



# High and Low or Light and Dark: The Illumination of Northern Kenya and the New Digital Divide

By Paul Goldsmith



## High and Low, or Down and Out?

Writing in *The East African* back in 1997, John Githongo described a visit to Mathare Valley. The tour began with the stone structures bordering Juja Road housing and proceeded to pass through successive strata of wood, iron sheet, and finally composite scrap and plastic houses. The number of *changaa* dens, incidents of criminal activity, and the flow of effluent and filth increased on the way down, directing Mr Githongo to graphically describe the descending levels of the settlement as a *de facto* class system.

The same relationship between elevation and socio-economic class also holds across most of the countryside. Remove several geographic zones like the narrow coastal fringe between Malindi and Diani, add the linked variable of distance from the 'centre' and we have a spatial equation that accurately predicts the socioeconomic status of most Kenyans. Two factors, altitude and proximity to the capital, account for why the material conditions of the country's rural dwellers become incrementally meaner as one moves down and away from Nairobi.

This allows us to assume with a reasonable degree of confidence that indicators like economic opportunity, household income, educational standards, access to social services, environmental vulnerability, daily calorie intake, access to electricity, and other factors like insecurity will correlate inversely as one moves away from the center and down the country's ecological gradient.

For example: we can expect people in Machakos to be better off than those in Mbeere, that farm incomes are likely to be higher around Nyahururu than Siaya; and that households in Trans-Nzoia or Chavakali will be wealthier than those on similar-sized farms in Voi. When altitude is similar, distance from the centre comes into play. This indicates conditions in Vanga should be marginally better than in Kiunga while residents of Wundanyi are most likely better off than those in Marsabit although both are high altitude (2300 meters) settlements.

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The interactive effect of these variables intensifies upon passing the extended arc demarcating Kenya's highland-lowland interface. The lowlands are often called 'Kenya B' due to their isolation. In Africa, spatial separation was a condition to be avoided at all costs. In many societies, banishment from the group, not execution, was the ultimate punishment. Although Westerners may go to great lengths to seek it out - in Africa, there is no splendour in isolation: spatial separation incubates vulnerability in the face of unpredictable dangers and environmental risk while increasing transaction costs.

Yet this was precisely the sentence meted out to the inhabitants of Kenya's rangelands at the onset of colonialism. The colonial regime erected administrative and economic barriers that transformed spatial separation into a *de jure* state of economic seclusion.

It is otherwise logical to assume that lower and less predictable rainfall is the single-most important determinant explaining conditions on *both* sides of the arc. Insofar as rural productive output is largely a function of rainfall, it forms a co-linear relationship with the altitude variable in our equation. But this was not exactly the case before; higher returns to labor made pastoraists the masters of the precolonial economy. As subsequent developments illustrated, in the regions beyond the zones of rain-fed agriculture, state policy became the more critical factor, adding a third independent variable to the equation.

Kenya's Sessional Paper No. 10 directed the newly independent government to focus investment in high potential areas. The policy framework predictably widened the socio-economic gap between agricultural and pastoral communities created by decades of colonial era spatial separation. Post-independence policy biases soon morphed into a recipe for social exclusion. The rangelands came to be regarded as economically peripheral to the national interest.

For decades, the ingrained perception that 'we are high and you are low' defined the natural *status quo*.

This structural bifurcation still drives perceptions of the country's expansive lowland landscapes as a breeding ground for livestock rustlers, bandits, and other anti-progressive forces—even while the tourist industry banks on the images of colourful tribesmen, the north's dramatic landscapes, and pockets of abundant wildlife. While such conditions came to describe the prevailing state of affairs in the north, this was not always the case.

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The region's livestock specialists were the premier risk takers of the pre-colonial era. Domesticated animals were both the main repository of agricultural surplus and regional currency of exchange. As the bankers of the regional economy, like the capitalist elite of our times, they may have been proud, aloof and possessed of strong predatory instincts. But they were not separate and independent of their agricultural neighbors. Rather, access to agricultural produce was also a *sine qua non* for the emergence of pure pastoralism. Dietary driven demand for carbohydrates in the form of grain and the social status associated with owning livestock linked herders and farmers together. Exchange based on niche production drove the expansion of the trade networks across Kenya's interior prior to colonization.

The acquisition of cattle and the adoption of herders' military institutions allowed agriculturalists occupying ecologically stable highland zones to expand territorially. During the latter decades of the 19<sup>th</sup> century they integrated many Maasai, Samburu, and hunter-gather refugees created by conflicts and environmental crisis, tilting the demographic balance towards the highlands on the eve of European intervention.

The *Pax Britannica* subsequently froze ethnic identities and short-circuited the dynamics of ecozone symbioses. A century of change conditioned by the altitude-spatial model subsequently inverted the pre-colonial dynamic.

Now the equation is again undergoing change. The discovery of oil in Turkana and Marsabit, the LAPSET mega-project, and the presence of various extractable resources are now conditioning the notion that the former Northern Frontier District will be the pivot point for Kenya's next phase of economic expansion. The region's proposed contribution to the national economic equation presents a mix of cautionary opportunities and potential dangers for the northerners.

### **Drivers of Kenya's Top-Down Development Revisited**

Around a decade ago a meeting outside Kinna called 'the University in the Bush' brought together a collection of pastoralist political leaders, researchers, and civil society actors. During one of the informal evening sessions on the banks of the Bisanadi River, one of the MPs present summed up the discussion of imminent developments by warning, "capitalism is coming!"

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He was referring to the planned infrastructural projects, investment in natural resource exploitation, and the accompanying influx of warm bodies that will swamp local communities. The group commiserated over the prospects of the impending changes overwhelming the region's distinctive way of life.

During the previous decades Kenya's top-down development had relegated the region's pastoralists to the bottom rung of the country's economic pyramid, but had left them in control of most of their economic resources while reinforcing their cultural autonomy. Now both are under threat.

The baraza on the Bisanadi also saw the penetration of capital as hardening the marginalisation and

spatial isolation of the rangelands into the same kind of class system Githongo observed on the slopes of Mathare Valley.

This discussion, it should be noted, took place at a time when the constitutional reform process had generated the unwieldy Bomas draft. The draft constitution became mired in repetitive cycles of partisan obstruction and political revisionism. The problems, however, were eventually sorted out. Kenyans approved a new and more elegant constitutional dispensation, and its provisions for devolution in the form of counties based on Kenya's original forty-seven districts came into effect following the 2013 national elections.

Even though the county governments are still young and frequently beset with internal wrangling, they have provided a platform for contesting the imposition of developmental schemes and budgetary decisions by the national government and external investors. Kenya's national elite, in contrast, retain their old school mentality in regard to their sense of entitlement and their central planning mentality.

The prime exhibit of the latter is Vision 2030. Kenya's blueprint for joining the ranks of emerging economies, is a pre-devolution document that highlights the role of LAPSSET for opening up remote areas of the coast and northern Kenya for development.

LAPSSET is a US\$25 billion fantasy scheme drawn up by planners in Nairobi, and a potentially attractive honey pot for international investors. The original scheme focusing on the Magogoni port and accompanying facilities and infrastructure was first offered to the Qatari royal family as the Roola Project. The exceedingly generous Memorandum of Understanding involved a 30 year B-O-T (build, operate, and turn-over) project tender that even ceded the control of labor hired to build and man the project to the investor. Some 200,000 hectares of prime Tana Delta land were included as a sweetener.

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The Roola MoU became a casualty of the 2007 post election violence and Raila Odinga's inclusion in the new coalition government. The Prime Minister was interested in selling an expanded version of the project that would include, among other things, a network of roads, railways, and pipelines extending into South Sudan and Ethiopia. It also included 'state of the art' tourist cities in Lamu and Isiolo and a new international airports. Governments in Asia and Europe and a number of private sector parties expressed their interest in the project.

The Chinese are now funding the new port while other components of the scheme are awaiting external finance. But the prospects of LAPSSET lifting off as planned are diminishing because funding LAPSSET is actually contingent on oil and other forms of energy generation, like the Lamu coal generation plant, wrapped in an investor-friendly package.

As the people of Lamu and Kenya's north are discovering, the inhabitants of the areas affected are expected to be passive spectators until that time when they will be allowed to queue up for jobs consistent with their skills and educational background. They are also finding out that implementation of constitutional provisions for community land and redressing historical injustices, along with the new bill of rights, have been put on the back burner.

## **The Energy Boom Conundrum**

Many observers believe that oil, renewable energy resources, and extractive industries will unlock the region's economic potential. Unfortunately, bringing extractive industries and other capital-intensive ventures like large-scale agribusiness industries into a region undergoing socioeconomic transition often ends up creating what the French analyst, Alain de Janvry, defined as disarticulated economies. Where de Janvry's critique focused on the role of large estates in South America, the same functional dualism is emerging in the north and areas of Ethiopia where local households subsidize the external investors by absorbing the cost of maintaining and reproducing the labor force.

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For many locals, this form of subsidization still may be preferable to hordes of outsiders snapping most of the jobs and small-scale business opportunities that will come with the new investments. In Africa, the dilemma extends to the creation of economic enclaves in general. The unrelenting cycle of conflict and criminality in the Niger delta illustrates the longer term impact of such disarticulated regional economy; the current conflict in Laikipia represents another variation.

The short but convoluted history of the Turkana wind farm is a case study directly relevant to the high and low thesis. The land for the wind farm was procured through an agreement formed between county council and local investors fronting for a consortium of international companies. The shadowy deal was brokered by the MP for Laisamis and reportedly involved 'bonuses' for Marsabit's county councilors that if once attractive now look like a pittance. The 310 MW wind farm and support facilities are constructed on forty thousand hectares but some 125,000 were allocated to the project. The deal by-passed the standard land board review, and there was no formal contract or MOU catering for the interests of residents and local government alike.

The prospect of inexpensive or subsidized lighting for the locals may have compensated for the arrangements shrouded in darkness. But although the Kenya government is legally committed to purchasing the electricity—there is no provision or contract catering to inhabitants' access to the electricity generated. The same problem followed construction of the Turkwell Dam, where local Turkana and Pokot children study by lantern light while the highpower lines overhead deliver power to downcountry consumers.

The excuse in both of these cases is that the energy producer is contracted to deliver their power to the national grid. The Lake Turkana Wind Power project web page says locals will be able access the power insofar as the electricity contributes to the supply being tapped by the government's Rural Electrification Authority. In other words, the herders displaced by the project are supposed to take the pens and notebooks provided to local schools by the project's corporate responsibility programme, and to keep quiet.

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The area's MP reportedly told his disgruntled constituents, 'if the donkeys make too much noise, predators will come to eat them'.

In the meantime 98 per cent of the County's inhabitants depend on wood and charcoal for fuel, with attendant environmental consequences. In addition to the loss of community land and the corresponding ecological stress, pastoralist hopes of reaping direct benefits beyond the counties' statutory share of profits from Kenya's energy boom are probably a mirage.

Even if Turkana Governor Joseph Nanok succeeds in his legal battle to up counties' share of proceeds to 10 per cent, it is naive to think oil will redefine local counties' developmental trajectory for the better. The likelihood of a national level oil export boom is also not good in light of the reduced long-term value of crude and the billions required to build the requisite export infrastructure. Oil is no longer the black gold of the past. Some observers see oil recovering from the current glut and sustaining prices in the range of \$70 per barrel for another two decades; many believe it will continue to slip, and is unlikely to rise above \$25 per barrel after 2025.

The age of carbon has peaked and is being displaced by the new electric economy. Renewable energy sources and power storage technologies transforming the international energy industry have reduced the world's spending on oil by US\$2 trillion over the past decade. The auto industry is another harbinger of things to come. Today's electric vehicles halve the maintenance costs of petrol and diesel vehicles because their engines and drivetrains use 200 parts where internal combustion engines have 2,000; the expected lifespan of the typical electric car is 800,000 kilometres compared to 250,000 for your average Toyota Probox. And this is just the beginning.

### **Electrifying the Future**

There are several important variables underpinning the shifts we can anticipate during the transition from Kenya's Vision 2030 to the real world Kenya of the year 2030. The expansion of transport and communication infrastructure will gather speed, attracting a diversified portfolio of external and domestic investment that goes beyond the rent and resource capture focus discussed above. There is no guarantee that socioeconomic conditions in the north will be amenable to such projections. Cultivating an active culture of constitutionalism is essential if the new legal framework is to translate into adaptive governance—a prerequisite for levelling differentials arising out of a century of high-and-low state policy.

The region's leaders and brain trust are going to have to take the lead in sorting its internal problems. The formation of the Frontier Counties Development Council (FCDC) is a promising development on this front. It also follows that a more peaceful Horn of Africa region and stabilization of cross-border regions are equally essential for rangeland progress. The expansion of the CEWARN cross-border conflict early warning system and related peace infrastructure initiatives taking root on the ground are also promising developments that will help counter the spatial divide and support more participatory democracy.

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There are two other forces that make conventional assumptions about the futurology of northern Kenya a precarious proposition. One is the nation's unprecedented demographic surge. Rangeland districts hosted the highest birthrates tabulated in the 2009 census and this demographic bulge is driving a socioeconomic de-coupling from the pattern of incremental change on the national scale. The usual measures for alleviating marginal areas' post independence malaise will not get the job done for the current generation coming of age on the periphery.

Technological change is the real game changer now. But the potential impact of developments in this domain remains problematic, especially for low-tech regions where the digital divide is replacing longstanding spatial and policy-based determinants of inequality. Those who think the often-uncomfortable implications of artificial intelligence, automation, and other avatars of technological efficiency for employment and society in general are limited to the industrial West are sorely deluded.

We are witnessing only the early manifestations of the data-driven technological revolution that include machine learning, cognitive computing, and a range of other more basic technological applications that are reaching into virtually every niche and crevice of economic activity. Technological innovation will be equally critical for enhancing traditional pastoralist livestock production, the management of water, animal health, and conserving the natural resource base. Most importantly are the implications of the information economy and new educational and training methodologies for the unleashing the potential of the human population.

Twenty years after John Githongo's perceptive observations on the relationship between altitude and class in Kenya, the *Digital Divide* is the new *High and Low*. Or, as one sectoral expert recently observed, before the most basic requirement for human existence used to be food and water; now it is food, water, and electricity.

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For the frontier counties, access to electricity is key to harnessing fast moving developments in the field of information and data based technologies. Even the oil industry now employs more data scientists than geologists. The electricity economy is consumer and environmental friendly, increasingly decentralized, and can integrate many different large and small sources of power into highly reliable power grids.

The catch-up strategy for Kenya's marginalised lowlands and coastal counties will arguably require the overhauling of the rigid education system and remaking it in line with a well-informed curriculum relevant to contemporary issues. But the provision of electricity is the essential enabling factor for the education sector and other local developmental priorities.

If electrifying the rangelands is a test case for the larger region's process of highland-lowland integration, the current prospects are not encouraging. Kenya Power and Electric Company's Last Mile Connectivity Project will connect some 312,500 households to the grid, but mainly in peri-urban and other densely populated areas in all counties. European donor funding will help connect another 296,647 households. The company has also subsidized connections for close to 800,000 low-income residents in informal settlements.

Expanding the consumer base and finding markets for the increasing supply is critical for the profitability of the majority state-owned corporation. With new energy generation projects coming on line across the region, the capital-intensive infrastructure for delivering the electricity is a significant constraint. The scale of front-end investment required to expand the national grid partially explains why Nairobi still accounts for 50 per cent of Kenya's electricity consumption.

The expanding rate of connections is still modest compared to the country's population growth rate. Kenya has a comprehensive energy sector road map but political interests unfortunately take precedence over technocratic implementation. Supplying outlying regions will be a slow process

despite the importance of access to electricity for rectifying historical inequalities dividing the nation.

The absence of meaningful consultation and provisions for at least some local distribution of the power generated are primary reasons why the Lake Turkana Wind Farm is turning out to be a backhanded example of how *not* to go about closing the gap.

Renewable energy initially seemed to be a win-win proposition, but examples like the Marsabit problem illustrate why its proving more complicated. Technical and economic challenges have dominated the movement towards the planet's renewable energy future. Local opposition in areas across Europe, the USA, and developing areas now underscore why project planners need to direct equal attention to public attitudes, local benefits, interference with established lifestyles, and impacts on the landscapes affected.

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The ticket for illuminating much of Africa instead lies with a new crop of creative off-grid options for the region's low density and scattered population. Methods allowing households to divert money spent on kerosene and candles to purchase solar panels is a major factor behind the spread of [innovative start-ups based on a range of adaptive micro-level methods](#) now delivering power to many poorer households.

The problem is not just about catching-up. The former Northern Frontier District, or the New Frontier for Development according to switched-on young northerners, is together with adjacent areas of Ethiopia and South Sudan home to the world's most diverse collection of indigenous peoples. Empowering these communities will bring a new set of problem-solving energies, social values, and fresh ideas to the region's stale developmental model with its inherited legacy of class, conflict, marginalization, and social exclusion.

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