

NIKINYA NTHI II IVONDOLE MWENE ATETE

I salute the SASOL fundis.

I salute the SASOL Board.

I salute the SASOL management staff.

Leaving the SASOL Chair is good for the institution and me. To hang on is to deny the Kamba age-grade/set rules and their ethics.

Three consultants, Peter van Dongen, Eric Nissen Petersen and I created SASOL in 1990 since KIDP refused to make water central in its program. Our recommendations led to the sacking of Jaap van der Zee, KIDP manager then. He joined SASOL and ran it until 1992. Eric left before the first Board met.

Peter, Jaap and I floundered for two years. Schools were in with some donors. We started a schools' program. There was drought; we started feeding schools and Baidoa! School feeding was limited by water availability; we built school wells and water tanks. Teachers and the community raided the water! However, we overturned the Classen doctrine, that wells were impossible in basement areas! It had reigned since 1950. The wells were successful. Schools were supposed to be gateways to changing parents and household incomes by introducing simsim into the farming system. 25 people were hired for this. Five others were in Nairobi. When Jaap left, confronted with a huge payroll, unreliable staff and simsim extension failure, we fired 28 staff members, closed the up market office/house in Nairobi and sold assets of somebody who had looted us. We retained Sam and British to begin to struggle with the water platform since wells did not produce enough community water and are extractive. The two had an old bicycle and one house for office and residence! Then we got some NGO money to start dams in Kiindu catchment. Lack of transport forced us there! **This led to dam mobilization policy by sublocations for community inclusion and cost control.** Typically communities finance close to half of the dam's cost.

Our assumption in 1995 was that the Eric dam designs were valid. We had rejected the Classen design for their expensive concrete construction. The USAID dams, wingless and with bulging downstream walls, accelerated erosion and washed away with the first storms! The Catholic Diocese ones were rejected on cost basis also. The four

designs were wanting in terms of site selection; foundations; construction techniques and materials and ground water recharge. **All four did not have systematic community participation.** Mukusya was our consultant, but we also rejected the Utooni design, which used formwork for construction on cost basis. **To contain costs, we were to build with local stones.** We also assumed that Kitui communities would welcome us. We had forgotten that the Catholic Diocese dams were essentially driven and owned by the church base communities and thus were an impediment to inclusive community mobilization and utilization!

By end of 1995 we had built some dams. However, there were still design, site, excavation, construction and siltation queries. Lake Tanganyika eroded the sides because our wings were also wanting! **From its failure, we learned how to extend wings. A CFGB farmer, who harvests wheat with ten computerized harvesters, run simultaneously from his house, proposed the first design change- a spillway!** We could not attract local university academics to help us solve problems since we did not have money for consultancy fees! **We went looking for TU Delft University who had global reputation for water structures design and modelling.** The assumption was that they would look for their research money. They did and investigated many aspects of design, location, construction, siltation, ground water recharge etc. We now can site by satellite if need be! We parted later when the link person and us differed on development theory. While in Kiindu, an external engineer bullied our fundi to change the height of a dam. It eroded! **Out of these two experiences, we developed a policy that no person external to SASOL should make policy or operational decisions. Keep it active for many external people impose ideas, policies and operations, which do not have contextual merit.**

The TU Delft link led to the three month NUFFIC sponsored postgraduate training of Milu Muyanga, Isika Mutua, Ament Mumina, Joseph Muinde, Mutinda Munguti, and Emily Kandia to Netherlands. Later it attracted other Netherlands intellectual capital, which ultimately led to our being recognized as the global leader in sand dam technology. **To date we have 687 sand dams as follows: Kitui County 668; Burkina Faso 10; Ethiopia 5 and Tanzania 4.** We have been invited to global water and climate change conferences on our own merit. **Kenya's chattering class, academia and**

bureaucracies ignore us *nundu mwathani nde nguma kwoo!* We still have not made it to the newspapers!

By late 1990s, we had attracted funding from bilateral donors and began to staff up. Kitema was the first victim! More significantly, basic county demographic data and geo-physical data, needed for forward planning, were lacking. Field enumerators had essentially cooked demographic survey data. A countywide detailed geological survey is yet to be done! Maps show some rivers going the wrong way! We requested Kenya National Soil Survey to map soils and geology. They quoted Ksh. 28 million for each ten square kilometre area. Njuru and I had succeeded too well in training them to adopt consultancy costing! We therefore, in 2000, mobilized 27 students and a civil servant to walk part of the county to gather demographic and river data for planning purposes. Mutinda and Ken were walkers!

In 2002, when Exchange literally parachuted in, our free intellectual capital expanded exponentially. **370 Dutch and 265 Kenyan students have participated in the Exchange Programme from 2002 to 2010.** Exchange sponsored the training of Joyster Ngute Tito, Alex Mwangangi Ngui, Moris Mbula, Lilian Muthama, Chris Mukuva, Rebecca Mwikali, Duncan Munywoki, and Cecilia Mwikali at the certificate and diploma levels in Kenya. SASOL sponsored Mathew I. Kitema, Bernard Muendo Ndunda, Mary Maingi, and Mary Mutheu at the same levels. Three students, Mutinda Munguti, Ancent Mumina and Peris M. Munyaka, sponsored themselves for postgraduate studies externally. **The researches and experience of the attached and sponsored students saved SASOL many years of staff research time.** They were not only used in operations but also formed a major input into the current Strategic Plan. Further, Kenyan student attachments have given us a very large pool from which to identify staff. **This is a good strategy. Keep it.**

Struggling with community organizing led us to sharpen listening to communities essentially by making our fundis community organizers and creating area coordinators. This led to key policies. **One was to drill communities that these were their dams. Second was that those interested in what we were doing would get it from the various communities, not from staff or Board. Third was to increase the number of Board Members from the Kitui community. The fourth is that Board Members cannot be**

politicians or civil servants. The organized communities and Kitui Board members have protected SASOL when confronted by irreverent politics and bureaucracies. **Treasure this insurance for we would not be here today without it.** In the future, recruit Financial, ICT and Green Energy specialists into the Board for SASOL is now complex. **Complexity grows daily. Attend to it diligently. Become intrapreneurs above being entrepreneurs.**

Michael Joseph says we have peculiar habits. Mine is an absolute belief that diverse knowledge is crucial for problem solving under uncertainty. **All development work is pure uncertainty in spite of its false theories and quantifications.** That is why I urge you to, first, read everything written about Kitui, and, two, read outside your formal training. Diverse sources enrich your web of knowledge. It often is triggered to creativity by sources, which at first glance look irrelevant. For example, Charles Dundas writings, from early 20th century, can trigger insight into a Maito. Another example is DC Kelly. He constructed all the water points repeated by Kenya Government and many NGOs since 1963. His work led Peter van Dongen and I to pushing water to KIDP and ultimately led us to the water platform. He also proposed and constructed all the major roads in the county. The ASAL study of 1977, only proposed the minor/rural roads. Knowing his road and water grids is useful in scheming interventions in the county since populations follow water and communication grids. In short, knowing the histories -**note histories**-of a county is important in imaging its future and development. **Therefore, all of you need to internalise the histories of peoples' philosophies and ethics; migrations; the land use patterns; past and present trading regimes and patterns; techniques and technologies; foods; historical marginalizations; remnants of tradition; exit of elites; religious beliefs and conflicts; past and still growing evangelical intolerance etc.** Such issues inform peoples' changes at local and national levels. These issues are yet to become part and parcel of formal training and therefore public knowledge. **Further, all of us need to continuously bulk up on local knowledge yet to be written. This is knowledge within people and their institutions.** To get it, one needs to be intellectually humble and to keenly listen to both genders and all ages at different levels of society. One must be intellectually tolerant. **Do you remember the Lawyer Of The Poor in Maito? Does she not know more about Maito than all of us?**

Galileo said: "Doubt is the father of invention". To invent Third Generation SASOL, you will need to doubt its past since the global and local referents are rapidly changing. The Board and Staff will have to image alternative futures for Kitui county and Third Generation SASOL within key global and local contexts. Globally, the East is crucial. Five years ago, China's economy was half of Japan's. It passed it this year. Currently, China accounts for 20% of global growth and 9% of global output. Currently, Africa accounts for only 2% of global output. In twenty years, its economy will be twice as large as the U.S.'s today. It will account for 24% of global output. **Already, it leads in nano and green energy technologies. It is the world's leading manufacturer of wind turbines and photovoltaic panels. Its experiments in using nano-technology to hold water in dryland soils are worth watching and copying.** Further, in ten years, India will move to third, displacing Japan to fourth.

These facts lead one to conclude that you will need to pay attention to the economics, politics, knowledge and financing emanating from China and India among others in the East. India has an intellectually and operationally vibrant NGO sector. **Learn from it as a step to the EAST.** The short cuts are to find universities/research or development institutions *a la* TU Delft interested! Rajasthan is important for it has struggled with dryland development for eons of time.

Locally, the future drivers of Kenya, Kitui included, will be ICT, climate change, youth demographics and poverty attenuated by the last two. In the past ten years, Kenya's ICT sector's growth has outperformed all other sectors, expanding by 23% annually. It now is six times larger than it was then! World Bank Chief Economist, Wolfgang Fengler, states that it added 0.9 % to Kenya's growth yearly. If it were not there, our growth would have been 3%, equal to population growth and thus stagnation. The Bank's Managing Director, Ngozi Okonjo-Iweala (Nigerian), states that M-Pesa supports investment to the poor and affirms their saving traditions through a low cost mechanism. This year, it is estimated that mobile phone transfers will account for 20% of GDP. **These are salient pointers to why you need to go deeper into ICT.** You will need to go beyond computer use for websites and Internet to cloud computing, with cell phones, crowd sourcing -linked with social media- for marketing and information.

Check out Iko-Pesa, yuCASH, iHub, Elma and above all, Tangaza, a digital solar powered banking system already approved by the Central Bank. M-Pesa is dated! **New computing approaches will increase incomes for the rural and urban poor without computer costs. Get into them and train at this higher level.**

The population influx seen in Kitui town is also afoot in the other county towns. Currently, 29% of Kenya's population is urban. It will be 50% in 20 years. Kitui county total fertility rate is still above seven. **Therefore the population will continue to explode into poverty for generations until family planning takes root.** 43% of the current county's population is under fifteen. In 20years, 90% of them and their children will have to be employed outside subsistence agriculture. **They will be driven out by farm size, increasing dryness and soil structure degradation.** I estimate that 50-70% of the county's total population will be urbanized then. Water must be harvested for their domestic consumption and systematic irrigation built up to feed them!

Water, industrially poisoned elsewhere and pumped from Athi River, is not an option until power costs come down in thirty or so years, if geothermal and wind energy are systematized nationally. Even then, how do we poison our people? Further, the Umaas are black holes driven by climate change due to size and evaporation! **Therefore, agitate that Grand Falls Dam be built for power and irrigation of Mwingi, not just for power. Push for the construction of the Ikoo dam, identified by Kelly and designed in 1977.** It has potential for urban and irrigation supply, by gravity, up to Kakya! Even if these two are done, they will be limited by piping costs or evaporation if canals are used.

THEREFORE, SCALE UP SAND DAMS on Tiva, Thua, Ikoo, Mui, Tyaa, Kalundu, Mwewe, Mwitasyano, Kalikuvu and Mitamisiyi etc. Families could have their own sources far away from the river as already shown by some of the current dams. **With existing knowledge, large dams can be designed to ameliorate saline boreholes; recharge the extensive black cotton areas and open new lands for cultivation away from the exhausted areas. Above all, large dams will supply the emergent towns!** Their wastewater and that of densely populated rural areas will need to be recycled. **Therefore, get into constructed wetlands.**

Generating employment opportunities for rural and urban poor, in the county, screams for attention. Of Kenya's GDP, 24% is from agriculture, 17% from industry and 46% from services. However, services create 68% of the jobs! If the national data is proxy for the county, **create an investing arm to get into financing/supporting/owning labour intensive entities** for food processing; value addition of precious stones, tree products, essential oils and animal products; and the desired services- health, technical education, marketing, and creative industries (entertainment and arts) etc. **Get into financing, building and operating urban infrastructure** like water, sewerage and warehousing through BOT, joint ventures or special purpose vehicles. **Get community groups into phone based agency banking.** Equity is already doing it with traders in Turkana! **Income from these varied activities should in turn ensure sustainability of the welfare side needed for supporting the rural and urban poor.**

Fourth Generation SASOL will be during the age of biomass industrial utilization as opposed to the current petroleum based industrialization. ETC Netherlands monitors this effectively. Stay in touch and build in-house capacity on biomass industrial utilisation.

SASOL should think about honouring past enablers. Peter van Dongen effectively taught us about ground water. Sam and British laid the foundation. Henk expanded our intellectual capital. Vice-Chair Katua controlled our money, hiring and counseling when our growth exploded. Annetta and Harold Miller nudged us to think about the water-platform process and its attendant community organizing. Prof. John Mbiti taught us **The Prayers of African Religion** (London: SPCK, 1975) and their ethics.

Finally, I absolutely refuse to be honoured, gifted, cited, named, memorialised or tokened. In **Creating The African University: Emerging Issues:** edited by Prof. T. N. Yesufu, (OUP: Ibadan, in 1973) I argued that those of us who were **privileged** to work in Chuos, on this continent, should find ways of contributing to communities over and above teaching and research, the classical work of university academics. **Therefore, it is for me to recognize and honour you for enabling me to practice what I preached. That**

you let me to come and eat goat heads is much more than enough honours! It truly has been great working with all of you.

G-C. M. Mutiso