support for a specific cause, as a means to "solve" the issue.



Chris P. Bacon:

This kind of journalism is heartwarming, quirky, and one-off. It often appears at the end of the evening news or on Thanksgiving, in the form of a kid with a lemonade stand or a guy who made a wheelchair for his beloved pig. It tells the viewer that the world has good people doing cute things, but doesn't get to the structural issues that we want solutions journalism to address.



CASE STUDIES

Writing ledes is hard, and writing ledes for a solutions story is particularly difficult — there's just too much choice. Do you begin by recounting the problem? Or with a scene that shows the response in action? Or a summary lede contrasting then and now?

There is no right answer. They all can work — depends on the story. There's also no standard structure for the body of a solutions story.

On the next few pages, you'll find four annotated stories by Pulitzer Center grantees — along with interviews with each of the authors. These are good pieces of journalism that incorporate, to varying degrees, elements of the solutions approach. We hope this annotation will give journalists ideas and models for structuring their own stories. All of these stories make their characters come to life by showing them at work. And all of them are set up like howdunnits. They introduce a seemingly intractable problem, but tantalize the reader or viewer with the implication that perhaps in this case, it's not so intractable. The audience stays with the story to find out how.



Amy Maxmen's *Nature* article on mass malaria prevention begins with a colorful scene of the response at work. The problem is familiar to her readers — lots of kids die of malaria — so she spends most of her story on the pros and cons of this response.



Chris Berdik's *New York Times Science Times* story on a mapping project with the goal of saving Cambodia's Tonle Sap lake starts with a brief scene-setter. It spends the rest of the article weaving together the various problems — overfishing, dams, climate change — with the mappers' plans to address them. It's the most complex structure of the four articles.



Steve Sapienza's *PBS NewsHour* video, on getting clean water into the slums of Dhaka, Bangladesh, starts with a scene-setter. After introducing viewers to Dhaka, he spends a lot of time on the problem before getting to a successful response.



Esha Chhabra's *New York Times Fixes* column on polio in India starts with a puzzle: India's immunization rates for most diseases, such as measles and hepatitis B, is a dismal 61 percent. Yet 95 percent of children are vaccinated against polio. She spends the rest of the piece explaining what the polio campaign did that was different — and how those lessons are now being adopted to increase coverage of other vaccines.

JOURNALISTS WE PROFILE



Amy Maxmen

Amy Maxmen is a journalist who covers health, disease, science policy and evolution among other topics. She also writes about how scientists interact with the world. Her stories and photos appear in a variety of outlets, including *Newsweek*, *The New York Times*, *Nature*, *Nova/PBS*, and *Al Jazeera*. In addition to freelancing, she is the senior editor at *Nautilus* magazine. Prior to writing, she earned a Ph.D. from Harvard University by spending a great deal of time in the ocean and beside a microscope in Honolulu.



Chris Berdik

Chris Berdik is a freelance science journalist and a former staff editor at the *Atlantic Monthly* and *Mother Jones*. He's written for the *New York Times*, *New Scientist*, the *Daily Beast*, the *Washington Post*, the *Los Angeles Times*, the *Virginia Quarterly Review*, *Pacific Standard*, and the *Boston Globe*, among other publications. In addition to his print work, his radio and multimedia stories have been featured on *Smithsonian.com*, *WBUR* (Boston's NPR affiliate), and *Sciencestage.com*. Chris's first book, *Mind Over Mind: The Surprising Power of Expectations* was published by *Current*, an imprint of Penguin, in 2012.



Steve Sapienza

Steve Sapienza is an award-winning news and documentary producer who has covered a wide range of human security stories in dozens of countries, including the HIV crisis in Haiti and the Dominican Republic, child soldiers in Sierra Leone, climate refugees in Bangladesh, and landmine survivors in Cambodia. For over 20 years he has shot and produced stories for broadcast television and online distribution. He regularly contributes stories to broadcast outlets like the *PBS NewsHour* and *Al Jazeera*. As senior producer for the Pulitzer Center, he shoots and produces stories from the field and also contributes to Pulitzer's multimedia and broadcast endeavors.



Esha Chhabra

Esha Chhabra is a journalist who covers social enterprise, technology for social impact, and development. She has contributed to a number of international and national publications: *The Guardian*, *Economist*, *San Francisco Chronicle*, *New York Times*, *Forbes*, and more. She is a graduate of Georgetown University (B.A.) and a Rotary Scholar from The London School of Economics (MSc).

Malaria: A race against resistance

By AMY MAXMEN

November 13, 2013

It is September in southeastern Mali, and Louka Coulibaly is standing in the shade of a squat, concrete building, giving instructions to a dozen men and women perched on a wobbly wooden bench. Coulibaly, a local medical supervisor, hands out nylon backpacks, each filled with bags of pills, plastic cups and a porcelain mortar and pestle that the women pause to admire. By noon, the men and women are packing up and heading back to their respective villages on foot, bicycle and motorcycle.

The following day, they and about 1,400 other health workers throughout the region will set up shop in public spaces: under the shade of mango trees, in one-room schools, at market stands and in district health centres. They will mix and mash the pills with the mortar and pestle, dissolve them in water in a cup, and hand the bitter dandelion-coloured liquid to about 164,000 children.

The effort is part of a broad campaign to prevent malaria by providing African children with drugs usually used to treat the disease. Nearly 1.2 million healthy children from parts of Mali, Togo, Chad, Niger, Nigeria and Senegal received these drugs during the rainy season — from around July to November — when malaria usually ravages the population.

The countries' governments are deploying this intervention — known as seasonal malaria chemoprevention, or SMC — with financial support from the United States, the United Nations and the medical aid organization Médecins Sans Frontières (MSF), also called Doctors Without Borders. Next year, many plan to expand the campaigns, and other countries hope to launch their own, encouraged by recommendations from the World Health Organization (WHO).

Preventive use of anti-malarial drugs is not new: tourists routinely swallow them when travelling. But public-health officials have long instructed people living in regions where the disease is endemic to refrain from taking drugs prophylactically, in part because of concerns that the parasite that causes malaria will develop resistance when many people take the medicine on a long-term basis.

That risk has not disappeared. In fact, scientists fully expect SMC to encourage widespread drug resistance. No one knows when, exactly, but it could happen within as few as five years. Until then, SMC has the power to prevent 8.8 million cases and 80,000 deaths each year if implemented in regions with high rates of seasonal malaria. That is considered a powerful enough benefit to justify losing the drugs.

"Life is a risk," says Coulibaly, a Malian hired by MSF to train local health workers. "And if you don't take risks, you don't win." [...]

Amy uses a lede that gives the reader the look and feel of a response to malaria. By the third paragraph, the reader understands that this process is widespread across many African countries.

This paragraph puts into perspective why it is worth paying attention to this particular intervention.

The project is designed to forestall drug resistance as long as possible, and to work in concert with mosquito nets and other preventive methods. Supporters hope that the combination will significantly suppress malaria, so that even if resistance eventually spreads, the caseload should be smaller and manageable with other treatments. But SMC will not be as successful if funding and infrastructure falter — and so far, programmes have had a shaky start. Still, advocates say that the challenges can be overcome. "SMC is feasible," says Estrella Lasry, technical adviser for malaria chemoprevention at MSF. "But it requires organization, a series of steps and money to back it."

Alassane Dicko, a malariologist at the University of Bamako in Mali, was a graduate student in Plowe's laboratory in 2001, when he started to think seriously about reviving chemoprevention [from the 1960s]. As a child, Dicko had lost his older brother and his best friend to malaria. Later, as a medical student working in hospitals, he was distraught at the number of children he saw dying. "You really feel it," he says. "If we want to do anything for this country in terms of health, we need to stop malaria first."

Dicko suggested that older antimalarials might be repurposed for prevention in places where resistance to them is not yet widespread. By using drugs seasonally, only in uninfected children and in combination rather than alone, he hoped to avoid some of the mistakes of the past. With drug combinations, parasites need to acquire several mutations to survive. These mutations usually come at a cost to the parasite, so removing the selective pressure of the drugs during the dry season would give parasites still sensitive to the treatment a chance to outcompete resistant ones.

Dicko proposed using a mixture of sulphadoxine and pyrimethamine called SP, which was known to be relatively safe over the long term. In 2002, his team treated 130 children with SP for two months in a placebo-controlled trial in Mali. The treatment reduced malaria by 68%.

Other West African scientists followed the study. Among them was Badara Cissé, a Senegalese researcher then pursuing his doctorate with malariologist Brian Greenwood at the London School of Hygiene and Tropical Medicine. Greenwood had been considering chemoprevention since the 1980s, and he and Cissé immediately grasped the potential in Dicko's approach. In 2004, they began a trial in Senegal to test three monthly doses of SP plus artesunate, an artemisinin derivative. Compared with the placebo group, nearly nine out of ten malaria cases were averted.

With a US\$4.5-million grant from the Bill & Melinda Gates Foundation in 2008, Cissé and his colleagues launched an as-yet-unpublished, 3-year clinical trial to study SP with another drug, amodiaquine (to preserve the efficacy of artemisinin). They treated nearly 200,000 children under 10 years old and found that they had 83% fewer cases of malaria than controls, says Cissé. Smaller trials in other African nations reported similar findings.

* These are impressive numbers, especially given how recalcitrant malaria has been to preventive measures. No vaccine has ever proved fully effective against the disease, for example. And the one that is closest to approval — RTS,S — has shown disappointing results in ongoing clinical trials, with less than a 50% reduction in cases. [...]

Amy mentions two necessary conditions for SMC to succeed: funding and infrastructure.

This sentence gives a window into Dicko's thinking, reflective of the "how" questions that define solutions-oriented reporting.

These paragraphs show that Dicko's findings were not just a fluke — which is particularly crucial for a scientific publication. The last paragraph in this section compares this method to the best-known anti-malarial vaccine.

Amy was fortunate to have the space to explore how critics reacted to SMC – in particular, to those who feared malarial resistance.

Resisting the critics

SMC raised some concerns that slowed its adoption. Some health officials suggested that natural, partial immunity to the parasite — built up as a child survives multiple bouts of malaria — would be compromised. Others fretted about the potential side effects of taking the drugs regularly. But the loudest complaints were about losing the drugs to resistance.

In a cramped office in a makeshift building at the University of Dakar, Cissé explains how he was frustrated by the deliberations among public-health officials as malaria waged war on Senegal's children. He slumps in a chair that seems much too small for him and asks, "Isn't it selfish to sit in our offices with air conditioning, saying that we should save these drugs?" He recalls a single night, 20 years ago, when he watched five children die of malaria. There was nothing he could do to save them. "If this happened to you, you would not be debating about the fear of losing a drug," he says.

In 2012, SMC finally won over most officials. The Cochrane Collaboration — an international group based in Melbourne, Australia, that specializes in evidence assessment — analysed results from trials in Senegal, Mali, Burkina Faso, Ghana and Gambia, and concluded that SMC could prevent more than three-quarters of malaria cases in places where the disease struck seasonally. In the trials, the signs of side effects, resistance and reduced immunity were all minimal. According to another report, nearly 21 million children in these regions stood to gain from SMC each year. And prevention is cheaper than treatment. Each month, chemoprevention costs \$1.50 per child, which pales in comparison to the costs of travel and medical care for a child who falls ill. In November 2012, the WHO published SMC-implementation guidelines that enabled countries to apply for funds from international organizations.

Slow start

Implementation has been a challenge, however. Mamadou Lamine Diouf, the drug-procurement manager for Senegal's National Malaria Control Program, says that the rollout there was supposed to reach nearly 600,000 children each month, starting in July and August. But he and the US agency footing the bill for the medicine had underestimated how much time it would take to get these older drugs manufactured anew and assessed by various organizations. By early November, health workers had managed to reach only 53,000 children. "We are learning by doing," says Diouf. "Now we know that if we don't master this long supply chain, nothing will be possible."

Drug delays set back chemoprevention pilots in northern Nigeria by a month. Togo's campaign did not start until September. Burkina Faso's project failed to launch when funds came up short. And the size of Mali's intended intervention dropped after a *coup d'état* and an invasion by al-Qaeda affiliates last year sent the nation into disarray.

Still, with the lessons learned, supporters say that they will be better prepared next. In March, some countries plan to apply for funding from the Global Fund to Fight AIDS, Tuberculosis and Malaria. Scott Filler, a disease coordinator at the Global Fund, which is based in Geneva, Switzerland, says, "There are not many things that can prevent malaria in 75% of children, so we will fully support it when countries come to us." [...]

In many global health stories, the implementation is the real hurdle. This section emphasizes the unforeseeable problems that can arise, even with the best of intentions.

As the programmes continue, researchers will keep watch to see if resistance to the drugs mounts. Randomly selected people who come to hospitals to be treated for malaria in Mali, Chad and Niger will have a spot of their blood smeared on filter paper, placed in a ziplock bag and shipped to a laboratory in Bamako, where Dicko and his colleagues will look for mutations associated with resistance to SP and amodiaquine. The University of Dakar will conduct similar tests.

For the campaigns to have a long-lasting effect, chemoprevention must work faster than the parasites acquire resistance. Supporters hope that the treatments will destroy most malaria parasites over the next several years, driving down infection rates and keeping them down even when resistance begins to spread.

Ramanan Laxminarayan, director of the Center for Disease Dynamics, Economics and Policy, a health-policy think tank in Washington DC, is sceptical. He predicts that imperfect implementation will prevent campaigns from having the benefits seen in clinical trials, and that the disease will bounce back in the end.

Importantly, says Paul Milligan, a malaria researcher at the London School of Hygiene and Tropical Medicine, funding agencies **must support follow-up evaluations to catch unintended effects** such as increased vulnerability to malaria in children who outgrow the interventions. Plowe adds: "If we just roll this out without surveillance, we risk repeating all of the mistakes made in the past."

Yet surveillance and drug resistance mean little to the mothers who congregate in a small village in the Koutiala region of Mali just after sunrise in September. Awa Damale, 25 years old and clad in an embroidered aqua dress and matching headscarf, arrives by donkey cart with her four children and two from another family. Five of the children swallow their medicine, but one of Damale's sons has felt ill this week. He tests positive for malaria and gets a referral to the nearest clinic. SMC is for prevention only.

The boy's illness may be a sign that the drugs he took last month are not 100% effective — or that he did not swallow all of the medicine — but his condition does not dampen Damale's enthusiasm. It is the first time this year that one of her children has had malaria. Before the intervention, she constantly juggled working on the farm with caring for sick children. She does not want to hear about the possibility of the programme drying up or the drugs losing potency years down the road. Most of her children are healthy now, and that is what matters most.

The pause Amy offers here shows that we still have a long way to go to prevent malaria – and that while the SMC approach is important and newsworthy, long-lasting success requires a much more sustained effort.

Amy's conclusion brings the reader back to the central tension in this article: When is it appropriate to allow perfect to be the enemy of good?



©Amy Maxmen

How did you come up with the idea of reporting on malaria in Africa?

I had written about malaria several times, and something that perplexed me as I reported every story was the simple fact that a cheap pill cures the disease, and yet malaria remains a leading cause of death in Africa. So clearly the solution isn't purely a scientific one, since the cure is known. Instead, the problems, and therefore the solutions, had to be contextual. I wanted to go to Africa in order to learn what the challenges were on the ground.

I understand that you envisioned this story before you had heard of solutions journalism. Yet as I read your piece, I was struck by its strong solutions orientation. How did you decide on this framing?

I'm generally more interested in solutions. From a narrative standpoint, there's a natural arc to a story about people who are trying to overcome a challenge. More specifically, in this case, I knew that health officials had attempted this particular solution for malaria in the past, and failed with disastrous results. This time around, they made changes to the method. It was a risky solution, but not one taken without a lot of forethought. I knew that would lend the story a natural drama. The risks and benefits were both so striking, that I couldn't decide whether it was a good idea until I had fully reported the piece. This ambiguity appealed to me too. I framed the story around this idea: Here's a solution; it's flawed, but it's the best we've got.



Can you talk a bit about your reporting process? What kind of people did you make sure to interview? What kinds of questions did you make sure to ask?

Before I left, I read everything I could about the intervention, called seasonal malaria chemoprevention. I talked with scientists and health officials who had studied it. This way I wouldn't need to fumble with details during my brief two weeks in Mali and Senegal. Once I got there, I focused on the people who were organizing the roll outs of chemoprevention, scientists who were studying it in those countries, and mothers who were taking their children to health workers for the pills to prevent the disease.

Beyond asking about all the obvious questions (details on who, what, when, where, why), I tried to remember to ask those big-picture questions that will be important when I sit down to write the story. In this case, I wanted to know how people felt about risk. I also tried to ask about personal experiences: When you have malaria, what does it feel like? Would you give these drugs to your children? Would you rather treat your children with something else? To be honest, I was looking for push-back against this solution. When I couldn't find it, that's when I started to think that it must be the right thing to do.

What advice would you offer journalists who were interested in reporting on solutions internationally?

Don't shy away from the complications inherent in the solution. Be tough on the solution: Is it cost-effective, is it sustainable, what are the down sides? At the same time, it's important to not go overboard and make the solution come off as a bad thing (unless it is). But if you can strike that balance right, I think you get a more interesting, and smarter story.

The toughest thing for me about this particular story was striking the right balance between costs and benefits. The risks were what attracted editors, and initially me, to the story because it made the solution controversial, and therefore dramatic. Here's an intervention that would save lives in the short-term, but at the same time render children less immune to malaria down the line, and render the drugs useless eventually. Since my editors and I didn't grow up in countries where people regularly die of malaria, the solution seemed a little reckless as I reported it over the phone in New York. But once I reported the piece in the countries where the intervention took place, and became convinced that the solution was the right approach, I realized that if I emphasized the downsides too strongly, the intervention might not receive the funding it desperately needed to launch at a larger scale. As a result, thousands of children could miss out on this intervention and die. Sure, there's a slim chance that my story alone would cause a donor to decide against the intervention. But I certainly didn't want to take that risk. Some of my editors (I wrote versions of this story for several outlets) may have been disappointed that I toned down my emphasis on the risks of the intervention in the story I gave them, compared to the way I had put it in my pitch, but they understood when I stuck to my guns, and I'm glad I did.

The New York Times

Of Fish, Monsoons and the Future: A Push to Save Cambodia's Tonle Sap Lake

By CHRIS BERDIK

June 9, 2014

AKOL, CAMBODIA — As the sun rises on Tonle Sap Lake, fishermen head out from floating villages like this one, past half-submerged mangroves and flooded shrub land, to check their nets, much as they have for centuries.

Every year, the lake yields about 300,000 tons of fish, making it one of the world's most productive freshwater ecosystems. That and the floods that pulse through it in monsoon season, swelling it to as much as five times its dry-season size, have earned the lake the nickname "Cambodia's beating heart."

But the Tonle Sap is in trouble — from overfishing to feed a fast-growing population, from the cutting of mangrove forests that shelter young fish, from hydroelectric dams upstream, and from the dry seasons that are expected to grow hotter and longer with climate change.

Keo Mao, a 42-year-old fisherman from Akol, says he hopes his five children can find a way out of the life that has sustained his family for generations. "The lake now is not really so good," he said. "There are too many people."

Now an international team of researchers has joined local fishermen in an ambitious project to save the Tonle Sap. The scientists are building an intricate computer model that aims to track the vast array of connections between human activity and natural systems as they change over time. Begun in 2012, the model will take several years to complete, while threats to the Tonle Sap continue to mount.

But the hope is to peer into the lake's future to predict how different developmental, economic and regulatory choices may ripple through this interconnected and fast-changing ecosystem, and to plan a sustainable way forward.

Charting a Changing Cambodia

Henri Mouhot, the 19th-century French explorer who crossed the Tonle Sap on his way to Angkor Wat, said the lake resembled a violin lying diagonally across Cambodia. At its neck, a tributary flows southeast to the Mekong River. On the laptop of Roel Boumans, an ecologist who helped develop the modeling project, the lake and its flood plain are divided into 16 watersheds that he fills with shades of green, yellow and brown, based on vegetation and land-use data from satellite images.

"The model tells us stories," he said, "and it tests the stories we, as scientists, tell about the how different parts of the system work."

Along with attributes like soil composition, elevation and vegetation, the digital Tonle Sap will soon have what the scientists call "agents," including fish and people. **Agents make choices.** They change the lake and react to those changes, depending on factors like when enough fish swim into an area to attract predators and fishing boats. Local fishermen are critical to the Tonle Sap modeling project. They have been collecting fish from small research nets, jotting down their species, lengths and weights, and snipping tails for DNA testing. They will also take part in other fieldwork, including water and sediment sampling, household surveys and economic research.

Chris' lede situates the reader in a part of the world with which they may be unfamiliar. He also establishes why this lake is worth the reader's attention.

Instead of detailing the ways Tonle Sap is in trouble, Chris opted to tell the reader early on about a response to the lake's woes – and what the team of researchers hopes to accomplish.

After explaining how the modeling works, Chris describes the role the local fishermen play in this effort.

This paragraph gives context for both the problem and the need for the response.

Cambodia's population is growing rapidly, at a rate of nearly 2 percent a year. Many rural Cambodians, including subsistence farmers displaced by land grants to large agribusinesses, have migrated to the Tonle Sap from upland areas. Others come after selling their farmland to pay off debt. From 1998 to 2008, the most recent period studied, the number of full-time Tonle Sap fishermen grew by 38 percent to 38,200, and the number of lakeside farmers, many of whom fish part time, increased 33 percent to 520,800.

The computer model does not yet account for the surging population, but it already has years of data on water levels. By sending blue pulses across the map on his laptop to simulate flooding, Dr. Boumans can calculate where floodwater sediments, shown in oranges and reds, are likely to settle.

He developed the modeling approach a decade ago with Robert Costanza, an environmental economist now at Australian National University. They called it Mimes, short for multiscale integrated models of ecosystem services.

It is among the most ambitious of several models to emerge from the movement among ecologists to assign economic values to nature and its processes. Critics warn that such models can lead scientists to discount important data that disagree with their forecasts; others say focusing on "services" puts price tags on nature, undervaluing things like biodiversity that aren't bought and sold. The idea's supporters, however, say it aligns nature's interests with our own.

"In the past, it was a conservation and environmental argument pitted against the economic argument," said Lewis Incze, a marine ecologist and oceanographer at the University of Maine who is not part of the Tonle Sap project. "You can still argue about valuation and importance, but these models recognize that this is not one class of argument against another, but a whole family of processes that need to be recognized and accounted for together."

Dr. Boumans said the Mimes model "lets you explore the decisions you're making about a landscape and seascape, showing you what's gained and lost over space and time."

One set of decisions involves the big dams planned upstream of the Tonle Sap, often portrayed as a trade-off between electricity and food. Fewer than half of Cambodians have reliable access to power; blackouts are common, and costly electricity slows business development and job growth.

But tropical dams typically generate power for just a few decades, while the Tonle Sap has been feeding Cambodia for centuries. Fish are carved in the walls at Angkor Wat, and they supply three-quarters of the animal protein in a country where nearly 40 percent of children are chronically malnourished.

About 60 percent of Cambodia's inland fish catch comes from the Tonle Sap, which also supports migratory fish caught upstream, said Chheng Phen, acting director of Cambodia's Inland Fisheries Research and Development Institute, which is taking part in the modeling project.

"If the Tonle Sap does not function," he said, "then the whole fishery of the Mekong will collapse." [...]

This is a hallmark of a well-vetted solutions story – it explores what critics believe are downsides of the idea.

Again, Chris weaves in context for why the Tonle Sap Lake matters.

The Coupling of People and Nature

Traditionally, ecologists have viewed humans in an ecosystem as something of a nuisance — contaminating samples, skewing data and clouding scientific analyses. "But the human aspect of an ecosystem is crucial," said Jianguo Liu, who leads the International Network of Research on Coupled Human and Natural Systems, or Chans-net, a network of 1,300 ecologists, economists, and sociologists.

"The central message of Chans is that humans and nature are coupled, just like husband and wife," says Dr. Liu, director of the Center for Systems Integration and Sustainability at Michigan State University. "They interact, work together, and the impacts are not just one way. There are feedbacks."

The Tonle Sap project is designed to capture those interactions and look for their consequences, often unintended. For instance, increased fishing could actually lead to more fish in the lake, at least for a while. Kevin McCann, an ecologist at the University of Guelph in Ontario, says that if fishermen take everything they bring up in their nets, the species that suffer most will be the larger fish that grow and reproduce slowly. With fewer big fish eating the fast-multiplying, small fish, the results will be more fish over all, but reduced biodiversity.

Over the past decade, data suggest that the lake has been losing its biggest fish — quarter-ton catfish, stingrays with six-foot wingspans, Siamese carp bigger than the fishermen who caught them — while the catch of the tiny trey riel, or money fish, has risen slightly. (They are used primarily for prahok, the fermented fish paste that is a staple of Cambodian cooking.)

Climate models forecast longer, hotter dry seasons for Southeast Asia, and more intense monsoon floods. Both changes could disrupt the migration and spawning patterns of Tonle Sap fish, said Sovan Lek, an ecologist at Paul Sabatier University in Toulouse, France, who is a native of Cambodia and a principal investigator in the Tonle Sap project. "In Europe, the water can go from very cold to very warm, from winter to summer," he said. "Here, the temperature is stable over the whole year, so adaptation to a change will be more difficult."

1.5 Million Depend on the Lake

Thol Thoeun, a 27-year-old Tonle Sap fisherman, sat on the floor of his floating house and recounted how rats devoured his vegetable garden, how all his money goes to home repairs after monsoons, and how his rickety fishing boat continually takes on water.



©Chris Berdik



©Chris Berdik

This seems like a novel way to look at the environment and conservation – and the heart of why this project is noteworthy.

This paragraph shows the biggest inherent limitation of the Tonle Sap project: while it can map out the lake in an innovative way, it doesn't mean that it will address the lake's problems.

His family came here in 2002, fleeing hard times inland, but times are hard here, too. More than 70 percent of households earn less than \$1,000 a year, and many fishermen are in debt, owing nearly \$780 on average, according to the Cambodian fisheries administration.

“Everyone faces difficulties,” Mr. Thoeun said. “Everyone is suffering.”

The 1.5 million people who depend directly on the Tonle Sap, mostly fishers, farmers and their families, are one of the biggest factors in forecasting the lake’s future. They can’t do much about the dams, most of which are planned beyond Cambodia’s borders, nor can they stop global warming.



©Chris Berdik

The kicker reiterates the importance of better understanding the ecosystem in the lake: it can help fishermen and policymakers alike develop sound adaptive strategies.

But how they react to changes on the lake will be critically important. If fish catches were to drop by a third, for example, fishermen might have to spend even more time on their boats, or venture into illegal “no take” waters, or turn to rice farming. Each choice would affect the ecosystem in different ways.

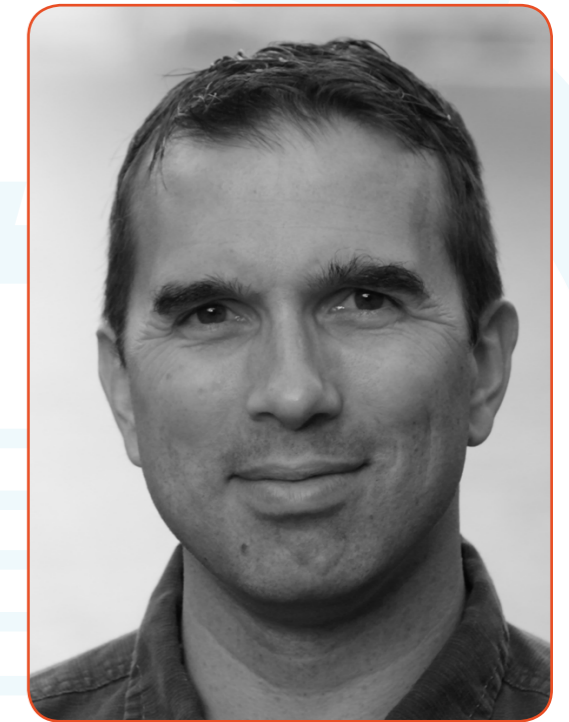
Evan Fraser, a geographer at the University of Guelph, will explore these sorts of scenarios with Tonle Sap residents in surveys, interviews and workshops, to begin later this year. His findings will become part of the model. A food-security expert, Dr. Fraser has studied some of history’s worst famines, as well as those prevented by tactics like stockpiling food and distributing drought-resistant seeds. His research suggests that no matter how the Tonle Sap changes in the coming years, the right adaptive strategies could mean the difference between a tolerable transition and a disaster.

“The policy and development challenge is one of managing the transition,” he said. “There’s no way to stop it.”

How did you come up with the idea of reporting on this lake?

Several years ago, I reported a story about revisions to the management plan for Stellwagen Bank National Marine Sanctuary, a very busy and biodiverse area off the coast of Massachusetts in the Gulf of Maine. Les Kaufman, the Boston University marine biologist featured in the Tonle Sap story, was one of my sources. At the time, he was just starting to tinker with the integrated ecosystem models that would feature in the Tonle Sap story, but his take on linking people and the health of ecosystems was evident, and I sensed its ambition and its break from traditional narratives of ecosystem vs. development.

The then-current management plan for Stellwagen was phone-book thick, as most such plans are, and it had pretty much failed. The problem, in Kaufman’s opinion, was the inability to take a holistic look at the ecosystem and the people who used it. I was really taken with this tension between the perceived need to do something to protect an ecosystem, including the people, and the high risk of surprise fallout from those actions, which could often work against their original intent. So, when I heard that Kaufman and colleagues had won a MacArthur grant to bring this approach on a larger and more formalized scale in Cambodia, I jumped at it.



Why was it significant to you to report on the issue with a solutions-oriented mindset?

This was tricky. The issue that Steve [Sapienza, who co-reported the story] and I kept running into was that the model was more of a framework within which to consider, debate, and modify solutions, than it was a solution in and of itself. Add to that the fact that even that framework, the Tonle Sap integrated ecosystem-model, was still in the process of being put together, and my claims to be presenting a “solution” to the multiple, overlapping threats to the Tonle Sap were tenuous. I brought up this concern to Tina [Rosenberg] when we first spoke, and she said that one didn’t need to have an iron-clad solution as a subject to produce solutions journalism.

How did you vet your story? Did you notice any differences in your vetting from what you would have done for a traditional story?

When I wrote the *New York Times* version, *Science Times* editor David Corcoran asked me to do more work interviewing experts outside of the project for their views on this type of modeling — its advantages and limitations. That was definitely something missing from my original reporting, and helped ensure the “so what?” I offered for the project.

Can you talk a bit about the pitching process of this story? How challenging (or conversely, easy) is it for you to place solutions-oriented content?

The pitch process didn’t differ appreciably from the usual process. In fact, I pitched it to both the *Pulitzer Center* and to the *Virginia Quarterly Review* before I conceived of it as a piece of solutions-oriented content. I did pitch it to the *New York Times* in that context, and that actually made it a touch more challenging. I think the *Science Times* editor worried that if you’re pitching something as a “solution” your objectivity might be at risk. You might be less inclined to point out the limitations, the cautions, or the naysayers attending the solution you’re covering. He didn’t say this explicitly, but he asked pointedly about whether Pulitzer or SJN had some say in what I was reporting on or what I wrote about it.

What advice would you offer journalists who were interested in reporting on solutions internationally?

I’ve only done this once, so I offer my advice with a grain of salt. Be patient. These stories aren’t tidy. They ooze along without clean news pegs or a linear narrative.

As Bangladesh's Population Grows, Slum Dwellers Struggle For Clean Water Access

By **STEPHEN SAPIENZA**
March 12, 2011

GWEN IFILL (host): Next, today is World Water Day. Tonight, we look at an innovative approach to getting clean water to slum dwellers in so-called megacities.

Our story is another in our occasional reports about population issues around the globe. It's part of a collaboration with "National Geographic" magazine and the Pulitzer Center on Crisis Reporting and comes from special correspondent Steve Sapienza in Bangladesh.

STEVE SAPIENZA: Dhaka, the capital of Bangladesh, is one of the world's fastest-growing cities and one of the poorest. As in many other developing countries, people are leaving the countryside in search of work and a better life in the city. Dhaka's population, now estimated at 15 million, is expected to hit 20 million by 2025.

DR. KHAIRUL ISLAM, WaterAid: Dhaka is one of the megacities which is growing too, too fast.

STEVE SAPIENZA: Country director for the charity WaterAid, Dr. Khairul Islam, says the increased population density is severely taxing the city's ability to house and care for its people.

KHAIRUL ISLAM: Almost 5,000 slums are in and around Dhaka City. And almost one-third of the population are living in -- at the low-income communities and slum areas. Most of them don't have ownership over those pieces of land that they're residing. But the main challenge is provisioning essential services for this huge number of population, mainly water and sanitation.

STEVE SAPIENZA: With 2,000 newcomers daily, the struggle to find clean water in the slums often has life-threatening consequences.

MAN (through translator): Water? Yes, we have water, but the water is not always available. When water is available, it is often bad. Yesterday, a woman here thought she had cholera. She went to the hospital, but she died last night.

STEVE SAPIENZA: If you want to see the human toll exacted by unsafe water and poor sanitation in Dhaka, you come here. This is the overflow tent at the short-stay unit at Dhaka's main cholera and diarrhea hospital. [...]

The introduction indicates that the story will focus on the problem as well as a response.

Steve's lede sets the context and describes the problem: getting essential services to slum dwellers. Especially since this is a video, it is important to give the audience a sense of the environment.

The following minute describes a scene in a Dhaka hospital. Before getting into that, Steve could have hinted that there was an innovative response to the problem, to set that up in the viewer's mind.

This man arrived at the hospital with no vital signs. After 15 minutes of trying to revive him, his wife is given the news. The staff reports cholera as the cause of death. The hospital's lead research scientist, Dr. S.K. Roy, and his colleagues work around the clock 365 days a year to save lives threatened by waterborne illness. The majority of the patients here are the urban poor, and the hospital care is free.

DR. S.K. ROY, International Center for Diarrheal Disease Research: We are now having about 400 patients every day. But in August, September, sometimes we go up to 1,200 a day. Then I can tell you, the average of a year is 120,000 patients every -- in a year. So, this hospital is a quite busy one, most of them having E. coli diarrhea and cholera diarrhea. Then we are having (INAUDIBLE) patients, quite a high number. So, these are coming through water and via hand contaminations.

STEVE SAPIENZA: Most diarrhea patients are released within 12 to 24 hours of receiving treatment. But at a nearby clinic, two newcomers to Dhaka have been battling the illness for five days.

Fezila Begam believes her baby, Saim, became ill after drinking water from a shared well. When the baby is finally cleared to leave, the attending doctor warns Fezila that Saim is in precarious shape and needs safe drinking water, regular meals and rest.

Fezila rents a small room at a nearby slum for \$20 a month. She shares cooking, water and toilet facilities with 25 neighbors. Neighbors say the shared well provided by the landlord is not deep enough to avoid contamination. Many here complain of frequent dysentery, and the evidence, small packs of saline rehydration solution, is everywhere. Fezila knows the conditions are unsafe, but she already pays more than she can afford to live here.

WOMAN (through translator): I know it's not a good situation, but what am I supposed to do?

STEVE SAPIENZA: The job of supplying safe water to residents belongs to the Dhaka Water and Sewage Authority, DWASA for short. Residents need city approval before they can extract water or connect to city water pipes. But approval to use city water is only given to residents who can provide proof of land ownership. This leaves four million slum dwellers without legal access to city water.

With few options, they end up paying high prices for suspect water supplied by slumlords, or they buy costly bottled water from the roving carts of water sharks. Still others tap illegally into city water pipes.

DR. DIBALOK SINGHA, Dushtha Shasthya Kendra: DWASA was with the system that was tied with house ownership. That actually forced us to talk with Dhaka WASA that, why it is not possible to provide water to slum dwellers?

STEVE SAPIENZA: Dibalok Singha lobbied the city to give a water license to his startup NGO on behalf of slum communities.

DR. DIBALOK SINGHA: They explained at that time that they are giving water only to people who have their own houses. So, we tried to facilitate that service to slums, linking them the Dhaka Water and Sewage Authority. [...]

This gives the viewer a sense of the scale of the problem, in terms of the number of patients who arrive each year.

This quote serves to transition from talking about the problem (i.e., Dhaka slum dwellers dying from unsafe drinking water) to its underlying causes -- and its response.

At this point, Steve switches from talking about the problem, to discussing a response.

This starts to describe why the response works. If Steve had more time, it would be great to understand how the idea was formulated, the conversations between Diabalok and DWASA to get the system up and running, and how widely it could be replicated.

It's great that Steve highlighted the extent to which this idea has spread in Dhaka. In a follow-up piece, it would be great to understand what caused the spread – and conversely, why most slums have not taken it up.

STEVE SAPIENZA: Linking slums to city water service has meant Dibalok's NGO assumed the risk if the slum dwellers failed to play the water bills. But Dibalok knew the slum dwellers, who pay 15 times the DWASA rate for water on the black market, **would pay their bills.**

DR. DIBALOK SINGHA: A win-win situation actually occurred, because Dhaka WASA, they wanted their revenues. On the other hand, poor people, they want the service. And they immediately see the economic advantage of getting access to Dhaka WASA water supply, because that is cheap, in comparison to private market. So in that way, it started.

STEVE SAPIENZA: NGO-backed water access points, like this one, are now **sprouting up in the slums all over Dhaka.**



©Glenn Baker

Each community forms a water committee that pays to install the pump and for the costs of operation and maintenance. These committees also collect and pay the water bills. The success of earlier NGO-backed water points now enables community groups in slums to negotiate directly with the city for legal water access without NGO help.

DR. DIBALOK SINGHA: Anybody living in urban slums, they can apply for the service. And if they are willing to pay for the service, DWASA has no problem.

STEVE SAPIENZA: Today, there are over **1,000 water connections in 100 slums.** But that leaves some **5,000 slums with no such service.**

DR. DIBALOK SINGHA: Still, today, there are slums and squatters where these services are not available.

STEVE SAPIENZA: With new residents like Fezila and Saim arriving every week, the need for more city-to-slum water connections will remain urgent.

INTERVIEW WITH STEVE SAPIENZA



How did you come up with the idea of reporting on water access in Dhaka?

I went to Dhaka with the idea of shooting stories about a growing megacity struggling with water and sanitation issues. At that time, Bangladesh had made significant progress improving water and sanitation services in rural areas. But hundreds of thousands of rural people were moving to the slums of Dhaka, with a huge influx of largely poor people, where services were not improving.

Why was it significant to you to report on the issue with a solutions-oriented mindset?

I was most curious to know why successful government/NGO water and sanitation programs in rural areas weren't working in the slums of Dhaka. That led me to question what was working in the slums of Dhaka at that time, with regard to water and sanitation programs. What I found was that the 'solution' was more about changing a mindset, specifically how the government and NGOs viewed slum dwellers, than any one particular clean water program or 'solution'.

How did the solutions orientation play out in your reporting?

I filmed/interviewed several different people and programs aimed at providing clean water to slum dwellers. But the better 'solution story,' to me, centered more on changing a mindset in order to deliver water to slums — mostly because it seemed scalable to other slums in Dhaka, as well as other megacities with growing slum populations.

Did it affect the people you interviewed? The questions you asked? The way you structured your narrative?

I knew the story would need a slum dweller to exemplify the water access problems faced by the urban poor. Initially I thought the story would be just to juxtapose the growing slums with government/NGO efforts to keep up with the delivery of clean water, but when I learned about the DSK approach to linking slums to the city water supply, I knew that the story would have to go in that 'solutions' direction. With the DSK approach in mind, I was able to ask the Dhaka city water authority rep, slum dwellers, and local water advocates questions that helped better explain the demand for clean water in Dhaka's slums, and why the DSK approach was so novel.

How did you vet your story? Did you notice any differences in your vetting from what you would have done for a traditional story?

Once I had the example of the DSK approach (launched by Dr. Dibalok Singha), I vetted the story by talking to water advocates, slum dwellers, and a representative from Dhaka Water and Sewer Authority. All the people I spoke with confirmed that the DSK approach was working and that it had potential to be expanded within Dhaka and beyond. Personally, I didn't see much difference in vetting this particular story than a more traditional story.

Can you talk a bit about the pitching process of this story? How challenging (or conversely, easy) is it for you to place solutions-oriented content?

The focus on water helped me place this story with the *NewsHour* because there was a hook with "World Water Week," so the timing was good there. My reporting also tied into a reporting series on global population issues between the *NewsHour*, *National Geographic* magazine and the Pulitzer Center on Crisis Reporting, so that also helped.

What advice would you offer journalists who were interested in reporting on solutions internationally?

I'm always trying to uncover the motives and funding sources of the various people and organizations that I meet. In some countries, foreign aid and donated funds are huge sources of foreign income, and government agencies, NGOs, and private sector firms will fight each other like wolves on Wall Street to get to that money. Corruption, theft, and self-interested fundraising schemes are common, so my advice is to maintain a skeptical eye, understanding that vetting sources may take more effort when in countries where you do not understand the language or customs. With regard to covering pressing global issues, you should definitely make time to contact experts in these issue areas before starting the field work. You should also follow up with those experts when you return, so that you can vet and confirm statements made by in-country sources/experts.

The New York Times

An end to polio in India?

By ESHA CHHABRA
March 5, 2014

ALIGARH, INDIA — On Jan. 13, 2011, a case of polio was discovered in the Indian state of West Bengal. India has been a hotbed of polio, often exporting strains to polio-free countries such as China. What's remarkable is that this case, three years ago, may be the last ever discovered in India. This year, the World Health Organization (W.H.O.) will officially remove India from its list of polio-endemic countries, leaving just Afghanistan, Pakistan and Nigeria.

India's routine immunization rates — for measles, rubella hepatitis B, TB and the like — were last recorded in 2009 at 61 percent nationally. India accounts for a third of the world's measles deaths. Public health is dismal, and India's per-capita spending on health care is among the lowest in the world. **Yet with polio, India achieved 95 percent coverage.**

* The success of India's polio effort has turned it into a blueprint for large-scale health campaigns. Now India is using what it did with polio to boost rates of routine vaccinations.

The Global Polio Eradication Initiative began in 1988 as a huge partnership among Unicef, the World Health Organization, the Centers for Disease Control and Prevention and Rotary International....

One reason the campaign succeeded is that **it was built to learn from its mistakes.** "We've refined this machine repeatedly. That's what the polio campaign was about, learning, making changes, and retuning it," said Dr. Sunil Bahl, a technical adviser to the National Polio Surveillance Project, a collaboration between the W.H.O. and the Indian government.

The Indian government has pitched in over \$2 billion to the campaign; other polio-endemic countries have not gotten this kind of financial support. But the government went beyond money. It collaborated in building an infrastructure that collected data at the smallest possible level, powered by the **input of over 2.3 million health workers nationally.**

In one immunization round for polio, over 170 million children under the age of 5 are vaccinated in the country. On the first day, booths are set up throughout the communities, and families are expected to bring their children. Stationed next to a hole-in-the-wall shop, selling grains, chewing gum and biscuits is a "booth": a rickety table, with a banner strung above it in the iconic yellow — a color that's become synonymous with polio vaccination.

Health workers, usually women, stand at the booths for eight hours to ensure that every child in the neighborhood is vaccinated. The vaccinated children are marked on the nail of their pinky with black ink. The following day, the health workers search for missed children by going door-to-door, carrying the vaccine in an icebox.

Esha used an "against all odds" lede here, since India's progress on polio is remarkable considering the country's record on public health.

This paragraph explains how India is applying lessons from the polio campaign elsewhere, thereby showing the method's replicability.

These two paragraphs explain the reasons for the success of India's polio campaign: money, infrastructure, and a campaign that learned from its failures.

At the W.H.O. office in Aligarh — with its 3.6 million people, it passes for a small city in India — Dr. Rakesh Vishwakarma, a W.H.O. regional supervisor, pulls out notebook after notebook of detailed notes for polio surveillance. Aligarh is in the troublesome region of Uttar Pradesh, once an epicenter of polio. The notebooks are filled with catalogs of households, numbers of visits by health workers, availability of the vaccine, validity of the cold chain — all carefully recorded in English and Hindi.

"We collect the data, identify gaps, and give it to the government to make decisions," Dr. Vishwakarma says, pointing to multicolored maps and meticulous charts taped to the wall. Every village in the district is accounted for and marked by percentage of children immunized. Red pins mark stool samplings, which are collected to track the virus, and ensure that any cases of acute flaccid paralysis, or limp limbs, are diagnosed properly. Flaccid paralysis is not necessarily polio; weakness in the muscle can be caused by other pathogens. The W.H.O. checks each case of paralysis to be sure it's not polio.

Dr. Vishwakarma's job is tiring, illustrating the depth and breadth of the polio surveillance effort. Based in Agra, he travels daily across Western Uttar Pradesh; he monitors 12 districts of the state, which cover a distance of about 125 miles from Delhi to Agra. His days begin at 5 a.m. and he retires at 10 p.m., after endless cups of tea with local officials, shadowing health workers, combing through stacks of data and overseeing surveillance efforts at regional offices.

* "I cannot miss any details," he says. "That's where the solution lies. That's why I'm constantly on the move."

That data then goes to the district task forces for immunization, consisting of the district magistrate (or local mayor), chief medical officer, Unicef and W.H.O. regional officers. They use it to design the next steps to improve coverage.

The philosophy for the polio campaign was, Dr. Bahl says, "**Who have we missed? Why have we missed them?** Why did they not take the vaccine? And we constantly looked at the data to help us."

These are the questions that help the polio team identify high instances of polio in Muslim populations and migrant communities, earlier. For instance, in 2006, 676 cases of polio were reported; 548 were in Uttar Pradesh, and nearly 60 percent of those afflicted by the virus were Muslim — an anomaly given that Muslims constitute only 13 percent of India's population.

"It was because we had the data that we could pinpoint the problem," Dr. Bahl says.

All the data in the world, however, would mean little if India had not had armies of health care workers to act on it. India has over 850,000 accredited social health workers, who are part of the National Rural Health Mission, a government initiative to improve rural health care. Their primary focus is maternal care, going house to house informing pregnant women of prenatal and neonatal care — work for which they receive 75 rupees a day (roughly \$1.25). In order to become an ASHA worker, they must attend training sessions, for which they're compensated 15 rupees (about 25 cents). "And they come!" says Dr. Vishwakarma. "So you know they're not doing it just for the money."

These paragraphs (and the two preceding) explain the detailed procedures the field staff undergo to vaccinate children. This gets into the "how."

This quote reiterates the processes explained above.

These questions seem to lie at the heart of India's polio campaign, and would likely be applicable to other public health campaigns



As with a section above, Esha describes a procedure in detail, after which she distills the key lesson in a quote.

This starts to get to the limitations of India's polio response.

Accredited social health workers have added vaccinations to their to-do list, conducting polio vaccinations and educating moms-to-be on the importance of immunizations. The social health workers are trained and supervised by auxiliary nurse midwives. And they're often accompanied by Anganwadi workers. The Anganwadi are hired by the Department of Social Welfare, and are responsible for the overall well-being of the community, not just health. At the polio booths in Aligarh, they accompany the health workers to hand out panjiri, a dry mixture of fat, carbs and sugar, part of a government scheme to provide nutrition to children.

The health workers are more than just vaccinators, Dr. Bahl says. "They should know how to engage with families, encourage them to practice good hygiene and be able to answer any questions."

Communication — Unicef's job — is the last key pillar of the polio campaign. It goes beyond just fliers, banners and announcements. Previously, when Muslim communities refused the vaccine — on the grounds that the vaccine was designed to make their children sterile — communication became critical. "At the local level, we had to work with the ulema [Muslim clerics], to correct this message," said Dr. Bahl. By collaborating with local leaders, Unicef found a new venue to preach the message of good health: the mosque. And it was the health workers who took that message further, by carrying letters, written and signed by local Muslim clerics, urging families to have their children inoculated.

All of these pillars are now being adapted for routine immunizations as the focus shifts. While polio immunization rounds will not stop to avoid any new outbreaks of polio, they may be tapered down, occurring only twice a year nationally, says Deepak Kapur, the chairman of India's National Polio Committee.

From 2010 to 2012, India conducted its first national campaign for measles. Over 119 million children between the ages of 9 months and 10 years were inoculated. And in 2013, the government of India initiated special immunization weeks, much like the National Immunization Days for polio vaccinations. "The N.I.D.s became synonymous with polio," says Mr. Kapur. They're hoping for the same with routine immunizations.

There is one problem the polio campaign never managed to solve: the immunization card. Keeping physical records of immunizations is still a challenge in a hot, dusty and rainy climate where the paper cards are damaged easily and locals fail to see value in the document.

In Akrabad, 15 miles outside of Aligarh, there's a small village, a grouping of 30 homes. Dr. Vishwakarma walks door-to-door here with the health workers; at one house, he pauses, hearing a 2-year-old cry. His mother appears out of the kitchen to get her child. Dr. Vishwakarma turns to her and asks if he can see her son's immunization card. She pulls out a paper pamphlet, crinkled and torn at the edges. It's barely filled out, missing critical information.

"Where do you keep this?" he asks.

She points to a ledge, out in the open. He shakes his head. "Keep this somewhere safe. Where do you keep your money? Keep it there. It's as valuable."

How did you come up with the idea of reporting on the end of polio in India?

I've been reporting on polio for the past five years in India. In the past three years, India had made significant progress and finally, there were zero cases. So, it was suitable to do a story on what India did correctly and what the other polio-endemic countries could learn.

Why was it significant to you to report on the issue with a solutions-oriented mindset?

Because if we're going to tackle any health challenges, we have to look at case studies of success stories. It may not always be a nationwide success; it may just be a local story of a contained effort. Most readers are aware of the diseases that are rampant in the world. They want to hear about what can be done to stop them.

How did the solutions orientation play out in your reporting? Did it affect the people you interviewed? The questions you asked? The way you structured your narrative?

I talked to a lot of health workers, as I tend to do in all my health reporting. I like getting the grassroots perspectives. But I would ask them a lot of questions about what they were doing five years ago and what they were doing differently today. I also talked to religious leaders who gave me a contrast - five years ago it was a serious cultural issue. Today, it's not, thanks to their efforts. So, it's not all about health workers; health issues can be very behavioral or cultural. Talking to Muslim clerics was very telling.

I spent a lot of time with WHO in the field. Rather than talk to heads in Switzerland, I thought it was worthwhile to get the local WHO coordinators and look at how they tackle polio on a micro-level. So I had them show me endless folders of micro-plans, minute details that go into planning an immunization round. I visited all their regional offices, and their partners offices as well. GPEI is a collaboration of the government, UNICEF, CDC, WHO, and Rotary.

I think the answers lie in the details. It's rarely a gross generalization that's a solution. So, I paid closer attention to the details.

How did you vet your story? Did you notice any differences in your vetting from what you would have done for a traditional story?

Not really. I just interviewed a lot of people to make sure that the stories overlapped and there were common threads. Again, this is a story that I've been covering for a long time so I went into it knowing the background info and the key players. As for the statistics, they're pretty self-evident. The GPEI can't fudge data on the number of cases.

Can you talk a bit about the pitching process of this story? How challenging (or conversely, easy) is it for you to place solutions-oriented content?

This piece was relatively easy thanks to Tina [Rosenberg]'s support. But I've written about polio for other outlets. Editors are always looking for interesting and alternative ways to showcase an issue. They don't want to drum on about how much disease there is in the world. However, it's different when you're trying to showcase the work of an NGO, social enterprise. You have to be careful to not make it a 'feel-good' story, which editors are weary of.

What advice would you offer journalists who were interested in reporting on solutions internationally?

It's desperately needed. So, please do pursue it. American media does a pretty pathetic job of covering international stories.

I would just encourage journalists to spend time in the field, independently. Go without an entourage or a group of journalists. Try to just spend a day in the field with a health worker or a WHO staff member — just tag along. You build a comfort level with your subject matter and that translates into better reporting. I find that press briefings and organized trips for journalists are staged and not as effective.

6 TIPS ON REPORTING ABOUT SOLUTIONS INTERNATIONALLY

1

Ask for evidence.

Organizations you meet will be eager to share individual, heartwarming success stories. Some may even introduce you to a beneficiary to interview. It's incumbent on you to look beyond the success story and ask tough questions. How many people have been affected by the organization? What's the evidence they're making a difference? What are the factors outside their control that affect their success, either positively or negatively? What would the beneficiary's life look like without the organization's intervention (income, health status, education level)?

2

Interview people not touched by an intervention.

On that note, it's equally important to meet people who are not receiving advice on breastfeeding, or access to fertilizer, or microcredit. The 'delta' between them and beneficiaries can tell you a lot about the effectiveness of a program. It can also give you a taste of that society's norms and beliefs. When do most mothers introduce solid foods into a baby's diet? How many tomatoes do most farmers harvest a month? What are some typical career paths for high school graduates?

3

BYOT: Bring Your Own Translator.

"If you travel to a country where translation is required, try to avoid situations where an organization you're writing about is translating between you and one of their clients. Find a translator instead at a local university, language school, or other independent source. And if possible, interview clients out of the organization's earshot. You want to increase the chances your interviewees are honest with you about the shortcomings of the program and the challenges they face.

4

Recognize the power imbalances.

What is a juicy anecdote to you may be a story that gets your interviewee in serious trouble. Along the same lines, in many societies, a person's well-being depends on telling those with more power and money what they want to hear. Keep those things in mind — because your interviewees do.

5

Look for the unexpected.

Build in time to get lost — on purpose. See things you didn't plan to see. And ask the people you meet about their lives. You never know what you might stumble upon.

6

Contextualize.

You may be seeing life-changing programs. But put them in perspective. Has this been tried elsewhere? With what results? How will it be paid for a few years from now? Who is going to be fixing the water pumps when they break? Is there a hidden cost — for example, is this program soaking up all the health care workers, leaving other diseases neglected?

5 TIPS ON WRITING A SUCCESSFUL PULITZER APPLICATION

The Pulitzer Center provides travel grants to cover hard costs associated with upcoming travel for international reporting projects. Grants are open to all journalists, writers, photographers, radio producers or filmmakers; staff journalists as well as freelancers of any nationality are eligible to apply. There's no magic formula for a successful proposal but here are some guidelines that Tom Hundley, the Pulitzer Center's senior editor, suggests keeping in mind.

1

Make it your own.

Journalists often ask us what topics we're interested in seeing and we always turn the question back to them. The best proposals we receive come from journalists with a deep commitment to reporting on the topic they propose, and to finding as many ways as possible to engage audiences around the topic. We want the topic ideas to be generated by the journalists because they are passionate about it — not because there might be funding to report on it.

2

Go deep.

The only parameter we have is that the project addresses a global systemic crisis. And by crisis we do not mean the headline-breaking crisis or conflict. We're trying to raise awareness of the slow-moving crises, and support reporting that digs beneath the surface to answer the root causes of these crises, as well as possible responses to them.

A crisis can be a conflict. Syria and Iraq are crises. But, so is the struggle for access to clean water and sanitation in Bangladesh, or the quiet struggle against female genital mutilation in parts of Africa, or the destruction of the rainforest in Malaysia. What we're looking for are broad systemic crises that are underreported.

3

Think beyond one story.

We support projects, not just one-off stories. Our overarching mission is to raise awareness of under-reported global crises so the most successful applications demonstrate that the journalist has thought about how to get the story out across numerous platforms to reach the widest possible audience. We encourage applicants to create partnerships with others and propose a complementary suite of deliverables to maximize their impact.

4

Do some homework!

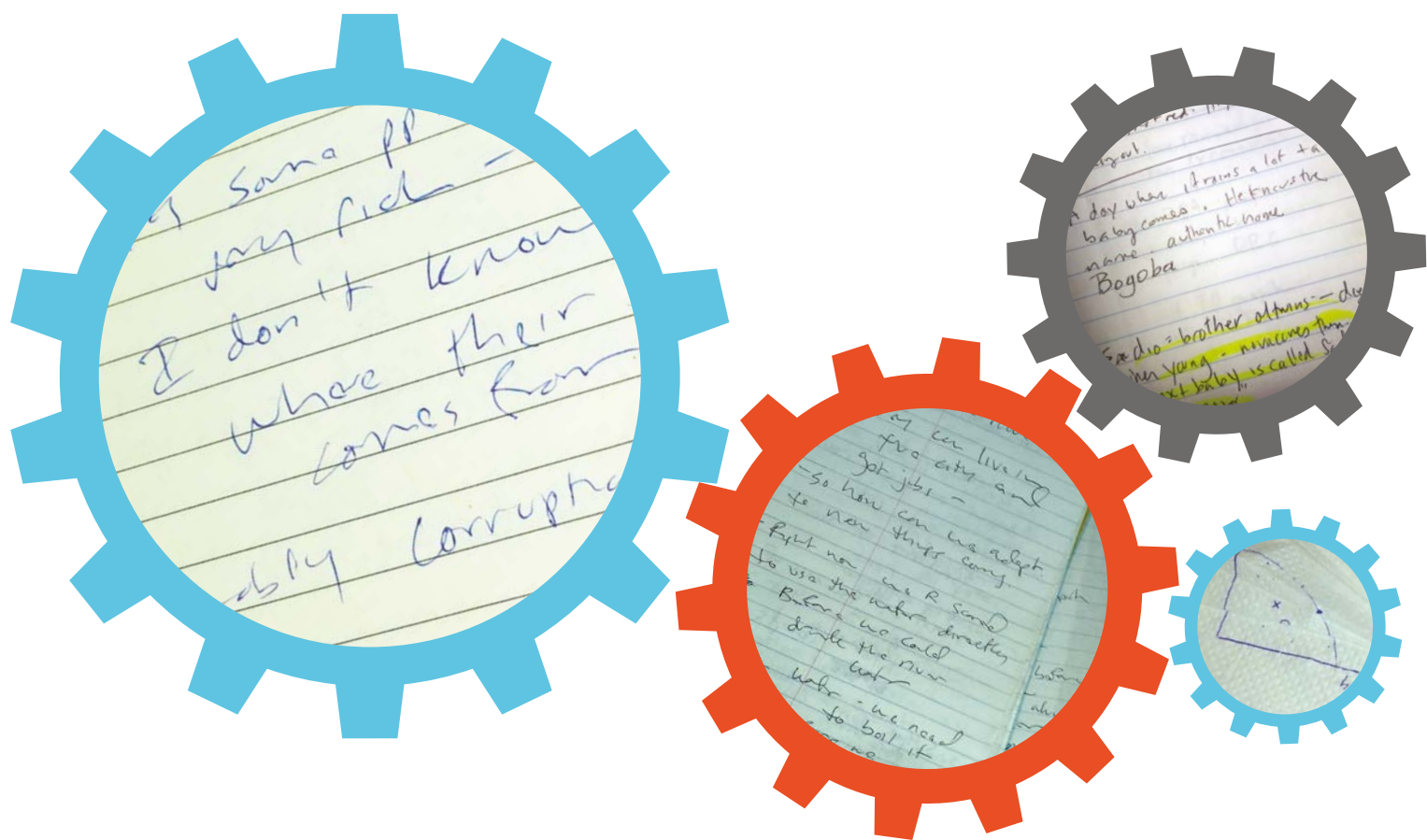
The most common mistake that applicants make is they don't check our website. They don't check to see what projects we've already done, or what projects we're currently doing.

The Sudan is a good example. In the lead-up to the 2012 referendum in the Sudan, we were flooded with applicants who wanted to go and cover the story. If they had checked the website, they would have seen that we'd been covering this story for six months. Not that we wouldn't accept another application or another project. In fact, we did. But you have to tell us how your approach is going to be different, or what gap in our coverage you're going to fill.

5

Keep it simple.

Be brief. We know some stories are very complicated—and we give you space on the application form for supplementary material—but if you can't explain what your story is about and why we should read it in 250 words or so, then you probably have some more homework to do.



The Pulitzer Center promotes in-depth engagement with global affairs through its sponsorship of quality international journalism across all media platforms and an innovative program of outreach and education.

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The Solutions Journalism Network works to legitimize and spread the practice of solutions journalism: rigorous and compelling reporting about responses to social problems.

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