

POPULATION DYNAMICS, ENVIRONMENT, AND SUSTAINABLE DEVELOPMENT IN SIAYA COUNTY



Siaya County is characterized by a rapidly growing population, high population density, water scarcity, falling food and fisheries production, and environmental degradation. The combined effects of climate change and rapid population growth are increasing food insecurity, environmental degradation, and poverty levels in the county.

Siaya County's Integrated Development Plan (CIDP) identifies population dynamics, environmental degradation, and climate change as key development challenges. These issues need to be linked in county policies and programs to ensure that projects that address them are implemented jointly. Addressing population growth, environmental degradation, and climate change together should be a top priority if Siaya County is to achieve sustainable development. The county government, donors and program implementers should develop policies and implement programs that integrate population dynamics, environment/climate change, and development.

Population Dynamics

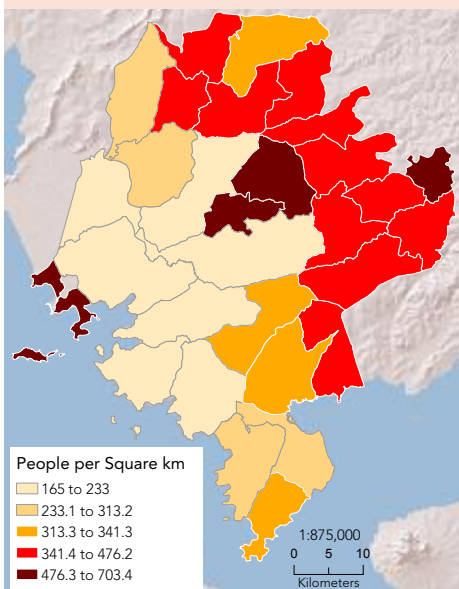
Located along the shores of Lake Victoria in western Kenya, Siaya County is home to 833,760 people. The county's population is projected to grow to 965,103 by 2017.

This growth is largely a result of high fertility, which is currently 5.5 children per woman, compared to a national average of

4.6 children per woman. This number has declined from 8.8 children per woman in 1998, mostly because of increasing demand for smaller families and use of modern contraception. Addressing barriers to access and use of family planning would further reduce fertility. In 2011, about one in four married women who wanted to postpone their next birth or stop childbearing altogether were not using any method of contraception.

Currently, the county population is dominated by young people who need to be supported by those in the workforce. Almost three quarters of the population is under 30 years old and 45 percent is under 15 years. The CIDP identifies the young population and high unemployment as threats to development. Siaya County's young age structure also means that the population will continue to grow for several generations. However, if birth rates were to decline rapidly, the age structure of the population would shift and there would be more working-age adults relative to children. Consequently the county could benefit from what is called the "demographic dividend" – economic growth resulting from increased productivity and greater savings due to a lower number of dependents. Benefits of the demographic dividend are optimized when accompanied by investments in health and education, and pro-growth, job-creating economic reforms.

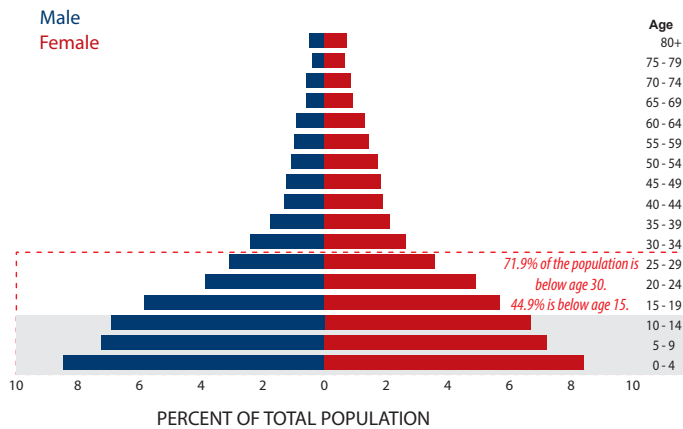
FIGURE 1. POPULATION DENSITY BY WARD



Data compiled from various sources.^{3,9,13}

TABLE 1.	SIAYA	KENYA
Current Population	833,760	37,919,647
Current Population Density	334.0	65.3
Projected Population (2017)	965,103	No Data
Projected Population Density (2017)	386.6	No Data
Total Fertility Rate	5.5	4.6
Contraceptive Prevalence Rate	41.2%	39.4%
Unmet Need for Family Planning	25.4%	25.6%
Data compiled from various sources. ^{1,3,7,8,9}		

FIGURE 2. SIAYA BAY 2009

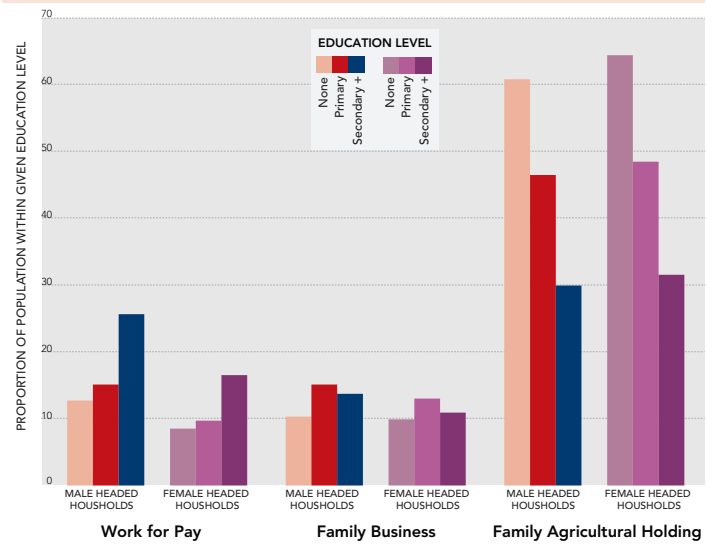


Data from KNBS⁵

Development

Siaya County performs below the national average on most socio-economic indicators. The county scores a 0.46 on the Human Development Index (HDI)—a composite measure of development that combines indicators of life expectancy, educational attainment and income. This is below the national average of 0.56. Poverty is prevalent in the county and manifests itself in other socio-economic outcomes such as poor nutrition, health, and education, as well as a lack of access to basic services. Unemployment is a major challenge in the county, especially among the youth. The majority of the population is employed in fishing and agricultural activities, with limited opportunities in commercial ventures and public service. As more young people enter the workforce due to rapid population change, the pressure on available employment opportunities is expected to grow.

FIGURE 3. EMPLOYMENT BY EDUCATION LEVEL IN MALE VS. FEMALE HEADED HOUSEHOLDS



Data from KNBS/SID⁶

Environment and Climate Change

The livelihoods of most county residents depend on fisheries and rain-fed small-scale farming, practices that are highly vulnerable to environmental degradation and the effects of climate change. Rapid population growth places enormous pressure on natural and environmental resources such as fisheries, forests, water, and land. Already scarce resources such as fisheries and farmland must be subdivided among more people, resulting in overexploitation. Fish stocks are dwindling due to overfishing and changing water temperatures, and people living in lowlands are frequently displaced due to flooding. As the county's population increases, these pressures on resources will be magnified.

TABLE 2.	INDICATOR	SIAYA	KENYA
Human Development and Gender Inequality	Human Development Index (HDI)	.46	.56
	Gender Development Index (GDI)	.42	.49
Poverty	Proportion of Population Below the Poverty Line	38%	45%
Education	Primary School Pupil/Teacher Ratio	42:1	52:1
	Secondary School Pupil/Teacher Ratio	31:1	31:1
Health	Average Distance to Health Facility (km)	No Data	No Data
	Doctor/Population Ratio	1:62,195	1:5,678
	Nurse/Population Ratio	1:2,538	1:1,431
	Infant Mortality	111 per 1,000 live births	49 per 1,000 live births
	Under-five Mortality	167 per 1,000 live births	73 per 1,000 live births
	Skilled Attendant at Delivery	52%	44%

Compiled from various sources.^{4,6,7,9,10,11,12}

FIGURE 4. FOREST LOSS 2000-2012

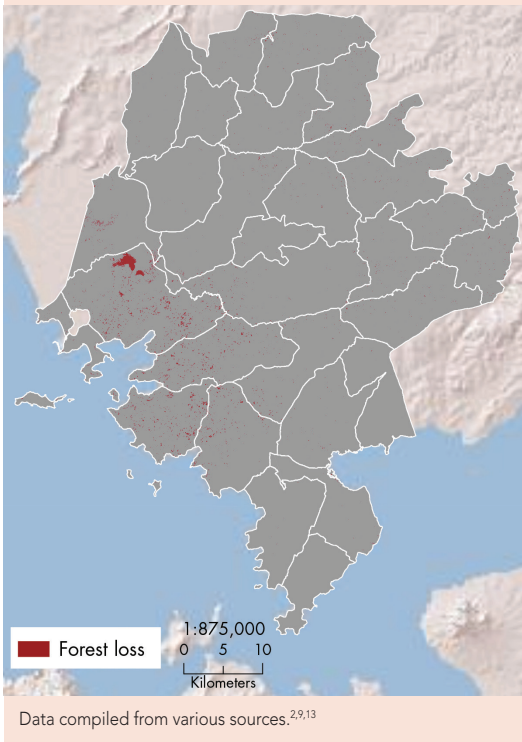
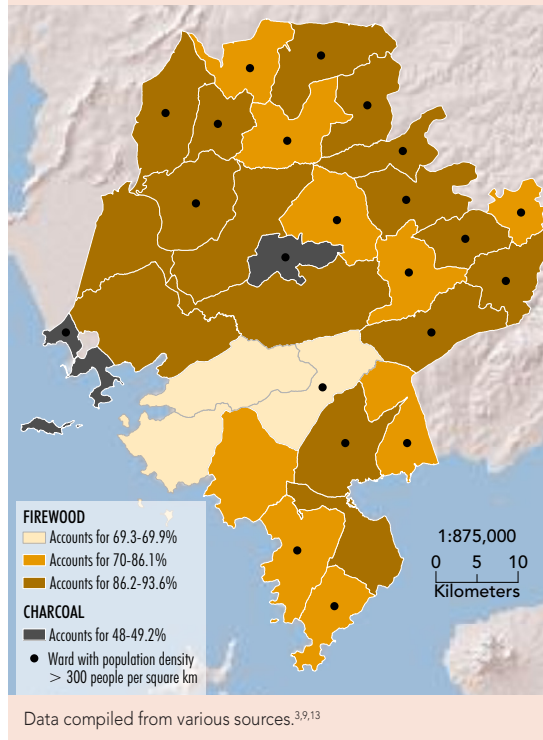


FIGURE 5. MAIN SOURCE OF COOKING FUEL BY WARD



Siaya County boasts abundant water resources due to its proximity to Lake Victoria, but as its population grows and climate change compounds water shortages, the county's water demands will increasingly exceed freshwater sources. Degradation of upstream catchment (land area where water collects and subsequently flows into water bodies), mainly due to agricultural expansion associated with population growth, is already impacting water availability.

Destruction of forests and wetlands in the county, and the resultant biodiversity loss, is also a key environmental challenge. Population growth, agricultural expansion, over-dependence on wood fuels, and low levels of afforestation have accelerated deforestation in the county. Loss of forests and wetlands can have consequences for ecosystems and food security.

The majority of Siaya County's population depends on wood fuel for cooking. With estimates that 97 percent of households use firewood or charcoal for cooking and heating, population growth and associated increases in demand for farming and residential land will undoubtedly accelerate deforestation and exacerbate the effects of climate change in the county.

Policy Framework for Linking Population, Environment and Development

Given the strong links between population dynamics, environment and climate change, integrated policy and program responses to addressing them would make sense and offer combined benefits for sustainable development in Siaya County. The CIPD recognizes population dynamics as key challenges for development.

The following recommendations will help integrate policies and programs on population, environment, and climate change in the context of sustainable development:

- 1 Incorporate prioritize population dynamics in county policies and strategies. These include the County Integrated Development Plan (CIDP) and sectoral policies that are being developed in the county.
- 2 Mainstream population issues within other development sectors, including public health, education, environment and climate change. The government should also address population issues such as urban planning, infrastructure development, and safeguarding the lives of the rural and urban poor against effects of climate change.
- 3 Secure financial resources from the county government, development partners, and non-governmental sources to fund programs that integrate population, environment/climate change, and development.
- 4 Prioritize meeting women's and their partners' needs for family planning. Family planning is a win-win intervention that can help reduce unplanned births, improve health outcomes for women and children, and slow population growth. It would help ease pressure on the environment and natural resources, strengthen resilience to climate change, and enhance county economic growth by empowering women.
- 5 Optimize the county's potential to benefit from the demographic dividend by enhancing investments in public health, education and empowerment of women, and by adopting pro-growth, job-creating economic reforms.
- 6 Enhance the design and implementation of programs that integrate population, environment/climate change, and development. These programs could include diversification of food crops and alternative energy sources, reforestation, water conservation and recycling, modernization of agricultural production and fisheries, and expansion of agricultural land under irrigation.

ENDNOTES

1. Ettarh, R. R. (2011). *Spatial Analysis of Contraceptive Use and Unmet Need in Kenya*. Chapel Hill: MEASURE Evaluation PRH.
2. Hansen, M. C., Potapov, P. V., Moore, R., Hancher, M., Turubanova, S. A., Tyukavina, A., et al. (2013). High-Resolution Global Maps of 21st-Century Forest Cover Change. *Science*, 850-53.
3. Infotrack East Africa Ltd. (2014, January 15). Kenya Counties. Nairobi, Kenya.
4. Kenya National Bureau of Statistics (KNBS). (2010). *Kenya Economic Survey 2010 Highlights*. Nairobi: KNBS.
5. Kenya National Bureau of Statistics (KNBS). (2011). *2009 Kenya Population and Housing Census*. Nairobi: KNBS.
6. Kenya National Bureau of Statistics (KNBS). (2012). *Statistical Abstract 2011*. Nairobi: KNBS.
7. Kenya National Bureau of Statistics (KNBS) and United Nations Children's Fund (UNICEF). (2013). *Siaya County Multiple Indicator Cluster Survey 2011*. Nairobi: KNBS and UNICEF.
8. Kenya National Bureau of Statistics (KNBS) and ICF Macro. (2010). *Kenya Demographic and Health Survey 2008-09*. Calverton: KNBS and ICF Macro.
9. Kenya National Bureau of Statistics (KNBS) and Society for International Development (SID). (2013). *Exploring Kenya's Inequality: Pulling Apart or Pooling Together*. Nairobi: KNBS and SID.
10. Siaya County Government. (2013). *Siaya County Draft First County Integrated Development Plan 2013-2017*. Siaya: Siaya County Government.
11. United Nations. (2013). *Millennium Development Goals Indicators*. Rome: UN.
12. United Nations Development Programme, UNDP Kenya. (2010). *Kenya National Human Development Report 2009*. Nairobi: UNDP Kenya.
13. Upande Ltd. (2011). *Kenya Human Population, 1999*. Retrieved August 2, 2013, from Virtual Kenya: <http://maps.virtualkenya.org/data/geonode:KenPop99>