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Peaceful Transition of Government in the Gambia

INSIDE: Global Order at Risk · Refugees in Limbo · Farmers Adapt to Global Warming · Lessons From Thailand

Cooperation and Collective Action

By Joseph McNamara, Editor

As is our custom, this issue of *Courier* provides insight and perspective on different global policy areas, including mass atrocity prevention in the Gambia and climate change agricultural innovation in Morocco.

This issue also features a special look at global order in a piece authored by our foundation president, Keith Porter. His article highlights increasing threats to the essential practices global leaders have used to maintain a world peace for the past 70 years: multilateral cooperation and collective action.

Through the years, cooperation and collective action among nations have been called many things, including diplomacy, collaboration, negotiation, and conflict resolution. Despite the different labels, this practice has required the same basic elements of honesty, commitment, and trust to identify resolutions and outcomes of mutual benefit, and, most importantly, identify common ground to achieve them.

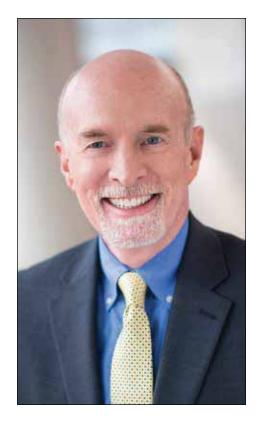
Cooperation and collective action are the lynchpins of successful governance. When these processes are applied to global governance, peaceful resolution has a chance. Conversely, if cooperation and collective action diminish on a global scale, global governance will be directly weakened.

I am struck by these lessons learned from history, but more importantly, that they are lessons we must apply now more than ever to the seemingly endless numbers of global conflicts.

It also strikes me that the global lessons learned of cooperation and collective action can and should be applied to governing the United States. From school boards and city councils to statehouses and the US Congress, applying these principles of good governance is essential to breaking through stalemates of disagreement and finding common resolution to pressing issues.

That means leaders at all levels—as a matter of first priority—must apply honesty, commitment, and trust to identify resolutions and outcomes that are in the best interests of the people and look for common ground for collective action to achieve positive results.

Recent political division in America has *not* changed the fact that the job of elected officials, at all levels, is still to look for solutions and common ground to achieve them. We the people need to expect and demand that behavior from them. We should also look for signs of cooperation and collective action in government and encourage more leaders to follow that lead instead of the cadence of conflict.



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Cover photo: During the week of Gambia's December 1, 2016, presidential election, supporters of candidate Adama Barrow, the flag bearer of the coalition of seven opposition political parties, dance at a political rally in Wellingara. (Marco Longari/AFP/Getty Images)



Local celebrations erupt as Senegalese soldiers arrive at the Gambia's State House on January 23, 2017, as part of a UN-backed regional standby force from the Economic Community of West African States. The force was called in when the Gambia's former president, Yahya Jammeh, refused to step down after losing the election to Adama Barrow. Jammeh finally left the country under international pressure. Barrow, was sworn in at the Gambian Embassy in Dakar, Senegal. (© Jerome Starkey/Flickr)

Conflict Averted Without Anyone Firing a Shot

Subregional, Multilateral Action

Helps Prevent Atrocities in the Gambia

By Jaclyn Streitfeld-Hall

he Gambia, the smallest country in mainland Africa, made big news in January 2017, when Adama Barrow became the nation's third president after defeating incumbant Yahya Jammeh in the December 2016 elections. Jammeh initially refused to accept the results, which triggered a constitutional crisis and threat of mass conflict.

Following is the story of how mass violence was averted through multilateral regional intervention and peaceful transition of governance.

Despite initially conceding defeat to Barrow in the Gambia's presidential election on December 1, 2016, Jammeh refused to step down, and his party, the Alliance for Patriot Reorientation and Construction, filed petitions to challenge the election results. What should have been the Gambia's first peaceful transition of power since its independence in 1965 instead became a political crisis that put populations at risk of mass atrocity crimes.

Ultimately, Jammeh's refusal to accept the election results and cede power after more than 22 years in office did not result in widespread violence or civilian casualties. However, throughout the six-week period between the election and his eventual resignation, political tensions pushed the country to the brink of disaster. According to the United Nations, at least 45,000 people fled the Gambia amid the political crisis.

Due in large part to concerted efforts at preventive diplomacy by regional actors—including the Economic Community of West African States (ECOWAS), the African Union, and the UN Office for West Africa and the Sahel (UNOWAS)—a potential armed conflict and widespread civil unrest were averted. On January 19, 2017, Barrow was inaugurated in Senegal. Jammeh went into exile in Equatorial Guinea two days later.

Elections are one risk factor for atrocity crimes, sometimes as a result of political parties deliberately manipulating identitybased differences between populations or because of fears of a winner-take-all environment, in which electoral defeat represents political and economic marginalization for large groups of people. In the case of the Gambia, however, neither the elections nor the act of refusing to leave office posed a direct and imminent threat to populations. Rather, Jammeh's disturbing and inflammatory rhetoric, his long history of human rights violations, his apparent willingness to use force to protect his power, and the threat of an ECOWAS military intervention combined to create a delicate and dangerous situation.

History of Escalated Violence

Jammeh had a long history of inciting divisions based on ethnicity, religion, and sexual orientation. In June 2016, he threatened to exterminate the entire Mandinka ethnic group, whom he did not consider authentic Gambians. He routinely endangered lesbian, gay, bisexual, and transgender people, notoriously threatening to "slit the throats" of all gay men in the Gambia. In the weeks following his electoral defeat, some of his supporters blamed political instability in the country on gays and their alleged foreign supporters, signaling growing fractures in Gambian society that Jammeh could use to mobilize his political supporters.



Gambia's President-elect Adama Barrow (center of photo in blue) meets with a delegation of West African leaders in Banjul, the Gambia on December 13, 2016, to discuss the election crisis created by defeated President Yahya Jammeh's refusal to step down. (Afolabi Soktunde/ Reuters)

As president, Jammeh consistently demonstrated he had both the will and capacity to systematically persecute civilians he perceived to be a threat to his power. Under his leadership, Gambian authorities participated in forced disappearances, arbitrary detention, torture, and other human rights violations against journalists, human rights defenders, and political opponents. In the initial weeks following his electoral defeat, Jammeh retained the loyalty of senior commanders within the military and tried to forcibly shut down independent radio and media sources.

As the end of his mandate neared, Jammeh made several public declarations threatening to use force to protect his interests. This included a speech in December in which he declared any protests by opposition supporters would be met with extreme force and several threats that if ECOWAS intervened in support of Barrow, it would constitute a "declaration of war." On January 17, 2017, Jammeh declared a state of emergency, banning any acts of "disobedience" that could threaten his presidency, curtailing civil liberties, and placing additional restrictions on independent media. The state of emergency was not revoked until January 24, 2017, after President Barrow returned to the country.

Regional Cooperation and Intervention

The crisis in the Gambia was neutralized by timely and consistent action on the part of ECOWAS member states and UNOWAS. On December 13, 2016, Jammeh's security forces blocked access to the electoral commission, and ECOWAS sent a delegation of presidents from four West African countries to the Gambia. After the delegation failed to persuade Jammeh to concede to Barrow, it swiftly formed a formal mediation team and prepared standby forces for a potential military intervention. Throughout January 2017, ECOWAS leaders and UNOWAS responded with consistent diplomatic and military pressure, including clear demands and deadlines for Jammeh to commit to a democratic transition or risk being forcibly removed from the country. On January 18, 2017, the last day of Jammeh's presidential mandate, a regional intervention appeared imminent. Senegalese troops were on the border with the Gambia, and Nigerian warships deployed off the coast. Although troops did cross into the Gambia, the ECOWAS intervention was halted after Jammeh accepted an amnesty offer and resigned, leaving the country.

In a briefing to the UN Security Council on January 25, 2017, the head of UNOWAS called the outcome "a success of preventive diplomacy that has been achieved through the mobilization of regional actors in perfect coordination with the international community."

Timely Action Before Atrocities Occurred

ECOWAS has indeed been a leading example of how subregional organizations, in collaboration with the United Nations and other regional groups, can uphold the international norm of the Responsibility to Protect (R2P), a political commitment by states to take measures to protect populations from war crimes, crimes against humanity, genocide, and ethnic cleansing, and, when necessary, to take timely action when states are manifestly failing to prevent such crimes from occurring. The situation in the Gambia merited ECOWAS's attention from the day Jammeh contested the results, rather than waiting for atrocities to occur.

Together with the head of UNOWAS, ECOWAS leaders put consistent pressure on Jammeh, making clear the organization was prepared to adopt forceful measures—including the credible threat of a military intervention—should the



With violence averted, children return home to the Gambia after weeks in exile in Senegal. Most of those who fled the threat of violence to Senegal were children, accompanied by women, as a precautionary measure until the uncertain political situation in the Gambia improved. These children are waiting for a car at the Selety border point on January 22, 2017, to drive them home. According to Senegalese authorities, as of January 23, some 76,000 people had fled the Gambia to Senegal during the first three weeks of January 2017. (© Hélène Caux/UNHCR)

president refuse to step down or escalate repressive violence against the population. Senegal played a pivotal role in linking the actions of the United Nations and ECOWAS, acting not just as a neighbor of the Gambia and member of ECOWAS but using its elected seat on the Security Council to ensure the United Nations remained engaged with the situation.

While many of the proximate threats to populations in the Gambia were alleviated with the peaceful departure of Jammeh, the risk to populations has not completely subsided. Barrow has undertaken various measures to reassure populations of the Gambia's respect for human rights, international institutions, and normative mechanisms. He has already reversed several significant actions of his predecessor, announcing the Gambia would rejoin the Commonwealth and would not leave the International Criminal Court. Barrow has also released hundreds of prisoners arbitrarily detained by the previous government. The new government has requested that ECOWAS maintain a small force within the country for six months, until the political situation has fully stabilized. Other potential sources of risk have also been alleviated as military officials have pledged their allegiance to the new government.

Nevertheless, societal cleavages that Jammeh deliberately deepened in order to retain power still need to be addressed through national reconciliation efforts to ensure that conflict does not arise between perceived Jammeh supporters and those who support Barrow. Additional concerns remain regarding the amnesty Jammeh was granted for crimes perpetrated under his leadership and allegations that he embezzled millions of dollars before fleeing. It also remains important to hold security forces and other government officials accountable for past human rights violations and potential crimes under international law to truly reconcile and move forward in the Gambia.

Jaclyn Streitfeld-Hall has editorial oversight for the R2P Monitor and all of the major publications of the Global Centre for the Responsibility to Protect. She also does research on populations at risk of mass atrocities in West Africa and Central Africa.

International Order at Risk

Solutions Exist,

but Political Will Is Lacking

By Keith Porter President, The Stanley Foundation

Former UN Secretary-General Ban Ki-moon reviews the original United Nations Charter on October 11, 2007, during a visit to the US National Archives in Washington, DC. According to a recent report on the global multilateral system, some in the world regard the United Nations as "old: shopworn, in some cases threadbare, marginalized, and increasingly irrelevant." (Mark Garten/UN Photo)

e stand on the shoulders of those who created the international order, which has prevented world war for more than 70 years.

"[American leaders] who laid foundations of the contemporary world order, envisioned a world in which all peoples might pursue shared peace, prosperity and dignity.

They hoped to forge a global community under the rule of law, governed by international institutions, in which sovereign nations could cooperate to deter and defeat aggression, trade openly and fairly, and enjoy domestic liberty. Enlightened self-interest, not altruism, underpinned these aims," wrote Stewart Patrick of the Council on Foreign Relations in January for the online publication *World Politics Review*.

Of course, not all those hopes have been realized by the United Nations and the other forums that embody this international order. Aggression occurs every day when smaller-scale wars break out, acts of genocide are committed, billions of people continue to suffer under authoritarian regimes, and more. The world regularly forgets what former UN Secretary-General Dag Hammarskjold said: "The UN was not created to take mankind to heaven, but to save humanity from hell."

Ongoing cooperation and progress to shared peace, prosperity, and dignity was, in fact, fostered under the post-World War II order. The Marshall Plan led to a peaceful rebirth in Western Europe, the nuclear nonproliferation regime has resulted in the avoidance of new nuclear weapons use, global systems of trade and finance have flourished, and global efforts on disease, hunger, and development have saved lives and lifted billions of people out of poverty. Furthermore, this level of cooperation has led to a new understanding of common human interests and challenged old thinking about the sovereign right of nations to mistreat their populations without interference. Disease, terrorism, climate change, arms and human trafficking, and other threats that pay little or no attention to national borders have led most people to conclude that humankind must work together or fail separately. The post-World War II international order provides the platform for this collective action.

Global Cooperation at Risk?

"Global cooperation, dealing with other countries, getting along with other countries is good, it's very important," US President Donald Trump said in an address February 24, 2017. Yet in his next lines, he summarized why many Americans believe the system of multilateral cooperation that has served the United States so well is at risk. "But there is no such thing as a global anthem, a global currency, or a global flag. This is the United States of America that I'm representing."

An inability to see how continuing to promote the common good strengthens the United States, coupled with a worldwide rise in nationalism and a growing distrust of institutions, gravely threatens the global order. The election of Trump signaled that "the era of multilateralism is at an end," according to Hungarian Prime Minister Viktor Orban. "For the first time in 70 years, the American people ◄ German Chancellor Angela Merkel and French President Francois Hollande shake hands on January 22, 2013, in Berlin, marking the 50th anniversary of the Elysee Treaty, in front of an image of West German Chancellor Konrad Adenauer (left) and French President Charles de Gaulle signing the original treaty. Ongoing cooperation and progress have been fostered under the post-World War II order. (Wolfgang Rattay/Reuters)

have elected a president who disparages the policies, ideas, and institutions at the heart of postwar US foreign policy," wrote Walter Russell Mead, professor of foreign affairs and humanities at Bard College.

While these trends are certainly worrisome, fault lines and fractures in the global order are not exactly new. Challenges to the system have been emerging for more than a decade, and the 2016 US election, as well as Brexit, may be symptoms of the problem rather than the cause.

Rising powers such as China, Brazil, and India and nonstate actors in the private sector and civil society, as well as regional actors and substate governments, are seeking their own seats in the multilateral process. Yet the leaders of nation-states have struggled to accommodate these stakeholders in a global order founded on principles of state sovereignty.

Stronger International Law Needed

The founding pillars of international law also have been under assault for years. Collective amnesia about human rights is rampant, expansionist actions are on the rise, international refugee law is undermined at every turn, countries are threatening to leave the International Criminal Court, and increasingly, government leaders assert the primacy of national law over international agreements.

The challenges and growing pains in the international order are real, but they are not new.

For more than 60 years, the Stanley Foundation has been dedicated to creating and preserving a world in which there is a secure peace with freedom and justice. Our bedrock belief is that more-effective multilateral action on critical issues of peace and security will lead to more-effective global governance. It should come as no surprise, therefore, that we believe the international order should be defended—and improved.

While the contemporary world order has delivered positive results and challenged old thinking about war and narrow national interests, there is so much more to do. In the last two years alone, there have been a number of efforts to analyze the elements of the global order and develop achievable recommendations for reform. In June 2015, the High-level Independent Panel on Peace Operations, convened by UN Secretary-General Ban Ki-moon, released a report reminding the world that UN peace operations involve more than 128,000 women and men in almost 40 missions across four continents working every day to prevent conflicts, help mediate and sustain fragile peace processes, and protect civilians. The report says "changes in conflict may be outpacing the ability of United Nations peace operations to respond," and adds, "A number of peace operations today are deployed in an environment where there is little or no peace to keep."

Global Cooperation

The panel called for essential shifts in UN peace operations, including a greater emphasis on political solutions, more flexibility in deploying missions, stronger and more-inclusive peace and security partnerships, and renewed resolve to engage directly with the very people the UN operations have been mandated to assist.

According to the Commission on Global Security, Justice and Governance—chaired by former US Secretary of State Madeleine Albright and former Nigerian Foreign Minister Ibrahim Gambari—the three major challenges and opportunities for global governance are (1) fragile and conflict-affected environments, (2) climate and people, and (3) the hyperconnected global economy.

The commission's report, *Confronting the Crisis of Global Governance*, includes detailed recommendations for addressing all three and, importantly, included a call to those beyond traditional nation-states to address global problems.

Collective Action

The international system built over the last 70 years can be preserved and improved. Although the risk of failure is increasing, the problems are identifiable, and the prescriptions for reform are abundant. Of course, we need a more nimble international system with more resources, but that won't happen unless all nation-states once again embrace the inherent benefits of collective action.

In the face of the warning signs of possible system failure, the commitment to reforming the international system must be coupled with constant reminders of why the system matters. As Joni Mitchell wrote, "Don't it always seem to go, that you don't know what you've got 'til it's gone?"

"My Apartment Building Is Full of Women Worrying About What Is Next"

Mulki Mohamed Omar Fled Somalia's Civil War for Kenya, With the Hope of Resettling

in the United States.

By Abigail Higgins Reporting for The Development Set

ulki Mohamed Omar is a 28-year-old Somali refugee. She fled her home in Somalia's capital Mogadishu when she was fifteen and has been living in Kenya's capital Nairobi for thirteen years waiting to be resettled. She's gotten married and birthed five children, all while waiting.

Mulki Mohamed Omar at her home in Nairobi, Kenya, with one of her five children. (© Nichole Sobecki)





Last year she finally received word she and her five children would resettled to Ohio in the United States. Omar told her story in Somali through a translator to Abigail Higgins.

We found the first bullet in my brother's crib. It wasn't the first bullet, but it was my first—and it was when I realized there was war in Somalia. I was five years old and playing in the house when I heard it pierce our thin ceiling and hit the bed where my brother was sleeping. We were sure it had killed him, but a few inches of space and minutes of time meant he was still alive. That is how war works.

Shortly after that, the first mortar landed near our home. Then came the first time to flee; it would the first of many times.

War stops and it starts, it comes in intervals. We'd stay home during the quiet and things would almost feel normal. But the distant gunfire would always begin to roar and it was time to run again. War is inevitable, it starts again at any minute. You can't control it.

We'd flee on foot, trying to reach my Aunt's house on the outskirts of Mogadishu before the gunfire reached us. We'd run when it was quiet and then duck behind walls and cars when it started again. Otherwise, you were a target. It was hard for my mother to keep me and my four siblings together. You can't go straight when you're running from bullets.

That was our routine for as long as I can remember. War came and it went. We ran and then we stopped. But it always came back again. War follows you.

I was fifteen when my mother told me it was time for me to leave Somalia. My mother's friends were fleeing to Kenya, the closest place where bullets didn't land next to your sleeping brother. My mother said, "Go, go with this family so you can be safe."

I hadn't ever been alone before, and my family couldn't afford to leave with me. But I was fifteen and rape was a regular part of the war. My mother was afraid I would be next.

When it was time to leave, I started crying, I told my mother I wouldn't go. She started crying too and told me I didn't have a choice.

"It's better to leave the country than risk being violated," she said. "That's something you can never recover from."

We drove for seven days, hopping from taxi to taxi in dusty border towns. The roadblocks were the scariest part: soldiers with guns leaning in through our windows looking for bribes, bandits looking for stray passerby.

These are the memories I have of Mogadishu. They're the memories that played when I heard that, after a decade of waiting in Nairobi, I was being resettled to America. They're the memories that played when I heard over the BBC's Somali radio earlier this year, while cooking dinner for my five children, that Somali refugees weren't being allowed into America, not anymore.

I had always imagined Nairobi as a beautiful modern city. It wasn't. It was dirty and crowded and busy. There weren't bullets, but there was grinding poverty. It was the first time I realized what it is to be a refugee in a country that hates you.

The family I traveled with told me I had to support myself. I wanted to cry. But what have tears ever accomplished?

Then I saw my husband in the grocery store. It wasn't about love; it was about livelihood, about doing what you need to survive when you don't have a family and you don't have a job and you're in a foreign country. I was young, but it felt like life pushed me into marriage.

He was a good husband until he wasn't.

The closest I've ever felt to my mother is when I gave birth to my first son Mohammed. She wasn't there, but she was who I thought about. I was only sixteen, but whether you're grown up or you're young, the significance of motherhood isn't lost on you. You think about when you were in your mother's womb, you think about the pain she went through to birth you. You realize the importance of being a woman, the importance of the pain of being a woman.

I respect my mother more than anyone in the world. Becoming one myself made me realize what she had done for me, that sending me away was the right decision in a way I couldn't have understood at the time. But it doesn't make it less terrible.

We talked on the phone throughout my entire pregnancy. A cell phone was the first thing I bought from the small amount of money I made cleaning houses. I called her when I was in pain and she told me when the pain was normal and she told me when the pain meant it was time to go the hospital.

But when my phone rang at 4am, I knew something was wrong. Phone calls from Somalia at 4am don't bring good news. A mortar had hit our house. Shrapnel had pierced my thirteen-year-old brother's heart, killing him immediately. My eleven-year-old sister had been injured and she was in the hospital.

It was around the same time I gave birth to Mohammed. That's how war works. He's eleven years old now and he wants to be an optometrist when he grows up. His English





Apartment living for a refugee in Nairobi is not life in a beautiful modern city, it's more like dirty, crowded and busy, with grinding poverty. (© Nichole Sobecki)

we're supposed to be resettled. I don't know much about Ohio, but I heard there are jobs and schools and that people are good.

I spend a lot of my days at UNHCR's offices waiting. I've been through so many steps since I registered as a refugee at sixteen: medical checkups, security checks, interviews about where I'm from in Somalia, why I left Somalia, where my family is. If I'm not waiting for information for my case I'm helping newly arrived women navigate the process, just like older women helped me when I first arrived. One good turn deserves another. Somalis help each other.

is perfect and to him, American means education. Each son after him looks like increasingly smaller versions of him.

I've only seen my mother once since she put me in the car when I was fifteen. She fell ill when I was pregnant with my second child and went to get treatment at a border town between Somalia and Kenya. It was the closest she had ever been so I took a bus to be with her. We spent two months together, her sick and I pregnant. She told me when the pain was normal and when the pain meant it was time to go to the hospital.

When it was time for us to leave, I didn't have the money to get her to Nairobi. "We'll meet again," I told her. "I promise." I hope that someday, we will.

A few months ago, my husband told me he was going to look for a job and never came back. After he left, I opened his drawers and saw that all his clothing was gone. When I called his phone a stranger picked up and said he didn't know who my husband was, that this had always been his phone number.

I think the wait for resettlement drove him mad, I think years of unemployment made him feel hopeless. I'm not angry at him. I have to worry about what is next, about how I'll feed five children without him. My apartment building is full of women worrying about what is next.

I had to file a police report about his disappearance so that UNHCR would continue our resettlement process without him. His sister-in-law is in Ohio, which is where We've been waiting for so many years. Our lives have been harsh. We've gotten so close only to hear those devastating words, words whose outcome I still don't understand, translated into Somali by the BBC "refugee ban." I thought by this time I would be going to America.

Like many Somali refugees, Omar isn't sure how her eventual resettlement will be affected by the travel ban, or if she'll ever be resettled at all. US President Donald Trump signed a new version of the executive order temporarily halting refugee resettlement from seven Muslim majority countries on March 6, 2017, which removed Iraq but retains Somalia and five other countries. For refugees like Omar, who is so far along in the resettlement process, these delays could mean that her security clearances expire, dramatically delaying her resettlement.

Abigail Higgins is an American journalist reporting from East Africa.

Nichole Sobecki is a photographer and filmmaker based in Nairobi, Kenya. She began her career in Turkey, Lebanon, and Syria, focusing on regional issues related to identity, conflict, and human rights. Nichole has completed assignments throughout Africa, the Middle East and Asia for The New York Times, The Washington Post, National Geographic, Time, Foreign Policy, The Financial Times Magazine, and Le Monde, and her work has been exhibited internationally.

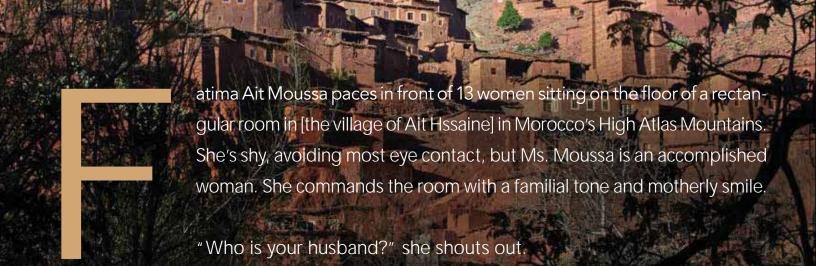
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Farming a Warmer Planet

Morocco Holds Lessons for How Farmers Around the World Are Adapting to, and Curbing, Global Warming

By Zack Colman, Christian Science Monitor

Mohamed Elmadi, a Moroccan farmer, has never heard of the term climate change. But he knows it's getting warmer. (© Tomas Ayuso)



"Argan!" they respond in unison. Moussa, dressed in a flowing black djellaba, repeats her question. One person responds, "Argan is my wallet!"

In reality, argan isn't literally a husband or a wallet. It's a tree that happens to play a vital role in sustaining the livelihoods of these entrepreneurial farmers. For the 149 women spread across 20 villages in Moussa's cooperative, the trees and the oils they provide—used in expensive cosmetics, soaps, and food products—are the primary source of income.

Moussa's actual husband died in the mid-1990s, saddling her with massive debt. Around that time, she witnessed a similarly cash-strapped woman try, unsuccessfully, to convince a grocer to accept argan oil as payment. The encounter sparked the idea for the business venture she now runs.

It's a success, judging by the women's enthusiasm and the framed certificates and photographs with leading politicians that decorate her office. Yet the cooperative is also beset by serious challenges, from drought and climate change to deforestation and global competition, that squeeze the women's \$5 daily incomes.

What's happening here is emblematic of forces that reach far beyond Moussa's venture in these arid, windswept mountains of southwestern Morocco. Worldwide, 3.4 billion people live in rural areas, often in poverty and with lifestyles that expose them disproportionately to the effects of changes in Earth's warming climate. From Afghanistan to Bolivia, as well as in large swaths of Africa, many of them cultivate land that's dry or growing drier.

The challenge for farm communities is to adapt and respond before climate change starts to erode agricultural productivity. For governments and development groups, the challenge is broader: They are recognizing that it's not just that climate change is affecting farmers, it's also that farmers are affecting the climate. While plants like argan trees can help store excess carbon that would otherwise add to the world's emissions, many agricultural practices create greenhouse gases. They, in fact, account for about a quarter of such emissions worldwide.

Half of those agricultural emissions come in the form of methane emitted by livestock, the tilling of soil, and other agricultural practices. The next largest contributor is deforestation, such as for creating land for grazing. Yet some of these emissions—as much as 20 percent—are offset by crops and forests actually filtering carbon dioxide from the air.

"People are now starting to see much more clearly the negative impacts of climate change on agriculture and food production globally and that is driving increased research and action on the ground," says Marc Sadler, an agricultural expert at the World Bank in Washington. ◀ Climate change has contributed to a rural exodus. Many locals have left places like Megdaz (left), a collection of houses in the High Atlas Mountains in Morocco, and moved to bigger cities such as Agadir, Casablanca, and Marrakech. (Antonio Marín Segovia/Flickr)

Primed in part by the United Nations climate accord reached in Paris in 2015, nations are now starting to funnel more aid to help poor nations respond to climate change—including on farms. In recent years, rich countries have pledged to give \$100 billion annually in climate aid to poorer nations by 2020.

But nothing close to that amount has started to flow, and the money being funneled into agriculture still remains modest: A 2014 report by the Climate Policy Initiative, a think tank, found that just 2 percent of the \$331 billion in global climate financing as of that date was going toward improving farming practices.

The dearth of funding down on the farm could carry significant consequences for the world. Many countries view better agricultural techniques as not only vital to blunting the effects of global warming, but also as a way to limit overcrowding in cities by giving rural communities more opportunities, preventing desertification, enhancing food security, and preserving native customs. The new buzzword to describe greener farming techniques is "climate-smart agriculture." It was a prominent topic at a November UN climate conference in Marrakech, Morocco. It's a theme at almost every global food production forum these days.

"Now you'd be hard-pressed to go to an agriculture conference and have climate not come up," says Elwyn Grainger-Jones, executive director of CGIAR System Organization, an international agriculture and food security group.

Climate-smart agriculture encompasses practices such as reducing water use, planting climate-appropriate crops, diversifying yields, improving soil management, and using natural landscapes to promote "green" infrastructure that stores carbon or manages rainfall.

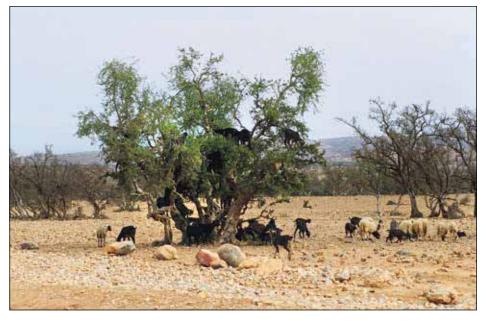
In Brazil, for instance, it means new legal and policing measures to slow the clearing of forests for cattle production. Mongolia is shifting to growing crops in greenhouses and away from allowing goats and other animals to graze on disappearing grasslands. Vietnam is using new breeds of rice seeds—ones that sprout earlier in germination—to cope with drought.



Cattle farming is a driver of deforestation in locations around the world, including Brazil. Here cattle roam open areas in Rio Branco, Acre, Brazil (Kate Evans/Center for International Forestry Research/Flickr)

► As grasses have receded because of the droughts and arid conditions, traditional grazing has become difficult, driving goats into the argan forests of southwestern Morocco and even up into the trees for the fruit. (© CTB/Zoubida Charrouf/*www.befair.be/Flickr*)

In Morocco, it means methodically pounding argan nuts. The government has committed to planting drought-tolerant argan trees across 95,000 acres of the country as part of its plan, under the Paris climate agreement, to both combat climate change and help vulnerable rural communities adapt to a warming planet. Doing so would pull about 0.613 megatons of carbon dioxide from the air—roughly the equivalent of taking 130,000 cars off roads—between 2020 and 2030.



Planting fruit and other kinds of trees has been a focus of governments and aid agencies across sub-Sahara Africa because they are more resilient to climate shifts than many traditional crops. They also provide a valuable source of income.

In Morocco, getting the coveted oil out of the argan nuts is arduous work. The women sitting in the room at Moussa's cooperative here pull the coffee-colored nuts from their large wicker baskets and smash the husks with smooth, black rocks. Then they pry the oil-bearing kernels loose, tossing them into smaller bags.

It takes the women half a day to fill the bags. They make about 60 cents an hour for their work in this barren town of terraced homes and scattered argan trees that cling to a dusty hillside. The women are now breadwinners for the indigenous Berber, or Amazigh, community. About 2 million people depend on argan in this coastal region, where nearly all of the world's supply of the tree is found in forests that look like clumps of broccoli.

"There is nothing like argan here," says Rkia Elhjam, seated on the floor, who has worked with the cooperative since 2004. "Argan is our main activity."

If argan exemplifies the promise of climate-smart agriculture, the forests here also reveal the multiple threats many rural communities face. The tree is one of the only things that can grow in this parched area. Yet Moussa says the droughts have become frequent enough that they are depressing even the harvest of nuts.

Traditional grazing has become more difficult, too. As grasses have receded, goats have ventured farther into

the argan forest, causing even more damage. Goats are a pest. They climb the trees with their spindly legs to eat the fruits. Tribal laws encourage villagers to set aside land for the animals. But they have been ignored.

Conservation hasn't been much of a priority, either. The argan trees have been cut for decades for use as firewood and to make handicrafts for sale in markets. The forest has lost half its cover in the past century. That's why UNESCO deemed 10,000 square miles of the area a protected site in 1998.

"There is nothing easier to grab land from than the forest," says Mohamed Fouad Bergigui, a Morocco-based analyst for the UN Development Program (UNDP), as he winds through the mountains in his small hatchback.

Farther up the Atlas range, the effects of climate change on the small towns of Morocco are evident as well. The village of Toufghine is so remote that people use homegrown walnuts for currency. Toufghine, in fact, isn't much of a town at all—it's a smattering of drab, gray stone houses perched haphazardly along cliffs.

Homes here have no running water. Electricity didn't arrive until 2014. Mobile phone service started in 2013. The first road to the hospital, where a doctor only visits for half a day on Tuesdays, was completed in 2009.

Mohamed Elmadi, a local farmer, has never heard of the term climate change. But he knows it's getting warmer.

Mr. Elmadi says that the river that runs along his small patch of farmland carries far less water than it used to during prime irrigation season. The reason is that the mountain snowpack at high elevations is getting lighter as temperatures warm. Precipitation that used to fall as snow now comes as rain, which significantly affects his apple trees and grapevines: Because snow melts slowly into the river, it normally produces water for crops in late summer.

"From May, June, July, August, the river is going down, down, down," says Elmadi while seated in a gite—basic accommodations for adventure-hungry tourist—he runs with his brother. "There is less and less water. So people can't irrigate."

Yet the heavy early rains often cause the river to flood in the spring. Big storms have inundated his fields and sent large boulders cascading into the stream. A heavy rain last May wiped out his potato crop, and, for the first time, his fruit trees were damaged.

"There is a solution" for reducing flood exposure, says Elmadi, as he trudges through his sodden field on an aluminum-gray day.

He wants more gabions—wire containers filled with concrete blocks—to deflect the river. But as in many rural regions of developing nations, infrastructure is hard to come by.

"We can't find anyone to make them," says Elmadi. "It takes a lot of energy and people and machinery."

While climate change is affecting food production in rural Morocco, it is contributing to another problem as well: the exodus of people to cities. Many young people, in particular, see declining opportunities in the countryside. When they depart, they leave fewer people behind to maintain local traditions and customs.

"Once the kids finish elementary school here, there is no high school, so they have to go to the city," says Moha Haddouch, a UNDP contractor who lives in the area. "If we had schools, a lot of people would stay here. They wouldn't go to the city at all."

That has certainly been the case in Megdaz, a dusty collection of red-ocher clay houses farther up the mountain. The town's very name means "wrong side"—the village doesn't get much morning sunlight. Most of the people here, reliant on farming, are impoverished.

Tijani Hassou remembers when local fields teemed with flaxen-colored maize and barley. But diminishing water supplies have curtailed harvests. As a result, many locals—both young and old—have moved to bigger cities such as Agadir, Casablanca, and Marrakech.

"I am very conscious of the river," says Mr. Hassou. "Before it was full of water in the winter and the summer. Now in the summer it's completely dry."

To adjust, Hassou has swapped out his barley and maize for walnut trees. The effect has been twofold: It has significantly reduced the amount of water he uses, and his walnuts bring more money in town.

"I'm planning to stay here all my life because the city is too expensive," Hassou says. "Life here is OK."

Yet not everyone has fended off a warming climate so easily. In local cultures like this, farmers pass down practices from generation to generation. Change comes slowly. That's where governments and aid organizations come in.

The Moroccan government, for one, is undertaking a number of initiatives to help the rural poor, maintain a vibrant Berber culture, and try to reduce overcrowding in cities.

Officials in Rabat, for instance, planted 140,000 acres of desert with cactuses that now grow wild in Skhour Rhamna, a desolate area wedged between the Atlas Mountains and the Atlantic Ocean 60 miles north of Marrakech. In three years, they hope to hit 200,000 acres and eventually 350,000. Everything in the area is monochromatically brown, except for the cactuses.

Fruit from the prickly pear produces an oil that is used in cosmetics, animal feed, and, soon, vinegar. The plants also sequester carbon emissions and boost soil health.

The cactuses have provided a new industry for communities that have relied largely on small-scale goat and sheep herding. But grazing has declined as the wheat used for animal feed has disappeared. "Lack of water was the big impact in the crop," says Laouni Ferrak.

Mr. Ferrak is now a manager at Inovag, a factory in Skhour Rhamna that extracts the oil from the prickly fruit. All the fruit gets mashed up in a processor, then vinegar and oil are pulled from the seeds. About 55 pounds of fruit are needed to make a quart of oil, which goes for \$200 to \$250 per quart. The company can process as many as 210 gallons a day. Inovag's founder, Alain Jouot, built the whole facility by hand. The result is a menagerie of aluminum, corrugated



With help from local governments, mass-planted cactuses are providing a new industry for urban communities, with fruit from the prickly pear producing oil for cosmetics, animal feed, and, soon, vinegar. (Pieter Edelman/Flickr)

steel, conveyor belts, and plastic fermentation vats. It's the board game "Mouse Trap" come to life.

A private equity fund for Banque Populaire, Morocco's state bank, has invested \$500,000 in the company. "The purpose of all of this is to keep people ... here to have jobs," says Adil Rzal, the fund's managing director, standing in a room piled with burlap bags of prickly pears.

Ferrak, a former farmer with four children, says the factory has given him a new start. The company also employs 11 other people and pays four drivers to collect prickly pears from the roughly 80 people who pick them from the boulevards of cactuses across the undulating landscape.

"It's an opportunity for people living in the area, for my family ... I can have my money at the end of the month," says Ferrak.

Efforts are under way to boost the production of argan oil at Moussa's cooperative as well. Mr. Bergigui, the UN development analyst, is working with locals on a scheme to preserve the prized but besieged argan forest.

He's trying to get the Moroccan government to act on a decades-old pledge to subsidize farmers who improve soil quality, reduce erosion, and tame floods through land terracing. It would place a monetary value on land-management practices that typically don't factor into the price of an agricultural product.

Bergigui and others are also pushing the idea of collecting green donations from tourists. Under this plan, ecotourism

companies would nudge visitors to voluntarily give small contributions—say, \$7—to offset carbon emissions from their travel to the area. The money would go to argan farmers, helping them compete against foreign companies now undercutting their prices in the global marketplace.

Ecotourism operators in Latin American countries, such as Peru, have already used such arrangements with some success. At least "we've got to try it," says Bergigui.

The women at Moussa's cooperative would certainly welcome the monetary assistance. The price they receive for argan oil has been falling. Moussa blames mechanization and competition from (mostly French) cosmetic companies. Forest degradation hasn't helped, either. "Once upon a time argan was a widespread product," Moussa says. "For women, widowed women especially, it meant they would not have to rely on men."

The women are eager to find ways to close the gap between the \$25 per quart that private companies pay for the oil and the \$60 per quart that would provide a decent living.

Perhaps counterintuitively, Moussa thinks enrolling more women in the cooperative will help—by reversing forest loss. They're good environmental stewards, she says, because their livelihoods depend on a healthy forest. So Moussa has opened satellite offices in villages across the region.

Though her project is tiny relative to the vast numbers of rural poor worldwide, what Moussa and her backers are trying to do here symbolizes the kind of solutions that experts say could help, place by place, around the globe: a ground-up, self-sustaining system that reverses environmental degradation, strengthens economic security, and reduces emissions all at once.

As Moussa puts it: "If it was not for the local population, the argan forest would have been gone a long time ago."

Zack Colman was one of five international journalists awarded fellowships by the International Reporting Project (IRP) and the Stanley Foundation to cover the Twenty-Second Conference of the Parties (COP22) in Marrakech, Morocco in November 2016.

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'Everyone's Background Is Different'

Teacher Shares Lessons Learned From Thailand in Classroom Back Home

> By Francie Williamson, The Stanley Foundation

A child at a school in Surin, Thailand, studies English words for animals. Students at Thai schools wear uniforms and study at their desks instead of getting up and moving around like students in American schools. (© Jessica Jones)





efore summer 2016, Jessica Jones had never traveled outside of North America. But on June 30, Jones, a second-grade teacher from Muscatine, Iowa, left for a month-long visit to Southeast Asia. Jones was one of two Muscatine teachers to receive the Stanley Foundation's 2016 Catherine Miller Explorer Award, named for a late Muscatine educator who believed strongly in global citizenship.

In the following edited interview, Jones discusses what lessons she brought home.

The Stanley Foundation (TSF): Why did you apply for the Explorer Award?

Jessica Jones: Because I really wanted to be able to [experience] different cultures. When I had taught on the Hopi reservation [in Arizona], I really did get a sense of what their culture was like, and I learned so much there that I wanted to see what another culture was like and wanted to see what I could bring back here and apply.

TSF: What does the term *global citizen* mean to you?

Jones: Being conscious of what other cultures are doing and making sure that you are respectful to the people who live there, and teaching others to be respectful of that as well.

TSF: Where did you choose to go and why?

Jones: I chose to go to Thailand. It was someplace that I've actually wanted to visit, probably for the last 20 years. It was just a place that had really interesting things to see, to me, to begin with. And then as I was looking into trips, [it was] the culture and basically the differences within the places in Thailand with their culture, and the way they've not only adapted to people coming in, the people coming there, [but] how they've been able to maintain some of that culture.

TSF: What kind of things did you do there?

Jones: I taught for a week in Surin. It was absolutely amazing, very, very different from the schools here. Their children all wear uniforms. They are not used to anything that is not completely teacher driven. Nor are they used to things like getting up and moving in the classroom. When a teacher would enter the classroom, they would have to stand up and say, "Good morning, teacher." And there was a response for us to do as well, which was, "Good morning, students." And then they would have to ask, "How are you?" and we would have to respond, and they couldn't sit down until we gave them permission to, which I found very interesting, because we don't have our children stand and say things like that. But it was not only a way for them to practice their English, but just the way that their culture expects them to be.

TSF: What else did you do while you were there?

Jones: [I] saw national monuments. [I] was in an elephant village where I helped with planting and harvesting of crops for the elephants and also got to bathe and feed them. [I] was in the national forest for a day for a tour there. And then [I] was on two separate islands, Kohphangan and Kohtao. And even between those two islands, which are very close together, the



Jessica Jones, a second-grade teacher at Jefferson Elementary in Muscatine, Iowa, taught for a week in Surin,

Thailand. This experience has allowed her to share pictures and stories that help her students in Muscatine learn

their lunch wasn't really supervised. The kids served each other, and then they just went and kind of sat in groups, and then when they were done they just got up and went and played because it was all outside. And [my students] were very interested that the kids served themselves, and also that the kids helped clean up in the rooms. That was new to them.

[My students] really liked the bat caves too. We were visiting some monuments [in Thailand], and there were a bunch of bats that come out of the cave area. And you could just stand

culture was completely different. And I got to go snorkeling and was while there and just explore any sights we could.

TSF: What part or parts of your destination did you enjoy the most, or find the most interesting/intriguing?

about other cultures. (© Jessica Jones)

Jones: The teaching was the most interesting. I knew it was going to be different; I didn't realize that it was going to be quite as different as it was. It really surprised me that they didn't do any hands-on activities; it was mostly them sitting at their desks. That was very different to me.

TSF: How has your trip impacted you since you returned?

Jones: It has made me actually view some of the kids that I have differently. It reminded me that everyone's background is different that they are coming to school with, and it kind of brought that back to the front of my vision for my class-room. I've been able to share pictures and stories, and that's helping the kids learn about something else.

TSF: When you brought your experience back to your students, which parts of the trip/destination did they find most interesting?

Jones: They were really interested with the fact that the kids had to greet their teacher that way [and] that they really didn't have necessarily the same materials that we do. I was describing the lunch and the recess to them too. Over there,

and watch them come across. I had video that I put up, and you could hear the bats. So that was something new for them. We did that around Halloween.

TSF: How are you applying these lessons to your class this year?

Jones: I just try to take whatever subject—like if I have a picture of it, if we're talking about monuments—I try to throw in, "OK, this is what you might see there." With the bats, we were learning about bats around Halloween, so I had pictures and videos of that kind of thing. ... During Black History Month, we're talking about diversity, and so we've talked a lot about the children there and their uniforms and what they did during class time compared to what we do during class time.

TSF: What advice would you give to future Explorer winners/travelers to get the most out of the experience?

Jones: I think it's just being able to connect to the people here that have already been to the place I'm going to visit, because they're going to have some background that you're going to need to know. I spent hours researching, looking through what's appropriate to wear and what isn't, and what's respectful and what I would need. ... Had I been able to connect with somebody [ahead of time], I think I would have been able to pack better... which would have made life easier.



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CONSIDER THIS...

Commercial satellite imaging will soon allow individuals and organizations to access wholeof-earth imagery, updated daily. This has empowered experts outside of government who track nuclear weapons development in North Korea, like those writing at 38north.org, to better analyze and monitor that country's nuclear and missile tests.

For example, Frank Pabian and David Coblentz recently used satellite imagery analysis to estimate the maximum explosive power of a nuclear test at North Korea's Punggye-ri Nuclear Test Site.

Such analysis used to be exclusive to nation states with the capability to put satellites in orbit. Now experts at universities and elsewhere can use Google Earth.

Source: Frank Pabian and David Coblentz, "North Korea's Punggye-ri Nuclear Test Site: Analysis Reveals Its Potential for Additional Testing with Significantly Higher Yields," 38 North, 3/10/17. www.38north.org/2017/03/ punggye031017/.

