

EYE of the EAGLE

THE
CARTER CENTER



Volume 19, Number 1

Winter 2018

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IACO 2017 Focuses on Yanomami Population

Fifty partners of the Carter Center's Onchocerciasis Elimination Program for the Americas (OEPA) gathered Oct. 31–Nov. 1 in Antigua, Guatemala, for the 27th InterAmerican Conference on Onchocerciasis.

Venezuela announced that its Northeast focus had successfully completed post-treatment surveillance, so now 90,000 fewer people are at risk of onchocerciasis, also known as river blindness. The only group now at risk in the Americas is comprised of 30,000 Yanomami indigenous people living along the Brazil-Venezuela border.

The theme of the meeting reflected this focus: "Improving health access in the Yanomami area with ingenuity and indigenous empowerment." Anthropologists Johanna Gonçalves and Alejandro Reig gave



in-depth reports on the Yanomami cultural mindset regarding health and disease and Yanomami migratory movements across the border between Brazil and Venezuela. The Brazil and Venezuela programs are working to increase involvement of Yanomami health agents in the provision of Mectizan® (donated by Merck) treatment in their communities;

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Mali, Niger Trachoma Programs Mark Progress

With target dates for the elimination of trachoma as a public health problem on the horizon, organizations and their government partners celebrated successes and reviewed plans at October 2017 events in Mali and Niger. Representatives from Helen Keller International (HKI), Sightsavers, The Carter Center, and ministries of health attended.

Robert Miyashiro, program officer for the Conrad N. Hilton Foundation, joined events in both countries following renewal of a three-year grant for the trachoma programs in Mali and Niger.

The Mali Ministry of Health hosted World Sight Day in Bamako on Oct. 12,

which included a lively celebration and powerful messages from the government and partners supporting eye health. Trachoma elimination was a key theme throughout the event, as was the focus of a press conference held after the festivities. Miyashiro, professor Lamine Traoré, who is national coordinator for Mali's National Eye Health Program, and Sadi Moussa, the Carter Center's country representative in Mali, presented a history of the trachoma program in Mali and answered questions from journalists about interventions to achieve elimination by the target of 2018.

After celebrating World Sight Day in Mali, the partners traveled to Niger to visit trachoma-endemic communities in the Maradi region. There, Miyashiro joined

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Electronic
Edition

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Yanomami

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presenters shared examples where this has led to improved treatment coverage. A binational meeting to improve mapping of the cross-border focus is planned for 2018.

The Venezuela South focus team reported on their efforts to rehabilitate old, overgrown landing strips to improve the program's reach. In some cases, the team has parachuted in with tools to clear a strip. Eight landing strips have been recovered to date, and two more are slated for 2018. **E**



A plane approaches the Caño Iguana landing strip in Venezuela, which was cleared in May 2017, improving access to 452 people at risk of onchocerciasis.

Onchocerciasis Committees in 3 Countries Discuss Surveillance

The Carter Center in the second half of 2017 supported onchocerciasis elimination expert advisory committee meetings in Uganda (August), Ethiopia (October), and Nigeria (December).

Uganda announced that two foci had completed post-treatment surveillance successfully and as a result were now classified as “onchocerciasis eliminated.” About 518,700 residents of these foci are no longer considered to be at risk for infection.

The Ethiopia committee met with Sudanese representatives in

attendance and determined that assessments had indicated the interruption of onchocerciasis transmission in a cross-border transmission zone (the Metema-Galabat focus). Based on World Health Organization guidelines, the committee recommended that mass drug administration could be stopped in a coordinated fashion in this cross-border focus in 2018. However, a very small portion of the focus in Metema, Ethiopia, still has an entomological “hot spot” of highly localized transmission that will continue to be treated with ivermectin. Coordinated

post-treatment surveillance with Sudan will commence outside this area.

The Nigeria committee reviewed the “Stop MDA” results of Carter Center Nigeria lab assessments of black flies and blood spots collected from five states: Carter Center-assisted Plateau and Nasarawa states and Sightsavers-assisted Zamfara, Kebbi, and Kaduna states. The committee will communicate its recommendations for stopping treatment in some of these states to the Minister of Health for his final decision early in 2018. In accord with the new Nigeria Onchocerciasis Elimination Plan, twice-per-year treatments with Mectizan (donated by Merck) to accelerate elimination were launched in four Carter Center-assisted states in 2017 (Enugu, Anambra, Imo, and Abia).

The Carter Center’s work to eliminate onchocerciasis in Uganda and Nigeria is made possible thanks to funding from the U.S. Agency for International Development and the ENVISION project led by RTI International. In Ethiopia, support is provided by Lions Clubs International Foundation. **E**



The Metema-Galabat focus, which straddles Ethiopia and Sudan, is poised to enter post-treatment surveillance.

Mali, Niger

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representatives from HKI, The Carter Center, and the district, regional, and national levels of the Ministry of Health to observe ratissage, or door-to-door surgery outreach for trichomatous trichiasis, as well as hygiene and sanitation interventions in communities and at schools. These interventions aim to prevent and control trachoma by emphasizing face washing and construction and use of latrines.

“The utilization of intensive interventions, such as door-to-door surgery outreach, will be key to the elimination of trachoma in Mali and Niger,” said Miyashiro. “The Hilton Foundation remains committed to the success of both national programs through its support for these last-mile elimination efforts.”



Robert Miyashiro of the Hilton Foundation (center) is joined by representatives from The Carter Center, Helen Keller International, and Sightsavers at the World Sight Day celebration in Bamako, Mali, on Oct. 12, 2017.

Following the field visit, the Niger National Eye Health Program held its annual program review meeting Oct. 17–19 in Niamey. In attendance were representatives from the national

and regional levels of the Ministry of Health and partners from the Bureau of School Health, HKI, The Carter Center, and the International Trachoma Initiative. **E**

Arts Illustrate Importance of Water, Sanitation, Hygiene

There's more than one way to get a message across.

The Ugandan Music, Dance, and Drama Festival is an annual competition sponsored by the Ministry of Education and Sports. Students showcase traditional dances, songs, poetry, drama, and speeches during the regional and national competitions. The festival's tradition and entertainment provide a friendly and effective medium for sharing important messages with students and the community.

One such message is the importance of water, sanitation, and hygiene, or WASH, in health and education, and that was the theme of the 2017 competition. The Education and Sports Ministry chose it in collaboration with the Ministry of Health's Trachoma Elimination Program and the Johns Hopkins University Center for Communication Programs, which

assists 27 countries with behavioral change messaging. Sanitation and hygiene are key to trachoma control.

Prizes for the competition included certificates, face towels, and trophies for performers at the regional and national levels. The final competition, held in Jinja district, was officiated by the state minister for primary education, the Hon. Rosemary Seninde, along with other ministry officials. Seninde thanked partners for supporting the function and stated that children are good ambassadors of change since the behavior they learn from school can be transferred to their homes and eventually the entire community.

Of the 44 schools that reached the finals, nine were from trachoma-endemic areas where The Carter



Students perform a song on traditional instruments during the Ugandan Music, Dance, and Drama Festival.

Center is coordinating partner for trachoma-focused surgery and health education activities in The Queen Elizabeth Diamond Jubilee Trust Trachoma Initiative. The incorporation of a WASH theme into existing education activities highlights the power of partnerships and integration. **E**

NEMO Aids Trachoma Survey Teams in Eastern Amhara

By *Caleb Ebert*
Graduate Assistant,
Trachoma Control
Program

NEMO has become the newest champion for trachoma elimination. Not the Disney-Pixar clownfish with the lucky fin, but the tablet-based data collection system.

NEMO's alter ego ELMO has been waging peace and building hope with the Carter Center's Democracy Program since 2010. Now NEMO has added fighting disease to the repertoire. ELMO is short for ELECTION MONITORING; NEMO is an acronym for Next-generation Evaluation, Measurement, and Observation.

I took NEMO with me to eastern Amhara during my first trip to Ethiopia in late May 2017. Introducing NEMO to the Trachoma Control Program team was exciting, culminating nine



Caleb Ebert field-tested a tablet-based data collection system in eastern Amhara in May 2017.

months of exploring and testing the system.

Prior to training in-country colleagues on NEMO, I had the opportunity to observe the 18th mass drug administration (MDA) campaign in eastern Amhara. It was my first exposure to such a large-scale public health intervention (reaching almost 6 million individuals) and to Ethiopian society. Witnessing the campaign illuminated critical points of knowledge

like the social structure of Amhara, which allowed me to develop appropriate questions to add to this year's post-MDA coverage survey. In addition to the routine coverage questions, new ones were included to study the characteristics of individuals who do not participate in MDA campaigns.

Following the question design phase, a week of rigorous NEMO training was conducted with the staff and survey enumerators. Throughout this training I realized how much of

an advocate NEMO is for in-country capacity building. Coupled with a miniature router, NEMO empowers country staff to be fully involved from creating the survey to uploading the collected data without ever requiring an Internet connection. This ability has huge impacts. My in-country colleagues and I met in person every night to make changes based on that day's feedback. There was a noticeable increase in the confidence and sense of autonomy among the country staff as a result of using NEMO.

With the NEMO-supported survey ready for deployment, 10 teams scattered throughout four woredas, or districts, to collect data on 7,200 individuals from over 1,600 households. This was the largest survey to be completed by NEMO for health data collection.

NEMO is expected to make more appearances with the Trachoma Control Program, fostering a more resilient and versatile process for conducting surveys. And that's something no one would carp about. **E**

Ethiopia's Amhara Region Pursues Ambitious Surgery Goal

The **second annual review** meeting for the trachoma program in the Amhara region of Ethiopia was held July 26–27, 2017, in Bahir Dar City.

The meeting focused on surgical output and quality. The Ethiopia Federal Ministry of Health in 2014 announced a Fast Track Initiative to reduce a backlog of surgeries to correct the painful condition trachomatous trichiasis (TT). After being piloted in 2015, the initiative scaled up in 2016, making significant progress against the backlog. In 2016, surgeons in the Amhara regional trachoma program

performed 111,687 TT operations, the most in its 15-year history.

For 2017, the Amhara regional trachoma program set an ambitious target of 110,000 surgeries, nearly matching the record output from the previous year. At the July meeting, stakeholders from all administrative levels discussed several issues, including ways to increase surgical output.

Presentations at the meeting also addressed facial cleanliness campaigns and transitioning surgical services from an elimination program to static services in health clinics.

Review meeting participants included the head of the Amhara Regional Health Bureau, Dr. Abebaw Gebeyehu; head of the Amhara Regional Bureau of Education, Ato Yelekal Kefal; Dr. Fentahun Tadesse from the neglected tropical diseases team at the Federal Ministry of Health; Most Hon. World Laureate Dr. Tebebe Y. Berhan, representing the Lions Clubs International Foundation; and Dr. Teshome Gebre, regional director of the International Trachoma Initiative. **E**

Love of Sudan Keeps Trachoma Program Officer Motivated

The work of a trachoma program officer in Sudan is challenging, but love of country and love for people have motivated Zeinab Abdalla Mohammed Ahmed to press on for 10 years.

Abdalla joined the Carter Center's Trachoma Control Program in August 2007 and has been advancing the program ever since. She has planned and conducted more than 110 program surveys and 35 rounds of mass drug administration, organized more than two dozen sight-saving surgical camps, and developed and implemented health education programs in primary and secondary schools across multiple states.

The Carter Center currently works in five states in Sudan, mostly in remote areas. The rough, unpaved roads become extremely muddy during the rainy season. Many nights have been spent waiting next to a stream for the water to get low enough for the team to pass. Some areas have

cellphone coverage, but Abdalla remembers the first few years when it was difficult to communicate with team members and family back home.

Despite the challenges, Abdalla says she could not imagine doing anything else, "because it is part of my beloved country. I like to provide health services to those humble people."

Abdalla grew up in a rural town called El Kalakla el Weheda in Khartoum state. She earned a bachelor's degree in public and environmental health from Khartoum University in 2001. During her studies, she learned about the science of public health, epidemiology, environmental sanitation, and research methodology. She wanted to use her knowledge to support people's health, which led her



Zeinab Abdalla Mohammed Admed conducts mass drug administration and surveys in rural villages of Red Sea state, Sudan.

to spend six years as a public health officer with the Federal Ministry of Health's Expanded Program on Immunization. Following six years with EPI, the program supported Abdalla to gain a master's degree in public health from Alzaiem Alazhari University in Khartoum.

The FMOH has been working on trachoma control since 1962 and has made elimination of trachoma as a public health problem one of its priorities. In 1999, The Carter Center began supporting the FMOH. When the program officer position opened at The Carter Center, Abdalla was eager to apply her immunization program experience to the field of neglected tropical diseases and disease control. She likes that the trachoma program allows her to work on both the prevention and treatment components of a disease.

"It is very blessed when a drug dose or any other type of service is provided to a child, a sick woman, or an old man in a remote area," she says. "I give thanks to Allah who lets me aid people in need and thanks to The Carter Center for their trust in my work." **E**



Zeinab has worked for the Trachoma Control Program since 2007.

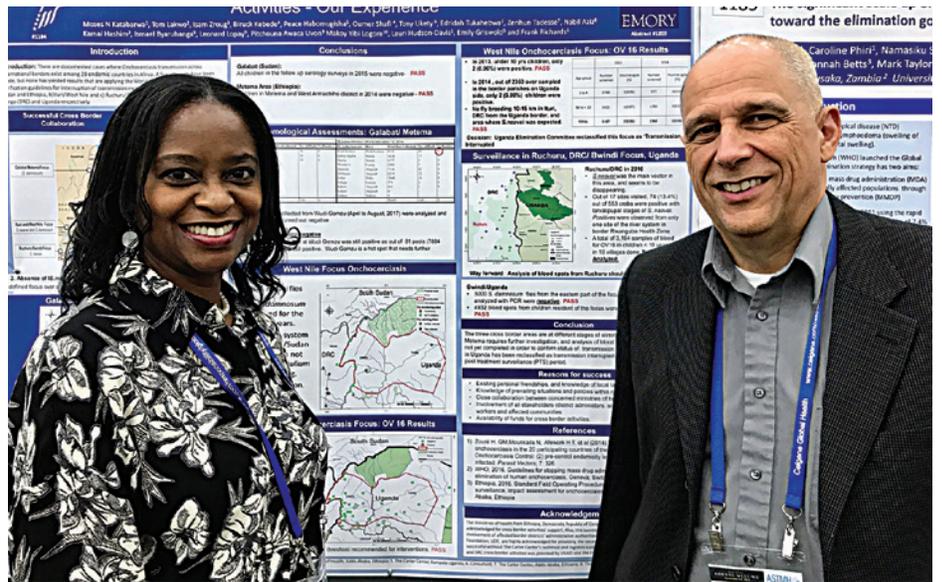
Carter Center Experts Present on River Blindness, Trachoma

Carter Center staff members and associates delivered several presentations at the annual meeting of the American Society of Tropical Medicine and Hygiene Nov. 5–9, 2017, in Baltimore.

Lindsay Rakers, associate director of the River Blindness Elimination Program, gave an oral presentation on a study on *Loa loa* infections in Nigeria. Emily Griswold, associate director, presented on treatment coverage surveys in a unique twice-per-year ivermectin program in Nigeria. Posters were presented by epidemiologist Dr. Gregory Noland on the impact of long-lasting insecticidal net distribution in Nigeria and by Lauri Hudson-Davis, senior program associate, on coordinated cross-border onchocerciasis elimination activities in Uganda, Sudan, the Democratic Republic of the Congo, and Ethiopia.

Dr. Scott Nash, epidemiologist in the Trachoma Control Program, presented on longitudinal trends in trachoma over eight years in a hyperendemic setting under the SAFE strategy, specifically in West Gojjam zone in Amhara, Ethiopia. Forest Altherr, a former graduate assistant with the program, presented on spatial analysis investigating the effects of water, sanitation, and hygiene (WASH) on trachomatous inflammation-follicular clustering in Amhara. Angelia Sanders, associate director, presented two posters: one on WASH baseline surveys in Uganda and one on data from impact surveys in six localities in Sudan. She also co-presented a poster on joint WASH and neglected tropical disease monitoring.

Tigist Astale, Eshetu Sata, Randy Slaven, Andrew Nute, and Alex Jordan presented posters that highlighted aspects of the Carter Center’s



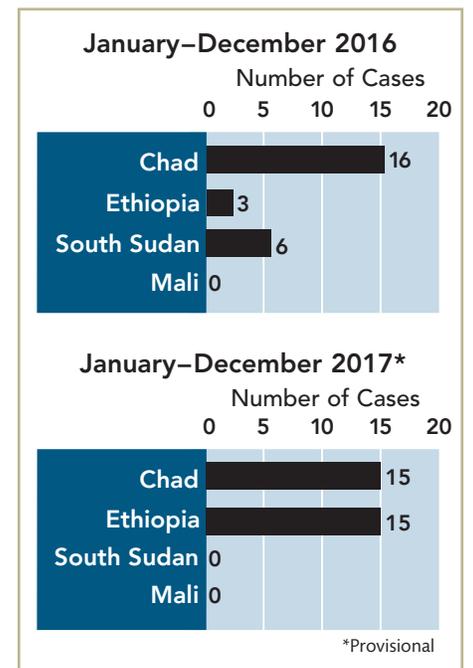
Lauri Hudson-Davis, senior program associate, and Dr. Dean Sienko, vice president for health programs, attend an American Society of Tropical Medicine and Hygiene meeting in November.

work in Amhara. Astale presented on self-reported side effects following mass administration of azithromycin. Sata presented data from the school trachoma health program baseline survey of facial cleanliness and latrine availability in primary schools. Slaven presented a cost analysis of conducting population-based prevalence surveys for the validation of elimination of trachoma as a public health problem. Nute presented prevalence factors of intestinal parasite co-infection among a population-based sample of school-age children from 2011 to 2015. Jordan presented on a village-level medication logbook audit following mass drug administration in 2016.

Attendees lined up to view the three-part virtual reality “Out of Sight” series on lymphatic filariasis, river blindness, and sleeping sickness, presented by the Huffington Post’s “Project Zero” initiative. Two of these presentations were filmed in Carter Center-assisted areas in

Nigeria and featured narration by Dr. Frank Richards, director of the River Blindness Elimination Program. 

Guinea Worm Disease Update



Inaugural REACH Awards Recognize Disease Warriors

On Nov. 15, 2017, His Highness Sheikh Mohamed bin Zayed Al Nahyan presented the inaugural Recognizing Excellence Around Champions of Health (REACH) awards to individuals who have made outstanding contributions toward eradicating infectious diseases.

Honoring the relationship between the U.A.E. and The Carter Center, awards were presented to several Guinea worm warriors: former U.S. President Jimmy Carter, whose son Chip accepted the award; Dr. Nabil Aziz Awad Alla, director, Sudan

Guinea worm program; Dr. Adamu Keana Sallau, director, integrated health programs, Imo and Abia states, Nigeria; and two representatives of the South Sudan Ministry of Health: Regina Lotubai Lomare Lochilangole and Daniel Madit Kuol Madut.

The awards were given during a global health forum in Abu Dhabi co-sponsored by the U.A.E. Crown Prince Court, The Carter Center, and the Bill and Melinda Gates Foundation. Dr. Ernesto Ruiz-Tiben, director of the Carter Center's Guinea Worm Eradication Program, was interviewed

by internationally known epidemiologist and author Dr. Larry Brilliant. Dr. Ruiz-Tiben was also recognized with a lifetime achievement award by the Crown Prince Court.

At the event, the Crown Prince and Microsoft founder Bill Gates launched two

initiatives: an Abu Dhabi-based research institute to promote disease-elimination science and a Reaching the Last Mile Fund, which aims to eliminate river blindness and lymphatic filariasis in Africa.

Among those attending the ceremony were President Idriss Deby of Chad; President Ibrahim Boubacar Keita of Mali; World Bank President Jim Yong Kim; Dr. Tedros Adhanom Ghebreyesus, director-general of the World Health Organization; and, representing Lions Clubs International Foundation, Most Hon. World Laureate Dr. Tebebe Berhan, Chairperson Bob Corlew, past International President Jim Ervin, and Augusto Di Pietro. Representing The Carter Center were Dr. Dean Sienko, vice president of health programs, and Dr. Frank Richards, director of the river blindness, lymphatic filariasis, and schistosomiasis programs.

Sheikh Mohamed has continued the support of Guinea worm eradication first begun by his father, Sheikh Zayed bin Sultan Al Nahyan, founder of the United Arab Emirates. **E**



Chip Carter (right) accepts the REACH award on behalf of his father, former U.S. President Jimmy Carter. The award was presented by His Highness Sheikh Mohamed bin Zayed Al Nahyan (left) and Bill Gates (center).

In Brief

New Post for Nigeria Director

Ifeoma Anagbogu, a longtime champion for neglected tropical diseases, recently was appointed the permanent secretary of the Federal Ministry of Women Affairs in Nigeria. Anagbogu will leave her post as the director of the NTD program in Nigeria.

Among many accolades, she was a finalist for the 2017 leadership award from Uniting to Combat NTDs and received a 2011 award from President and Mrs. Carter in recognition of her Guinea worm work.

100&Change Winner Announced

The Carter Center congratulates Sesame Workshop and the International Rescue Committee (IRC), winner of the John D. and Catherine T. MacArthur Foundation's 100&Change grant competition. As reported previously, the Center was one of eight semifinalists for this \$100 million grant; the Center's proposal was to eliminate river blindness in Nigeria. The Carter Center and its partners will continue its elimination work in nine Nigerian states and wishes Sesame Workshop and the IRC and the other 100&Change competitors great success.

Hispaniola Project Recognized

The Pan American Health Organization presented its 2017 Malaria Champions in the Americas award to the ministries of health of Haiti and the Dominican Republic for their binational malaria elimination efforts. The Ouanaminthe-Dajabon project was launched by The Carter Center in 2008 to promote binational cooperation to eliminate malaria and lymphatic filariasis from Hispaniola, the countries' shared island. Congratulations to both countries and to Dr. Phuc Nguyen-Dinh, Carter Center consultant. **E**

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This issue is made possible in part thanks to the Michael G. DeGroote Health Program Publications Fund.

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Two Nigerian States Eliminate LF as Public Health Problem

Results of recent surveys confirm that lymphatic filariasis (LF) transmission has been eliminated as a public health problem in Plateau and Nasarawa states (population 6.9 million people), Nigeria. LF, also known as elephantiasis, is a debilitating and disfiguring mosquito-transmitted parasitic disease. Adult filarial worms reside in the lymphatic vessels causing blockage and dysfunction that can lead to severe swelling of the legs (lymphedema) and male genitalia (hydrocele).

With over 120 million people at risk nationwide, Nigeria is the most endemic country in Africa and second most endemic in the world, behind only India. The Federal and State Ministries of Health, with support from The Carter Center, launched the LF elimination program in Plateau and Nasarawa in central Nigeria in the

late 1990s as an extension of Carter Center-supported onchocerciasis elimination activities. The goal of the LF elimination program—the first of its kind in Nigeria—was to demonstrate that annual mass drug administration (MDA) of ivermectin and albendazole (provided by Merck and GSK, respectively), together with insecticide-treated bed nets, could interrupt transmission of LF. Following scale-up of MDA in 2003 to all 30 local government areas (LGAs) across Plateau and Nasarawa, mean LF antigen rates dropped from 23 percent at baseline to less than 2 percent in 2012—thereby meeting the criteria for stopping MDA.

Following the halt of MDA, World Health Organization (WHO) guidelines recommend that consecutive transmission assessment surveys (TAS-2 and TAS-3) be conducted

over a five-year post-treatment surveillance period to confirm that LF transmission has not resumed. A total of 14,240 primary school children were tested for the presence of LF antigen in TAS-3 surveys across all 30 LGAs of Plateau and Nasarawa in 2016 and 2017. None of the children tested positive for LF antigen, meaning that the WHO criteria for elimination of LF as a public health problem have been met.

The Carter Center's work to eliminate LF is made possible thanks to funding from the U.S. Agency for International Development and the ENVISION project led by RTI International.

The Carter Center is proud to partner with Nigeria to achieve this historic milestone and to eliminate the scourge of LF from future generations in Plateau and Nasarawa! **E**