

Water Decline or Water Grab: Is Climate Change or Globalisation Drying Water Sources in Africa?

! D R A F T - NOT TO BE QUOTED!

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Abstract

Water is a basic need and an important catalyst for accelerating economic development in semi-arid areas. But an unseen emergency is continuing to unfold due to competition over water because of a deepening globalisation of agricultural production, changes in land tenure and population growth.

The availability of water in semi-arid Kenya among Maasai pastoralists has been studied since the late 1980s. Initial success stories could be reported as a result of a mix of rapidly spreading water sources triggered by land tenure changes and a congruent effort to improve traditional water provision techniques, in particular shallow wells. Many Maasai pastoralists took up small scale cultivation which made them food secure and many left the ranks of the poor. In recent years these wells started drying. Several possible causes were studied including claims of climate change and competition from other water users.

From 2005 onwards a growing number of shallow wells started to dry. Information of all boreholes and (nearly) dried shallow wells was recorded. The survey concluded that since the subdivision of group ranches (mid-1980s), land had become a commodity allowing new landowners to settle. In particular, the arrival of commercial agriculture resulted in the sinking of (too) many deep boreholes responsible for draining the aquifers. Indications are that the water table has fallen by over 50m in the last 10 years. This is an inconvenient truth for all stakeholders, but certainly the shallow well owners.

Commercial (flower) farms own 32 boreholes causing the drying of some 100 wells by 2010. Lessons learned indicate that local communities face an uphill battle to safeguard water in an age of globalisation. Besides technological innovations decentralization of water governance is a first requisite to address these problems.

Key words: *Maasai pastoralists, water, land, globalisation*

Introduction

Global agricultural production basically consists of food for people, feed for livestock, fibre for industry, and fuel for energy (Hurni et al 2007:41). In 2050, agriculture will need to feed some 10 billion people. Will it be able to do so? Some, like Hans Herren of the Millennium Institute, claim we already could today for 12 billion (see Vermeulen 2011). We actually fail to do so at this moment for all of the less than 7 billion world citizens, with for example 1 out of 3 Africans going to bed hungry every night. Does this confirm that it is not so much a lack of food production but of income and for those outside the monetary economy at times unfavourable weather conditions, lack of pastures, poor soils, pests and lack of storage?

The food security question seemed to have disappeared from the development agenda until the fast rise in food prices in 2006. It triggered a renewed interest in food security and brought back the old debate on large versus small scale farming. The debate added new elements such as climate change and biofuel production.

The search for good arable land at cheap prices is ongoing. Special 'land hunters' are on the payroll of international companies active in the agro-food production industry, e.g., Cargill, searching for cheap and high quality arable land (e.g., in Eastern Europe). In essence this drive

for land to grow food (for humans and/or animals) is not all that different from what commercial companies have been doing for decades. International companies have been growing agricultural commodities such as cotton, tea, coffee, rubber, palm oil, tapioca, sugar, tropical fruits for export during several centuries. The water and land footprints of developed countries in Africa and other regions of the developing world have been and still are substantial. Increasingly new products are put on this long list of high value commercial agricultural exports; flowers, French beans, vanilla, khat, soy, etc. A new phenomenon seems to be that countries, both in the East and North also look for land across their national borders in other parts of the world, often in Africa. And some of the African countries, among them some of the most food insecure, actively campaign abroad in search of foreign investors. Western entrepreneurs seem to have taken up this challenge. But so do Asian. China, for example, is growing pigs feed in Zimbabwe to be able to answer the demand for delivering meat on the plates of a growing Chinese middle class. For some of these countries, especially countries in the Middle East, though, it seems to be a drive triggered more so for (green) water than land. Besides the search for agricultural water, arable land is in need for another new type of agricultural production, i.e. the growing of biofuels. These are considered to be the best answer to the urgent challenge of providing the world with (cheap) fuels for running our cars, trucks, aeroplanes, factories, heating our homes and preparing our food. These biofuels can be food crops such as maize but also non-consumptive crops like jatropha. This seems to be the driving force for another group of countries and companies.

In the following we want to look in more detail to the transfer of land and change in land use in southern Kenya and the reasons that triggered it, the players that enabled it, and the consequences it brought along. As Henry Bernstein (2002) has stressed we need to look at the development and land reform processes in particular in Africa over a long period of time.

Creating Boundaries and Grabbing Land in Eastern Africa: The Early Years

The district of Kajiado, located in southern Kenya was a ‘closed district’ until the late 1960s. This status meant that outsiders were not allowed to enter the district without a written permission. And as Kenya gained full independence in 1964 it was some years after this ban was lifted Kajiado district was opened officially for outsiders: meaning other ethnic groups than the local Maasai could now enter the district without a written permit and restriction in duration of their stay.

Map 1: Kajiado District, Kenya



The Maasai pastoralists had been occupying this area for about two centuries since their move southwards from their area of origin in southern Sudan in the 18th century. The only boundaries that existed in those days were flexible ones, resulting from geopolitical spheres of influence based on military and economic strength both external; i.e., Maasai versus non-Maasai groups, and internal, i.e., between the Maasai sections. These sections (*il-oshon* meaning plateaus) embodied control over natural resources within a certain territory.

In the late 19th century, the Kenyan Maasai sections found themselves locked within two new borders that came along with the arrival of the European colonizers; i.e., an international boundary splitting across the Maasai ancestral lands to the south dividing German and British territories of occupation while to the north another even more visible and effective boundary had been constructed by Indian labourers, i.e. a railway line connecting the coastal town of Mombasa to the interior, i.e. Lake Victoria and ultimately Kampala. To recover the costs for building the line and pay for its running costs the British local rulers sought interested settlers to come over and take up farming. The settlers received large chunks of land allocated within reach of the railway either for free or at minimal costs.

The railway divided the Maasai area as did the international boundary, albeit the latter was merely a line drawn on a map and only marked through some beacons on the ground. This line was easily crossed. The northern line, however, was a firm obstacle as the new settlers did not allow the disease ridden cattle of the Maasai on their newly acquired land inhabited with imported, expensive livestock. More railway branches were constructed opening up other agricultural and prime grazing areas to the north.

Treaties were signed in 1904 and 1911 which made it possible to remove the Maasai from their best pastures in the north to a southern reserve. Still, their new home area, about 36,000 km², was only half the size of the former Maasai territory and of much poorer quality. Over half of the areas settled by Europeans used to be former Maasai lands.

Post-colonial Period: “There Shall Never Be a Landless Masai”

Having lost their best pastures to white settlers at the beginning of the colonial era, subsequently foremost *nusu nusu* Maasai continued the grab from within towards the end of this period. Moreover, the brothers and sisters of the *nusu nusu* Maasai were feared to become the new settler community after independence. The Kaputiei Development Committee proposed registering the Kaputiei area under one title deed as a buffer towards new outsiders and to keep all options open for a flexible management of the pastures. This idea was not accepted by the authorities as it would not stimulate commercial changes. It seems as if the Kaputiei region in general, and the high-potential Ngong area, in particular, were thought to be suitable for commercial ranching purposes with the prerequisite of individual or cooperative forms of land tenure. The authorities continued to put aside verbal and active forms of protest. The DC Narok wrote on October 18th 1965 to the Hennings Mission on Land Consolidation in the Ministry of Lands and Settlement that ‘... the more enlightened Masai, including farmers, traders, teachers and others, are anxious to have the land demarcated and land registration titles issued immediately. On the other hand, the majority of the Masai pastoralists are very much opposed to demarcation. This is clearly evidenced by the fact that they have been and still are destroying the beacons erected by the Survey of Kenya. Their main reason for this opposition is that they believe that land demarcation will be the first step towards taking away Masai land forcibly.’ (KNA/DC/KAJ/4/18/2). Support for those opposing the individual ranches came from the Lawrance Mission of 1965 that criticized the government’s haphazard approach to the Maasai land question and the illegal approval of the creation of individual ranches.

To take away the worries the Minister of Land, Mr Angaine stated that ‘it would not be sufficient for just a few of the more prosperous members of the Masai tribe to make progress,

and for the remainder of the people to suffer poverty and hardship. We are determined that there shall never be a “Landless Masai” problem.’ (KNA/DC/KAJ/4/18/2).

Towards the late 1960s, all the Maasai sections accepted the group ranch concept, which was introduced by the Kenya Livestock Development Project and sponsored by the World Bank.¹ In short, the idea of a group ranch meant the setting aside of a certain piece of land to be communally owned by a group of people who were recorded and registered as the legal owners through membership of the particular ranch. Unlike in the past, livestock movements would be restricted within the group ranch’s specific boundaries and non-members would not be allowed to bring their animals to graze there. Through the provision of loans for infrastructural development and steer fattening, an attempt was made to radically transform the nomadic subsistence-oriented production of the Maasai pastoralists into a sedentary, more commercial system. This market-oriented production was to bring about a de-stocking of Maasai pastures while at the same time providing meat for the national and international markets.

Besides welcoming the idea of water provision, veterinary care, improved livestock breeds and the like, a major rationale for accepting the group ranch proposal was an increase in the number of Maasai acquiring individual ranches and fears of the encroachment of non-Maasai into the district. The concern that even more land could be lost to game reserves or national parks also played a role.²

The introduction of group ranches had organizational, juridical and economic consequences. The ranches were effective in stopping an educated elite of Maasai allocating themselves huge chunks of former communal land that had been set aside as individual ranches. Likewise, the feared massive influx of non-Maasai was avoided.³ Only land from individual ranchers could be acquired, as in the Ngong and Loitokitok areas. Secondly, the group ranches initiated livestock management techniques and the construction of facilities such as boreholes, dams, troughs, tanks, pipelines and cattle dips. Thirdly, group ranches stimulated the building of schools, shops and health centres. A final achievement of such group ranch development is said to have been to allow wildlife to continue roaming freely over large parts of the district.

In addition to these accomplishments, several scholars mentioned problems and failures including delays in project implementation; disappointing rates of investment and difficulties in loan repayments; a continued trespassing of group ranch boundaries; refusals to de-stock ranches; no real transformation to a market-oriented livestock production; and corruption among ranch committees.

Overall it can be concluded that in many respects, the group ranch concept, as proposed by outsiders, was an artificial creation that lacked a firm traditional, sociological as well as ecological basis. The implementation of this change in land tenure was over-ambitious in aiming at de-stocking pastures and commercialising production while barely taking into account pastoralists’ strategies and household needs. The final outcome of these problems and the resulting frustrations was a growing desire among many Maasai for the subdivision of the group ranch into individually owned shares.

¹ In some regions of northern Kaputiei and the better-watered parts of the Ngong area, individualization was preferred and opposition to group ranches persisted. These ranches, although officially registered, never functioned.

² The pilot Poka group ranch started in the south Kaputiei location in 1964 and in 1969 Phase One of the Kenya Livestock Development Project (KLDP I) began officially. By 1970, 14 group ranches, covering more than 10% of the district were recorded in the Kaputiei area. KLDP II, which started in late 1974, added 16 ranches comprising another 25% of Kajiado District. And, by 1980, a further 20 ranches had been incorporated. These are often referred to as ‘Phase Three group ranches’ but no World Bank funding was provided for them. This brought to 51 the total number of group ranches covering 15,200 km² or some 75% of Kajiado District.

³ By the late 1960s the status of closed district was removed. From then onwards, non-Maasai, who were well represented at national level, were able to enter the Maasai districts much more easily. The installing of group ranches, however, prevented outsiders from buying land legally.

Subdividing group land into individual parcels: selling wealth to buy poverty

In the early 1980s no clear position was taken by the government in response to the call for the subdivision of group ranches – apparently because the administration itself had some doubts about it and the individual departments were in dispute with each other. Ministries of Livestock and Wildlife opposed the idea whereas the Ministry of Agriculture was in favour.

Supporters of group ranch subdivision said it would help self-advancement and raise standards of living, boost the ability to procure a loan using the freehold title deed as collateral, minimize the exploitation of the poor by rich households, promote Maasai engagement in agricultural and industrial enterprises, and facilitate better maintenance of the existing infrastructure. In general, those opposing subdivision claimed that the ultimate result would be the alienation of land to the non-Maasai, severe erosion in areas where cultivation was to start, the loss of Maasai culture, and the restriction of the movement of wildlife and livestock to the detriment of the district's meat-producing and tourist functions. All these arguments have been studied by the author among a group of 500 Maasai households but we will restrict ourselves here to a review of the land use and environmental effects. By 1990, a total of 40 group ranches had decided to dissolve their ranches. Seven had already gone through the procedure and the members had obtained private titles. Only four ranches opposed the idea of subdivision, while another seven had not yet made a decision. In other words, 78% of the ranches had at that time ceased to exist or were about to. Alongside this process, a whole range of other difficulties arose, including disputes over ranch boundaries, corruption in plot allocation and conflicts between registered and non-registered group members. In 1998 more ranches indicated their willingness to subdivide and took steps to formalize the process of obtaining freehold titles. However, the number of ranches that had run into dispute and whose cases subsequently went to court had increased significantly. The following section looks in particular at the post-subdivision developments that occurred in Olkinos group ranch from late 1986 until the beginning of 2010.

Olkinos group ranch 1986-2010

After subdivision started in 1986, the former Olkinos members each owned a farm with a mean size of 46.7 ha within a range from 11.0 to 132.0 ha per parcel. The process of subdivision had been most favourable for the most powerful. Former group ranch committee members obtained above-average plot sizes of some 81.8 ha, almost double the overall mean size (Rutten 1992).

A generally positive attitude towards the overall process of subdivision and the allocation of plots was recorded among the Olkinos ranchers. In 1990 91% of the Olkinos members were positive opinions, 7% had mixed feelings and only 2% were negative to subdividing the group ranch. Approximately 1 in 5 households, however, had mixed to negative feelings concerning the size of the plots allocated. When posing the same question in 2000 opinions had become more negative, especially among those who sold land. Overall though, opinions were still positive (81%), the most negative issue being the size of the parcels of land. In 2010 a major drop in the positive opinion towards subdivision could be recorded: only 10% of the 104 households interviewed indicated to have a (very) positive view, 45% had an intermediate position while the remaining 45% indicated to value the subdivision as (very) negative (see Table 1).

Table 1: Overall opinion subdivision among Olkinos heads of household 1990, 2000, 2010

| | OLKINOS 1990 | OLKINOS 2000 | OLKINOS 2010 |
|----------|--------------|--------------|--------------|
| Positive | 86 | 81 | 10 |
| Neutral | 2 | 5 | 45 |
| Negative | 12 | 14 | 45 |

Source: Datasets 1990 (n=108), 2000 (n=54), 2010 (n=104)

A positive attitude towards subdivision would seem to indicate that the concept of individual ownership of land in general is still favoured by the majority of landowners despite their negative experiences. However, 25 years of individual titling have turned upside down the percentages of those holding neutral or negative feelings to the process of subdividing land into individual parcels. The group having negative feelings is larger than the one with positive opinions. Let us have a closer look at the sale of land.



Many Land for Sale signboards



Some owners are tired of requests to sell

The sale of land

Detailed information concerning sales of land by the Olkinos individual plot holders in the 1990-2010 period shows that in 1990 no specific set of characteristics could be perceived for the group of sellers, and sales of land occurred among a wide range of people irrespective of their age, wealth or education. It was noted, however, that the group of former committee members at Olkinos dominated the group of non-sellers. Those few committee members who sold land had bought it mainly for speculative reasons. Furthermore, a correlation was seen in the plot size per person and the sale of land. The more land available, the more would be sold, except by the wealthiest land-holding households who were not engaged in selling at all. This reflects the fact that the group of former committee members were aware of the value of the land they possessed as well as the shortcomings this amount of land posed for fenced ranching livestock production.

The marginalized Maasai who roam the district, or country even, and have no involvement in group ranch matters seem to be the most willing to sell part of their ranch and earn the salary of a lifetime all at once! The sale of land was put on hold by the authorities for some time but this did not stop the landowners from further subdividing and transferring parcels to willing buyers. As a result of the process of further subdividing parcels out of the original 118 holdings established in 1986 a total of 782 plots could be counted in March 2009. This figure stood at 260 only in 2000. This most major rise in parcel numbers is mainly caused by five housing projects located in the northern region of the former group ranch. Together this has resulted in 387 residential plots, some as small as 1/8 of an acre. This means that aside of these residential plots subdivision of the grazing area has resulted in an almost quadrupling of the number of agricultural parcels. And given the fact that slowly but surely most of these areas are fenced it becomes clear that livestock and wildlife alike are increasingly finding it more difficult to find their way in this former prime grazing area.

The group of land buyers is made up of a variety of people; initially mainly small agriculturalist, retired civil servants and Nairobi-based speculators in addition to a few educated Maasai. Most of them bought small plots and started rainfed agriculture. These non-Maasai immigrants settled, albeit initially with some hesitation over experienced hostility, especially during election time, in their newly acquired plots. In need of water they started to dig a well next to their homes and would strike water at varying depths of 5 to 30 metres depending on the specific position of their parcel of land (Mwangi 1993). They showed the Maasai that water was available year round and not just restricted to the river and nearby surrounding.

Shallow wells as a means for getting out of poverty

The water drawn from the newly dug improved water sources opened a completely new set of opportunities. Some people placed a water tank next to the well to store the water. Ferro cement, aluminium and lately large numbers of black plastic tanks or combinations of these are sprouting all over the subdivided group ranches of Kajiado District. These tanks serve as storage for the dry season. Through gravity, water is transported to a system of tubes irrigating a few acres agricultural plot, to a trough to the benefit of young sheep, and to a water tap for domestic use. This has really revolutionised the economic base of a number of households; in addition to tomatoes, onions, vegetables, and the like a few Maasai have started to grow bananas, oranges, mangoes, paw paws and even grapes. Households escaped out of poverty (Rutten, 2005).

The small scale farmer immigrants were soon followed by a group of buyers composed of ministers, high ranking civil servants, Asians flower growers, South African eucalyptus farmers, the Kenchick poultry company, university lecturers' pension schemes, educational institutions, religious organizations etc. As a result land prices over this period have risen from a low of Ksh 500/- per acre to Ksh 1.2 million per acre! The Maasai that were quick to sell their land now seriously regret they did so, because the late 1980s sale of some 100 acres would be an equivalent to some 0.5 to 1.0 acre only in 2010.⁴

Land Grab? It is the Water, Stupid!

The second group of newcomers came along with more money than the first buyers. The former are financially strong players and they invest in land, (farm) buildings and water infrastructure, especially deep boreholes. One of the key new players in the Olkinos/Embolioi area was an Indian entrepreneur interested in growing vegetables. From the mid 1990s in the southern region along the Isenya river and close to Isenya Town he tried to grow vegetables but was soon defeated because of too salty water. In 1997 he established PJ Dave Flowers and then shifted to the floriculture business. In the span of over 10 years three companies have been created all belonging to the Indian and his relatives; P.J. Dave Flowers (35 ha), Isinya Roses (29 ha), P.J. Dave Flora (16 ha) (Flora Holland 2008:22-23). They now occupy alongside both sides of the Isenya river huge parcels of land in Olkinos and even more in the neighbouring Embolioi area, another subdivided group ranch. This expansion has resulted in one of the largest flower companies in Kenya. According to our 2010 dataset the companies own much more land than officially reported. The figures show a total of 639 ha under green houses belonging to P.J. Dave Flowers (340 ha), Isinya Roses (125 ha) and P.J. Dave Flora (174 ha). In total the P.J. Dave group owns at least a staggering 1,933 ha. This has been acquired from 60 individuals, mostly in the Embolioi area. Lately the P.J. Dave group is expanding to other areas in the district (Ilbissel) and even beyond (near Mt Kilimanjaro and Mt Kenya).

⁴ The 2009 announcement that Olkinos would become part of the greater Nairobi metropolitan area will most likely further boost land prices. The Maasai community protested the 'grab' of their rural area by their urban neighbour located over 60 km away but without result.

The company recruits its labourers actively from western Kenya and from near Lake Naivasha, home to a major concentration of horticultural farms. This recruitment of outsiders did not go down well with the Maasai community near Isenya, who claim that they have been left behind in the provision of jobs to their youngsters.

With the influx of flower workers the local retail business has been flourishing. The company could be earmarked an exemplary success story if not for at least one major problem: destruction of the environment. As a result of the indiscriminate drilling of boreholes for pumping water to feed the roses and the pollution of the seasonal Isenya river the Maasai neighbours are now witnessing the drying of their shallow wells, the disappearance of riverside trees and at times the collapse of livestock drinking polluted water.

Throughout the 1990s all the newly constructed shallow wells operated smoothly, the wells being effectively managed, and their numbers mushrooming, providing water for livestock, cultivation and human consumption. Even during the extreme drought of the year 2000 the wells still had water. Food security, in particular, was boosted by the rapid spread of small-scale cultivation. However, from 2003 onwards reports trickled in that some newly developed improved wells had started to dry. A 1997 survey in the area had established the depth of the aquifers in the area to be between 40 and 80 meters below ground level depending on the surveyed sites. Borehole data taken by the National Environment Monitoring Authority (NEMA) from the flower farm indicated water struck levels ranging from 117 to 156 meters in 2004 (NEMA 2004:4). Mention was made of six boreholes at the flower farm.



Source: FloraHolland (2008a)

In addition, complaints by the local community, including senior government officials were aired that the flower farm was responsible for polluting the Isenya river. These grumbles were most likely not known to the Aalsmeer Auction in the Netherlands that awarded the company a prize, the VBA Kenya Award, for the best Kenyan rose (Rosa Abacadabra) in 2004. The NEMA environmental audit report, published that same year, indicated that the operations of the farm had no 'significant negative impacts on the environment and the workers. Nevertheless, the farm operations have potential for adverse negative impacts as the farm is situated along the banks of the seasonal Isinya River' the report concluded (see NEMA 2004). It was also remarked that a better waste water management should be put in place, staff welfare addressed and that the farm social responsibility programme needed to be enhanced. It also called for an enhanced communication between the farm management and the local people, especially through the local leaders (NEMA 2004).

The P.J. Dave group of companies did use a local Maasai, albeit, foremost to acquire more land. This raised problems as neighbouring Maasai claimed that they were pressurised to sell their land to the land broker. Some plot holders finally accepted and were offered land

elsewhere in return. The community, in trying to air their discontent, asked the flower grower to communicate directly instead of through the land broker. Many accusations to this latter person's behaviour, especially by illiterate Maasai, have been made including; delay in payment of full amount for the land as agreed, some bills waiting to be settled since 2002; paying in kind with an overvalued car; asking for commissions to both seller and buyer; stealing land when transferring a parcel from the original owner to a new buyer misusing the fact that not seldom the exact size of the parcels on the ground differs from the register. Those who dared to take legal action and complaint through lawyers or at the police station were threatened to be arrested in stead. Telephone calls were made to those who tried to assist the illiterate. Not all of the land bought is currently under green house production. Some is used to graze cattle and acts as a buffer to the local community or is in the waiting for new extensions in coming years.

In 2005 tension went up that high that the local people were ready to invade the flower farm. Some of the local politicians, allegedly involved in instigation the threats for some claim also political reasons, were summoned by the central authorities to stay far from the flower farms. For the people though, the problem was not political but a serious challenge because from 2005 onwards the first time ever drying of the wells in the neighbourhood of the flower farm went very fast. The NEMA report released at the start of the P.J. Dave Flora company summarised the potential natural and human impacts as soils erosion, loss of natural biodiversity, soil compaction, public health on workers and neighbours and soil pollution from chemicals but failed to mention the water depletion (NEMA 2006). The flower farm was also blamed for polluting water courses and for livestock disease and deaths. In one case, a farmer initially claimed he lost 15 cows after taking water downstream. However, later the story was he had caused the problem himself when spraying the animals with acaricide to kill ticks. To make matters more complicated it was stated that the funds needed for the education of the family's children, that suddenly came available after the accident, were meant to silence the case and tell the acaricide story. This might confirm a 2010 water test report that hinted that not all was well on the farm. This was confirmed during an interview with an ex-employee who was fired after questioning the chemical flushing system used by the company which apparently did not cater for decent basins to collect the used chemicals. In any case, the chemical smell of the air near the flower farm is a sign that not all is well. People also complain of painfull eyes and sour throats.

Besides flower farms the number of eucalyptus growers had started to increase significant in the area. The recent introduction of eucalyptus tree farming (for electricity poles, construction and firewood) has been motivated by its potential as a good earner. An investor from South Africa had pioneered in the area and soon after Kenyan elite and smaller farmers tried to copy this initiative, although many of the new farms seem to be struggling to produce a viable tree, especially during the 2009 drought. Those copying the South African initiative apparently used the wrong varieties as was reported in the newspapers (*Daily Nation* 7/12/2007). In this article the neighbours accused the trees of drying up their wells 'saying they suck a lot of underground water'.

One literate local resident did not report his frustration over the situation to the newspapers but, tired of the ongoing attempts to have his land transferred to the flower company, at long last wrote a letter, dated 01/09/2008, and stated: 'Please take this as my final word: That, I [Name withheld], WILL NOT, NOW OR IN THE FUTURE, sell my land to you through coercion or harassment. I request that you desist from sending your sidekicks, hirelings, proxies or even yourself asking me to sell land. When I decide to sell part or the whole portion, I know your office and or other buyers who treat people in a civilized manner.' (see Box 1 for details).

Box 1: Letter by local Maasai to P.J. Dave Flowers Ltd owner

*The Managing Director
P.J. Dave Flowers LTD
Attn: Mr. Hitesh Dave
Dear Sir,*

Re: harassment by yourself

I refer to several communication [sic] from you directly and through proxies asking me to sell part or all of my land.

The occasions and venues are as follows:

- You remember an occasion when you summoned me to the office and offered to buy me a plot in Isenya in exchange for a few acres of my land. I declined.*
- You called again asking me to speak to my wife and get her consent to sell land to you at “whatever price”. I declined.*
- You have sent a gentleman by the name of [Maasai local 1, name withheld] to talk to me to agree to sell part of my land. I declined.*
- You have again sent [Maasai land broker, name withheld] to me to offer a plot in Isenya arguing/advising me that it's [g]ood investment in exchange for my land. I declined.*
- Your other emissary was [Maasai local 2, name withheld] who you told to tell me that you have some 20 acres with a borehole in Enkirgirri which you wanted to exchange with my land. I declined.*
- You personally informed me of 3 parcels of land of about 80 acres in Ormeirruui and Ilassit areas. I declined.*
- You have also asked me to consider some land you have around the Maasai Rural Training Centre in exchange for mine. I declined.*
- You have offered prices ranging from 250,000/= Kshs to 750,000/= Kshs so that you acquire my land. I declined.*
- You requested me to sell some land for use as an access road. I declined to sell but allowed you to use the road anyway. The same goes for power lines. I argued that since we are neighbors I do not need to sell land for you to get access hoping you will reciprocate.*
- Together with [Maasai local 3, name withheld], you approached me to sell you 10 acres and I move closer to our old homestead where you are currently building residential houses. I declined. On this, you phoned me begging that I change my mind.*
- You again send Tania, the Flora manager to ask me to sell my land. I declined but she called THREE more times!!!!*

Mr. Hitesh, since you became my neighbor, we have co-existed peacefully with everybody minding their business. It appears, you have compared me with others who have forced by your actions as outlined above, to move to other places bought and exchanged by you.

I have absolutely no intentions of moving even though I realize my parcel is cutting right across your farm and residence.

Recently, I have reported to the police an attempted robbery in my place. Frankly, I did not think it was a robbery but part of a calculated scheme of harassment you have hatched with the help of your side kicks/hirelings who will do anything to acquire land for you.

I am a government officer and I have faith in the might and resolve of the government to protect me and my family. I will not be intimidated by anyone to give up my birth right for “fear of consequences” by you or your agents.

Land is something of intrinsic value especially if it has been inherited from parents. It cannot be compared with your land which you bought and have no special attachment to it other than making huge profits that do not benefit the locals in terms of social responsibilities.

I realize that you are capitalizing on the ignorance of the neighbors largely due to illiteracy. However, kindly note that some of us know our rights and will dig in to protect them with the help of the government.

I appreciate that you pay huge sums of taxes but that so do I in my small way. It uses the taxes to protect its citizenry from predators!!

I have not even complained regarding the effluent that gets into and contaminate water at the Isinya river passing through my farm and you know it is a natural resource and you have no right to contaminate water flowing all the way to the Indian Ocean!!!

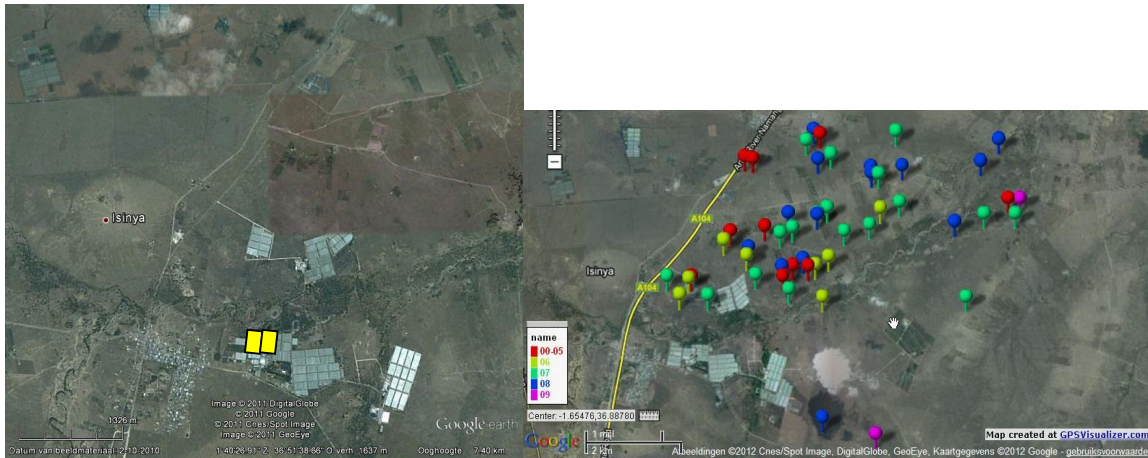
This neighbour's experience is not unique. People on the Olkinos side of the Isenya river have equally been approached to sell their land. One family that had no interest ended up in a

boundary conflict started through another Maasai emissary who repositioned survey beacons and started to put up a fence on their land claiming his land extended that far. The herdsman of the family was harassed several times for ‘illegal trespassing’. One other leading personality in the Olkinos society who fell out with the flower company and joined those airing their protests had late night burglaries to his home including physical attacks.

Box 2: Profitability of flower farming in Kenya

The three flower companies employ some 2,000-4,000 workers depending on the demand from Europe. Salaries are in the range of Kshs 6,600 to 9,000 per month (appr €60-85). In November 2008 it was reported that the three companies delivered 200 million stems per year (FloraHolland (2008b)). This translates in an annual turnover of some Ksh 6 billion (€55 million). This makes one better understand the drive to enlarge the companies’ acreage almost every year.

In 2008 reports continued to paint a dramatic decline in water levels. To establish the seriousness of the situation, a survey was conducted in the Olkinos/Embolioi area to look for causes and possibly solutions. The study established a total of at least 105 deep boreholes. Horticulture and poultry farming owned 32 deep boreholes. A total of 29 shallow wells that had fallen dry were counted by the middle of 2008. One year later this number had gone up to 53. The survey showed that most of the dried wells were located in the direct surrounding of the Indian flower company. The Olkinos/Embolioi area also accounts for 14 eucalyptus farms and these have contributed to the drying up of 3 shallow wells in a radius of 0.1 and 1 km within two years of the trees being planted. Latest reports for 2011 speak of almost 100 dried up wells.

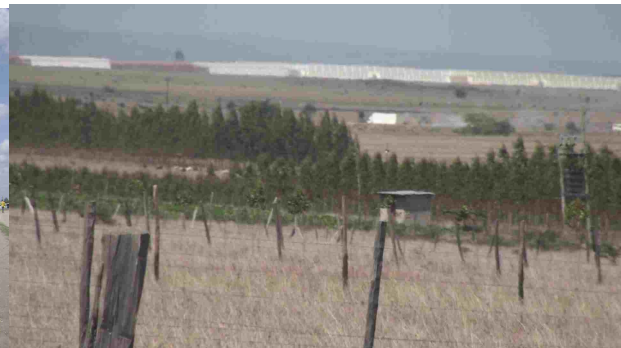


The farm in 2010 (yellow: size in 2005)

Location of dried wells (2009).



Green houses used in floriculture



Eucalyptus commercial farming

Most of the boreholes are within the prohibited distance of 800m from any other source of groundwater. Lack of control and monitoring by the authorities is responsible for this breach of the Water Act. And where NEMA counted six boreholes, other sources have expressed numbers ranging from 18 for P.J. Dave Roses only, to 34 for the total P.J. Dave group.



Drilling another borehole



One more died well

Besides over pumping, another threat comes from sand, stone and vegetation harvesting in the seasonal rivers of Kajiado. Some riverbeds are now bare rock, with the shallow wells in and along these seasonal waterways being lost as a result of unabated sand harvesting. The sand, which holds and protects the water for the shallow wells and aquifer recharge, is being exported outside the district to the construction industry in Nairobi and beyond. The riverine forest is said to become less dense as huge acacias are falling over and seem to dry slowly but surely. More study is needed to see whether the sand and rock harvesting is the main culprit resulting in a too fast and powerful mass of water exported out of the area during the rainy season or that chemical pollution is causing these problems. The river banks have also become bare of trees due to charcoal burning and higher levels of water evaporation. Complaints are made that sudden abortion of sheep, goats and cattle is linked to drinking water from the river. People state the water is no longer fresh as before due to the use of agrochemicals on the flower farms. The threat is not only to people and their economic activities but also to wildlife and the ecosystem in general. Bees, using the trees for shelter are disappearing at a fast rate. Whether this is linked to the pollution of agrochemicals is yet to be established as other causes could also be responsible for this fact. In other areas of the district, likewise, bees seem to be having difficult times.

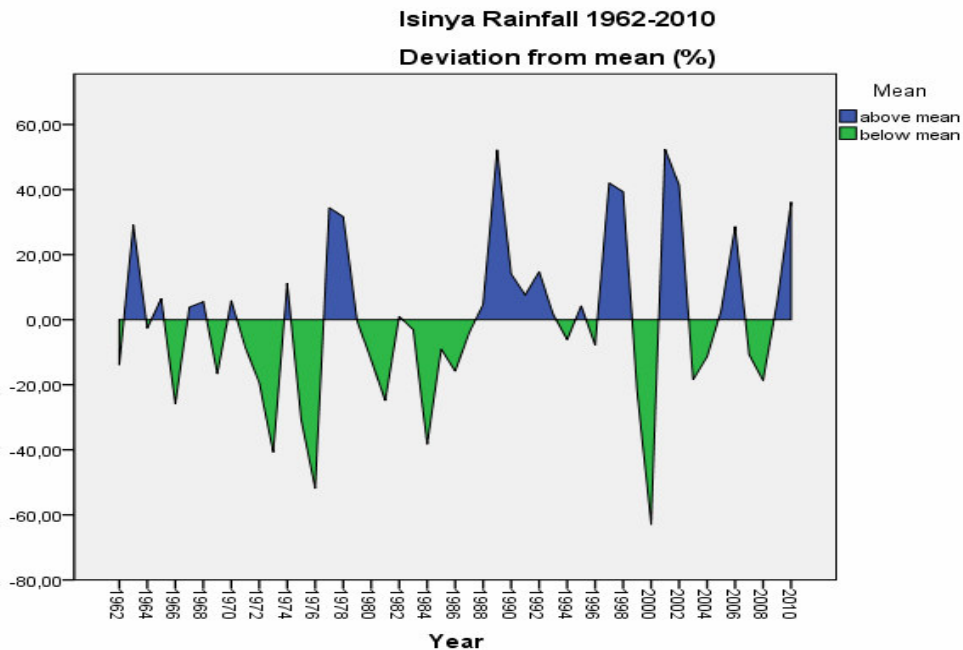


Isenya River: Uprooted tree. Riverine forest zone opens up (2011)

Finally, with the growth of Nairobi, more people are moving into Kajiado District. Nearby Kitengela town and its surroundings have grown tenfold in the last ten years due to immigration. As more settlement takes place, wells are being drilled to meet the rising demand for water. The announcement that the Isinya region will be part of the Nairobi Metropolis will heighten pressures in this region. These new challenges are undermining the improved water wells and present an inconvenient truth for all stakeholders.

Some may question whether the drying of wells is caused by climate change. Orindi & Murray (2005:4) blame governments in East Africa for not preparing for climate change which they claim is already widespread in the region with dry lands becoming drier. However, when checking rainfall figures for the semi-arid Olkinos/Embolioi region we concluded that in fact since 2000 average rainfall is up from 603mm for the long mean in the 1962-2010 period to 622mm per year. Out of the 10 wet years (>1std above mean (606mm) in the 1962-2010 period (49 years), 6 occurred in the last 14 years, with the number of rainfall days remaining constant (approximately 50 per year). Out of the 5 dry years 3 occurred in the 1970s, and one only (2000) in the last 14 years (Figure 1).

Figure 1: Rainfall Isinya 1962-2010



Orindi & Murray (2005:15) furthermore claim that the best way to mitigate climate change is not in the technical solutions proposed by national governments. ‘Real, long-term solutions can be found in existing livelihood strategies used by communities. Recognition of traditional land rights and systems of management in the formal land laws (for example in Tanzania) is therefore a significant step towards reducing vulnerability of communities.’ Experiences in Kenya, however, as pictured above, question their claim if formalisation leads to commoditization triggering the introduction of less sustainable alternative land uses.

But this ‘success story’ comes at a price. Each rose needs about 7 litres of water. That would mean an annual water consumption for roses of some 1.4 billion litres. That is the equivalent of a one square kilometre swimming pool with a depth of 1.40 metres! Or expressed in production litres of water: each day over a million litres of ground water is sent to the Netherlands from

semi-arid Kajiado. The worst effect to date has been the drying up of a large number of the (improved) shallow wells near these new activities, forcing the owners – the majority of whom are relatively poor – to buy water from their new commercial neighbours. Others are illegally pumping water from the river, buying it from commercial vendors in town, or trying to harvest it from the roof.



Water ferrying



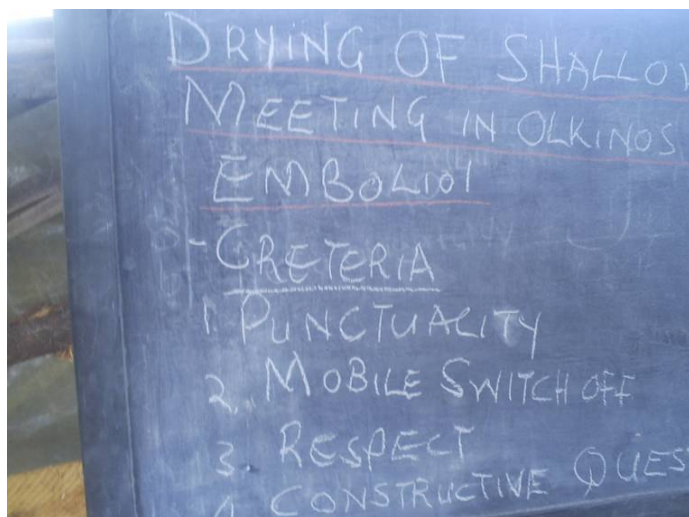
Illegal pumping from the river

Failing legislation, failing corporate responsibility

In 2009 the community had a number of meetings in an attempt to share their experiences and exchange notes. Invitations were sent to all stakeholders to attend the meetings. Experts were invited to explain the new 2002 Water Act, among others, as a tool to address the situation in a legal sense. The Water Act 2002 has introduced comprehensive and radical changes to the legal framework for the management of the water sector in Kenya (Mumma 2007: 160). A key element is the decentralisation to lower-level state organs and the creation of water resources users associations (WRUAs) to include a role for community groups in the management of water resources. Foremost these associations are expected to act as forums for conflict resolution and cooperative management of water resources.



Water laws meeting (2009)



Dried shallow wells users meeting (2009)

The workshops made it possible for the local community to appreciate the Water Policy and Water Act, the requirements of national environmental management and the dynamics of the interventions that stand in the way of sustaining their water resources. Interestingly the members of the new association were recruited from all ethnic groups found in the area.

Deprivation is breaking down ethnic boundaries and builds new ones along class lines, as not just the flower farmer but also other wealthy Nairobi urbanites, Maasai top civil servants and ministers have bought land in the area and are investing in commercial agriculture. It also opened up the bad relationship with the flower farmer, as some of the key flower farm managers attended the meetings. Ideas were launched to address the situation and plans for a communal borehole were drafted. This, idea, however, only lived a short life when the land broker decided to interfere and falsely accused some of the community members that they wanted to allocate the borehole for private purposes in their compound. The water crisis continues. It will be seen which steps the newly created Isenya WRUA, for which the local community has applied, can enforce a fair solution to the problem. Will they be able to receive full transparency of the company's licences and water use. A licence is needed for extraction of water more than 100,000 litres a day for any purpose. Does the company have this kind of licence? Can it be withdrawn? Will water test reports give them the legal means to halt environmentally destructive practices? Will they be able to have sufficient funds to follow this up, if need be, in court?

The flower companies provide some 2,500 to 3,000 jobs on an acreage that was occupied by three families 15 years ago. That is a scenario every African government is longing for. Also landlords renting out houses, retail shops, agri-chemical suppliers, airline companies (both Kenya Airways and KLM), borehole drilling companies in Kenya, Dutch flower auctions, flower retailers and the Netherlands government all profit from these activities. Yet this has come at the expense of the Olkinos/Embolioi community and the environment. As Aggarwal (2006) has noted for India also, globalisation comes foremost with outside investors that have a very short horizon for the well being of the environment.

Kenyan flower farm labourers are both beneficiaries as victims as they earn minimal incomes for long and sometimes dangerous labour. Moreover, when many lost their jobs they did not return to Western Kenya but remained around and run into trouble in making ends meet. Young girls ended up in prostitution and unwanted pregnancies. Some of the young men formed gangs that during the night attacked homes of the local community. The original inhabitants have now started a neighbourhood security project in trying to prevent attacks. One wonders whether the NEMA 2006 report had foreseen this scenario when the report states 'Social integration will be increased because the project will bring people from different ethnic and cultural backgrounds to pursue a common goal. The project will incorporate members of the surrounding community as well as people from across the country to work.' (NEMA 2006:30). The NEMA 2006 report for P.J. Dave Flora also claimed that 'No land use conflict or incompatibility with adjacent land uses is expected because P.J. Dave Flora Ltd owns the plot.' And 'No conflicts are expected as the land was acquired legally by the proponent and will be fenced around to avoid interference from neighbouring enterprises.' (NEMA 2006: 9, 25). It turned out that the interference was the other way around foremost.

The less favourable reality comes on top of the financial loss the local community, Maasai and non-Maasai alike, are suffering already. Not only are the investments in the shallow wells fully lost, their owners now need to buy water from far or from their borehole water drilling neighbours. Some of the dry well owners have been forced to sell their improved Frisian cows due to the high daily water demand these improved breeds have. Milk production for the family and the wider market is significantly reduced as a result. Others lost income from small scale commercial agricultural. For example, a local widow used to grow vegetables and supply the produce to a local supermarket. It allowed her children to attend secondary school. Her contract has now been taken over by her neighbour, a white telephone farmer from Nairobi who dried the former's well by drilling a borehole next to her door. The widow's arable land no longer grows vegetables.



Pointing at the neighbour who dried her well

“In Africa we have hundreds of millions of poor people in rural areas for whom there is no alternative. For these people, agriculture will have to be the key to their development, for their escape out of poverty, and water is a crucial constraint in many places.” (Salim Ahmed Salim, African Water Ambassador)

Some of the small scale land farmers that had settled from outside are thinking of giving up and returning as they no longer strike water in their well, in spite of several attempts to deepen these sources. But for the local Maasai there is no option of returning, only leaving elsewhere, as five families did, or moving to town. A last option is staying and trying to make ends meet in an increasingly stressful environment. Lately, more horticultural and flower companies are being erected in the Olkinos/Embolioi area. Some of these do employ local people and assist the locals in a more genuine way.

For now, it will be a matter of wait and see if the local community is able to correct the wrongs. It will be an uphill battle. Besides seeking a unified stand, being undermined actively as we have seen, they might be too optimistic in relying on the Kenyan authorities and politicians. In this light it is telling that the land broker was sponsored by the flower farmer to run for the position of councillor in the last general election of 2007. He failed as he is obvious not popular among the locals and actually feared. However, he was given the position of nominated councillor. This means that possible calls for farm invasions as in 2005 are less likely to be unknown to the company. Moreover, the company is in a good bargaining position with the politicians as it employs a workforce that could tilt the balance during voting easily. Election history in Kenya is littered with experiences whereby Kenyan labourers on large scale farms have been instructed to support certain politicians.

Besides the need for maintaining and strengthening existing water and labour laws, commercial farmers should be held responsible immediately for the unsustainable groundwater abstraction practices that are threatening the environment. These short-term exploitative practices may ultimately destroy the employment opportunities and economic wealth that has been created. If local institutions such as labour unions or environmental watch dogs are ill equipped or compromised it should be up to international consumer organizations and auctioneers to listen to the outcry of these local communities and apply a code of conduct. The Isenya people would welcome international assistance as they realise that one family has gained the multimillionaire status at the expense of their environment and well/being.

Conclusion

Is individual titling promoting sustainable agricultural production in semi-arid Kenya? Twenty-five years of land tenure change in Kajiado district have shown that the process of group ranch subdivision has not supported the ideas of De Soto (2000) and other neo-liberal economists who claimed that registering individual property would enable landowners to escape poverty. Over the last quarter of a century, a whole array of positive but also many negative effects of the change in property rights have been witnessed, in particular a loss of land to outsiders and the elite within Maasai society. Losing land is nothing new to the Maasai people but this time round it is slowly but surely turning Maasai society upside down, destroying its harmony, reciprocal rules and regulations, and solidarity, especially towards those selling their ancestral land. These individuals are blamed for doing so and will have difficulties finding support in times of need as

before. Also the rich are getting richer through their involvement in land speculation and have become less welcoming to share their wealth.

Moreover, the ordinary Maasai are now facing another elite: from outside. Initially it was the colonial settlers who took their pastures and ensured Maasai livestock stayed far away from theirs to avoid any possible transmission of disease and commercial competition. The settler grab was followed by national and local Maasai elite taking over land from within. Following political independence in Kenya, the Ministry of Wildlife Conservation and international conservation organizations also made claims on the Maasai's (dry-season) grazing areas. Attempts to stop any further loss of land were made by accepting the establishment of group ranches under a private statutory regime but most of these ranches ultimately ended up being subdivided into individual plots, with land subsequently becoming a commodity dictated by the market. This market attracted new settlers from outside and within. First they were small players who showed the Maasai how to improve food security by developing low-cost improved shallow wells. Dutch development aid played a significant part in this process and lifted people out of poverty. Later, other outside investors started commercial agriculture which has had an even bigger impact.

This new land grab is being conducted by direct and indirect coercion, with money and/or land being offered elsewhere. Threats are being made, water resources depleted and access routes blocked, which leaves no other option but to move. This also means that a Code of Conduct entailing a single check at the time of purchase is not good enough, nor is the implementation of legal instruments as a single weapon of defence to improve the resilience of the agricultural sector. Technological solutions to promote sustainable agriculture, including soil enrichment and revolutionary water harvesting techniques, are also needed.

These steps should help to stop the serious assaults on the environment that are primarily to the benefit of a few investors and other stakeholders who are playing their part in transporting cut flowers from Kenya to Europe. This new 'grab and earn' agriculture is worse for the environment than the old practice of 'slash and burn'. Mention should be made of the many landless (mainly female) immigrant workers that benefited from the agri-business jobs created. However, political, economic and natural shocks such as domestic election violence, a global financial crisis and an ash cloud from a volcano in a faraway country made many of them lose their casual jobs, for reasons beyond their control, and pushed them back into poverty. For now horticultural farming is foremost a rosy story for a privileged few, leaving the thorny side for the masses.

Political and economic interests are still too strong to address these wrongs effectively so local people have started to group together in an attempt to solve the water and health problems they face. Political sabotage by the elite from outside and within needs to be overcome and international assistance should be part of this process. However in the end, the devolution of power in water management that allows the issuing and control of water permits by local communities could be a way of addressing some of the non-sustainable onslaughts on Africa's limited fresh water resources.

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