

Adolescent Sexual and Reproductive Health: Lessons from the Global South

By Carol Gatura, Communications Officer



From left: Jacob Ochieng' of Centre for the Study of Adolescence; Fauzia Akhter Huda of the International Centre for Diarrhoeal Disease Research, Bangladesh; Joyce Mumah of African Population and Health Research Center and Eunice Muthengi of Population Council.

Unintended pregnancies, unsafe abortions, sexually transmitted infections: these are just some of the sexual and reproductive health (SRH) challenges facing adolescents in the global south. Without concerted and collaborative action matched by political will, young people will be unable to fully engage in the development of their nations.

This clarion call was heard loud and clear at the 2016 International Conference on Family

Planning, attended by close to 5,000 participants from around the world engaged in lifting the barriers to access to family planning.

In a side event, the African Population and Health Research Center, and partners Strengthening Evidence for Programming on Unintended Pregnancy (STEP UP) Research Programme Consortium, shared lessons and strategies for innovative approaches to adolescent sexual and reproductive health.

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Challenges adolescents face

"There are numerous policies and guidelines on adolescent health, yet the health indicators on their sexual and reproductive health are poor," said Dr. Joyce Mumah of APHRC.

A lack of comprehensive sexual education has had profound implications in Kenya's capital, Nairobi, where only 15% of schools are implementing the national school health policy. Of every 1,000 girls aged 15-19, 96 have ever had a child - with nearly all of them dropping out of school.

In close partnership with the Nairobi City County, APHRC is trying to more than double the number of schools implementing the national school health policy by developing a Plan of Action that aims to reduce the number of early and unintended pregnancy among primary and secondary school learners.

"We need to keep girls in school, and the best way to do that is by making sure they aren't having babies until they're ready," said Dr. Mumah. "Providing them with sexuality education is just as critical to their future as reading, writing and math, and APHRC is working with local government to provide the tools that schools, and teachers especially, need to impart these important lessons."

It is clear that early investments in girls will break the downward spiral into early pregnancy, early marriage and intergenerational poverty. "Evidence from research is what governments need to influence national policy and scale up cost-effective interventions for adolescent girls in the future," said Dr. Eunice Muthengi of Population Council.

Akinrinola Bankole, the director of international research at Guttmacher Institute, warned policymakers that failure to implement national policies on teaching sexual education in school will have repercussions - not only for the future livelihoods of young populations but for their tenure as elected leaders. "We must hold political leaders accountable! If they fail to address these issues, they should not be elected to office!" Bankole said.

Interventions that work

The session provided a window into some of the innovative approaches being used globally to reach adolescents with smart, targeted and effective messages about family planning. In Bangladesh, they have recognized the need to provide family planning information to married adolescent girls.

According to research by the International Centre for Diarrhoeal Disease Research, Bangladesh (icddr,b) in conjunction with STEP UP, over half of married adolescent girls in urban slums had an unintended pregnancy largely due to non- or improper use of family planning. "We designed an intervention where we reached these girls through peer clubs, marriage registrars and female health workers to relay family planning information," said Dr. Fauzia Akhter Huda, project coordinator at icddr,b.

Social media is also an innovative yet effective source of SRH information for youth.

"According to the 2014 Kenya Demographic and Health Survey, only 12% of health facilities in Kenya are providing youth-friendly services; that's why we're looking at social media as a tool to provide such information," said Jacob Ochieng' of the Centre for the Study of Adolescence.

Addressing evidence gaps

There is a lot of work on adolescent health but there is need for more evidence to guide policy. Bankole said the greatest barrier for adolescents was access to information. "If we can give them the right information, it can go a long way in helping them deal with their sexuality and reproductive health," he said.

Adolescents around the world, not just in the south, are in need of targeted policies and interventions to cater for their health and wellbeing. The hope is that commitments made at ICFP, and other policy forums, will be acted upon to ensure sustainable development.



Carol Gatura of APHRC explains the Center's work on family planning to an ICFP participant at the APHRC exhibit booth.

Preventing NCDs in Kenya by improving evidence use, coordination, and access

By Ruthpearl Ng'ang'a, Policy Engagement Manager

Key stakeholders of Kenya's Non-Communicable Diseases Knowledge Sharing Network (NCD-KSN) met on February 5, at the Panafric Hotel in Nairobi.

The workshop, organized in collaboration with the Ministry of Health's Division of Non-Communicable Diseases, provided updates on the status of ongoing NCD projects and programs including: an intervention on hypertension in Nairobi slums, a multi-country analysis of NCD prevention policies and the national STEPwise approach to surveillance (STEPS) survey. The WHO STEPwise approach is a simple, standardized method for collecting, analyzing and disseminating data in WHO member countries. Workshop participants discussed ways to improve collaboration so that all stakeholders working to prevent and control NCDs can be more effective and have greater impact.

Already, NCD stakeholders from around the continent and beyond are reaching out to the NCD-KSN to learn how to bring together multiple sectors for NCD action. The Kenyan NCD strategy has now become a model for several strategies in Africa, including Nigeria.

The NCD Knowledge Sharing Network was developed in response to the first ever Non-Communicable Diseases (NCD) Consultative Forum, organized by the Kenya Medical Research Institute (KEMRI) with the support of the Division of NCDs in the Ministry of Health, in 2012. The aim of the forum was to prioritize research and coordinate activities for effective prevention, control and management of NCDs in the country.

According to the WHO, NCDs account for more than one in four deaths of Kenyans aged 30-70 years, equivalent to almost 370,000 people per year. But more than being a major cause of mortality, having and not effectively treating NCDs can also reduce productivity, curtail economic growth and trap the poorest people in chronic poverty.

Some 18% of Kenyans die from an NCD. The main risk factors for NCDs are exposure to tobacco use, physical inactivity, unhealthy diet and harmful use of alcohol; the rising toll of NCDs can also be attributed to the effects of globalization on marketing and trade, rapid urbanization and population aging.




The NCD knowledge sharing portal (<http://www.ncdinfo-kenya.org>) is open to all NCD stakeholders in Kenya.

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NCDs contribute to over 50% of inpatient admissions and 40% of hospital deaths, which also strains the stretched healthcare budget in Kenya, particularly in public facilities.

Since the Network's official launch in August 2013, the secretariat - comprised of academia, government, research institutions, and non-governmental/civil society institutions - has developed a strategic plan and specific activities to harness existing information on NCD in Kenya. Among these was the activation of the web-portal for the NCD knowledge sharing in Kenya (<http://www.ncdinfo-kenya.org>) launched in February 2014. The network holds meetings annually to discuss the latest research findings and coordinate upcoming research and policymaking efforts.

This year's meeting was attended by some 60 participants who practiced what they preach by standing and even moving around during the day-long event. Dr. Sam Oti and Dr. Steven van de Vijver, both until recently with APHRC, provided results from the SCALE UP program: the sustainable model for cardiovascular health by adjusting lifestyle and treatment with economic perspectives in settings of urban poverty. The intervention ensured that most slum residents aged 35 years and older were screened and, if required, placed on treatment for hypertension at a local clinic in a reasonably cost-effective manner.

However, most of those who received treatment failed to maintain a regular routine of clinic visits, reducing adherence to the treatment regimen and ultimately failing to get their blood pressure under control. The cost of medication (even though highly subsidized), lack of time and forgetfulness were cited as main reasons given by those who dropped out of the clinic. Addressing these identified challenges, according to the researchers, should be a priority for future interventions in slum settings in Kenya in tandem with a renewed focus on prevention efforts such as controlling consumption of salt and unhealthy oils while encouraging physical exercise.

Dr. Pamela Juma and Dr. Shukri Mohamed from APHRC shared preliminary findings from an ongoing study focusing on Analysis of Non-Communicable Disease Prevention Policies in Africa (ANNPA).

This study documents the extent of multisectoral action in NCD prevention policy development in five countries (Kenya, South Africa, Cameroon, Nigeria and Malawi), with a focus on World Health Organization (WHO) best buys: evidence-based, cost-effective interventions for NCD prevention.

The preliminary findings from the Kenyan case-study revealed that policies targeting NCD risk factors exist but fail to adequately address WHO best buys. Factors enabling multisectoral engagement in developing NCD prevention policies included resource mobilization, availability of champions and civil society advocacy, while the hindering factors included sectors' lack of awareness of their potential contribution, absence of clear and supporting coordination structures and inadequate resources including funding for implementation.

Beyond the work presented by APHRC were a host of other initiatives, including the Astra-Zeneca Healthy Heart Africa, which found that there is a challenge with prognosis as doctors have trouble determining the cut-off point (when a patient can be declared hypertensive or diabetic). This can also have an impact on the choice of first- and second-line medication and may contribute to the late diagnosis and treatment of NCDs.

The head of the Ministry of Health's NCD division, Dr. Joseph Kibachio, provided an update on the much-awaited WHO STEPS survey, which estimates the prevalence and determinants of NCDs and what actions need to be taken. The survey examines four risk factors: alcohol and tobacco use, physical activity, blood pressure and diabetes. Dr. Kibachio said that the STEPS data analyzed so far "brought out things we already know but with the documented evidence to back up action". He expressed interest in partnering with the network's stakeholders to launch the STEPS survey and identify subsequent policy action in the coming months.

Participants concluded that Kenya no longer has a paucity of information describing the extent of the NCD problem. In coming months, the network shall be moving to the next part of the NCD strategy and begin to translate the available data into NCD prevention policies.

Editor's note: If you have any new data (publications, reports, projects or briefing papers) kindly email them to info@ncdinfo-kenya.org.



The main risk factors for NCDs are exposure to tobacco use, physical inactivity, unhealthy diet and harmful use of alcohol.



Delivering on a data revolution in sub-Saharan Africa

By Danielle Doughman, Policy Outreach Manager



A revolution starts with a small, beautiful idea that ignites the imagination and inspires action to a bold, new future. The vision: strong national statistics and data systems for decision-making at all levels of government for better, deeper, faster development.

The first step is improving what we call the building blocks of data as a bare minimum: records of birth and death; growth and poverty; taxes and trade; sickness, schooling, and safety; and land and the environment. To be valuable to policymakers, citizens and donors, and enable the cycle of accountability, these building blocks must be accurate, timely, disaggregated, relevant and open.

When the United Nations High Level Panel on Post-2015 Development Agenda called for a “data revolution” in its 2013 report, there were whoops of joy heard around the world. Finally, data nerds everywhere felt heard. Something they had been grappling with for years was getting some big attention, and with it, renewed donor interest.

Since the recent data renaissance, there have been scores of meetings, conferences, panels aimed at trying to get at what *this thing* - the Data Revolution - is, especially in Africa. The advantage of so many meetings has been the regular opportunity to meet with thought leaders in conference rooms from Libreville to Abidjan to Addis Ababa to Johannesburg. But most of these meetings were at the global or regional level and have yielded little concrete action at the country level.

In February, APHRC hosted a small gathering in Nairobi. So, what’s new about that, right? Everyone thinks their meeting will be *the one* to catalyze action.

But maybe this meeting was just a little bit different. APHRC convened a dozen smart people who care about data and its importance for Africa’s development and deeply understand its political economy to talk about “what next” – and, most importantly, to make sure we were all using the same language when we talked.

“As Africans, can we drive and decide our priorities? How do we create and generate traction from within? How can we identify issues Africa is going to be facing in the coming decades?” asked Dr. Alex Ezeh, executive director of APHRC.

With the leadership of directors general of National Statistical Offices including Zachary Mwangi of Kenya and Pali Lehohla of South Africa, along with other data revolution thought-leaders, the group strategized about how governments can lead and achieve the data revolution with support from non-governmental entities. APHRC believes, like many, that lasting change in country systems won’t be driven by external forces - it has to be generated and sustained by governments. This idea forms the basis of the 2015 Africa Data Consensus, too; countries must own the prioritization, financing and leadership of this revolution.

One aspect of the meeting was vetting the idea of a Country Data Compact - a formal, country-specific, multi-year agreement - as an instrument for governments to accelerate progress on core national statistics. CDCs were the brain child of the (now former) Data for African Development working group, spearheaded by APHRC and Center for Global Development.

In the lead-up to the meeting, some asked about the added value of a compact. How are they different from what countries have already been doing to improve their national statistical systems through SHaSA (Strategy for the Harmonization of Statistics in Africa) or the roadmap outlined in the Africa Data Consensus?

Retreat participants believe that CDCs are the natural next step to actualize the roadmap in a country, tailored to their context. A CDC would outline roles and responsibilities for government and its partners, including co-funding. It offers a way to grow beyond existing efforts such as the national strategies for the development of statistics: not *instead of*, but as a complement to and a way of addressing challenges encountered by such existing efforts. A compact would foster engagement from both producers’ and users’ perspectives across data communities, and, it is hoped, include modalities of moving beyond *statistics* to better utilize *data*. There is also the potential for a country to create or update frameworks that could have value across multiple countries.

Over the course of the year, APHRC and its fellow “revolutionaries” - Development Initiatives, Ushahidi, PASGR, and others from national statistical offices - will be detailing what such a compact could mean for a country. As a guiding principle, we believe that delivering on a data revolution in Africa means forging a new relationship of accountability and cooperation among governments, their partners and the producers and users of data. Equally important to this work, APHRC and others see a critical need for African voices to guide the data revolution across sub-Saharan Africa and to inform global processes. APHRC looks forward to driving the discourse alongside other thought leaders.

Can urban fertility trends predict how African countries may fare in achieving a demographic dividend?

By Zacharie Dimbuene, PhD, Demographer-Statistician

Demographers and development professionals sometimes find themselves on opposite sides of the debate about the move across Africa towards urbanization. On one hand, there are more opportunities for economic advancement in cities; on the other, the challenges of urban life can leave many consigned to poverty and poor health outcomes due to overcrowding, poor sanitation and destitution. What both can agree on is that women in urban environments are having fewer children than their rural counterparts - and this relationship could have implications for population wellbeing.

There are many factors that contribute to the decline in fertility; women have greater opportunities for education and employment in cities, and better access to family planning. They also tend to get married later than their rural counterparts. There are other differences, which means that any explanation of urban-rural fertility advantage should integrate these differences. The easiest way to account for the urban-rural demographic and socioeconomic differences is to answer the "what if" questions in observational data.

The question is, therefore, "given that the average number of children born to a woman in an urban setting is known, would there be a difference if that same woman lived in a rural setting? Likewise, given that the average number of children from women living in rural settings is known, what should it be if they lived in urban settings?" Using 38 Demographic Health Surveys in Eastern Africa, I showed that urban women have significantly fewer children than their rural counterparts.

So if people are migrating from rural to urban areas at an unprecedented rate, and cities are struggling to accommodate both the new arrivals and the resident populations, what does this mean for countries seeking to achieve a demographic dividend: the economic boom that accompanies a demographic shift when the size of the working-age population exceeds that of their dependents?

For one, it means that countries must better understand why women in cities are having fewer children - and seek to apply those lessons to their rural populations as well.

Making family planning accessible, affordable and available would go a long way to reducing fertility. Equally, increasing the opportunities for women and girls to be educated - irrespective of where they live - will provide them with more choices, and give them greater exposure to economic opportunities.

But, as Bloom and Canning wrote, all of these commitments pale in comparison to the need for a conducive policy environment to take advantage of the demographic opportunity. Good governance, solid macroeconomic management including job creation for youth and other working groups, a carefully designed trade policy, efficient infrastructure, well-functioning financial markets, and effective investments in health, education, and training are key to achieving the demographic dividend.

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Why do researchers need leadership training?

By Estelle Sidze, PhD, Associate Research Scientist

I am a social scientist, trained as a demographer, who has developed a particular interest in reproductive health in sub-Saharan Africa. I crunch numbers, study population dynamics and explore trends in fertility, marriage and mortality; one might say that I have never seen a spreadsheet I didn't like.

My training has included formal lectures and workshops on social change and family/household economics, so that I can have the skills and knowledge to study how people behave and how they make choices about their own reproductive health and wellbeing.

But what my training has not included, despite 22 years of schooling that culminated in my doctoral degree in 2011 from the University of Montreal, is skill-building in leadership and management: both critical to any researcher seeking to do more than just publish.

In the past, research scientists have been allowed to hide behind their books and microscopes, peering over their spectacles and shunning the interpersonal niceties required of most professionals as they advance through their careers. Not anymore.



Now, research leaders must interrogate not only their research questions and methodologies but also how their research can influence policy discussions at all levels. It's added value, no question. But how do we learn how to do it?

I have done a lot of 'learning by doing' during my tenure at the African Population and Health Research Center (APHRC), where we work every day to champion evidence-based development across the continent. I have been a project manager on several projects on provision, access and use of family planning, and maternal health services and information. I have also mentored research assistants and other people in my department.

But it wasn't until I was invited for a leadership fellowship at the Guttmacher Institute that I really understood what being a research leader means, and how to develop and nurture those skills in myself.

The leadership fellowship program at the Guttmacher Institute is run in conjunction with the Bixby International Fellowship Program, and brings scholars or advocates from the developing world to the Institute for up to two months to collaborate with Guttmacher staff on new or ongoing international activities. The Bixby fellowship was an opportunity given to me to bring to Guttmacher knowledge and expertise that complements the Institute's work on sexuality education. I also had the opportunity to engage Guttmacher staff on APHRC's current investigations on the impact and cost-effectiveness of the free maternal healthcare program in Kenya. The icing on the cake was to add my voice and support in a Guttmacher-led campaign to raise funds to collect and analyze data, to deepen my understanding of the status of sexuality education policies and curricula in developing countries.

I was also given the tremendous opportunity to attend the annual meeting of the Oral Contraceptives/Over-the-Counter

coalition in Washington, DC and witness policy evidence and communication in action out of the African context!

Since returning to APHRC in Nairobi, I have had further opportunities to develop my leadership skills thanks to a decision by the Center to provide one-on-one sessions with a personal leadership training coach. This visionary endeavor is helping us nurture our relationships with colleagues in order to collaboratively produce the strongest research we can to help effect change in Africa. The session helped me to gain perspective into how I see myself as a leader, how colleagues and other collaborators view me as a leader and to lay down strategies for effective leadership.

These new skills are truly helping me with my work at APHRC. I can now manage projects more efficiently and model the way forward on issues related to family planning and maternal health, which I think will serve not only my goals but also the Center's own vision: that the people of Africa enjoy the highest possible quality of life through policies and practices informed by robust scientific evidence.

As a social scientist with a passion for empirical evidence, I am rather amazed at how enthusiastically I embraced the 'soft skills' of leadership, and how valuable these new skills will support my efforts to effect real change with my work in the field of reproductive health and population demographics. It's exactly this blend of leadership and evidence that we need to change the conversations about reproductive health in sub-Saharan Africa – and it is right, and good, that it is African scientists who are working to change those conversations.

My responsibility, now, is to share those skills with my colleagues at APHRC, and help to nurture them to join me as a research leader for Africa. Only by sharing these skills can we mold and shape the next generation of research leaders, and create space at research institutions for that kind of mentorship. Not a bad goal for someone who used to hide behind her spreadsheets.

Population's part in mitigating climate change: an African response

By Alex Ezeh, PhD, Executive Director

APHRC Executive Director Dr. Alex Ezeh participated in a roundtable discussion organized by the Bulletin of the Atomic Scientists debating the link between carbon dioxide emissions and population.

In a series of articles and interactions with fellow researchers, one from China and the other from the United States, Dr. Ezeh sought to contextualize the links between environmental impact and population growth and debunk the myth that the large family sizes in Africa were somehow more to blame for climate change than the heavier carbon footprints of other industrialized nations.

The link to the roundtable discussion may be found here: <http://thebulletin.org/debating-link-between-emissions-and-population>. We have extracted Dr. Ezeh's two articles for inclusion in this newsletter.

There are those who perceive any effort to limit population growth as "population control." This is a term that chillingly evokes coercive state intervention to control individual reproductive behavior. Population control programs have rarely been implemented without exacting unacceptable ethical costs.

But there's a big difference between coercive state-led population control programs and efforts to slow rapid population growth. Population control programs target the actions of individuals. Efforts to slow the population growth rate, meanwhile, work within existing societal contexts and seek to produce voluntary change. Population growth rates can be influenced by policies that - unlike the one-child policy - respect people's right to make individual reproductive choices. (The same can't be said of a population's current size, which can only be drastically altered through unthinkable steps such as genocide and forced expulsion).

Population size and composition are among the key drivers of climate change. Whether there are 7 billion or 14 billion people on Earth matters on a fundamental level for the climate.

But the relationship between population and planetary health is not straightforward. A child born in, say, North America will have a heavier carbon footprint than will her age-mate born in sub-Saharan Africa.

Regions with the heaviest carbon footprints are experiencing slower population growth than other regions. Many countries - including Japan and Russia, and most nations in Eastern Europe - are experiencing negative population growth. But this is not the case in sub-Saharan Africa. Between 1950 and 2000, the region's population grew from fewer than 180 million to more than 642 million.

Just since 2000, the region's population has increased by half, to nearly 1 billion. By 2050, the population of sub-Saharan Africa is projected to more than double, to 2.1 billion - and 50 years after that, the region will be home to an estimated 4 billion people. Under that scenario, two out of every five human beings in 2100 will be sub-Saharan Africans.

Sub-Saharan Africa's carbon footprint is light. But the region's rapidly growing population has an environmental impact that is already very evident. Ecosystems such as tropical rain forests are degrading rapidly. Inefficient agricultural practices are creating undesirable land use changes. Biodiversity is diminishing. All these effects can be expected to intensify if Africa's population grows as projected.

African policymakers do care about the region's rapid rate of population growth - but climate change is by no means the top reason why.

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In Africa, increased demand for basic services - without increased resources to pay for them - can stretch infrastructures beyond capacity.

This makes each successive government in the region appear less effective than the regime that preceded it. Education is a good example of increasing demand for public services. UNESCO estimates that sub-Saharan Africa, to achieve universal primary and lower secondary school coverage by 2030, will require an additional 2.1 million primary school teachers and 2.5 million additional lower secondary school teachers (it currently has 3.1 and 1.0 million teachers in primary and lower secondary schools, respectively). At the same time, demand for jobs, housing, and other necessities will also increase. Clearly, political leaders in sub-Saharan Africa face enormous challenges due to rapid population growth.

Political leaders are also concerned about population growth because they fear insecurity and instability. Extremists can find adherents more easily in a larger pool - especially in a large pool of young people whose poor education, poor employment prospects, and lack of options can leave them disenchanting.

Leaders also take an interest in population because of the potential for a so-called "demographic dividend" - that is, an improvement in a nation's economic prospects when its ratio of working-age to non-working age people increases.

So it's no surprise that when African policymakers consider population growth, climate change is not central in their thinking. But what *should* be the key concern regarding the 4 billion Africans who might exist in 2100?

The issue isn't whether Africa, a continent of more than 3 billion hectares, has enough space for so many people. Even an Africa with 4 billion inhabitants would have far fewer people per unit of habitable land than India has today. Really, the key question is this: What type of people will these 4 billion Africans be?

Will they be poor, sick, uneducated Africans trampling over each other to escape? Or will they be healthy, educated, productive Africans delighted to live on the continent of their birth and contributing to regional (and global) progress and development? Most of all, how can sub-Saharan Africa transform its demographic future into something manageable, development-oriented, and economically viable - while fully respecting individual reproductive choices?

African nations can change their demographic and development trajectories for the better if they vigorously pursue three key policy actions. The first is to provide universal access to family planning services, which have been shown to significantly reduce the number of children born even in poor, uneducated, and rural populations. An increase of just 15 percentage points in contraceptive prevalence is associated with a one-child reduction in the number of children born to the average woman.

In sub-Saharan Africa, increasing contraceptive prevalence by 45 percentage points could reduce the total fertility rate from 4.7 to 1.7, which would bring the region's population growth rate to below replacement levels.

The second key policy initiative involves efforts to delay marriage and childbearing. All else being equal, a population in which women begin having children at age 15 will have 25 percent more people after 60 years than a population in which women bear their first child at age 20.

The longer a girl's marriage is delayed, the more opportunity she has for personal development and the better it is for the entire country.

A third important step is to expand girls' access to education beyond the primary-school level.

Women, if they receive additional education as girls, have fewer children; this has been demonstrated consistently. Improved education also provides women better opportunities for earning an income - precisely what developing countries need in order to advance economic development. Implementing these three policy initiatives would lead to more sustainable, more durable, and (most importantly) quicker reductions in the population growth rate than any coercive government action would achieve.

The prospect of 4 billion Africans by 2100 can be cause for concern - or it could inspire commitments to invest in educational opportunities for girls, greater access to family planning, and delayed marriage. These steps would be transformative for the continent. They would generate development and promote economic growth in addition to reducing the demographic burden that contributes to climate change. But while African efforts to slow population growth will contribute to planetary health, one mustn't forget that the greatest culprits in the race to destroy the planet are the countries with the heaviest carbon footprints. Global initiatives and investment are required to support African countries as they work to achieve a demographic dividend - but these must be matched by appropriate, complementary efforts to mitigate the environmental damage wrought by countries expecting zero or even negative population growth.



Population size and composition are among the key drivers of climate change. Whether there are 7 billion or 14 billion people on Earth matters on a fundamental level for the climate.



Peering into the black box: how network analysis can help unpack the biggest problems in development

By Lauren Gelfand, Director of Policy Engagement and Communications



Dr. Massoud Moussavi is the founder and managing director of Causal Links, a company dedicated to informing and improving decision-making in social development fields.

Dr. Moussad Moussavi spent April 18-19 at APHRC with a diverse team of senior researchers to explore where we could apply network analysis to our strategy to approach the demographic dividend: the potential economic boom that can be derived from a reduction in fertility rates if it is matched by catalytic investments in health, education, governance and infrastructure.

Network analysis produces a logical model that looks to understand how different input variables or factors are related to one another, and the extent to which those relationships may influence an outcome. It filters those relationships through a contextual lens and aims to produce a strategic roadmap that helps think through problems while identifying the critical constraints and problems before prescribing solutions.

In addition to giving a brown-bag presentation to all staff entitled 'Analytical Models and Tools for Policymakers' Diagnostics, Evaluation and Policy Dialogue,' Dr. Moussavi sat down with the Policy Engagement and Communications team to share insights on a-ha moments, community applications of network analysis and why the only thing off-limits in this kind of modeling is personal relationships.

After earning a doctoral degree in artificial intelligence, Dr. Moussavi began in the late 1990s to explore other applications of probabilistic modelling. Shifting into the private sector, he applied this analytical approach to the oil and gas sector, in order to develop diagnostic tools to optimize oil production.

"We found that there was a lot of uncertainty within the industry, and there were so many risk factors that could prevent the optimal production of oil from any given site or well," he said. "So we began to develop these diagnostic frameworks, applying the techniques that I had used before to a different industry.

And it made me realize that there was no limit on how you can apply the logic model, the network analysis, in order to see how things are really related to each other.”

Shifting from the relatively straightforward physics-based causal relationships of oil and gas into the ‘fuzzier’ area of social science proved challenging - mostly because it was bringing systems thinking into an area that had never been forced to grapple with that kind of discipline before.

“In science, things are more straightforward; in a digital circuit, for example, the causal pathways that connect inputs to outputs are very clear,” he said. “In social science, it’s more difficult, because there are guiding principles but not necessarily strict laws - and there are a lot of other factors that need to be considered in order to achieve, or that prevent the achievement, of outcomes.”

Education research, for example, is one area where Dr. Moussavi has applied network analysis to the fuzzier social science. When it is a question of understanding quality of learning outcomes, there are a number of inputs: the quality and extent of facilities, the size of the class, funding, availability of textbooks, the quality of teaching, and so on.

“All of these have some impact, but individually they could be minimal,” he said. “So the network analysis allows you to bring in the other factors that are intermediate and perhaps harder to measure, where data is hard to collect - but that have an influence on the eventual outcome. So you have to unpack them, and peer inside that black box, to get your head around a complex situation and identifying the multiple causal chains for a single intervention.”

He added: “It’s all a process of making explicit that which is implicit, and allowing for the acknowledgement of the assumptions you make about a certain research question and allowing that to figure in your calculations.”

The other value of network analysis, according to Dr. Moussavi, is the visual narrative that accompanies the process of building the model. “What you’re doing is essentially translating a mental map into a visual depiction,” he said.

“It’s like developing the narrative of a good story, and then supporting each element of that story with evidence and measurable data.”

This visual depiction of the model, and the interactive way in which it can be developed, makes it a natural fit for community-level work, said Dr. Moussavi, at least.

“Learning about various factors and their inter-relationships relevant for stakeholders at all levels; the model helps present concepts and makes them easier to discuss, even when you are working with people who are not necessarily researchers,” he said. “The first phase of the modeling really does rely on common sense and prior knowledge, and is a good way to extract knowledge and then verify it.”

It’s only afterwards, when the model needs to be quantified, that research support is necessary; if assumptions are presented as part of the network, there is a need to fill those gaps and design ways to answer those gaps. And that’s where the researchers come in.

“Researchers, when doing analytic work to establish the relationships and other factors that affect outcomes are testing the assumptions that are predicated on one reading of the gaps in the relationships,” he

said. “That is why this analytical work is so critically matched to implementation because it identifies the multiple causal chains that can ensure the success - or failure - of an intervention.”

Identifying these multiple causal chains goes beyond research, however, which means that Dr. Moussavi - whether watching the evolution of the global crisis in migration or the circus of the current US political campaign - can’t resist applying a network analysis to every policy point the presidential candidates make... or fail to make.

“It’s so frustrating because it is a prescription for a solution without an analysis of where the problems really are,” he said. “Politics is really a good space to apply network analysis, to apply deeper and systematic thinking to the major problems of the day to find the causal relationships without rushing to prescriptive solutions.”

The only area off-limits for network analysis is, perhaps, personal relationships, said Dr. Moussavi. “Analyzing emotions is just too complex,” he said. “And plus, they’re tough to measure... and hard to collect data to support.”



The value of network analysis, is the visual narrative that accompanies the process of building the model.



Bridging education gender gaps in doctoral training in Africa: The CARTA story

By Daniel Adero, Communications Officer

With more women entering academic fields and pursuing doctoral degrees, Africa is narrowing the gender gap in a sector historically dominated by men.

However, there are still a number of reasons that the proportion of women in doctoral programs across the continent remains significantly lower than their male counterparts. And while this can be attributed to the prevailing orthodoxy about gender norms in Africa, there are also real pressures on women - namely the pressure to bear and raise children - that can inhibit the pursuit of advanced education.

In conceiving the Consortium for Advanced Research Training in Africa (CARTA), Professor Sharon Fonn and Dr. Alex Ezeh sought to remove this pressure as one of the barriers to access to the program for women, ensuring equitable representation in the vibrant African academy able to lead world-class multi-disciplinary research on population and public health issues.

"CARTA has a dynamic gender equity policy developed in recognition of the importance of gender for development, and reflecting that men and women experience barriers and opportunities differently," said Dr. Ezeh. "One of the provisions of this policy is that pregnant and/ or breastfeeding women are fully supported to benefit from opportunities in CARTA."

CARTA has built in a number of contingencies to ensure that both male and female candidates are able to both achieve entry and complete the fellowship program. Despite every CARTA fellow being admitted on merit, the age cut-off for women is higher, as women often reach the stage of being able to study further when they are older because of their child-rearing responsibilities.

These contingencies are working, and working well. Of the 140 fellows enrolled in the six cohorts of CARTA who are on track to achieve their doctoral degrees, 69 are women. Seven of the 24 fellows who have completed their fellowships are women, and three are currently engaged in postdoctoral trainings and re-entry grants.

"Fundamental to achieving improved health outcomes is addressing gender inequity and we are cognizant of that in relation to who does research as well as the way CARTA fellows approach their research," said Professor Fonn.



Olivia Osiro, a cohort 6 CARTA fellow, holding her baby, Abigail during JAS 1 held at Safari Park Hotel, Nairobi in March 2016. Abigail turned 1 year on day 1 of the JAS.

"Both who is on the program - female and male academics - as well as their approach to research - including a gendered perspective - is important to CARTA."

CARTA's commitment to gender equity is framed as a human rights issue, ensuring a proactive approach to identifying and addressing gender-related issues that may impede a fellow's progress through the program. For example, nursing mothers are invited to bring their infants to the required month-long residential Joint Advanced Seminars that are spread out over the four years of the program.

"Our best experience was when one fellow had a baby between JAS 1 and JAS 2 and her husband came with her to JAS 2 to do the childcare," said Professor Fonn. "Every four hours the dad would arrive and we would pass the baby to

her mom for her to feed and then back to her waiting dad who then took over until the next feed. It worked very well and both the mom and dad enjoyed the experience. He said it was a wonderful opportunity to parent that he otherwise would not have had were it not for CARTA. His wife now has her PhD, and as I recall, she graduated on time."

The recent JAS 1, in which 26 fellows spent four weeks in Nairobi learning critical thinking, technical skills, and other core research competencies, and introduced students to the essential concepts and seminal articles in their disciplines, also included two nursing mothers. One of the two, Mzee Tutu Said, came with her two-week old baby. Said is undertaking her studies at Ifakara Health Institute in Tanzania, and her research topic is "Molecular epidemiology of antibiotic resistant bacteria and their interaction mechanisms in human, livestock and environment".

Olivia Osiro, another nursing mother at JAS 1 from University of Nairobi, is undertaking research that is looking at the development of a glass ionomer cement using fluorspar from Kerio Valley and other raw materials in Kenya. She was both relieved and impressed that she could bring her daughter, Abigail, who celebrated her first birthday during the JAS.

"It may seem obvious that a nursing mother requires special consideration but it is rare that something is actually done about it," said Osiro. "What CARTA did for me in ensuring that my baby and I were taken care of during the JAS will never go stale in my mind. Thank you CARTA for providing me this opportunity to pursue my PhD, and going further to ensure that I am not distracted just because life happened."

Urban ARK Creates Elijah Agevi Visiting Fellowship Program

Blessing Mberu, PhD, Head of Urbanization and Wellbeing

In 2015, APHRC found a true partner in its work to understand the real health consequences of poor solid waste management (SWM). Elijah Agevi, whose organization, Research Triangle Africa, helped the Center get the Urban ARK project started.

Urban Africa: Risk Knowledge is a collaborative effort led by King's College that will, over a three-year period, seek to contribute to a reduction of disaster risk in urban sub-Saharan Africa by breaking the cycle of risk accumulation.

Our work at APHRC is to understand the role of poor solid waste management and associated secondary hazards such as soil, air and groundwater pollution, flooding and fires in health loss among urban residents in Nairobi, Mombasa and Dakar. To achieve our goals, we are conducting policy reviews, demographic and epidemiological studies of vulnerability, capacity and loss to health; and a biomedical study of the linkages between SWM, environmental contamination and health outcomes.

Elijah's role was to share his wealth of expertise and perspective borne from decades of work in understanding the causes and consequences of poor solid waste management and flooding in Nairobi and Mombasa, including the policy environment and the key stakeholders invested in helping to reform the system for reasons of public health and of security. A dynamic and engaging personality, he linked Urban ARK with key stakeholders both in and out of government. Elijah's sudden death in December 2015 left a massive hole in his family. His death has left a void at APHRC as well.

With his luminous smile and passion for a well-planned and managed urban environment, he had over the course of his professional career played a pivotal role in bridging research and policy in Kenya. A firm believer in the value of smart urbanization as a driver of socio-economic development, Elijah worked tirelessly to ensure that those who moved to urban areas in search of a better future did not find their dreams turned to rubble because of the stress of life in urban slums.

In a tribute, Irungu Houghton, associate director of the Society for International Development, wrote: "Elijah's strength was his ability to move between sectors, across spaces and bridge different communities. His life informs a vision of all Kenyans as planners, citizens actively dreaming, designing and building liveable towns for all. Elijah was also an activist. He had a passion for the right to shelter and beautiful and safe public spaces."

To honor Elijah's memory, the Urban ARK consortium members named a visiting fellowship for the program as the Elijah Agevi Visiting Fellowship. True to the ethos of the project - and Elijah's own passion - the fellowship facilitates exchange and learning to help build the research and policy skills of the selected researcher or policy actor.



The late Elijah Agevi, CEO at Research Triangle Africa.



His strength was his ability to move between sectors, across spaces and bridge different communities. His life informs a vision of all Kenyans as planners, citizens actively dreaming, designing and building liveable towns for all.



The fellows are provided with financial support to spend up to two months in an international exchange with one of the consortium partners, developing and producing a piece of work that they can be proud to put their name to such as a co-authored academic paper. Those interested in applying for the fellowship should visit Urban ARK website <http://www.urbanark.org>.

Publications: January to March 2016

2016 Peer reviewed articles

1. Michielsen, K., Meyer, S.D., Ivanova, O., Anderson, R., Decat, P., Herbiet, C., **Kabiru, C.W.**, Ketting, E., Lees, J., Moreau, C., Tolman, D.L., Vanwesenbeeck, I., Vega, B., Verhetsel, E., and Chandra-Mouli, C. (2016). Reorienting adolescent sexual and reproductive health research: reflections from an international conference. *Reproductive Health*. DOI 10.1186/s12978-016-0117-0
2. **Haregu, T., Oti, S., Ngomi, N., Wandabwa, C., Egondi, T., and Kyobutungi, C.** (2016). Interlinkage among cardio-metabolic disease markers in an urban poor setting in Nairobi, Kenya. *Global Health Action*. doi.org/10.3402/gha.v9.30626
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5. Austrian, K., Muthengi, E., **Mumah, J.**, Soler-Hampejsek, E., **Kabiru, C.W., Abuya, B.A.**, and Maluccio, J.A. (2016). The Adolescent Girls Initiative-Kenya (AGI-K): study protocol. *BMC Public Health*. DOI 10.1186/s12889-016-2888-1
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7. **Bakibinga, P.**, Matanda, D.J., Ayiko, R., Rujumba, J., Muiruri, C., **Amendah, D.**, and Atela, M. (2016). Pregnancy history and current use of contraception among women of reproductive age in Burundi, Kenya, Rwanda, Tanzania and Uganda: analysis of demographic and health survey data. *BMJ*. doi:10.1136/bmjopen-2015-009991
8. van de Vijver, S., **Oti, S.O.**, Gomez, G.B., Agyemang, C., **Egondi, T.**, Moll van Charante, E., Brewster, L.M., Hankins, C., Tanovic, Z., **Ezeh, A., Kyobutungi, C.**, Stronks, K. (2016). Impact evaluation of a community-based intervention for prevention of cardiovascular diseases in the slums of Nairobi: the SCALE-UP study. *Glob Health Action*. doi: 10.3402/gha.v9.30922. eCollection 2016.
9. **Haregu, T.N., Khayeka-Wandabwa, C., Ngomi, N., Oti, S., Egondi, T., Kyobutungi, C.** (2016). Analysis of Patterns of Physical Activity and Sedentary Behaviour in an Urban Slum Setting in Nairobi, Kenya. *J Phys Act Health*.
10. Reniers, G., **Wamukoya, M.**, et al. (2016). Data Resource Profile: Network for Analysing Longitudinal Population-based HIV/AIDS data on Africa (ALPHA Network). *Int J Epidemiol*. doi: 10.1093/ije/dyv343.

11. Oyeboode, O., **Oti, S.**, Chen, Y.F., Lilford, R.J. (2016). Salt intakes in sub-Saharan Africa: a systematic review and meta-regression. *Popul Health Metr.* doi: 10.1186/s12963-015-0068-7.
12. Michielsen, K., De Meyer, S., Ivanova, O., Anderson, R., Decat, P., Herbiet, C., **Kabiru, C.W.**, Ketting, E., Lees, J., Moreau, C., Tolman, D.L., Vanwesenbeeck, I., Vega, B., Verhetsel, E., Chandra-Mouli, V. (2016). Reorienting adolescent sexual and reproductive health research: reflections from an international conference. *Reprod Health.* DOI: 10.1186/s12978-016-0117-0
13. Ameh, S., Adeleye, O.A., **Kabiru, C.W.**, Agan, T., Duke, R., Mkpanam, N., Nwoha, D. (2016). Predictors of Poor Pregnancy Outcomes among Antenatal Care Attendees in Primary Health Care Facilities in Cross River State, Nigeria: A Multilevel Model. *Matern Child Health J.* [Epub ahead of print].

2016 Articles in Press

1. **Haregu, T.N., Khayeka-Wandabwa, C., Ngomi, N., Oti, S., Egondi, T., and Kyobutungi, C.** (2016). Analysis of Patterns of Physical Activity and Sedentary Behavior in an Urban Slum Setting in Nairobi, Kenya. *JPAH.* DOI: <http://dx.doi.org/10.1123/jpah.2015-0510>

2016 Briefing Papers (policy briefs & fact sheets)

1. **Kimani-Murage, E.W.,** Goudet, S., Samburu, B., **Wangui, C., Njoki, T., Njeri, M., Wekesah, F.M., Muriuki, P., Ngángá, R., Adero, D.,** and Griffiths, P. (2016). Measuring The Value of a Baby Friendly Community Intervention in Nairobi's Slums.

2016 Technical Reports

1. **Kimani-Murage, E.W.,** Goudet, S., Samburu, B., Wangui, C., Njoki, T., Njeri, M., Wekesah, F.M., Muriuki, P., Ngángá, R., Adero, D., and Griffiths, P. (2016). Social Return on Investment Assessment of a Baby Friendly Community Intervention in Urban Poor Settings, Nairobi, Kenya.
2. **Kimani-Murage, E.W.,** Goudet, S., Samburu, B., **Wangui, C., Njoki, T., Njeri, M., Wekesah, F.M., Muriuki, P., Ngángá, R., Adero, D.,** and Griffiths, P. (2016). Social Return on Investment Evaluation Report Maternal Infant and Young Child Nutrition Project.

Staff Updates

January to March 2016

New staff

1. Stella Chege - Development Officer
2. Patricia Kitsao-Wekulo - Post-Doctoral Research Scientist
3. Catherine Asego - Working Group Coordinator/Mobilizer
4. Joshua Amo-Adjei - Post-Doctoral Research Scientist
5. Kimanthi Mbindyo - Communications Officer

Staff departures

1. Oscar Machira
2. Samuel Oti
3. Sabina Wanene
4. Namuunda Mutombo

Highlights

In February 2016, 139 girls from Nairobi's Korogocho and Viwandani slums were awarded cash subsidies to aid their transition to secondary school. This was a great end to the first phase of the 'Improving Learning Outcomes and Transition to Secondary School' project, which helped girls improve academically and shield them from some of the risks inherent in living in a compromised environment.



Sarah Wayua, one of the top performing girls in Korogocho said "One major lesson I have learned from the project is to understand who we are, despite being born in a slum. The after-school sessions and mentorship raised my self-confidence and school aspirations."



Sarah Wayua's mother was also part of the project. Parents were offered counseling sessions on how to improve their relationships with their daughters. "I used to think the cane is the only form of discipline. But after the counseling sessions, I realized that I need to talk to my daughter to understand her better," she said.



75 girls from Korogocho slum each received a cash subsidy of Ksh. 12,000 shillings (USD 115) to aid their transition to secondary school.



"Life as a young girl in a slum is hard. There's a lot of idling around over weekends with boys." Halima Abdi, one of the project's beneficiaries said. "These days however, I find myself utilizing my time better through studying or helping my mother at home."



Mentoring and coaching for the 1,000 girls enrolled in the study was provided by two community-based partners: U-Tena in Viwandani and Miss Koch in Korogocho. These two groups were instrumental in supporting the girls and their families.

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