Provided are informative facts and figures within the case to help teams create a proposal. The data provided are derived from independent sources, may have been adapted for use in this case, and are clearly cited allowing teams to verify or contest them within their recommendations, if necessary. Teams are responsible for justifying the accuracy and validity of all data and calculations that are used in their presentations, as well as defending their assertions during judging.

Thank you to the following UAB students and staff members who contribute to writing the 2022 case: Katie Adams, Camryn Durham, Nadia Haq, Sean McMahon, Vani Mittal, and Kimberly Tsoukalas

Additionally, the writing team thanks Nelson Ole Reiyia and Margaret Sakian Koshal of the Nashulai Maasai Conservancy for their direction and insight in the development of this case.

Front page image source: Adams K, 2017
Introduction

Kenya’s Wildlife Act 2013 defines a wildlife conservancy as “land set aside by an individual owner, body corporate, group of owners or a community for purposes of wildlife conservation.” This law established formal mechanisms for communities to come together and cooperatively manage land and resources. The most common type of conservancy in Kenya is the community conservancy, which is established and democratically controlled by people living in a particular area. Across Kenya, conservancies are proving to be an effective tool in both wildlife conservation and poverty reduction (Kenya Wildlife Conservancies Association [KWCA], n.d.).

The Nashulai Maasai Conservancy (NMC), founded in 2016 in Narok County, is the first conservancy in Kenya to be founded and operated by Maasai people. Occupying 5,000 acres, NMC is a critical connection between the Maasai Mara National Reserve and the Naboisho and Isaaten Conservancies. The mission of NMC is threefold: conserve wildlife, preserve culture, and reduce poverty by combining traditional indigenous knowledge and modern-day methods. The land serves as a cultural commons for the Maasai community and as a tool for mitigating climate change, habitat depletion, external development, land commodification and poverty (NMC, n.d.a).

When the COVID-19 pandemic started in early 2020, social services and communal activities halted all around the world. To mitigate the spread of the novel coronavirus among Maasai communities, trading markets shut down and tourism, which fuels the local economy, abruptly ended. Several people found themselves without the means to maintain their livelihoods. Due to the pandemic, several older adults in Maasai communities lost much of their safety net, and civil society organizations like NMC stepped in to provide support where needed. The Maasai cultures and traditions have been passed down for generations; elders play a vital role in preserving Maasai cultural knowledge for posterity. Elders promote a sense of community, culture, and traditions. With so much of Kenya’s younger population moving to urban centers for economic opportunity, several older generations remain in remote communities, at times without the traditional support systems of younger family members to care for them. This often leaves older adults to manage chronic health issues such as respiratory diseases, vision problems, and even cancer on their own. With over 500 individuals aged 70 years and over living in NMC, or about a quarter of the population, these three health issues specifically have risen as top priorities for the Conservancy (N. Reiyia, personal communication, August 2, 2021). NMC leadership has asked for innovative proposals to address these health issues. You have until Saturday, January 29, to develop a proposal using the following report as well as supplemental research you find on your own. More details may be found in the “Team Assignment” section.

About Kenya

Kenya gained its independence from Great Britain in December of 1963, after centuries of exploitation and oppression. Today, Kenya is home to just over 53 million people, making it the 27th largest country in the world and the 7th largest in the African continent by population. Since the early 2000s, life expectancy has increased in Kenya, with female life expectancy currently at 71 years old and male life expectancy at 67 years. The median age is 20 years. As of 2021, 28.5%
of Kenya’s population is urban, with most people living in rural areas (Central Intelligence Agency, 2021).

Table 1: Key country data

| GDP                  | Purchasing power parity: $2226.94 billion  
|                      | Growth rate: 5.39%  
|                      | Per capita: $4,200  
| Primary sectors, by % of GDP | Services: 47.5%  
|                      | Agriculture: 34.5%  
|                      | Industry: 17.8%  
| Languages spoken     | English (official); Kiswahili (official); various indigenous languages such as: Kikuyu, Kamba, Dholuo, Cushitic, Maasai, Luhya, and Gusii  
| Religions            | Christian: 85.5%, Muslim: 10.9%, other: 1.6%, none: 1.6%  
| Ethnic groups        | Kikuyu 17.1%, Luhya 14.3%, Kalenjin 13.4%, Luo 10.7%, Kamba 9.8%, Somali 5.8%, Kisii 5.7%, Mijikenda 5.2%, Meru 4.2%, Maasai 2.5%, Turkana 2.1%, non-Kenyan 1%, other 8.2%  

Source: Central Intelligence Agency, 2021

The Maasai People

The Maasai people are one of many populations indigenous to eastern Africa. Traditionally nomadic, the Maasai have inhabited the Serengeti-Mara ecosystem for centuries; however, several Maasai communities are semi-nomadic or have transitioned into permanent agricultural settlements. Maasai culture defines communal roles through “age sets,” or cohorts of individuals initiated into adulthood together through a coming-of-age ceremony (Encyclopedia Britannica, n.d.). For more information about Maasai culture, and how it interfaces with the Kenyan legal system, see “The Legal Perspectives of the Maasai Culture, Customs, and Traditions” by G. Nasieku Tarayia.
Maasai Mara Reserve & Conservancies

Figure 2: Map of Kenya’s Maasai Mara National Reserve and Adjacent Conservancies

Under British colonial rule, land-use practices relocated families and divided communal lands. Fencing dissected the land where the Maasai had lived in harmony with wildlife for centuries, and wildlife began to disappear as migration corridors were closed off. Many animals were left unprotected and vulnerable to poachers (NMC, n.d.c). In response to the loss of wildlife and the restricted movements of the migratory animals in the area, the Maasai Mara National Reserve (MMNR) was established to halt the encroachment of human activity on wildlife ecosystems and establish a formal medium for tourism in the area. The Serengeti-Mara ecosystem, characterized by the monumental migrations of wildebeest and zebra known as one of the natural wonders of the world, stretches from northern Tanzania into southwestern Kenya. Formally established in 1948 as a Wildlife Sanctuary, MMNR lies directly across the border from Tanzania’s Serengeti National Park and protects about 25% of Kenya’s portion of the Serengeti-Mara ecosystem. The remaining 75% of the ecosystem is protected by a patchwork of legal agreements with local administrations and conservancies (Walpole et al, 2003). Unfortunately, the tension between human and animal populations did not end upon Kenya’s independence. Over the past 40 years the human population in Kenya has grown over four times; meanwhile, the wildlife population 40 years ago was four times what it is now (NMC, n.d.c). Conservancies have proven effective, though. Today, MMNR’s
lion population is twice what it was ten years ago and the economic activity from increased tourism now brings in about $4 million annually (KWCA, n.d.).

NMC is one of many conservancies supplementing the MMNR’s protection of the Serengeti-Mara ecosystem. While these conservancies’ primary objective is to maintain wildlife diversity and sustainably balance the environment and tourism, they often engage with initiatives to reduce poverty and improve living conditions for the human population. NMC itself sponsors women’s empowerment, cultural preservation, and economic development programs in addition to its environmental restoration projects (NMC, n.d.b).

Healthcare of Older Adults

Across Kenya, the elderly population is especially vulnerable to malnutrition, hunger, and famine due to food insecurity, overconsumption of foods with low nutrition values, low income, and a lack of means and resources for food production (Ministry of Labour, Social Security and Services, Republic of Kenya [MOL], 2014). As most people in Maasai communities must walk to get anywhere in the community, elderly persons face a specific challenge with orthopedic and health issues that make it difficult for them to efficiently and safely walk to places for supplies, services, and care (N. Reiyia, personal communication, August 2, 2021).

Common causes of death for the general population of Narok County in 2019 included: HIV/AIDS, diarrheal diseases, tuberculosis & lower respiratory infections, neonatal disorders, and stroke (Institute for Health Metrics and Evaluation [IHME], 2020). These causes shift when considering older adults only, as seen in the table below. Because available numbers are from 2019, they do not reflect the impact of the COVID-19 pandemic.

Table 2: Leading Causes of Death Among Older Adults in Narok County, Kenya

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Cardiovascular diseases</th>
<th>Respiratory infections &amp; tuberculosis</th>
<th>Neoplasms</th>
<th>Digestive diseases</th>
<th>Diabetes and kidney diseases</th>
<th>Enteric infections</th>
<th>HIV/AIDS and STIs</th>
</tr>
</thead>
<tbody>
<tr>
<td>60-64 years</td>
<td>(22.6%)</td>
<td>(15.52%)</td>
<td>(14.01%)</td>
<td>(11.33%)</td>
<td>(6.36%)</td>
<td>(5.98%)</td>
<td>(5.46%)</td>
</tr>
<tr>
<td>65-69 years</td>
<td>(25.73%)</td>
<td>(14.6%)</td>
<td>(13.65%)</td>
<td>(12.46%)</td>
<td>(6.16%)</td>
<td>(5.81%)</td>
<td>(5.81%)</td>
</tr>
<tr>
<td>70+ years</td>
<td>(30.29%)</td>
<td>(16.74%)</td>
<td>(10.03%)</td>
<td>(8.74%)</td>
<td>(6.9%)</td>
<td>Chronic respiratory diseases (6.6%)</td>
<td>Enteric infections (6.31%)</td>
</tr>
</tbody>
</table>

Source: Institute for Health Metrics and Evaluation, 2020

Currently, little national infrastructure exists to support the particular needs of older people – including a lack of public insurance for long-term care, doctors specializing in geriatric care, and
public residential care facilities. Cultural norms expect family members to fill the role of caregivers for older people with disabilities or chronic illnesses. This expectation is complicated by country-wide trends of younger adults moving to urban areas for work, while many older individuals stay in rural areas (Maina, 2017). Within NMC there is a rural health clinic, but services are limited due to intermittent access to electricity, social stigmas around certain medical treatments, and supply shortages. The nearest full-service hospital is two hours away by car (S. Moak, personal communication, December 22, 2021). Across Narok County, there are eight hospitals and only eleven ambulances (Narok County Government, n.d.). Kenya’s ageing population is projected to continue growing as life expectancies continue to increase, meaning that lasting interventions are needed to meet the challenges of providing adequate healthcare to older adults.

**Lung Health**

As we age, the risk of developing lung diseases such as chronic obstructive pulmonary disease (COPD) or pulmonary fibrosis increases. Physiologically, older adults’ lungs are more susceptible to infection, and decades of exposure to pollutants can manifest as chronic lung conditions without pathogenic activity (Bowdish, 2018). Both infectious and noncommunicable respiratory diseases accounted for about 23% of deaths among the elderly population of Narok County in 2019, with lower respiratory infections accounting for about 10% of deaths (IHME, 2020). Lower respiratory infection is a generalized term for infections related to the windpipe, airways, and lungs. Unlike upper respiratory infections, which are more acute and affect the sinuses, lower respiratory infections can cause chronic issues with breathing and lung function (Duda, 2020). Lower respiratory infections, often presenting as pneumonia, along with COPD, account for 47% of deaths caused by household air pollution (WHO, 2021c).

Several of the elderly community members in NMC live in small traditional homes which can trap smoke from cooking fires (N. Reiyia, personal communication, August 2, 2021). This significantly increases the risk of both acute and chronic respiratory infections. Any respiratory issues that exist within the community will only get worse with continued exposure to heavy smoke in poorly ventilated housing. Smoke-induced diseases are responsible for the death of about four million people every year, making it one of the most lethal environmental health risks worldwide. Many of these deaths are the direct result of indoor cooking and improper ventilation systems in a home’s structure. With the elderly population spending more and more time in their home, poor ventilation in their space can quickly become a life-threatening situation (Langbein, 2017; WHO, 2021c).

**Eye Health**

Another health issue affecting the elderly population in NMC is eye health, specifically cataracts and trachoma (N. Reiyia, personal communication, August 2, 2021). Similar to lungs, our eyes become more susceptible to impairment and disease with age due to both physiology and harmful exposures over time. A person’s eyes often show signs of aging before other parts of the body do; often the first sign of aging is the hardening of the lens, resulting in blurred vision (National Institutes of Health, 2017). Data suggests that “over 80% of blindness in Kenya is due to curable and preventable causes” (Ministry of Health, Republic of Kenya [MOH], 2020, p. 17).
Cataracts are an eye condition that affects the lens of the eye. Cataracts cause clouding of the lens which gradually gets worse. If left untreated, cataracts may result in permanent vision loss. Cataracts are most common in people who are over the age of 60, and more specifically in elderly women. Though most cataracts are caused by aging, other risk factors include eye injury, smoking, high blood pressure, and diabetes. Without proper eye care and testing, many people cannot take the appropriate steps to prevent the degeneration of their eyes (Mayo Clinic Staff, 2021). In 2019, it is estimated that about 800 cataract surgeries were performed per million people in Kenya. The WHO recommends a rate of 3,000 per million population (MOH, 2020).

Trachoma, also known as granular conjunctivitis, is a bacterial infection of the eye. This infection is caused by different types of the Chlamydia trachomatis bacteria and can be spread through contact with eyes or sinus secretions of infected people, handling of infected objects, or eye seeking insects like flies. Risk factors include age, crowded places, and poor sanitation. Like cataracts, women are more at risk for developing Trachoma than men. Pest control and sanitation are key in prevention of the spread of Trachoma through a community. If untreated, Trachoma can cause scarring of the inner eyelid, deformities of the eyelid, and blindness (WHO, 2021d). Narok County has been identified as one of twelve counties where blinding trachoma is a significant public health concern (MOH, 2020).

**Cancer**

Accounting for about 10% of the deaths in Narok County in 2019, cancer represents a third significant health concern for the people of NMC (IHME, 2021). Cancer is the abnormal growth of cells in any part of the body due to mutations in the cells’ DNA. Several environmental and behavioral risk factors play a role in one’s likelihood to develop cancer. The WHO estimates that up to half of cancers could be prevented by avoiding risk factors within one’s control, such as not using tobacco, eating a healthy diet, and vaccination against HPV, to name a few. Prevention of cancer, especially when integrated with the prevention of other related chronic diseases, offers a cost-effective long-term method of cancer control (WHO, 2021b; MOH, 2018).

Cancer treatments are costly and are not always feasible, especially in lower-middle income countries like Kenya. Research has shown that shifts in dietary and physical activity patterns have contributed to rising cancer rates across much of eastern Africa. In addition to these social changes, policies promoting cancer prevention, such as increased taxes and advertising restrictions on tobacco products, are not in place in Kenya (Asiki, 2020). While screening for cancer can help identify the disease in its early stages, screening alone does not treat the disease. Therefore, NMC leadership is interested in strategies to promote cancer prevention through interventions addressing environmental exposures, behavioral risk factors, nutrition, etc. (N. Reiyia, personal communication, August 2, 2021).
Existing Policies & Interventions

Following recent global trends, Kenya is experiencing a rise in average life expectancy. According to the World Health Organization (2020), the estimated population of elderly people in sub-Saharan Africa is projected to increase from 43 million in 2010 to 163 million in 2050, an increase of almost 280%. While the Constitution of Kenya does not establish a legal definition for older individuals, Article 57 ensures the rights of older persons:

(a) to fully participate in the affairs of society;
(b) to pursue their personal development;
(c) to live in dignity and respect and be free from abuse; and
(d) to receive reasonable care and assistance from their family and the State.

Even with a growing elderly population, there has not been any specific legislation beyond Article 57 which “comprehensively promotes and protects the rights of Older Persons” (MOL, 2014, p. 6). Additionally, the healthcare infrastructure in Kenya contains very few physicians who specialize in geriatric care. Instead, Kenyan culture dictates that elderly individuals are to be cared for by family members (Kimamo, 2018). While long-term residential care facilities are available, they are small in number and often run by non-profit or religious organizations (Aboderin, 2019).

Expanding Universal Health Coverage

There has been a recent push for the Kenyan government to provide more health insurance opportunities for its citizens (Alushula, 2021). In 2019, Kenya declared its intent to create a universal health coverage program operated through the National Hospital Insurance Fund (NHIF) by 2022 (Mbau et al., 2020). The NHIF has previously been criticized for limiting its coverage to approximately 42,000 citizens, however, a commission report completed by the Ministry of Labour and Social Protection (2019) laid out a plan to provide comprehensive coverage to all senior citizens over the age of 70, facilitated by the NHIF, which will provide healthcare for approximately 1.3 million people. The Kenyan government expects these programs to be implemented in the next few years, though it is unclear how the pandemic will impact these plans.

Kenyan Mental Health Policy 2030

Following several studies based in sub-Saharan Africa, the MOH dedicated a number of resources to increasing mental health care. As a part of the larger Universal Care 2030 plan, nicknamed “Kenya Vision,” the MOH detailed a policy to include mental health resources in the Health Information System (HIS), the national database utilized by the NHIF. Additionally, they propose rewriting the Mental Health Legislation to include additional funding and resources to reach the Kenyans who need care. Currently, there are less than 100 psychiatrists and only 12 neurologists in the nation, with the majority of them practicing in Nairobi (Meyer & Ndetei, 2016). According to the World Health Organization (2021a), over 20% of the elderly population suffer from some form of mental health disorder. Kenya Vision is dedicated to the promotion, prevention, care,
treatment, and rehabilitation of people with mental health disorders, a portion of which will focus on elderly care.

Existing Efforts

Religious Organizations

Braman Foundation of Charities, a religious institution based out of New York, US, operates an elderly care program focused on nutrition and resource gathering for rural elderly populations in Kenya. Based primarily in the Uriri District in Migori County, the program works to identify elderly persons living below the poverty line who have little or no family support. 80% of the individuals that Braman services report having no means of income or financial support and rely solely on the community and other organizations for food and resources. Braman reports the ages of the individuals to range from 80 to 102.

Ageing Concern Foundation (ACF) | Help Age Kenya

Originally founded in 2018, the Aging Concern Foundation is dedicated to providing resources to senior citizens over the age of 65 in the regions of Migori, Siaya, Kakamega, Narok, Meru, and Nairobi. They offer human services through recreational activities, medical care, and social support along with basic needs. Additionally, AFC advocates for income-generating programs that allow older individuals to maintain financial support, primarily based on agricultural opportunities. The additional income helps to provide adequate medical care to those who are otherwise unable to afford or obtain it, as well as reincorporate elderly people into society and bridge an intergenerational social gap.

Team Assignment

Addressing Older Adults’ Health: A Pilot Intervention

For several years now, NMC has initiated programs and interventions to improve the lives of people living within its bounds. Oftentimes these efforts are scaled up and implemented in neighboring conservancies and communities (NMC, n.d.b). Leadership from NMC is prioritizing the health of older people and wishes to continue this trend of piloting interventions and scaling up.

Task at hand

With the delivery of this case, your team received instructions on how to indicate your health issue preference. We strongly advise you do not move forward with developing your plan until the health issue selection has been confirmed by the Sparkman Center for Global Health or the Lister Hill Center for Health Policy.

Your team is tasked with serving as a sort of advisory committee for the Nashulai Maasai Conservancy in its goal of improving the health of older adults. As this committee, your mission
this week is to create a presentation outlining your suggested approach for increasing health care access for older adults with a focus on your target health issue. For each program, be sure to include a detailed plan and justification. Remember that these efforts should be based in public health, which is commonly defined as the “the science and art of preventing disease, prolonging life, and promoting health through the organized efforts and informed choices of society, organizations, public and private communities, and individuals” (Winslow, 1920, as cited in CDC, 2014, slide 5). Also keep in mind that while the above report provides context to the issue and examples of ideas already being implemented in similar conditions, NMC wants to see novel approaches and innovative solutions to approach care for the elderly in the Maasai Mara.

Parameters of the presentation include:
- Timeline: 3 year maximum
- Funding: $300,000
  - Teams are allowed to propose strategies for increasing funding, but these proposals must clearly define the funding mechanism and policy parameters.
- Presentation: 15 minutes, followed by 5 minutes for Q&A

On Saturday, January 29th your team will present to a panel of judges with experience and knowledge across the areas of the three health issues, community development, and global health implementation in similar communities. After viewing your presentation, judges should be able to answer the following questions:

1. What are the key components of your intervention and how will they positively impact the health of Maasai elders in the Nashulai Maasai Conservancy?
2. How might existing policies and infrastructure in Kenya impact the intervention you propose? What are your strategies to mitigate potential barriers and capitalize on potential supports?
3. How well can your proposal be scaled up for implementation in neighboring communities? How will you garner support for your proposed programs and/or policies?
4. Maasai culture holds elders in high regard. What are your strategies to engage with this population in a culturally appropriate manner? How has your team incorporated cultural considerations in your proposal?
5. What is your budget and how is it split across different aspects of your health intervention?

Important areas of consideration for your proposal:
- **Social Benefit/Social Return on Investment**: Impact on health outcomes, economic improvement, and productivity at the personal, family, and community levels
- **Economic Impact**: Direct costs associated with proposed strategies; potential for positive economic impact in the community as a result of your intervention
- **Cultural Acceptability**: Cultural perceptions of the proposed strategies and the extent to which they have incorporated local cultural context, languages, and technologies
- **Sustainability & Scalability**: Plans for how the program will proceed once funding ends; opportunities for this program to expand to other target populations
• **Monitoring and Evaluation**: Comparison of baseline data to data collected during and after proposed intervention(s) and how this information will be used to inform program improvements and demonstrate impact

• **Risk Identification & Mitigation Strategies**: Potential challenges/risks associated with recommendation(s) and how those will be addressed, including legal issues & ethical concerns

• **Innovation**: Are there aspects of the proposal which could be considered particularly innovative or creative; novel application of existing technologies or new products/services proposed?

### Additional Resources

*General resources to support your intervention development:*

- **Public Health 101 slide deck**: key definitions, essential services of public health, public health approach (CDC, 2014)
- **Social-Ecological Model**
  - Definition from the Office of Behavioral & Social Sciences Research, National Institutes of Health
  - Explanation of social-ecological model in the context of violence prevention, CDC
- **Public Policy & Policy-making**
  - Observatory of Public Sector Innovation: Public Policy, Organisation for Economic Cooperation and Development
  - “Re-thinking the Policy Making Process for today’s needs,” Betty Tushabe, TEDxRugando
- **Examples of past Global Health Case Competition cases & winning presentations**
- Kirigia, Mburugu, G. N., & Huka, G. S. (2017). The Indirect Cost of Disability Adjusted Life Years Lost among the Elderly in Kenya. International Archives of Medicine, 10. [https://doi.org/10.3823/2483](https://doi.org/10.3823/2483)
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