

Remembering Africanization: annotated transcript of staff reunion, Amani Hill Station, 23 April 2015

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FIGURE 1A–E During the 2015 reunion of old Amani scientists and technicians. Photographs: Astrid Ghyselen and Wenzel Geissler.

Participants

Professor Bukheti Swalehe Kilonzo, born 1949: joined Amani in 1968 as a Scientific Assistant. He received a bachelor's degree in microbiology from the University of London in 1972, a master's in medical parasitology from the

London School of Hygiene in 1973, and a PhD in plague epidemiology from Dar es Salaam in 1984. He left Amani in 1982 as Research Scientist and became professor at Sokoine University. He established plague research at Amani; see e.g., Kilonzo, B. S. and J. I. K. Mhina (1982). The first outbreak of human plague in Lushoto district, north-east Tanzania. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 76(2): 172–177.

Dr William Kisinza, born 1966: the current Director of Amani Research Centre at Muheza, participated in the reunion *ex officio*, and represents a slightly younger generation of Amani-based scientists. He obtained a master's in medical entomology from the Liverpool School of Tropical Medicine in 1999, and a PhD from the same school in 2006. Like other younger colleagues, he mainly worked on collaborative malaria prevention, together with London School of Hygiene and other transnational global health research institutions; see, e.g., Kisinza, W.N., T.E. Nkya, et al. (2017). Multiple insecticide resistance in *Anopheles gambiae* from Tanzania: a major concern for malaria vector control. *Malaria Journal* 16 (1): 439.

Dr Edith O. Lyimo, born 1957: obtained a bachelor's degree in biology at Dar es Salaam in 1982, and a master's in parasitology and entomology at the University of Jos, Nigeria in 1985, followed by a PhD in mosquito ecology in 1993. She entered Amani as Research Scientist III, in 1982, and moved to Amani's (then) field station Ubwari, Muheza in 1983. In 1989 she moved on to the Ifakara research centre and retired as Research Scientist II. Her work focused on malaria-related entomology. See, e.g., Lyimo, E.O. and W. Takken (1993). Effects of adult body size on fecundity and the pre-gravid rate of *Anopheles gambiae* females in Tanzania. *Medical and Veterinary Entomology* 7(4): 328–332.

Mr Alban Machaga, born 1948: joined Amani in 1973 as a Laboratory Technician, having previously received secondary education. He retired in 2008 as Laboratory Technician. He did not author own papers, but was gratefully acknowledged in many of his Tanzanian and international colleagues' papers.

Dr Stephen Magesa, born 1960: obtained a bachelor's degree in biology and ecology at Dar es Salaam in 1985, and a master's in medical parasitology at the London School in 1988, followed by a PhD on malaria in Copenhagen in 1999. He joined Amani in 1985 as Research Scientist III, and served as Director of Amani Research Centre from 2005 to 2010, overseeing the transfer to the lowland location of Muheza. He worked principally on malaria, authoring and co-authoring numerous articles, beginning with path-breaking collaborative work, with colleagues from the London School of Hygiene, on treated bed nets; see, e.g., Magesa, S.M., T.J. Wilkes, et al. (1991). Trial of pyrethroid impregnated bednets in an area of Tanzania holoendemic for malaria Part 2. Effects on the malaria vector population. *Acta Tropica* 49(2): 97–108.

Mr Lincoln Malle, born 1954: worked as Laboratory Technician at Amani from 1977 to 2004, when he moved to another NIMR laboratory. He features on several multiple co-authored papers, as well as in acknowledgements, see, e.g., Lusingu, J., A. Olotu, et al. (2010). Safety of the Malaria Vaccine Candidate, RTS,S/AS01E in 5 to 17 Month Old Kenyan and Tanzanian Children. *PLOS ONE* 5(11): e14090.

Mr Y. G. Matola, born 1941: joined Amani in 1963 as Laboratory Technician. He received training while working at Amani, receiving a master's in applied immunology from Brunel University in 1977. Upon his return, he became a Research Officer I in 1978, a Senior Research Scientist II in 1985, and a

Principal Research Scientist in 1991; he was the Director of Amani between 1992 and 1995. His entomological research continued the tradition of Amani Malaria Research Institute, and extended further into filariasis research; see, e.g., Matola, Y.G. and S.A. Magayuka (1981). Malaria in the Pare area of Tanzania. V. Malaria 20 years after the end of residual insecticide spraying. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 75(6): 811–813.

Mr John Mganga, born 1949: worked as a Laboratory Technician in Amani from 1971 until he retired in 2000. He was trained in Amani on the basis of a school certificate. After working for several years with John Raybould, he continued working on several other onchocerciasis related projects, among others with Muro, and was acknowledged on numerous papers.

Professor Franklin Mosha, born 1946: received a bachelor's degree in biology from Dar es Salaam in 1971, a master's in medical entomology from North Dakota in 1973, and a PhD in medical entomology from Dar es Salaam in 1978. He joined Amani in 1973 as Research Officer, and left in 1978, becoming an academic at Kilimanjaro Christian Medical University College. His original research was mainly on bancroftian filariasis, and he contributed to numerous publications on malaria and filariasis entomology; see, e.g., Mosha, F.W. and V. Petrarca (1983). Ecological studies on *Anopheles gambiae* complex sibling species on the Kenya coast. *Transactions of The Royal Society of Tropical Medicine and Hygiene* 77(3): 344–345.

Dr Abraham Muro, born 1950: obtained a bachelor's degree in chemistry and zoology at Dar es Salaam in 1976, followed by master's degrees at Tulane (public health, 1980) and London School of Hygiene (medical parasitology, 1989). He entered Amani as Research Scientist Trainee in 1976 and left Amani (which by now had administratively moved to the new Amani Research Centre, Muheza) as Principal Researcher in 2010. Muro continued the work started by John Raybould and colleagues, concerning the role of black flies in the transmission of onchocerciasis. See, e.g. Muro, A.I. and Raybould, J.N. (1990): Population decline of *Simulium woodi* and reduced onchocerciasis transmission at Amani, Tanzania, in relation to deforestation. *Acta Leidensia* 59(1–2): 153–159.

Mr Richard Mtoi, born 1940: joined Amani as Laboratory Technician in 1975, retiring as Principal Laboratory Technician in 1995. He was trained as technician at Muhimbili National Hospital, 1961, as well as at Kampala, 1966, and Paddington College, London, 1970 and 1979. Mtoi contributed also to work on the epidemiology of onchocerciasis.

Dr George L. Mwaiko, born 1945: obtained a degree in chemistry at Matera University in 1971, a certificate in chemistry in Prague in 1973, and a PhD in immunology and biochemistry of parasites at Muhimbili Medical Centre, Dar es Salaam, in 1992. Came to Amani as Research Officer Trainee in 1966 and retired as principal Research Scientist II in 2008; from 1980–83 he was Acting Director of Amani. Working in chemistry, Mwaiko contributed to different projects; see, e.g., Mwaiko, G.L. (2000). Biochemistry research activities covering 20 years of NIMR – Amani. *Tanzania Health Research Bulletin* 2(2): 32–5. Mwaiko also continued the established interest in onchocerciasis at Amani; Mwaiko, G.L., Mtoi, R.S., Mkufya, A.R., et al. (1990). Onchocerciasis prevalence in Tanzania. *Central African Journal of Medicine* 36(4): 94–6.

Mrs Prisca Mwaiko: nurse midwife, wife of George Mwaiko. Worked as a nurse at Amani from 1975 to 2011.

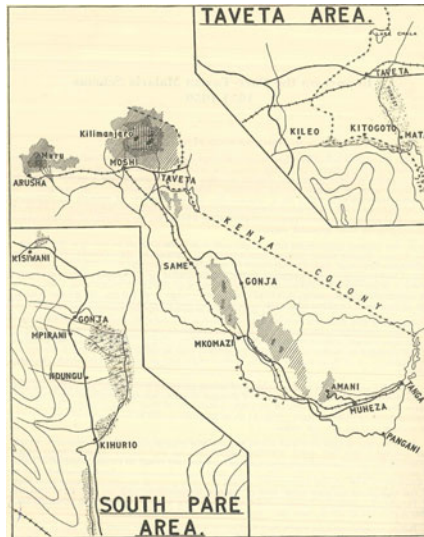


FIGURE 2 Amani and its field stations, Muheza, Tanga and Gonja/Pare, 1960
 Source: East African Institute of Malaria and Vector-Borne Diseases (1960).
Report on the Pare-Taveta Malaria Scheme 1954–59. Dar es Salaam, Government
 Printer, p. 2.

*Transcript*¹

[Welcome remarks by Dr William Kisinza, current Director of the National Institutes of Medical Research (NIMR) Amani Research Centre, Muheza, under which Amani Hill Field Station now falls.]²

[Professor Kilonzo asks whether participants all speak English. Discussion. Some argue that ‘technical’ issues require English. Decision is made to mix languages.]

*Dr William
 Kisinza:*

So I want just to mention few key events of the Amani
 Medical Research Centre [...] We will mix languages so

¹*Note on transcript:* Unless indicated, all transcribed text was spoken in English. The text is presented in chronological order, but redundant passages and excessive repetition has been removed; any removed text is marked as [...], or briefly summarized in [xxx]. By contrast, ‘...’ indicates a moment of hesitation or pause in speech. [*inaudible*] indicates speech that could not be transcribed. Passages or words that are not quite clear are suggested as [xxx].

²Amani is the name of the original research station located on top of the East Usambara mountains, founded around the turn of the 20th century; in most of this transcript, this is what Amani refers to. Around the middle of the 20th century, Amani had three so-called field stations – Muheza, Tanga and Pare (or Gonja). For scientific and economic reasons, activities shifted from the 1990s onwards from Amani to both Tanga and Muheza; this was in 2005 recognised by making Tanga a research centre of its own, and by formally transferring Amani Research Centre – as it now was called – from the hill to Muheza. Therefore present-day Amani Research Centre, at Muheza, includes Amani Hill Field Station – that is, the original research station. See Figure 2.

that each one understands. I will begin with the colonial era: 1902, I don't know what we can remember [...] the Germans established Amani [Biological-] Agricultural Institute³ under the Germany colony. [...] In the year 1927 up to 49 this centre was changed and became an East African Agriculture and Forest Research Institute.⁴ [...] In 1949, I think that's when mostly the history of Amani commences, in the presence of Captain Dr Bagster Wilson⁵ who established another centre called the East African Malaria Unit⁶ under the British colonial and welfare scheme;⁷ this was first at Muheza.⁸ [...] So it changed from agricultural research to malaria research. [...] In 1951 the [...] unit then moved from Muheza [...] to Amani. Actually malaria

³Amani [Biological-] Agricultural Institute, or *Biologisch-Landwirtschaftliches Institut Amani* was founded in 1902 as the central botanical Institute of the budding German colonial Empire. Modelled upon the Dutch colonial botanical garden at Buitenzorg, it aimed to assemble agricultural plants and trees from around the world, to study their properties, making use of Amani's fertile soil and rainfall, as well as the steep altitude and temperature gradient within a limited geographical area. See Engler, A. (1903). Das biologisch- landwirtschaftliche Institut zu Amani in Ost-Usambara. *Notizblatt des Königlichen botanischen Gartens und Museums zu Berlin* 4(31): 63–66; Bald, D. and G. Bald (1972). *Das Forschungsinstitut Amani: Wirtschaft und Wissenschaft in der Deutschen Kolonialpolitik Ostafrikas 1900–1918*. München, Weltforum Verlag; see also Zepernick, B. (1990). Zwischen Wirtschaft und Wissenschaft – die deutsche Schutzgebiets-Botanik. *Berichte zur Wissenschaftsgeschichte* 13(4): 207–217.

⁴As a consequence of World War I, Tanganyika became British mandate, and eventually the German botanical research station became the British East African Agriculture and Forest Research Institute, continuing research into agriculture and forestry; see Nowell, W. (1933). The agricultural research station at Amani. *Journal of the Royal Society of Arts* 81(4224): 1097–115.

⁵Donald Bagster-Wilson, OBE (1901–60), was Amani's first Director post-World War II. He set the direction of malarial research for Amani and was thought of as a symbol of traditional British colonial authority long after his departure in 1959. See <http://www.bmj.com/content/1/5219/134.4>, accessed 16 January 2016.

⁶In 1949, the East African Malaria Unit was established at Muheza, in the malarious lowlands beneath Amani hill station. It's founding director, Bagster-Wilson, successfully lobbied the colonial office to transfer the unit to Amani Hill station in 1950, practically replacing the East African Agriculture and Forest Research Institute. See, e.g., Ombongi, K. S., M. Dobson, et al. (1998). The East African Medical Journal: its history and contribution to regional malaria research during the last 75 years. *East African Medical Journal* 75(6 (Supplement)): S10–S19; also: <https://www.nimr.or.tz/about-us/background/>, accessed 8 January 2018.

⁷Referring to the 1945 Colonial Development and Welfare Act, which considerably extended the previous act of 1940, notably in providing substantial funding for scientific research in 1946–1951; see Anonymous (1945). Colonial Development and Welfare Bill. *Nature* 155: 358.

⁸Bagster-Wilson established malaria research at the hospital at Muheza; however, realising that the agricultural research station at Amani was underused, and extremely pleasant to work in, he successfully lobbied the colonial office to transfer his unit to the hilltop location. In the Annual Report of 1952, he praises the combination of headquarters at high altitude and field stations in malarious low country: "While Amani provides surroundings in which it is possible to carry out laboratory work of precision and to do a prolonged day's work without undue fatigue to the European, the lower ground gives much of the year a constantly recurring cycle of the interactions of human and the mosquito phases of the malaria cycle." (East African Malaria Unit (1953), *Digest of Annual Report for 1952 of the Medical Research Organisations*, Nairobi, Government Printer, p. 20.

research began in Muheza, then it was brought here in 1951 where it was called the East Africa Malaria Institute, and research which was covered during that period was malaria, schistosomiasis and onchocerciasis,⁹ therefore these were the key components of the research here. [...] In the year 1954, I mean after three years the East Africa Malaria Institute (EAMI) was given another name, it was called the East African Institute of Malaria and Vector-Borne Diseases (EAIMVBD), so the focus was on vector control. I don't know if there was any among us who was here in 1954, is there a person who was there by that time? Professor Msangi.¹⁰

Dr George

L. Mwaiko:

Professor Bukheti He is late.

Swalehe Kilonzo:

[The conversation switches to Kiswahili]

Kisinza: He is late but to those who are here, was there anyone who was there that time?

[All]: No.

Kisinza: So all of you are of the same history like mine.

Kilonzo: We all began school at the same time. [laughter]

Kisinza: So in 1960 – I think some of us were born at that time – there was a change of research focus: schistosomiasis was removed, it was phased out, and Bancroftian filariasis and plague¹¹ were introduced as new research areas.

[Some disagreement from the group.]

Professor We shall correct this; we shall make corrections.

Franklin Masha:

Kilonzo: We will make corrections, [...] there are many things there.

⁹Schistosomiasis or Bilharzia is caused by a blood fluke, *Schistosoma sp.*, which enters the bloodstream in its larval stage through contact with stagnant, infested water; the intermediate host, or vector, which sheds the larvae into the water is a snail; onchocerciasis or river blindness is caused by the blood parasite *Onchocerca volvulus*, which enters the human body through the bite of an infected leg fly, *Simulium sp.*; this fly breeds in streams and rivers, in some cases attaching its eggs to freshwater crabs; onchocerciasis research involves thus both clinical and insect vector studies, as well as research on crabs.

¹⁰Abdulrahman S Msangi, b. 1929, BSc from Makerere 1953. He assisted in bilharzia studies and mosquito larvicide trials, publishing in the *Bulletin of the World Health Organisation* and elsewhere. In 1961, he transferred to Morogoro as entomologist with the Tanganyika Malaria Service; see Clyde, D. F. (1962). *History of the Medical Services of Tanganyika*. Dar es Salaam, Government Printer, p. 182.

¹¹Bancroftian filariasis is caused by the parasite *Wuchereria bancrofti*, which enters the human bloodstream in its larval stages through the bite of an infected mosquito; during advanced stages, the disease leads to extreme swellings of legs and scrotal (elephantiasis). Plague is caused by the bacterium *Yersenia pestis*, which, among numerous pathways of infection, can be transmitted through the bite of infected fleas; plague research involves thus studies of fleas, as well as of their rodent hosts.

Mosha: Schistosomiasis and filariasis were moved to Mwanza Medical Research Centre, they were not removed but actually shifted to Mwanza.¹²

Mr Richard Mtoi: They were taken there.

[*Most agree*]

Kisiza: Okay, then it was phased out here at Amani, and taken to Mwanza, ok. We will do correction on that. Do you see

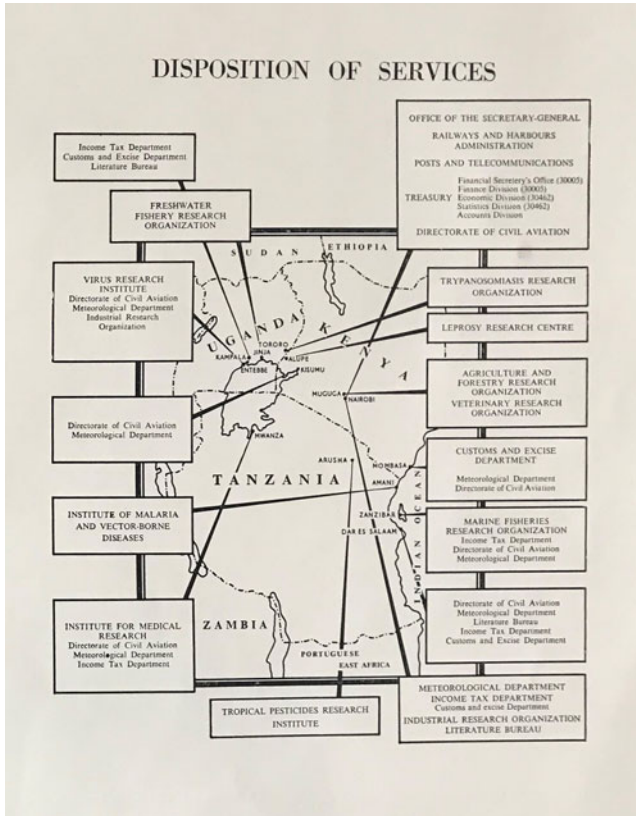


FIGURE 3 Institutions and services under the East African Common Services Organisation. Source: East African Common Services Organisation (EACSO) (1960) *How EACSO Serves You*. Nairobi: EACSO, p. 17.

¹²The East African Institute for Medical Research, in Mwanza, was one of the numerous research institutes under the East African Common Services Organisation. Later it became, like Amani, part of the newly founded NIMR. See <https://www.nimr.or.tz/about-us/background/>, accessed 12 January 2018.

the importance of old is gold? In 1977 that's when the collapse of the East African Community happened,¹³ and the institute called the East African Institute of Malaria and Vector-Borne Disease was then changed to Amani Medical Research Centre in 1977.

Kilonzo: When was it?

Kisinza: 1977, was it after the East African Community collapsed?

Kilonzo: Write it – we will correct it.

Kisinza: Right, [it was] 1979 of course [...] there were changes in the two years, I know I am skipping issues [focusing on major ones]. After the establishment [of NIMR] in the year 79, that's when NIMR got the mandate of conducting and regulating health research, as major acts of NIMR. Fast forward to 2005. [...] In 2005, the NIMR council decided to divide the Amani Centre into two sections – we had Tanga Centre and Amani Centre. Then it moved the management of the headquarters of Amani Centre to Muheza. Whereby up to this moment it is the headquarter called the Amani Centre in Muheza [combining Amani Hill and Amani Muheza] and Tanga Centre located at Bombo Hospital. So the aim is to strengthen the clinical research at the hospital, and [...] they decided to move it down to Muheza, [...] due to the costs of running the centre from up here. Most researches were conducted down there, so the frequency of climbing up and going down was costing the centre and there was a need of reducing these expenses by shifting the headquarters to Muheza, which [had been] the field station [until] then. Afterwards, the authorities saw a need of establishing another centre. This was made possible by [...] forming NIMR Tanga Centre, focusing at clinical trials. Then this place remained with the name Amani Hill Research Station. It remained with few research activities, [...] many technical staff were moved to Tanga Centre at Bombo. Only few people remained here. That's when the actual, what you can call deterioration of this place [started]. There was no longer [...] concentration of research and

¹³In 1977, the East African community, founded 10 years earlier, broke apart, on account of political differences, and the conflict between Tanzania and Uganda. In consequence, the highly specialised research institutions, spread across East Africa and each focusing on a specific disease – e.g., leprosy, viruses, malaria, schistosomiasis – became nationalised, personnel from other countries had to return to their home countries, and research priorities became more varied and open to the influence of donor interest. At the same time, but only partly related, international core funding, as well as national contributions to medical research institutions reduced dramatically. See, e.g., Beck, A. (1973). The East African Community and Regional Research in Science and Medicine. *African Affairs* 72(288): 300–308; Hazlewood, A. (1979). The end of the East African community: what are the lessons for regional integration schemes? *Journal of Common Market Studies* 18(1): 40–58.

administration here. Then the government started curtailing running costs of its research institutes by reducing and removing other charges and other research implementations. However, there is still a vision of the future, to have this place becoming as a fully-fledged centre again. There is a new vision [...] that Amani will soon become a training centre by establishing a NIMR University. There will be [...] training in postgraduate levels and other specialised courses. Actually, we will also have some of this place to be turned into a science park because the area is spacious. There is already government commitment and a plan to collaborate with other institutions such as SEKOMU (Sebastian Kolowa Memorial University)¹⁴ located at Lushoto. So we looked on the proximity of this area and Lushoto, that they can become affiliated. A child cannot be born and instantly start walking. These are ongoing initiatives. So I only wanted to brief you of where we are coming from, the Amani Research Centre changes, and up to this moment. So it is not forgotten. *[applause]* Thanks a lot.

[Drs Okwaro and Mangesho explain seminar procedures.]

[The conversation changes to English.]

Ferdinand Moyi
Okwaro:

Why we called you here is to talk to you, or you talk to us, about your experiences during the transition period [around independence]. You were all here around the times of the Africanization, [...] when Amani was transiting from [...] the time it was run by [Europeans] and [you were] now taking over as Africans. [...] So we want to know how [it] was like working in Amani, [...] taking charge of the centre, of the science conducted here. [...]

In the afternoon we [will] look at the 1980s, so for now we just want to hear about the 60s, 70s and up to [...] 79. [...] We are interested not just in the science itself but also in the social aspects of being and working in Amani. There are no limits, just what is interesting to you and what was fascinating for you at that time and what your experience was, [that] is what we would like to know. [...]

Mr Y. G. Matola:

Was there anybody here in the 60s, who came here in the 60s? *[laughter]* [...]

Kilonzo:

[...] I can start – I came in 1968. It was around June, immediately after my National Service training.¹⁵ In fact, when I

¹⁴A recently founded (2012) private university in the West Usambara mountains; see <http://www.sekomu.ac.tz/index.php/en/>, accessed 8 January 2018.

¹⁵Since 1963, the newly independent Tanzania had obligatory national service including military training (see Anonymous (1973) *Ten Years of National Service, 1963–1973*. Dar es Salaam: Tanzania Publishing House).



FIGURE 4 ‘Major’ Kilonzo, 1968 (personal collection, Bukheti Kilonzo).

came, the Director, the then Director Dr Lelijveld,¹⁶ renamed me Major Kilonzo. [*laughter*] I walked in with my uniform, went to his office, I saluted him, [*laughter*] ‘So is this a major?’ he asked. So the name of Major actually stuck. I was known all around as ‘Meja Kilonzo’. And on my first day I was told to report to the board council; by then there was Dr. Fletcher¹⁷ and Dr Mwaiko of course

¹⁶Jan Lelijveld, born in 1929, a Dutch MD and the first non-British – and last European – Director of Amani, lived in Amani from 1966 to 1970.

¹⁷Tom Fletcher was head of the chemistry laboratory at Amani. Fletcher had started to work in Amani in 1957, during colonial times and continued for several years after independence, leaving after 1969; he was widely considered an exemplar of the old-fashioned colonial type. See Graboyes, M. (2015). *The experiment must continue. Medical research and ethics in East Africa, 1940–2014*. Athens, Ohio University Press.

[who] was Mr Mwaiko by then. [...] And Dr Fletcher asked Mr Mwaiko to interview me. [*laughter*] [...] So I was interviewed and the interview was very positive of course, he recommended [me] very well, so I was recruited at that time as a lab assistant on temporary basis, waiting for the position of [permanent] scientific assistant to be advertised. Scientific assistant was equivalent to technician. So, [...] I stayed on that basis or position for [...] some months. In April 1969, I was called to Arusha to attend an interview that was very competitive, where there were applicants from Kenya, Uganda and me from Tanzania, applying for a single post of a lab technician or scientific assistant on permanent basis. [...] So good enough, I passed [*laughter*] the interview, so I got the first letter of permanent employment as a scientific assistant, in 1969. Then I had to go to Kampala College to study for a diploma in laboratory technology. But before I left for Kampala, I discussed with my Director, at least to get his advice on what was best for me. [...]

So the Director told me: ‘But you are still young, and you are hard working’. In fact, all that time I was here I was assisting him in arithmetic analysis of his PhD data. He was working on malaria; I think malaria and pregnancy or whatever. I think Mr Matola was one of his very senior technologists. He saw how hardworking I was, then he told me: ‘You are still young, don’t go off, I advise you not to go to Kampala, try to apply for a university position to study for a degree’. Well, I applied to University of East Africa; by then [...] Tanzania had no university, it had only Dar es Salaam University College, it was just a college. I applied [...] but then I was not successful getting the position. They told me to wait until I become 25, so that I go there as a mature entry. I was still very young, I was far from 25 years. So when I told my Director, ‘I’ve missed the University of East Africa, what would I do?’ Then he said, ‘If you were able to speak Dutch, [*laughter*] I will get you a place in my university, the University of Nijmegen, but it will take you two years to study Dutch. Let me call the English researchers who are here to give you addresses of English universities’. So he called Dr Graham White,¹⁸ he was a mosquito entomologist from England, [and he] called John Raybould¹⁹ – by then he was known as ‘Kidevu’; people used to call him Kidevu because of the beard, [and] Kidevu was [a] very common name around.

¹⁸Graham White, born in 1941, was a British medical entomologist, who lived and worked in Amani from 1967 to 1972.

¹⁹John Raybould, born 1935, was a British medical entomologist and blackfly expert, who lived and worked in Amani from 1960 to 1976.

So we sat [down in] the Director's office, so he asked them, 'I like this young man I would like him to become a scientist, would you give him addresses of universities in England?' He said, 'No problem, give us a day. Kilonzo, see us tomorrow.' The next day, I saw most of them; they sat down, the two researchers they gave me several addresses of English universities, and I applied, I sent my application. Within few, less than a month, I got admission to Queen [Mary] Medical University of London for my bachelor. So I went away in September 1969 for my undergraduate in microbiology. In 1972, Mr Wegesa²⁰ had become the first African Director; he came to England to London, he visited me – of course his wife was there, so he came to visit his wife and he saw me, he said, 'Kilonzo I want you to come back with a good degree'. 'Okay what do you mean?' He said, 'I'm now the Director [and] I want you to come back with a good degree – good degree I mean a master's'. I said, 'Okay, will the Community pay for me?' He said, 'I'm the Director now. I will make sure that you are sponsored for that'. That's why from that statement from my immediate boss, I needed to apply for master's. So 1973, October 1972, I joined the [...] London School of Hygiene and Tropical Medicine for MSc in medical parasitology [...]. There are some degree courses that take two years, but that course at that time was [a] one-year course. So, I came back here after my master's; that was August 1973. Then I came back, now my employment was research officer, by then we were research officers. But the first day I reported to the Director, Mr Wegesa, he told me, 'Kilonzo, me as a Director of Amani I have been assigned by the East African Medical Research Council to initiate [a] research programme on plague'. 'But I told you, Mr Director, I'm prepared for mosquitoes, even my master's research was on mosquitoes!' He said, 'No, you are prepared to do that, but I already have researchers on mosquitoes' – that is Professor Mosha, by then [he] was Mr Mosha and Ms. Frances Bushrod.²¹ 'So I cannot have three researchers working on mosquitoes, while I'm being pushed by my bosses to start [a] research programme on plague. Now since you did microbiology, [...] I assign you to start a research programme on plague, otherwise I lose my job as a Director because this was [a] directive from above'. Now, how, where do I start? [...] There was a building here, it

²⁰Philip Wegesa, the first African Director of Amani, took over from the previous, Dutch, Director Lejliveld. He was a Kenyan graduate of the LSHTM, and before his directorship, he worked with John Raybould on onchocerciasis. He returned to Kenya in 1977, and died in 1995.

²¹Frances Bushrod, born in 1947, was a British parasitologist and entomologist and was in Amani as a PhD student of the Liverpool School of Tropical Medicine, studying Bancroftian filariasis, from 1972 to 1978.

was used by artists [scientific illustrators], you saw it last night on a picture, that was a building used by artists. So he said, ‘I give you that building’ – it was just a hall – ‘Establish a laboratory!’ But, ‘I direct you to go to Dar es Salaam first hand, seek Mr Msangi, he is the only man in Tanzania who has worked with plague, he can give you some advice.’ So I went to Dar es Salaam, I saw Mr Msangi, and, of course, if you are a young man and he shows interest in your field, there is some kind of ... you feel like very happy. Then Wegesa told me, ‘When you come back from Dar es Salaam you go to Nairobi; see the only German, called Dr Guggisberg,²² he also works on rodents, he is a rodentologist.’ Something which I did, then after those two visits I came to settle, started to set [up a] laboratory. Meanwhile, proposing progress for plague research in East Africa – not Tanzania, it was East Africa, [because] by then the Community was still alive. [...] So I designed the laboratory as the Director said, ‘I’ve given you some assistants’, John Mganga was one of the recruits. [*laughing*] Later on Mr Matola was transferred from Mwanza to Amani and was attached to my lab.

[A little noise]

Kilonzo: And Mr Mtoi, Richard Mtoi, [*laughter*] as a very senior technologist. So then [...] my challenge was to design how to catch rodents alive. Because of plague you cannot kill them when they [are] trapped. [...] If you kill it, [the] fleas will jump away, if they jump away they will bite people and if they are infected with a *Yersinia pestis*, you are going to spread the disease. So I had to design – how do I catch these? There were some old people, old technicians at the workshop, one called Mr Mndolwa... Is he alive?

Mtoi: He died.

Mwaiko: Died.

Kilonzo: And the other man... there was this artisan that was very good...?

Mtoi: Julian Mgyaya.²³

Kilonzo: Well, I bought a trap [...] in the shop down there [in Muheza], [which was a] break neck trap. [So I sat down with the technicians], ‘Now tell me my fathers’ – they were old – ‘I want this trap, [it] is a break neck, I want it to

²²Charles Albert Walter Guggisberg was a Swiss-born biologist who lived and died in Nairobi. From 1947 until 1970, he was affiliated with the Division of Vector-Borne Diseases, part of the Department – later Ministry – of Health in Kenya. His passions were wild mammals, and he authored well-known books on East African wildlife, while his wife Rosanne is remembered for her 1958 cookery book, *Eating in Africa*, aimed at colonial households. See Christen, W. (1980). CAW Guggisberg 1913–1980. *Der Ornithologische Beobachter* 78–79: 219.

²³These technical support staff could not be further identified.

catch rodents alive, so build a box around [it] so that when the rodent touches it, it is pushed inside instead of being killed'. Hence the men said, 'Okay, give us time, we shall see you in two days time'. After two days that old man came and said, 'Look, is this okay?' Aah, it was very good, the box trap, but [*inaudible, about publishing this invention*] there was somebody else in Dar es Salaam [who] called it 'Serengeti trap'. [*laughter*] But then, to us, we don't have that kind of [problem]. If it is published by anybody, it is still something [*inaudible*]. So I designed the [plague] programmes for East Africa, they were approved by the necessary bodies, and for obvious reasons waiting to start in Tanzania, because of all these expenses. But before we even went to Kenya for research activities, there was a political hazard that came in and the [East African] Community disintegrated. So my programme for Kenya and Uganda never worked, we stayed in Tanzania and worked on plague from 1974 to December 1982; that's the time I changed my position, I went to Morogoro because by then the government through the Ministry of Agriculture had started the so called Rodent Controls Centre in Morogoro²⁴. They looked around to see a Tanzanian who is interested in these rats; they saw Kilonzo. So they told me to go there, but then it was not easy because my Director [...] – then it was Dr Temu²⁵ and Director General was Mr Kilama²⁶ – they didn't like me to leave. But eventually [...] I went to Morogoro, but I continued working on plague, and I'm working on that until now. [*laughter*] I would like to see NIMR establishing programmes on plague. Good enough the centre Director is here, because I'm retired, [and] young people [don't study plague]. I don't know if it is fear or whatever, yah. When I

²⁴The centre subsequently developed into the Sokoine University of Agriculture Pest Management Centre (SPMC), see <http://www.spmc.sua.ac.tz/>, accessed 9 January 2018.

²⁵Simon E. Temu was Director of Amani after the first African Director, Wegesa, left following the collapse of the East African Community, and after the interregnum overseen by, among others, Mwaiko. Before this, he worked on the research focus on Bancroftian filariasis, established in Amani during the 1970s. See, e.g., Temu, S. E. and J. E. McMahon (1981). Chemotherapy with spaced doses of diethylcarbamazine preceded by levamisole in Bancroftian filariasis. *Transactions of the Royal Society of Tropical Medicine and Hygiene* 75(6): 835–837.

²⁶Professor Wenceslaus L Kilama was the founder and first Director General of NIMR from 1980 to 1997. Professor Kilama studied in the US and founded the Department of Parasitology and Medical Entomology at Muhimbili University in 1970 before he set up NIMR. In 1995, he was a member of the Africa Malaria Vaccine Testing Network, one of the leading malaria research organizations. He has co-authored over 100 articles and served on various WHO, World Bank, and EU commissions as an expert in malaria, research ethics, and sustainable development. Source: <http://budefo.org/wence-kilama/>, accessed 11 January 2016.

went to Muhimbili [in] 1973,²⁷ there was one head of department for microbiology, [...] a professor from India, and I told him, ‘In Amani we’re starting a programme on plague research but we don’t have facilities to do culturing in Amani, can we do [it] here? I just collect my specimen [and] bring them here for culture?’ He said, ‘No, no, no!’. [laughter]

Okwaro: Just to recap: you started when Lelijevelde was Director. And you went for studies and when you came back, Wegesa was now the Director. [...] How was this transition for you from when Lelijevelde and Fletcher were in charge, to the time when Wegesa was in charge? [...] This Africanization process – how was it?

Kilonzo: To me I think there was nothing wrong. Moreover, this is a national institute, and it is just good if it is made mostly by nationals. But collaborations with externals are important.... But I don’t know. What do you want me to say, to say it was a successful transition or Africanization...?

Okwaro: No, not really. My question is: was there any change in the working arrangements, the scientific relationships and in the science that was conducted? Not if it’s good or bad or whether it should or should not have been – you as a scientist working in Amani, what were the notable differences between one time and the other, and how was the transition?

Kilonzo: To me the transition was smooth, but the disintegration of East African Community had some notable effects. Because even the funding was not as good. For example, my plan was to carry out research and establish endemicity levels of plague in Eastern Zone, Central Zone, Southern Zone, Western Zone, Lake Zone and Northern Zone. So that I would have covered the whole of Tanzania. But every time I wanted to go to the Lake Zone, there was no money, it was too expensive. So I never went there. I only went to Southern Zone after a directive from [the] then Prime Minister’s [office]. There was, at one time, [...] a severe outbreak of rodents, [and the] Prime Minister gave directives. You know our countries, when the directives come from above, they are respected, but I can say generally the funding deteriorated somehow. But this is not because of Africanization, it’s because of economic problems!

Okwaro: And this was in the 70s?

Kilonzo: Yes. Especially late 70s [...] and the earlier 80s.

Okwaro: [Let us] concentrate on [the time before] 77, then after lunch we look at the 80s.

²⁷Founded as Dar es Salaam Medical School in 1963, Muhimbili University of Health and Allied Sciences is Tanzania’s leading medical school. See <https://www.muhas.ac.tz/index.php/about-muhas/a-brief-history>, accessed 12 January 2018.

- Kilonzo:* Okay, otherwise during that [time], there was a little [...] bit of deterioration because of the funding, but not as much as now.
- Mosha:* Right, to complement what he has said: [...] I joined here in 1973, two or three months before Kilonzo. I think we were in the national service during the same period, but he was smart enough to come immediately after national services. I went to University of Dar es Salaam. And before completion I had already been granted a scholarship to do a master's programme in the US. So when I graduated in 1971, I was posted to Amani Research Institute.
- Wenzel Geissler:* Sorry, what was your master's in? [...]
- Mosha:* Medical Entomology. At North Dakota. So I went as a [post service] because I had not been attached to any research institution [before], I just had a scholarship from ministry, and when I came back, I reported back to the ministry that I am... Ministry of Education?
- Okwaro:* No, to the Civil Service. Then they told me to wait for a position. They directed me to the Ministry of Agriculture. But then they told me that the conditions of service in the ministry do not recognise postgraduate degrees. [*some laughter*] So they will only give me two increments and post me to any place in Tanzania as a research officer. I said, 'No, because I am free to go anywhere'. So I went to the Community head office in Arusha and inquired whether there's any position for entomologists. He asked me to report after two days. When I went back he said okay, the problem was to find out where they could house me. He checked, but, 'They, don't have a house for me, but in Amani [...] Dr Wegesa [...] is eagerly waiting for you, so just go there and you can start working'. That's when I came here and I was assigned to mosquitoes with Bushrod who had joined the previous year after Graham White had left. So my experience here was that we found a very supportive Director, and even the foreign community was also supportive. I remember Dr Raybould, although he was working on blackflies, when [we were] supposed to go for a meeting for networking in Kisumu, he insisted that he should come with us as senior person, to see that we were behaving well [*laughter*] and that we were asking the right questions and that we were carrying away proper knowledge from that area. So in the case of me and Bushrod, he said, 'You people are too young, I have got to mentor you.' But it was good, because when we went there, he was asking me simple questions. [*laughter*] So I said that was good.
- Mosha:* But then on the social side, [at that time] in Amani, we had two clubs. There was a club for Europeans, [...] up here, and another one for Africans, down there, and I could see those two classes. But we conspired with

Mwaike and Kilonzo to try to penetrate through this, and as that I was elected as chairman of this club; [laughter] of the European club and encouraged a lot of... Africans!

Mtoi:



FIGURE 5A–C Pages from private photo album, 1970s (personal collection, Franklin Moshia); Figure 5D: The team at Kisumu, with John Raybould and Frances Bushrod (personal collection, Frances Bushrod).

- Mosha:* Africans, including the junior Africans who would only be comfortable down there, also to join here and as that happened...
- Okwaro:* Sorry, which year was this when you were elected?
- Mosha:* 1974.
- Mwaiko:* 73.
- Mosha:* 74.
- Okwaro:* So before that the club was exclusively for Europeans?
- Mosha:* They didn't say it, they didn't say it, but that is what it was. [laughter]
- Matola:* In practice.
- Mosha:* In practice.
- Kilonzo:* [drawn out, joking] But in theory... [laughter]
- Mosha:* That is what it was, but then I came across a problem, because people would just drink and sign and then at the end of the month they were not paying [the monthly club bill]. [laughter] [...] Because it was the first time the Africans were exposed to this kind of things, [...] they just drink and sign. [laughter] When they figured out it was free beer, they became very generous, 'Hey give me that whisky and what does he want...?'. Then [they] found themselves at the end of the month... [and] they had drunk much more than their salaries. [laughter] So it became a bit of an embarrassment that now we are trying to come to manage the club, but we're having people who [...] just drink and not pay. [laughter] So that was a bit of a problem. So the transition, which I saw, was the club. [...] In the science world, there was no problem, because there it was lot of integration and mentorship.
- Mwaiko:* Yes, I came in December 1966 after my A-level from Mkwawa High School.²⁸ I did PCB; at O-level I did additional mathematics. When I came in December 66, actually I came in August 1966, [...] I had some neighbours, they were my relatives. [They] were already staying here, so I [had] some interest in joining this place. At that time Dr Thomas Fletcher, he was a chemist, he was the acting Director of this place. So I [initially had] interest in coming to this place. Mr Chovenye²⁹ was administrator here, and I told him I wanted to work in this place. He said, 'You write an application and then it will take time, they will consider you, so you go and bring the application'. So I just

²⁸Many came from famous old schools. Mkwawa High School, now Mkwawa University College for Education, was founded as a high school in 1964, taking the place of an earlier colonial School. It was opened by President Nyerere, and was an institution of excellence; see <http://www.muze.ac.tz/>, accessed 9 January 2018.

²⁹Junior Administrative Officer at the time; working under the 'Goan' administrator, Mr Carlos.

bought paper and then [wrote]. But he said, ‘Ooh, no you must type this! But anyway, I will try – you know this place is very strict’. So when he went into the office, the door was open, he said, ‘Where is he, you just have to call him here’. So I went in, there was an interview; they had interest: ‘you come here in December, you will start working here’. So when I went back to Mkwawa, I introduced this idea to my friend. [...] He came [to have] the same desire. He asked, ‘Where is Amani?’ ‘I got a job there’, I said. ‘We will go together’. We came here, but he was not known here. I’m the only one who got a job here, but himself he didn’t have a job. I mean he was interested, with me he came here and he reported to the office and was told by the Director, ‘I hear you came with a friend [*laughter*] from the same school’. He did write an application, so we are together for discussing; he said, ‘Okay you go to the laboratory’. He took him to Phillip Wegesa’s laboratory, zoology, so he started working there. [...] So at that time we were given orientation: Two weeks protozoology, two weeks entomology at Ubwari,³⁰ chemistry. So after [that], in February, the Director, at that time now we got a new Director, Dr Lelijveld. So he said, ‘now from today we move you to the chemistry laboratory’. So we started working. But some time in January, Hermann Kiligigli³¹ said, ‘No I am going to Musoma, I am going to teach’, so he went [...]. So let me explain a little bit [about] the training [...]. At the time I came, [...] 1966, it was the end of East African High Commission. [...] Because Tanzania got independent in 1961 December, Kenya got 1963, Uganda?

Matola: 1962.

Mwaiko: So this transition was a very interesting transition, 63.

Mtoi: 1962.

Mwaiko: 62? So that was the transition to East African High Commission.³² [...] After the British takeover, after Second World War, 1945, they formed East African High Commission. Then it was a very big organisation, which

³⁰Ubwari is the actual location, in Muheza, of what then was the lowland field station of Amani; originally, the malaria research programme had been established here under Bagster-Wilson (1949), and eventually (2005) it returned there.

³¹Could not be identified.

³²Some terminological confusion here: the East African High Commission was established in 1948 to integrate the administration of regional development, triggered by the 1945 Colonial Development and Welfare funds; in 1961, when these African territories became politically independent, the commission became the East African Common Services Organisation, under which the research institutes like Amani fell; see Maekawa, I. (2015). Neo-Colonialism Reconsidered: A Case Study of East Africa in the 1960s and 1970s. *The Journal of Imperial and Commonwealth History* 43(2): 317–341; the speaker refers to the latter transition.

was controlling major economic activities. We had East African Railways and Harbours, East African Airways, Post and Telecommunications and Customs. But for other activities, which were not really involving [any] sort of a business, they established General Funds Services, [*all agree*]. This included East Africa Metrological Research, Red Cross, medical research, and then they included other...?

Mtoi:

Mwaiko:

... income tax ...

Income tax, [...] TRA, meteorology, so all these were under General Funds Services. And medical research, research per se, not medical research alone, because there was TPRI³³ which was doing something else, [*discussing with someone*] pesticides, fisheries, a lot of things. These are what [was] called General Funds Services, this was 1961. I'm talking about [this] because [it was] between 60 to 68. So, when this country got independence they said, 'No, [...] we have to transform this, it should no longer be East African High Commission, it must be East African Common Services Organisation'. The first [...] secretary general [was] Dunstan Omari...³⁴ So that was the time when I was here 1966. Training of Africans existed even before independence, because there was Professor Msangi here, who came as Bsc in chemistry in 1963. Training of Africans [at] that time was there. The only thing, which I saw at that time [was that] higher education, higher graduates in Africa were very scarce, they were not there, they were looking for them. I think I remember Professor Hiza [*inaudible*] [...] they use to be called in to join this NIMR here.³⁵ There was [a] plan to attract [Stuart], he was a veterinarian. They were attracting [staff for Amani], and they used to get worried, even myself, they said we have been calling many people here, but they don't come up, they don't turn up here, so anybody interested can come here. So they changed from East African High Commission to East African Common Services with the first Secretary General Dunstan Omari.

³³The Tropical Pesticides Research Institute, founded after World War II and still in existence, see <http://www.tpri.or.tz/>, accessed 9 January 2018.

³⁴Dunstan Omari, b.1922, was one of the earliest Tanzanian civil servants and the first African District Commissioner during the colonial era, who subsequently became Secretary-General of the East African Common Services Organisation, and a moderate politician under Nyerere. See Molony, T. (2014). *Nyerere: The Early Years*. Oxford, James Currey. p.215.

³⁵Philip Hiza was a surgeon and chief medical officer of the Tanzania Ministry of Health; see Iliffe, J. (1998). *East African Doctors. A History of the Modern Profession*. Cambridge: Cambridge University Press, p. 204; and Meier, L. (2012). *Striving for Excellence at the Margins: Science, Decolonization, and the History of the Swiss Tropical and Public Health Institute in (post-)colonial Africa, 1943–2000*. Department of History, University of Basel. PhD, p. 204. (Meier refers to competition between Hiza and Kilama – the future director of NIMR – for scarce qualified staff.)

- Matola:* East African Community – this was the first time an African became secretary general, who was, Dustan Omari.
- Mtoi:* East African Currency [Board] [was also headed by] Dunstan Omari.³⁶
- Mwaiko:* Something like that... East African Railways for example, had [a] Director General by themselves. They used to be recruited seasonally, after ten or five years, I remember Post Office [Director] General was John Keto, [and] first general manager, Director General for the East African Railways was [Njugura] Gakuo.³⁷ East African Airways was somebody... I forgot him. But I think General Funds Services [...] was separate, [*all agree*] to look after affairs of the general services. So this is the time when they said, ‘Now we have to go the Africanization path to train senior staffs’. At that time, they had not moved yet headquarters [of East African Common Services Organisation] to Arusha.³⁸ The headquarters were in Nairobi there. So, the idea of training staff was a real necessity. But it was something of a dialogue, ‘How is it going to work?’ I was the first one to be interviewed by [*inaudible*] to join the [training]. I’m actually the first recruit, in the training programme.
- Mosha:* As part of Africanization?
- Mwaiko:* Yeah, of Africanization, so Lelijveld went to Nairobi. He said, ‘Now we’ve considered, you have passed your exams, the [East] African Common Services will take over your sponsorship to university’. Actually I applied for Bsc General Medicine, Development and Bsc General, and so he said, ‘Okay, take Bsc General’. I studied in the University of Dar es Salam [*inaudible*] where I did physics, zoology and chemistry – first year. So Lelijveld said, ‘Okay, but you must be interviewed’. So we moved here to Nairobi, actually with my Director Lelijveld. [*laughter*], for interview purpose. It was very interesting because I’ve never gone to the headquarters. We went in an official car, in a big hotel we stayed there [*laughter*] for [the] interview. But [...] I was not alone, there were some other Kenyans, from Uganda. [...] So I went there in the morning for the first time, we stayed at the first floor, I was very happy to see Dunstan Omari, Secretary General. So I went in the

³⁶As Secretary General, Omari was also Chair of the Currency Board.

³⁷Keto and Gakuo were Tanzanian civil servants and later politicians of the first post-independence generation; see East African Common Services Organisation (EACSO) (1964). *The Annual Report of the East African Common Services Organisation for 1964*. Nairobi, EACSO, p. 1.

³⁸With the reconstitution as East African Community in 1967, headquarters moved from Nairobi to Arusha.

office of Daniel Wako,³⁹ he was a Director of Personnel... So I went in his room... [inaudible] 'You have three minutes'. [laughter] [...].

So after going to second year in the University of East Africa, I scored very well in chemistry. I came here because my senior was working [with chemistry], Thomas Fletcher [...]. He came here [in] 1952. He's the one who established schemes of service. [...] He did a lot of things here, a lot of things, and he really equipped the laboratory – chemicals, equipment. It was so comfortable to work in there; you don't miss any equipment, according to the technology of that time. I remember when I was doing [inaudible], if you remember chemistry on molecular way, there were so many apparatus there. [laughter] He used to show me every day all the apparatuses. You know, there was everything, each and rare chemicals like cyanogen chloride – a component of tear gas – the police were using, it is here! [laughter]

Matola:

Don't bring it here! [laughter]

Mwaiko:

There was a time we used to discuss about these things, a lot of things. He was a very good chemist. So, I went to see Professor Robertson,⁴⁰ who was a professor of chemistry [...] in Dar es Salaam, University of Dar. And he said there was no problem [...], 'Let him come'. So I just moved here, included the letter, we went to the dean of students and he gave me permission, I returned, took my books, came here. One night, I reported here. [inaudible] Then I finished in 1971.

Okwaro:

So you studied in University of Dar? [...] Did you complete? Continued. The reason was at that time [they had] combinations. [...] The University of Dar es Salaam was a very big university, they ended up with 3-2-2. But in Makerere they had 3-2-1, 3-1-1 [...] combinations. First year you start with three subjects, second year you go with two subjects, third year, two. This was how Dar es Salaam did it, but Makerere no, they had only [...] 3-1-1, so I went to do 3-1-1. [...] It was the training programme of the year – chemistry laboratory, so I went to do 3-1-1 chemistry. I completed my course and came here. [...] Kilonzo was trained on that programme, whereby he was the second person to be trained by that system. [...] [inaudible] It was a deep problem of Africanization.⁴¹ [...] Later on they came more. [...] So

³⁹Wako is depicted in EACSO (1964). *The Annual Report of the East African Common Services Organisation for 1964*, p. 12.

⁴⁰Founding Professor of chemistry at the Dar es Salaam department; see Truter, M. R. (2003). Obituary. John H. Robertson (1923–2003). *Journal of Applied Crystallography* 36(3): 957.

⁴¹Presumably referring to the challenge of training sufficient qualified personnel with higher degrees.

when I came here, A. Kilimali⁴² [*unclear*] was on the same programme.

Mosha: And the only Indian, Patel.⁴³

Mwaiko: Patel no!

Mosha: Yah, yes.

Mtoi: Yes.

Mwaiko: He was trained?

Mosha: He stayed with mosquitoes and never came back.

Mwaiko: Patel yah. This programme went on all over [...] to meteorology, all of those areas, income tax. So when I came here, he said, ‘Okay you start working, but you need to go for interview’. That was for sponsorship. So I went to Arusha, now that time they said, ‘No, you see, this East African Common Services should be changed, there must be something, which [brings a] union of East Africans’. So they said, ‘We should change to East African Community’, so East African Common Services was changed now to East African Community. This period was 60 to 67, instead of East African Common Services then we established East African Community. But [it had] the same function, activities were the same. When they established East African Community, they said, ‘Where should we select our headquarters?’ Then they selected Arusha. There were no buildings; they just invaded some buildings, which were there, some of them are still there just next to AICC.⁴⁴ I remembered after General Omari they divided carefully...

Mr John Mganga: Who is he, General Omari?

Mwaiko: Secretary General Omari. So that was the transition. Now coming to research, from my own experience, there was so much...

Okwaro: Sorry, just a quick clarification – you got employment in 1961 as a...?

Mwaiko: After the interview? [...] We went to Arusha with John Raybould. I was interviewed, we were two people that time I remember, me and Dr Temu.⁴⁵ He was applying for a medical research officer, senior medical research officer, at Tororo, for virus research.

Mosha: Trypanosomiasis.⁴⁶

⁴²Dr Vincent A. Kilimali was a Research Officer in the biochemistry lab in 1976, taking over from T. Fletcher and like him, mostly a co-author.

⁴³Could not be identified.

⁴⁴Arusha International Conference Center, opened 1977.

⁴⁵See note 25.

⁴⁶This exchange refers to different research institutes that were part of the East African community: the trypanosomiasis (sleeping sickness) research Institute in Tororo, Uganda, and the virus research Institute in Entebbe, Uganda (which the speaker confuses).

- Mwaiko:* Tororo? No no no, Entebbe? [*murmurs*] No, Tororo, actually, filariasis... Okay, trypanosomiasis.⁴⁷
- Kilonzo:* Trypanosomiasis?
- Mwaiko:* Yah, trypanosomiasis, in Tororo. So after the interview I came back here [and] was appointed now as Research Officer Trainee Chemistry, grade 3. Two years probation period, not one year. After two years, I was confirmed, as a Research Officer. From a Research Officer Trainee then to Research Officer 3, and then I went to Research Officer 2. By 75 – Research Officer 1 in chemistry.
Now [back to] the trend of research: actually I came here and there were a lot of activities, way back from say 1950. Bagster-Wilson [...], there was a very strong team of Gillies,⁴⁸ with Tom Fletcher, other very active people, and John Raybould came 1963.⁴⁹ [...] So that time, [...] primary principal people were Bagster-Wilson, Gillies, Tom Fletcher, and their technicians. That time they were very much concerned about malaria; that's why if you read previous [...] Annual Reports, it was entirely malaria. [At] that time emphasis was [on] epidemiological surveys studies. [...] At that [time they] were talking of malaria eradication. There were very huge projects extended to malaria [eradication], but later on they kept changing considering the limitations, saying we should control rather than eradicate, they had very big projects such as Project Sudan, Pare Taveta scheme, that [had] the target to eradicate malaria; [and] extensive surveys in Gombero by Bagster-Wilson.⁵⁰
- Matola:* The Malaria Eradication Program on Zanzibar.
- Mwaiko:* Zanzibar, later. The idea was to target just *Anopheles gambiae* [a malaria vector], and its relatives. Actually, I used to work in a team, entomology, then go there, [...]; they said [to teach me], 'This is endemic sporozites, transmission seasons' and so on and so on. So when Raybould came here, he never started working on onchocerciasis, he started working on houseflies. If you read his books, he did a lot of

⁴⁷The speakers use the names of specific sites of East African Community medical research – Tororo, Entebbe... – synonymous with the diseases that at the time were the research focus in these stations.

⁴⁸Mick Gillies, 1920–1999, was a senior medical entomologist at Amani from 1951–1963. He worked on mosquito behaviour but his particular passion was mayflies, on which he became a world authority. His wife Agnes, a surgeon, gave up a position as an orthopaedic registrar in the UK to follow him to Amani and raise children there. Gillies' memoirs, *Mayfly on the stream of time: a medical naturalist's life*, were published in 2000 (Whitefield: Message Books).

⁴⁹Raybould arrived 1960.

⁵⁰Various large-scale projects to test antimalarial interventions to eradicate or control malaria were designed and run out of Amani. See Graboyes, M. (2015). *The experiment must continue. Medical research and ethics in East Africa, 1940–2014*. Athens, Ohio University Press.

work here, but [this was] the area [of] work of Mr Msangi [in] 1954. He designed flytraps, you can catch as many flies just once. This area is one of my projects I'm looking for funding at Open University, I have a project – Dar es Salaam pests and the use of pyrethroids. When you go to Dar es Salaam, flies are all over, I'm working on adopting Professor Msangi's experiments. They can work in Dar es Salaam. So he [Raybould] started with house flies and then mosquitoes. Phillip Wegesa came in [and] worked on mosquitoes, later on Leonard Otieno⁵¹ came in. These were direct employees, they were not trained.⁵² So they did a lot of projects, but later on, Phillip Wegesa left [mosquitoes], I think it was because of over staffing, because Graham White came here, he was an entomologist. So Phillip moved out of mosquito entomology and he went to work on onchocerciasis. Raybould left [...] houseflies, he went to *Simulium*⁵³ vectors, and vectors of onchocerciasis. That's how it started. But later on there were also people [...] who did [filariasis], I think?

Mosha:

Yah, that was the programme that I was assigned to work [with] when I joined the institution. The institute had received a large grant from WHO for control of lymphatic filariasis, and I was assigned to do that together with Frances Bushrod. So that was our first assignment on filariasis and we established [ourselves at] the same time in Tanga and also Muheza, and mapped the prevalence of the disease, as well as the vectors from the whole of the Tanga coastline. Incidentally, when I left this place to go to ICIPE,⁵⁴ Mombasa coast, ICIPE assigned me to map filariasis from Tanzania border up to Somali border. [*laughter*] Yah, so filariasis started, and we had our team leader [*inaudible*] in Tanga,⁵⁵ and that continued up to 1977 when I left ICIPE to continue with something else that was sponsored by the UN [*inaudible*].

Mwaiko:

So when most of us came here, the task force was these gentlemen here; and work was on laboratory, clinical

⁵¹Otieno, from Kenya, studied at the LSHTM and took his PhD in 1972 on trypanosome (sleeping sickness) infections (available online at <http://researchonline.lshtm.ac.uk/682435/1/550324.pdf>, accessed 18 January 2016). At Amani he worked alongside Jan Lelijveld on malaria field surveys, and later on filariasis. He returned to Kenya in 1979 following the breakup of the EAC, to join the International Centre for Insect Physiology and Ecology (ICIPE) in Nairobi. He died in Kenya.

⁵²I.e. they had received formal training before employment at Amani, by contrast to earlier employees.

⁵³Group of blackflies including the vectors of *Onchocerca volvulus*, the parasite causing River Blindness.

⁵⁴The International Centre of Insect Physiology and Ecology, founded in Nairobi 1970; see <http://www.icipe.org/>, accessed 22 March 2019.

⁵⁵The project was led by J.E. McMahon; see McMahon, J. E., S. A. Magayuka, et al. (1981). Studies on the transmission and prevalence of Bancroftian filariasis in four coastal villages of Tanzania. *Annals of Tropical Medicine & Parasitology* 75(4): 415–431.

issues, entomology. So meanwhile plague [research] was continuing. The focus was [...] on all of that, so Wegesa was on clinical side, Raybould was on entomological. But the position, at the chemistry laboratory, was... You know ... the chemist ... [*indicates instability with his hands; laughter*] [*inaudible*]. At that time, issues of chloroquine [an anti-malarial] resistance came, in 1968. If you read Annual Report 1968, pyrimethamine [resistance] was first recorded, [...] then later on chloroquine. So we started ... [Jan] Lelijveld focused mainly on resistance, but he also continued with epidemiology; and he brought a new technique, instead of parasites and so on, he introduced indirect fluorescent antibody technology, [to] which he assigned Mr Matola, which he went on with, also with FA radioimmunology. [...] So the science was changing. Epidemiology, but targeting control, and insecticides and resistance.

So whenever Raybold ... whenever Wegesa used to go for onchocerciasis, Raybould was [there] and eventually, also when Muro came, he joined that task force for *Simulium*, taxonomy [...]. But the main issue was vector identification. Myself at the time of drug resistance with chloroquine, I started doing a lot of work on drug analysis in body fluids, looking for effective dosages either as the metabolite of chloroquine or chloroquine itself in body fluids. [...] But Lelijveld said, 'No we don't like very laborious technical things here, [*murmuring*] we want you just to go in the field [scientific terminology, *inaudible*]. So, while I was doing all that, [...] sooner or later Lelijveld⁵⁶ went and came by with [dipsticks]. That was a development by the London School of Hygiene and Tropical Medicine, so I started using them. So that is the type of work I used to do, anything which was chemical or had aspects of chemistry. For example, I did also blood meal identification for the vectors. It was a bit fun, I did [learn] indirect about mutation induction. [...] So one time, Phillip said 'Now, come and help me for onchocerciasis'. Phillip used to do a lot of things [...]. He was a really good experimental scientist, apart from surveys, but he spent most of his time on tissues. [*someone laughing*] He was very much interested in following the development of *Onchocerca volvulus* in *Simulium naevei*. So he used to collect infected flies, he designed his rearing technique, very nice – rearing, thermostat, temperature, which could maintain temperature of 28 degrees – observing

⁵⁶Lelijveld, J. and H. Kortmann (1970). The eosin colour test of Dill and Glazko: a simple field test to detect chloroquine in urine. *Bulletin of the World Health Organisation* 42(3): 477–9.

trends, soon after blood feeding.⁵⁷ So he used to cut sections from the abdomen at close, very close time intervals. So I joined him. We found that soon after infection with time, they [larvae] were migrating. Soon after digesting they migrate, to the thorax, so we used to cut sections from abdomen, and thorax, with hair. So we used to stain, we got very nice patterns. And the number of [larvae], whatever the numbers, by the end only two or three reach the proboscis. Some of them had been digested in the abdomen, those which managed to escape the thorax they are those which develop.⁵⁸ So, we did that, and then he said [*inaudible*]. ‘Why don’t you initiate in-vitro cultures?’ So I started doing in-vitro cultures, [...] but the only success I got was survival of ten days only [*someone laughing*], but there were no development. Then somebody [...] came here and said, ‘Your media was not consistent and there are things missing, actually you are drowning these parasites’ because I put about [details of ingredients, *inaudible*]. So Wegesa said, ‘Just leave that’. But he said, ‘We need also to establish diagnosis’. That time was the time of sero diagnosis.⁵⁹ We thought that for filariasis – not filariasis alone, but all diseases – we should develop some reliable quick method, immunodiagnostic method. [...] So I took over doing serology of onchocerciasis, simple tests to diagnose onchocerciasis, [diverse methods, *inaudible*] using [controlled? cross] antigens compared with *Onchocerca volvulus* in endemic areas. So whenever parasitologists used to go [to collect blood], I took some samples. Comparing, I got very good results with hemagglutination methods, it was feasible. You don’t use any expensive reagents, you use saline, I used to buy [sheep] here, remove blood [*inaudible*]. Even a laboratory assistant can do it; actually, they are doing it. But then it became very difficult because at that time, it was 74–75, this was the break up of Community. So when the Community broke up, we had a lot of problems. I think Kilonzo remembers this and Mosha, was it not?

⁵⁷Laboratory-based rearing techniques for *Simulium* vectors of onchocerciasis had been developed, through various stages by Wegesa’s predecessor, John Raybould and co-workers during the 1960s. See, e.g., Raybould, J. N. (1967). A method of rearing *Simulium damnosum* Theobald (*Diptera: Simuliidae*) under artificial conditions. *Bulletin of the World Health Organisation* 37: 447.

⁵⁸See Wegesa, P. (1967). *Simulium vorax* Pomeroy. A potential vector of *Oncocerca volvulus*. *Annals of Tropical Medicine and Parasitology* 61(1): 89–92.

⁵⁹In the 1970s, following global developments in immunology and laboratory technology, a strong interest in serodiagnostics based on antibodies developed in tropical medicine; this meant initially a shift to novel and relatively expensive methodologies, and resulted eventually developed into dipsticks and rapid diagnostics for malaria and other parasitic diseases; for Amani see e.g., Draper, C.C., A. Voller, et al. (1972). The epidemiologic interpretation of serologic data in malaria. *American Journal of Tropical Medicine and Hygiene* 21(5): 696–703.

of each fly was recorded. The collecting-periods of the various assistants were alternated in such a way as to minimize the possible effect of one collector being more attractive than another to the flies.



FIG. 1. The forest clearing near Amani where the biting-catches were made. The two collectors are seated, while the two standing individuals are recording wind speed and light intensity.

From the beginning of March 1964 onwards, the entire biting-catch of *S. woodi* was dissected and each fly recorded as parous or nulliparous. The condition of the ovaries and

FIGURE 6 Scientific assistants catching blackflies from their legs (Raybould, J. N., 1967). A study of anthropophilic female *Simulidae* (Diptera) at Amani in Tanzania, with particular reference to the feeding behaviour of *Simulium woodi* and the transmission of onchocerciasis. *Annals of Tropical Medicine and Parasitology* 61(1): 76–88).

Mosha:

I was in 1977.

Mwaiiko:

Aha OK, so I went on with that sero diagnosis. When the Community broke up, Mosha had left; there were problems here. Phillip was at the time doing this experimental science, he used to collect blood smears from the bush, one time he took a smear from a lion somewhere. He used to drive this car – Pringle⁶⁰ the Director had sold him the Director car, this big ford American car.⁶¹ [laughter] He used it whenever he went for his surveys, and he found a hyrax crashed by a

⁶⁰Gerry Pringle, born 1916. Deputy Director of the Amani institute from 1958–60, then Director from 1960–66, after which he returned to the UK to work for the Pfizer Group and then the Liverpool School of Tropical Medicine. His background was as Senior Malariaologist in Baghdad from 1946–1958. See Reynolds, L.A. and E.M. Tansey (2001). *British Contributions to Medical Research and Education in Africa after the Second World War*, London, The Wellcome Trust Centre for the History of Medicine at UCL.

⁶¹According to Lelijveld's son Hubert, a Ford Zephyr, the largest model of the British Ford range at the time. There is possibly some chronological confusion here, as Wegesa did not succeed Pringle, but Lelijveld, who succeeded Pringle.

car. He went and put it into the boot. One time he got a *Brugia* species in a lion! Ooh it was a very big debate. He published it; it was so difficult. Nelson⁶² came here to confirm this. [laughter] It was very difficult for him. [...] It was terrible when those people were coming: ‘Put your stains!’ Nelson came here, we eat dinner like this now, but after dinner, instead of this session, we went to the blood – just to the laboratory over there – staining, the whole day. At about five o’clock in the evening: ‘Confirmed’. He said, ‘This is *Brugia*, yes, congratulations’. Oh, we clapped! [very loud laughter]

Geissler: Who was Nelson again?

Mwaiko: Professor [George] Nelson, he was a professor in Liverpool, he was a filariasis authority. You know the British have got this *Lancet*, this is, they publish weekly, in there...

Mosha: It was a prestigious journal. *Canis leonis!*⁶³ [lots of laughter]

Kilonzo: And it was only one specimen.

Matola: One specimen, ah no, no, no, one cow, one lion, but several slides... [laughter] And it is the work of several smears.

Kilonzo: How did he get the lion?

Mwaiko: I don’t know, it just... [laughter] it was killed by this...

Dr Edith: Was he a hunter?

O. Lyimo: No, he used to go out with this slide box all the time.

Mwaiko: Okay, all the time he was collecting things... Ok.

Lyimo: So you [worked] with Wegesa in this transition?

Mwaiko: Yah, as I’ve explained, there was so much collaboration; we worked almost as a team. He [...] knows what I’m doing, because we were working on the same disease, filariasis. [...] Things were very well integrated.

The only problem was when the Community broke up. We had a very difficult time. [...]. One of the first things was the report, because [at] the time [...], every year we used to produce a new [Annual] Report. So we had to collect all the data, you remember? [laughter] All the data, despite the fact that the Community had broken, but we were here so we collected all the information to create a report during the break; we never talked of administration [in the report], probably because it was broken. [...] It was a bad

⁶²Professor George Nelson, 1924–2009. Reader in Medical Parasitology at School from 1963, then Professor of Medical Helminthology 1966–1980, and Professor of Parasitology at the Liverpool School of Tropical Medicine until his retirement in 1988. Following his early medical career in Uganda and Nairobi, he went on to set up internationally important research programmes on many of the key infections in Africa. Source: http://www.lshtm.ac.uk/alumni/news/professor_george_nelson.html, accessed 11 January 2016.

⁶³The dialogue suggests here that Wegesa’s finding was published, but this could not be verified.

time, but we focused on science. The Annual Report for 74 and 75. That was a report, which we compiled with these gentlemen here.... So, sooner or later Simon Temu was recruited. During the break, Simon Temu was in Tororo;⁶⁴ he just came to Ministry of Health [after leaving Tororo] and he was told, ‘You go to Amani’. Then they appointed him the acting Director; that was the government transition, administratively. That after community break [...] we went over to Ministry of Health. Before NIMR was formed, we were under Ministry of Health, and Temu was acting Director here at the time. [...] 77, 1979, 80, NIMR was formed.

Kilonzo: Actually, NIMR was formed during his time. He was our Director here, during the time of transition.

Mwaiko: He was appointed by the Ministry of Health to take over. So when he came here actually, [...] we showed him our manuscripts for Annual Reports for 74–75, so [he] went over that, and then 1980 NIMR was established.

Kilonzo: Can I supplement on [what] Dr Mwaiko says? [...] There was at one time [in the] 1960s a chloroquine treated salt project, I think you were involved...?

Mwaiko: Yes. I was at biochemistry [at] that time. As I’ve said, there were very interesting issues of malaria eradication, so somebody came with mass chemotherapy. [...] So [they] selected an isolated area where malaria was highly endemic at that time. So they designed, they calculated ... a certain amount of chloroquine, they put it into cooking salt. They instructed the company to prepare that salt, common salt to be used at household. And you know, they have a monthly [ration]. So [...] they were prohibited to bring [other] salt there. So they did mass chemotherapy. They had all phases and then they were following how the parasite rates responded to this. But there was a problem with chloroquine, how stable is it in salt? So, whenever they took the salt from households, I had to measure chloroquine content – was it the same? There were some variations actually, with long storage in hygroscopic materials the chloroquine concentrates down down. Even if you get salt from [production], there were some variations, so whenever, I used to move with my specimen workers, a lot of households [*someone laughing*] with somebody else called [...] Then somebody came and asked what about retinotoxicity? Chloroquine binds to melanin by [...] free radical mechanism. So he said, ‘don’t you have a possibility of [chloroquine] accumulating in the

⁶⁴After the breakup of the East African Community, foreign nationals employed at the former EAC research institutes had to return to their countries of origin.

eye retina?’ They called this programme retinotoxicity programme. Dr [Host] from the Dutch came with optical instrument; he stayed for six months, to survey those areas were we used domestic, chloroquinated salt, but I think my understanding there were no effects; otherwise we didn’t hear it. Did you hear anything about it?⁶⁵

Matola: No, [...] he found out that there was no problem at all, despite the fact that the intake acquired by salt was estimated at 0.0003%. There is something they call premix, so they mix that one with the salt and nobody should use any other salt except that. So what we did, in January and July we [were] doing mass surveys. We collected samples from their salts. You do a survey; you would ask a child, ‘Can you bring me that little thing which contains some salt?’ Now as time went, things started changing. We had a nuisance with a boy where, when you said to the boy, ‘*Kalete chumvi*’ [‘Bring the salt’], he said, ‘*Ipi yenye dawa au isiyokuwa na dawa?*’ [‘The one with medicine or the one without medicine’] [laughter] Then we knew things were going wrong. [laughter]

Kilonzo: So possibly it wasn’t so good. Some people were buying salt from elsewhere instead of buying salts from their local shops, which was treated with chloroquine.

Matola: If I may be allowed to just go back to the sociological aspect for the Amani Club. During that time there was this Mao Zedong in China, and Nyerere and Mao Zedong were like this, [*he intertwines his fingers*] and Europeans used to have a Christmas party for children the day before Christmas, at the Club, so we were being invited. But no African was going to that because we were not invited, and then one chap says, one of the Europeans said, ‘Aah Africans don’t understand these things about children’s party for Christmas, but if they were told Mao Zedong was coming, ooh they will ooh ooh’. [*lots of laughter*]

Mwaiko: So that is the scientific story from the 60s to 70s. [...] Yah, I think that was adequate. [If] it was to the social aspect, the Amani Club, that one was essentially was for senior staff.

Okwaro: Where ‘senior’ means?

Mtoi: Technicians.

Mwaiko: Actually, because that time, [...] it was not for Amani staff, all tea managers [...] they used to come here, this was their club but essentially it was for ... they used to come with

⁶⁵See, Onori, E., D. Payne, et al. (1982). Incipient resistance of *Plasmodium falciparum* to chloroquine among a semi-immune population of the United Republic of Tanzania: I. Results of in vivo and in vitro studies and of an ophthalmological survey. *Bulletin of the World Health Organization* 60(1): 77–87.

- their field assistants, managers, branch group managers.⁶⁶ [...] Most were senior officers from tea plantations. So Matola was invited. He was already a senior person. Phillip Wegesa was introduced when he was a senior person. And Leonard Otieno...
- Matola:* ...Otieno. Myself, I was introduced when I was undergraduate, but with reservations. [*loud laughter*]
- Mwaiako:* You were still young.
- Mtoi:* [*imitating British accent*] ‘Who is this young man?’, ‘Tom, who is this boy?’⁶⁷ [*mocking tone*] I had no [money], but he said, ‘You write a beer on my name’ – ‘Tom, who is this boy?’ [*laughter*]
- Okwaro:* So who was this asking?
- Mtoi:* The other people. [*murmurs of agreement*]
- Mwaiako:* Because I was young at my age. ‘Can I get you a beer? Do you have your pay check?’ It was Thomas Fletcher, ‘Hey Tom, can I give beer to this boy?’ [*laughter*] ‘Yah give him’. [*emphasising reluctance*]
- Kilonzo:* Now Mr Chair, [...] going back to the scientific aspect during those years – we used to have annual scientific conferences every year, every country. If this year it’s held in Dar es Salaam, next year it’s held in Nairobi, the other year in Entebbe, Kampala or whatever. [...] So that was a very good aspect of scientific [achievements].
- Mwaiako:* We also had some scientific exhibitions.
- Kilonzo:* All the medical researchers were coming together presenting scientific papers. I think that was a kind of a good scientific [achievement].
- Matola:* That was what was carried on with NIMR, that annual scientific meeting, and unfortunately also the rules of promotion. If you joined as a Research Scientist grade 3, to advance to grade 2, you must have at least two publications; from three to two you must have two excluding the first [publication]. So if you were lucky to come to the level of Principal Research Scientists, you should have more than 20–30 printed published papers in international journals. So they were very strict in to publications. [...] I mean like Graham [White] worked very nicely here, yet he never published anything for the period he was here, so East African Community said, [*inaudible*] because you are not productive. Then he goes to London School of Tropical Medicine and Hygiene and publishes like hell! And then we got sort of disappointed.

⁶⁶The forests around Amani are surrounded by tea plantations. Many of the local managers and foreman of the plantations were of South Asian origin. Within the logic of colonial racism, these occupied an interstitial position and thus were allowed to join (some) clubs earlier.

⁶⁷See note 17 on Thomas Fletcher.

- Mwaiko:* Actually, let me explain the publications concept: It was very frustrating; conditions were very stiff. [...] Requirements for promotions were very stiff, because I remember when I came here after being employed, I stayed for two years without a paper. So I say, ‘Why can’t I publish a paper?’ This year I was culturing. I said to Phillip [Wegesa], ‘What about this culture?’ ‘As long as there is no development, you can’t publish this’. [laughter]
- Okwaro:* I didn’t get that.
- Mwaiko:* When I was culturing these parasites, I said, ‘Can I publish this one here?’ But [it never developed effective stages] ‘If it does not develop, you can’t publish this. But I’ll present it to London for this committee’.
- Okwaro:* Yah, so who was saying that?
- Mwaiko:* My Director, Phillip. I was checking my cases, when I was ready to publish a paper, he said no, ‘This one you can’t publish, it is not enough, but I can present it; you go and find another project’ [lots of laughter]. Conditions were very stiff, so sooner or later when I started reading this serology, I remembered Alister Voller. [...] When he used to come here [...] [to the] laboratories, he would wonder about ... I was working with the serum and he said, ‘Why don’t you try this, this, this’. But he said, ‘We have a problem here, we have all these serum samples but we don’t have negative controls’. I said that I collected from Kilimanjaro, there are lot of helminths, because filarial parasites they move with helminths, even *Necator americanus*, *Taenia saginata*, *Ascaris lumbricoides*.⁶⁸ ‘But I’ll bring you negative controls’, he said – I don’t know how he got – and they were really negative controls. Their titers were very low, so I used [them] as my standard, and they said, ‘Okay, this test is not specific, how specific is it?’ So I started collecting serum from schistosomiasis, *Necator americanus*, *Taenia saginata* – all those helminths as negative control. And I found very interesting, they were [inaudible]. You get agglutination, but the titers were not equivalent, as high as those of onchocerciasis. So I said this is my cut-off point, these are due to cross-reactions, these are my [needs] sasa. So that, all those studies ... At that time Phillip had already left. I had to add on some information, [and] then I had to revise the paper on distribution of onchocerciasis. I published it in the *Central African Journal of Medicine* in Zimbabwe.⁶⁹
- My first paper was ... I said, ‘Okay now let me try through [...] test, see how they precipitate’. And we compared this with

⁶⁸Different intestinal worms: hookworm, tapeworm, roundworm, which each cause a specific immunological reaction.

⁶⁹A.R. Mwaiko, G.L. Mtoi and R.S. Mkufya (1990) Onchocerciasis prevalence in Tanzania, *Central African Journal of Medicine* 36: 94–96.

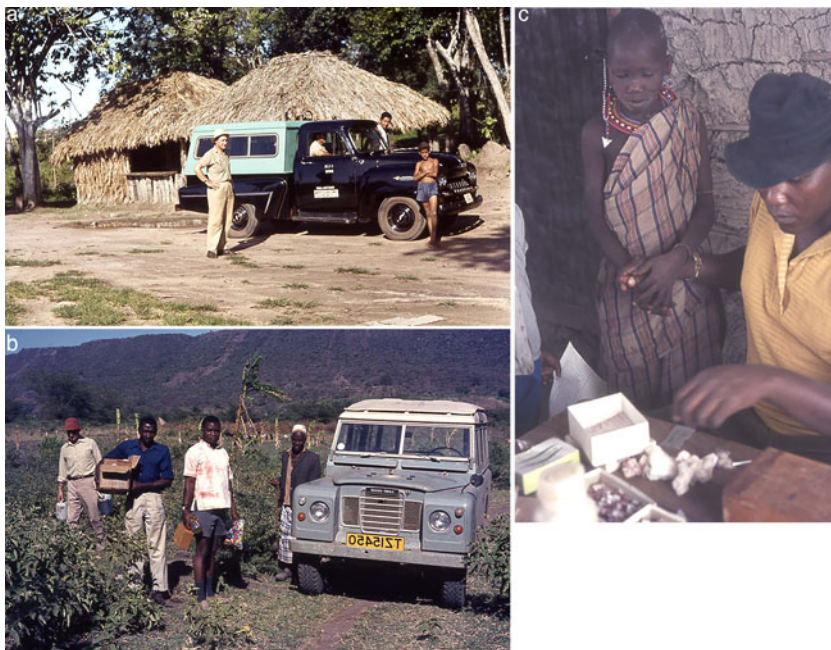


FIGURE 7 A–C The immunology research team in the field, led by Alister Voller, Mr Matola in the field lab with hat, early 1970s (personal collection, Alister Voller).

agglutination, so I combined all the work I did from coagulation, counter-current immunoelectrophoresis, for instance. My first paper came out in 77 in *Central African Journal of Medicine*⁷⁰. Demonstration of antibodies, in people infected with *Oncocerca volvulus*. This was my first paper.

Okwaro:

Was it jointly authored or was it just you?

Mwaiko:

My own paper.

Mtoi:

Single published.

Mwaiko:

And I had to go to Dunbar⁷¹ – he said [*mocking tone*], ‘Let me see... rubbish... rubbish.’ [*laughter*] One time there was a Dutch man, Goosen.⁷² He used to do many experiments, like

⁷⁰This paper could not be identified.

⁷¹R.W. (Bob) Dunbar is a Canadian taxonomist (PhD Toronto, 1962) and cytotaxonomist, who worked temporarily in Amani in the 1970s. He introduced ‘cytotaxonomic’ work to Amani, i.e. the use of chromosome banding for the distinction of morphologically similar species. See, e.g., Dunbar, R. W. (1966). Four Sibling Species Included in *Simulium damnosum* Theobald (*Diptera: Simuliidae*) from Uganda. *Nature* 209: 597.

⁷²Theo Goosen, a Dutch clinician from Nijmegen, worked in Amani from 1971, living with his wife Tineke and family. See, Goosen, T.J., M.A.L. Goosen, et al. (1976). A Rural Study in Tanzania of the Chemosuppressant Activity of Various Regimes of Co-trimoxazole or Chloroquine in Subjects with *P.falciparum* Parasitaemia. *Parasites, Fungi, and Viruses*. J. D. Williams and A. M. Geddes. Boston, MA, Springer US: 69–78.

this, this, this. Then he ended up with fragmented data. When he wanted to publish he went to Dunbar: ‘rubbish, rubbish, rubbish’. [laughter] So [some noise] one day when I was in the laboratory, Goosen came, ‘George, you see your paper you gave it to Mr Dunbar, and it was published in the journal’. ‘Yes?’ ‘But this [man, he knows too much, he said] ‘Rubbish, rubbish’. [laughter] He knows too much. [miming to show around the manuscript] ‘Look at what he did: it says rubbish, rubbish.’ [laughter]

Okwaro: Just to wrap up the discussion on the publications...

Matola: [leafing through an old Annual Report]⁷³ All right, actually, his first paper was in 1971. Studies on the attraction of fresh water crabs into cone entrance cage traps containing jackfruit extract, which was published in 1971.

Mtoi: *Mwaiko*, that was in Annual Reports.⁷⁴

Matola: It was a publication [...]

Okwaro: Yah, and talking about publications – did you have joint publications?

Mwaiko: Yes a lot of them.

Okwaro: And who was it, deciding who is on the paper?

Mwaiko: There was no one [who decided] – what was important was the contributions, that’s all.

Mosha: But, can I add? Unlike these days, where you find several authors in one paper, [at] that time it was possible for a person to have single authored papers. A lot of landmark papers were single, even Raybould was single. And the elite or the principal investigator is the one who decides whether they should include his colleagues as co-authors and the rest then go into acknowledgements; unlike now when you have multiple partners in research and find that one paper can have several authors. That did not use to be the trade [in those days].

Kilonzo: You can even have more than ten authors...

Mosha: But in those days, single authors...

Mtoi: ... was common.

⁷³Since the reunion took place in the old Institute library, historical documents were at hand, and participants occasionally leafed through Annual Reports and academic publications from the time they had lived in the station, sometimes to verify a date or name, at other times to find a reference to their own name.

⁷⁴This research was indeed only documented in the Institute’s Annual Report, and not published. *Mwaiko* shows in it that crab traps containing jackfruit (commonly used for trapping crabs for food and research purposes around Amani) attract most crabs, whereas sponges with jackfruit juice attract less, and traps with sponges or without anything attract no crabs. See, East African Community (1971). *Annual Report of the East African Institute of Malaria and Vector-Borne Diseases, January–December 1971*. Arusha, East African Community, pp. 46–8.

- Kilonzo:* And I think one good achievement was the establishment of so called *East African Journal Medical Research*.⁷⁵
- Mwaiko:* Eee, for East African research.
- Kilonzo:* Yah, to have our own journal for East African medical research.
- Kilonzo:* I don't know if it is still alive.
- Mwaiko:* It existed but it also disappeared when Community... [...]
- Kilonzo:* This is where my first paper appeared in the 60s.
- Mwaiko:* I remember, even mine also.
- Okwaro:* Okay, I think on that note we can take a tea break.
Or ... Mtoi you have something you want to say?
- Mtoi:* Yah.
- Kilonzo:* Something short.
- Mtoi:* Actually I am a trained medical lab technologist at Muhimbili. At that time it was called Princess Margaret Medical Training Centre⁷⁶ [...]. In 1959 [...] to 1961; then there were some scientists from Mwanza, Dr Robert Sturrock.⁷⁷ They came to Tanga here, and they were [...] interested in me joining them to Mwanza. Then I joined Mwanza Medical Research Institute in 1964. I worked there, [...] on hookworm research and also schistosomiasis with them. And then in 1975 I was transferred to Amani. I joined Mr Kilonzo and his plague project. We did so much work on epidemiology of rodents. [...] Then I joined onchocerciasis project, and when Dr Muro went for his studies, I was also invited to [Europe to] attend a seminar for two months on [enzyme electrophoresis]. When I came back I was initiated in [electrophoresis] on this *Simulium*. At that time [Dr Sabati], she was expert on [enzyme electrophoresis], with Dr Mwaiko in 1978. In 1990 I was transferred to Tanga Centre, to take over administration at the same, because [Mr Ali Said], who was there as a senior doctor technician, had retired. In 1999, I retired. So most of my time here I was working with Professor Kilonzo and Dr George Mwaiko. At this place [the library], I was the scientific secretary of meetings when we were holding meetings here.
- Mwaiko:* And on top of that, actually, you played a major role during the onchocerciasis surveys when you were trying to remap

⁷⁵The *East African Medical Journal*; see, Ombongi, K. S., M. Dobson, et al. (1998). The East African Medical Journal: its history and contribution to regional malaria research during the last 75 years. *East African Medical Journal* 75(6 (Supplement)): S10–S19.

⁷⁶Before independence in 1963, Muhimbili Hospital was called Princess Margaret Hospital.

⁷⁷Robert F. Sturrock, born 1937, is a zoologist. From 1961 to 1966 he was employed at the East African Institute for Medical Research, Mwanza, Tanzania, and worked on hookworm and schistosomiasis in East Africa. Later in life, he was associated with the LSHTM, and the Division of Vector-Borne Diseases of the Ministry of Health in Kenya. See [http://archives.wellcomelibrary.org/Dserve/dserve.exe?dsqIni=Dserve.ini&dsqApp=Archive&dsqDb=Catalog&dsqCmd=show.tcl&dsqSearch=\(RefNo=%27WTIRFS%27\)](http://archives.wellcomelibrary.org/Dserve/dserve.exe?dsqIni=Dserve.ini&dsqApp=Archive&dsqDb=Catalog&dsqCmd=show.tcl&dsqSearch=(RefNo=%27WTIRFS%27)), accessed 12 January 2018.

- the prevalence of onchocerciasis – the Kagera surveys – in Kagera, Mongo, Kigoma, Mpanda...⁷⁸
- Okwaro:* So how was it for you to work in Amani at that time?
- Mwaiko:* He was a very happy man. [*laughter*]
- Dr Richard Mtoi:* That time, when I came here, I didn't see any discrimination, as explained, because there were two social centres, we had a bar here and there.⁷⁹ [...] At that time, Wegesa was the Director, then Dr Temu. Well, life was normal... So I can't say there was serious discrimination. I did not see much of that. [*laughter*]
- Mosha:* Since we are going for tea, one thing about tea. We used to have coffee break, coffee and tea in this library room, and it used to be brought here, a flask and filter papers. [*laughter*] And then we would just take coffee, sit here and have a scientific chat for about ten minutes. I'm told Matola and Graham White used to have very lively discussions in this [room]. [*laughter*] [This coffee club cost] ten shillings a month.
- Mwaiko:* Even the membership at that club was five shillings only.
- Kilonzo:* But five shillings, it was a lot then.⁸⁰

Tea break

- Okwaro:* Let us proceed from where we stopped. We were talking about [...] who would decide who is to do the publications [...]. So, during those years, were there times when you felt the PI included someone who did not do so much, and you were left out – were there such incidents where you felt, it's just the PIs deciding by themselves? And who were the key PIs, how did they decide who gets on and who doesn't? Maybe we can start with those who haven't talked a lot? I would like to hear a bit from Muro.
- Dr Abraham Muro:* Well, may I give the opportunity to my senior Dr Matola?

⁷⁸Probably the Kagera Health and Development Surveys, conducted from 1991, involving the University of Antwerp; see <https://www.uantwerpen.be/en/staff/joachim-deweerd/public-data-sets/khds/>, accessed 22 March 2019.

⁷⁹Referring to the Amani (senior staff) Club at the apex of the station, near the library, and the junior staff or African Club on Market Street in the staff settlement.

⁸⁰Salaries for senior staff at Amani during the post-independence period were comparatively high, as payscales were inherited from pre-independence racialised hierarchies. Thus a senior scientist could in the early 1960s earn as much as £800 pa, which was higher than the average UK salary at the time, with subsidised housing and food supplies. Salaries of lower ranks were considerably lower, thus a fieldworker or laboratory attendant could earn as little as £30 during the same period, i.e. 50Sh per month. Salaries rose subsequently with inflation and became less unequal. If a mid-60s junior researcher earned some £200 pa when he was employed, this would have amounted to about 330Sh per month, so that 5Sh membership fee would indeed have been acceptable – while actual club expenses might not have been (see below).

- Matola:* On that question, actually, I was one of the culprits who suffered. Theo Goosen ... For a long time it was me who was writing, but then he would put his name there, and neglect me completely. [*laughter*]
- Muro:* Not even in the acknowledgments?
- Matola:* No. [...] On several occasions. Like this work on the Mto wa Mmbu project.⁸¹ I was the one who was doing the research and writing the results, gave him to be typed. And he changed it; he put his name instead of mine. Then I thought what is the point of arguing with him, so I said, 'Okay, forget about it'. So I normally used to forgive. [...] And then he went away without no official communication at all.
- Okwaro:* Ah, what was the name again?
- Matola:* Theo Goosen from Rikshospital in Nijmegen.
- Okwaro:* So not even co-authorship? He just took the work and published himself? Was this common with many other of your colleagues?
- Everyone:* No.
- Matola:* No, except the other one, who was also very funny, that was Fletcher. Fletcher worked very hard, but he never published anything at all anywhere, except in the Annual Reports. Is that not true Dr Mwaiko?
- Mwaiko:* Yah, he had this problem. He used to do [...] lab work; very good work on sickle cell. He was funded by Nuffield Institute of Comparative Medicine.⁸² He did a lot of that work, but he never published a very substantial report, apart from his presentation in the Annual Report 1967, that's all. He was very hesitant to publish, but I think he did it in the 50s on Dieldrin⁸³ determinations, when they were doing the Pare Taveta scheme.⁸⁴ I saw one of his publications. But later on, when I stayed with him, I never saw any publication [*someone laughing*].
- Okwaro:* Did he publish that work later?
- Mwaiko:* I don't know. I would have seen it. All the time I was working very close to him.
- Matola:* But he was renowned actually even for his PhD. At three weeks before submitting his PhD, he went on holidays overseas somewhere else. He came back after few days, just before his interview, his presentation, his paper.

⁸¹The Mto wa Mmbu experiment, distributing chloroquine medicated salt, began in 1961; during its later stages it also involved research on the retinotoxicity of chloroquine (see note 56), *pace* Graboyes, M. (2015). *The experiment must continue: Medical research and ethics in East Africa, 1940–2014*. Athens: Ohio University Press, p. 5, note 13.

⁸²A British zoological and medical-related research institution and funder, which opened in 1964; see, e.g., Goodwin, L. G. (1976). Nuffield Institute Of Comparative Medicine. *Journal of Zoology* 178(4): 529–542.

⁸³Insecticide widely used in malaria control at the time.

⁸⁴Fletcher, T. E., J. M. Press, et al. (1959). Exposure of spray-men to dieldrin in residual spraying. *Bulletin of the World Health Organization* 20(1): 15–25.

- Mwaiko:* He wrote a very thin, very nice book. He worked on the resistance to DDT among houseflies.⁸⁵ That time, I think, because Msangi was working on houseflies; so he was concentrating on the possible insecticides; that time we were dealing with these organophosphates.
- Mr Lincoln Malle:* And another thing, which I experienced in the past, is that during publications, the name of the Director General was appearing almost in each and every paper. I don't know whether this was a criteria or...?
- Okwaro:* Who was then the Director General?
- Mwaiko:* Professor Wencelaus Kilama.
- Matola:* Wencelaus Kilama. But that was unavoidable because any publication would go through him. He must see them; give permission for publications. That was in the acknowledgement. You must say, 'I'm thanking the Director General for allowing this publication to be published'. So if he didn't see that one....
- Okwaro:* So before you even give it to him you have to put his name?
- Mwaiko:* No, but that was on the ethical grounds. Because you are working under the [...] National Institute for Medical Research; any document published, although it comes as your publication, but it is owned, it is in the name of the National Institute for Medical Research. Normally it goes in the acknowledgement. And if you don't mention the name, but permission was given by the National Institute for Medical Research, you must accept it. [...]
- Dr Stephen Magesa:* My observation was that, you know, Kilama was a longtime professor before he came to NIMR. And I think by the time he came, he was the most senior person around here. Like these people were just beginning to get into research, publishing their first papers. And he used to sort of, trying to make an effort to help people to get these papers in good shape. So he really did a job of dissecting it.
- Muro:* Critically and positively.
- Magesa:* Very critically, and he gave a lot of comments on reports. So people felt somehow like they owe to him, to include him [as author] after all that process [*someone laughing*]. It wasn't a rule, but people felt very, very grateful with his contribution and 'Professor' from university, in this small organisation coming up. So this is what I observed when I was there.
- Okwaro:* Which year was that?
- Magesa:* In the mid-80s.
- Okwaro:* In the mid-80s, that was when Kilama was a Director?
- Magesa:* Yes.

⁸⁵Fletcher, T. E. (1952). DDT metabolism in two DDT-resistant strains and one non-resistant strain of *Musca domestica* L. *Transactions of the Royal Society for Tropical Medicine and Hygiene* 46, 6.

- Muro:* In fact he was a Director General for almost nineteen years. [laughter]
- Lyimo:* No, the thing is, when they established NIMR, [...] he was brought in as the first Director General, and he worked very hard to bring people like us in. He was going to universities, interviewing people and convincing them to join the institute and all that.
- Muro:* And looking for research grants.
- Lyimo:* Yah, and he was gradually revisiting universities.
- Magesa:* And maybe he also looked at everybody as students. [loud laughter]
- Kilonzo:* But in a way he is right, because he was the most senior. For some of us, he was our supervisor, and so it's okay to look at you as a student.
- Matola:* But he was very clever in one aspect, that when his time of office was over, somebody would be appointed. So he had in mind that Dr Kitua⁸⁶ would be appointed, so he sent him for training for three years so that he can take [inaudible] in his absence.
- Okwaro:* That's an interesting part and I would like us to revisit it again in the afternoon when we talk about post-EAC time. For now we just want to concentrate a little bit on the 60s and 70s.
- Mosha:* Actually we did not have a problem in publications, as I mentioned earlier. We were involved in a large programme and the project leader was Dr John McMahan.⁸⁷ So when it came to publications, we sat down together and decided who will lead. And as I told you, we were three scientists, all of us enrolled for PhD. [laughter]
- Matola:* On the same subjects?
- Mosha:* Not the same subject, in the same area. So each one had his speciality and his study area.
- Okwaro:* So there were [Frances] Bushrod, you and?
- Mosha:* McMahan himself.
- Matola:* No, no, no.
- Muro:* Niels.
- Mosha:* Aah, yes, Niels.
- Mtoi:* Niels Kolstrup.⁸⁸
- Mosha:* But also in the team there was Daniel Abaru.⁸⁹ So the clinical papers, it's McMahan who decided with Abaru. But on the entomological papers, we decided the three of us. Each of us had a special study area where he was concentrating. But

⁸⁶Dr. Andrew Y. Kitua was Kilima's successor as Director General of NIMR, 1997–2009.

⁸⁷Referring to the filariasis research programme led by J.E. McMahan, see note 55.

⁸⁸Kolstrup, born 1950, was a Danish-Norwegian MD who did his PhD on the filariasis programme; see Kolstrup, N., J. E. McMahan, et al. (1981). Control measures against Bancroftian filariasis in coastal villages in Tanzania. *Annals of Tropical Medicine & Parasitology* 75(4): 433–451.

⁸⁹Abaru was a Ugandan MD, who came to Amani to work on the filariasis project, then returned to Uganda after EAC collapsed; see, Abaru DE, McMahan JE, Marshall TF et al. (1980). Tanzania filariasis project: studies on microfilaraemia and selected clinical manifestations of Bancroftian filariasis. *Acta Tropica* 37(1): 63–71.

apart from these, we had our own individual small studies. I was able to publish three papers as alone, or with Saidi Magayuka⁹⁰ on various aspects of mosquito ecology. And we were not hindered from doing that. We collected data, published and then did acknowledgement; that this has got blessings from the community of the centre, but there is no problem. We were able to publish independently, end of subject. [...]

- Muro:* That was agreed on very smoothly between the co-workers.
- Mwaiko:* You know this arose because everybody at that time was assigned to a specific project, which he knew. So there was no problem. And all of us we went through specialisation actually: He went for *Simulium* taxonomy, and I went to molecular biology and technology, so there it was.
- Okwaro:* It was always ...
- Muro:* ... very smooth.
- Okwaro:* Very smooth. Right, that's interesting; what [...] about the social events? What kind of events did you have jointly at that time?
- Mwaiko:* We had football. 'Mmbu Sports Club'. Mmbu means mosquito.
- Matola:* And the band was here.
- Kilonzo:* 'Amani Jazz Band'.
[all agreeing]
- Kilonzo:* And also we had a very good netball team for our sisters. They went to Kampala for some competitive games.
- Muro:* And Mombasa.
- Kilonzo:* And we started an athletic team, I remember, I was one of the warriors of the team and their leader. We had this Kenyan who was a very good runner, Hugo.
- Muro:* I think every end of year, the former Director, Phillip Wegesa used to slaughter a cow from the cowshed,⁹¹ and we stayed together to eat, drink and have fun – either in the cathedral, his compound or in the club. Actually we were working here as a family, we were very comfortable.
- Kilonzo:* And in the early 70s, all of the African scientists – this were Mwaiko, Mosha, me and Abaru – the scientist, African scientists that time – we used to have some fortnightly, what we called *Bata* party. [laughter] *Bata* means a duck, to eat ducks; it was a kind of get together for the young scientists.

⁹⁰Magayuka was a senior technician in the entomology laboratory at Amani from 1964 to 77 or 78; he co-authored and wrote several publications; see e.g. Magayuka, S. A. (1973). Development of filarial parasites in mosquitos in north-east Tanzania. *Bulletin of the World Health Organization* 49(1): 110–111.

⁹¹Amani had, since at least World War II, its own dairy production. According to witnesses, the herd of black and white Friesians counted up to 40–50 heads, with their own stables and dedicated staff, and was grazed on extensive meadows of imported so-called “Kikuyu grass” that had been planted in the valleys around the station, giving the landscape, a distinctly English character; see Ghyselen, A., P.W. Geissler, J. Lagae et al. (2017). Scenes of Amani, Tanzania: Biography of a postcolonial landscape. *Journal of Landscape Architecture* 12(1): 6–17.

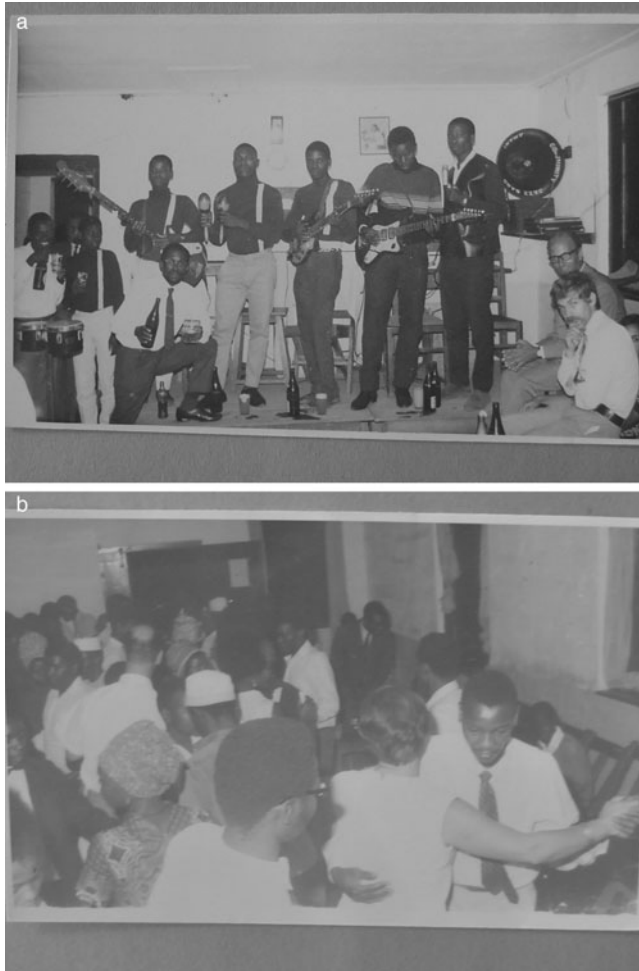


FIGURE 8A–B Amani’s band at a dance at the African club on the occasion of Dr Jan Lelijveld’s departure, early 1970s (personal collection, Jan Lelijveld).

Okwaro:

Kula bata? [eating duck]

Mtoi:

[We also had a Christmas party] [...]

Matola:

It brought some repercussions, this question about Christmas parties. The Muslims were saying, ‘Why is it Christmas and not Eid al-Fitr?’ [...] So we had to change from Christmas to New Year which is neutral, to please everybody.

Mwaiko:

We had an annual party every New Year.

Kilonzo:

Of course, there were also smaller social activities which combined several families. Like I remember, all the families from Same district and few others including Machaga’s



FIGURE 9A–B Amani’s female staff and its netball team, early 1970s (personal collection, Bukheti Kilonzo).

family. We used to get together every Christmas and every Eid al-Fitr, twice a year, either in our house or somebody else’s house, but it was a very good kind of social get together.

Muro: If somebody is retiring there will be a party for all staff members, funded by the centre Director. If somebody was moving from one centre to another – a farewell party. I mean life was smooth and comfortable.

Matola: Then, family wise, we used to have rotation like, one weekend we eat at Mtoi, I mean the children, the whole family at Mtoi’s place. And Mtoi’s family would decide whether there would be *ugali* and *mchicha*,⁹² and Matola would say, ‘Probably we will have *wali* and *nyama*,’⁹³ and we would rotate from one house to another every weekend. Isn’t that so? Mtoi, do you remember?

Mtoi: Very much, yes.

Kilonzo: So all this means people were living here as a community, as sisters and brothers, yah.

Okwaro: Did this involve both... or just the non-whites?

Muro: All the staff members, starting from the most juniors to the most seniors. [*others agree*]

Okwaro: Did you also go to the other houses like to Leljeveld, Raybould, White?

Muro: The only problem was shopping. Shopping was a problem. I think there used to be a food van every Wednesday. Our shopping was essentially in Muheza town there. You can see, even during your stay here you can’t move around, shopping is a problem. There are few shops, so for eating commodities, household commodities, we go down to Tanga. And the road

⁹²Stiff porridge of maize and green leaf vegetable.

⁹³Rice and meat.



FIGURE 10A–B The young guard of Amani’s scientists, and dinner party at Bhuketi Kilonzo’s house (*kula bata?*), around 1970 (personal collection, Bukheti Kilonzo).

was very rough; there used to be heavy truck vehicles in lots, almost twenty tons, fifteen tons. Those trucks used to ruin the road, because it was all earth, and it used to rain heavily.

Mosha:

But they used to give us lifts.

Muro:

They used to help us. There was a shortage of transport. Not everybody could be accommodated in the institute vehicles. So we jumped on the back of the log trucks and held on to the chains. Down the hill to Muheza. [*laughter*] When you are in Muheza you board a bus to go to Tanga. [...] Shopping or whatever or where you wanted to go. So life was socially a bit difficult on that aspect. If you want to go to Tanga for any reason, transport was a problem. During those days, in Tanzania owning a vehicle wasn’t as easy as it is now. They used to be something called ‘vehicle permit committee’. Even a TV, to own a TV you would have to have a license, from a committee which was established in the Bank of Tanzania.⁹⁴

Kilonzo:

And where do you get it? Because they were not available in shops!

Muro:

And if you brought it from outside, you would apply for a permit to own whatever you bring to the country. So transport was really hectic. Now everybody, even students, own vehicles. Those days, owning a car wasn’t as easy as it is now, so movement was a problem, and I think that’s the reason people thought that we should move downhill, because of the cost of moving up-down-up-down. It was costly to the individuals and the centre.

⁹⁴The speaker refers to various aspects of Tanzania’s 1970s economic policies, which also included import substitution and restriction of imports and transfers, which resulted in shortages. See, e.g., Aminzade, R. (2013). *Race, Nation, and Citizenship in Post-colonial Africa: The Case of Tanzania*. Cambridge, Cambridge University Press.

- Lyimo:* Actually for me that was the biggest problem when I came here. When you want to move from this point down. So after one and half year, I decided to move to Muheza.
- Malle:* Also it didn't happen during my stay here, but I was being told that in the past they used to bring famous bands from far, like Mbaraka Mwinshehe,⁹⁵ the famous. [laughter] [...] Yah, they came up to here. They came to entertain people.
- Matola:* Yah, we used to bring them in the local club.
- Mtoi:* To ease up isolation, and the loneliness. That was part of what the administration in the club made possible here.
- Matola:* And then there was a problem also with what was called in that particular time, 'remoteness allowance'. If you were working in a remote area, government would pay an allowance. So we tried to negotiate if we could get anything. The government said, 'If the government is paying employees remoteness allowance in your area, we will also pay...'
- Okwaro:* So they didn't pay?
- Matola:* They didn't.
- Okwaro:* And this music band would play in both clubs, or only up [in the European club]?
- Matola:* Yes.
- Okwaro:* So you were not allowed to come to?
- Mwaiko:* We started down there [junior club] but later we came this way [senior club].
- Mosha:* I thought during the 60s you said that there was a local band?
- Mtoi:* *Zamani* [former, old, long ago].⁹⁶
- Okwaro:* Yah and the band, could it play in the other, in the senior [club]?
- Matola:* No maybe it was down at the African, the band.
- Kilonzo:* *Utamaduni* [cultural, traditional] band.
- Okwaro:* I'm just wondering [...] You would visit each homestead in turn, in the 60s, but when it comes to the club it's [separated] So you could meet in their homes, but you could not meet freely in the club?
- Matola:* Except for Christmas when the Europeans said, 'Do you have Christmas party for the children?' The Christmas Eve, that's when the problem of Africans not accepting their children to the club because they are not members.
- Mosha:* But can I comment; actually the segregation was on the basis of seniority. So when they say scientist [were permitted], before that there were very few Africans [who were scientists].
- Muro:* Three.

⁹⁵Mbaraka Mwinshehe, 1944–79, famous Tanzania Jazz and dance music guitarist; see, e.g., https://www.youtube.com/watch?v=o-roysoN_1A, accessed 20 January 2018.

⁹⁶Presumably referring to the local staff band mentioned above.

- Lyimo:* And those Africans were more comfortable with others down there [at the junior club] than [up at the senior club]?
- Mwaiko:* Yes.
- Okwaro:* So the Africans preferred mainly to be down?
- Mwaiko:* No, we were sometimes going to both.
- Mosha:* That was now during my chairmanship. [*laughter and murmuring*]
- Mr Alban Machaga:* And in the 70s when I came in, we had something called 'food van', which collected the food from Tanga, from Muheza. Families used to bring their orders to the driver and the helper, and so they went and collected the requirements up here. Then they distributed all around the houses, but you had to request and give them the money.
- Mwaiko:* We had our own milk supply here. [*others agree*] Thirty cents per litre! [*laughter*]
- Muro:* It was very cheap, subsidized I think.
- Kilonzo:* After all, where are those cows, are they still around?
- Machaga:* They are still around.
- Kilonzo:* So the farm is still there?
- Machaga:* Yes.
- Kilonzo:* So why do we drink empty coffee [without milk] during the tea break? [*laughter*]
- Mosha:* But also, the time was good. We had some good parts. Firewood also would be distributed to the houses.
- Machaga:* And manure.
- Mosha:* So we were able to keep good gardens, to have good fire in the evening, for heating system.
- Matola:* Waste disposal also was done by the institute every Tuesday and every Friday. They would go around and collect garbage for throwing away.
- Okwaro:* During this transition time, apart from talking about the science and the direction it takes, did you have any other discussions with the non-Africans about the direction that Amani was taking? With a view of the political changes taking place now that Tanzania was becoming [independent] Did you have that general discussion over beer or over coffee? [...]
- Mwaiko:* [Those discussions] they were not there directly. They used to be discussing directly at the coffee club, here. Because we had newspapers. So whatever is in the newspaper, people gave [their] own comments. [...] For example when Africanization used to appear, and you sit here with Fletcher, who is outgoing ... [*very loud laughter*]. He was outgoing.
- Muro:* Actually it was like cracking jokes; people were very friendly.
- Okwaro:* I want to hear what the jokes were about.
- Mwaiko:* Aah well, it is difficult to remember, but they used ... Actually these days [...] people talk on different points of

opposition, what not. That time was [...] just after independence. Our leaders were Kenyatta and Obote, there were no politics of opposition. It was time of Africanization, things should move forward. So everything that used to appear [in the papers] was almost like a directive, [...] ‘This time this should happen’, so people used to comment.

Lyimo: If I may chip in a question for example, after 1967, with the changes that took place in Tanzania in 1967, what was the reaction, for example here?

Matola: 1967?

Magesa: ‘Azimio la Arusha’.⁹⁷ [all agree]

Mwaiko: Aaaah okay.

Matola: You see when [...] we were sort of isolated from the community. Therefore some things we could not know about, because we were sort of cut off. The system of transport was very poor. Communication was through landline telephones, which sometimes didn’t work at all. There was only one telephone in the office. You were reading here, the messenger came, ‘Matola you have a telephone’, you have to run all the way from here to the office. When you reached in the office you are panicking almost, you can’t talk. And then also there was a Dr Pringle, who was the Director when I came. He didn’t want to employ girls in the laboratories. He said people would not spend time doing the work, which they were supposed to be doing. There will be all the time chatting. There was a typical example, [...] in the supplies department, there used to be a girl and all the time she was sort of looking in the mirror like this. [laughter] She was dismissed.

Okwaro: So Pringle had like a policy of not employing girls. Because it will distract you guys?

Matola: It was gender bias. [laughter]

Mwaiko: I think that’s a very good question. After the Arusha Declaration, there was a feeling that we were isolated here from the rest of this country, because we had some privileges. Because Arusha Declaration came with certain restrictions about the Tanzanians; changes on taxation first, they introduced Pay As You Earn,⁹⁸ while others – Kenyans and others – were not in the system.

Mtoi: Oh yah, I remember that.

Mwaiko: Taxation changed for us Tanzanians. Kenyans remained with their own tax system.

Matola: And Ugandans.

⁹⁷The ‘Arusha Declaration’ made by President Nyerere in 1967; key document for TANU’s ‘African Socialism’.

⁹⁸Direct deduction of income tax by the employer, PAYE.

- Mwaiko:* So we started seeing that change. And there was also an issue ... Tanzanians couldn't buy a car if you did not have a permit. You see my point? This Arusha Declaration was directing us to socialism and so on. So there were some restrictions, some concerns to some of the Tanzanians who were here. So we saw that. But all the same, despite these minor restrictions, as long as this [institute] was carried by three countries, the resources were enormous. You could not compare our institution with say Mlingano centre.⁹⁹ They did not have any facilities. [...] So this institute when they used to come here, they used to say, 'You people have everything here, while we don't have funds', because we were funded by three countries. There was this feeling.
- Okwaro:* Where was the funding coming from, mostly for you?
- Mwaiko:* Three countries.
- Muro:* The East African Community was regarded as international organisation.
- Mwaiko:* Apart from external funding, basic funding, funding salaries, was from three countries.
- Matola:* With the headquarters in Nairobi.
- Mwaiko:* So, we had a lot of resources. I remember my Director used to overestimate, but when [Wafura]¹⁰⁰ became Director of budgets, he said if you compare this with East African [Community] – this is peanuts. [*little laughter*]
- Okwaro:* So the salary and everything would come here, but you also had projects funded from outside?
- Mwaiko:* Yah, from WHO, British Council, several. Actually, British Council was contributing annually.
- Matola:* Wellcome Foundation [Trust], Nuffield Institute of Comparative Research [Medicine].
- Mwaiko:* WHO with funding if we requested.
- Matola:* Liverpool School of Tropical Medicine. London School of [Hygiene and] Tropical Medicine, Nijmegen University in Amsterdam.
- Okwaro:* Was this funding coming directly to Amani or through EAC to Amani?
- Mwaiko:* [The money] used to come from Arusha, they came to Arusha.
- Mosha:* Yah, to the secretary general.
- Okwaro:* Okay, did you have to apply directly for funding for each project?
- Mosha:* No.

⁹⁹Mlingano Agricultural Research Center, under the Ministry of Agriculture (and therefore funded as a national rather than a regional institute); see <http://www.kilimo.go.tz/index.php/en/institutes/view/ministry-of-agriculture-training-institute-mlingano-tanga>, accessed 15 January 2018.

¹⁰⁰Unidentified administrative staff member.

- Okwaro:* Everything came through?
- Mwaiko:* Yah, once the project was already approved. The fact that there was this direct management, there was no more [...] fund application committee.
- Okwaro:* And between the 60s and the 70s, were there any constraints, for funding, [...] during this transition, like when the whites were still here? [...]
- Mwaiko:* At that time, in the 60s and 70s during the community and so forth, there were very minor constraints. Because [...] this institution was established 1952, so most of the resources were already available, it was just adding on. In most cases it was on the equipment side and transport. Particularly if you asked for laboratory equipment. If you need transport in your grant they would give you a vehicle [*murmuring*] and whatever supplies you want. But [the] infrastructure was already there. Except the changes we had, about generating electricity.
- Mosha:* Hydroelectrical.
- Mwaiko:* We [...] used to have it [a power station], but the power was very small.
- Mganga:* 7 KW.
- Mwaiko:* So we brought TANESCO¹⁰¹ here. I remember my Director when he was putting the budget, it was [...] 300,000. It was enormous, this money, 300,000.
- Matola:* But Mr Chairman, what I felt at that particular time was that, if we didn't have any sort of formal qualifications or something like that, you would not get involved in such monetary things. It's only the head office and the Director who would know of any constraints. Some of us would only know there's no salary this month, we don't even know why, we were not told why. We were not involved in sort of budgeting.
- Okwaro:* So, if I get you right, there was a time when sometimes salary was not in the bank?
- Matola:* Oh yah, the bank was in Tanga, you have to go all the way to Tanga to get your salaries.
- Okwaro:* And would this be attributed to the shift [of management] or you didn't know why?
- Mwaiko:* During 60s when things were operating without any constraints, I think the system of management of the institution; it was managed essentially via senior officers. On top they have Director and council members. This question of sitting down all of us thinking, where to get money and everything, was not there. These people were planning. As

¹⁰¹Tanzania Electric Supply Company, who established grid electrical supplies for Amani to replace the hydroelectric plant.

long as you say, ‘I want to do this, this is my budget’, that was all. We used to complain as some [budgets] they slashed [*inaudible*]. I never was ... I was not asked, where I am going to get the money, or ‘Look for a grant!’, no. You were told that, ‘Your training is ready, you are going somewhere next year’, that’s okay. So it appears there were people working on that, but things have changed. Everything is put in your own hands to look for grants. This way you find life is very competitive.

Muro: Another thing is during the 60s–70s, the political system affected the freedom of people; to criticize the administrators ... People didn’t have the freedom we are having now. So criticism was not as common and this obvious, as it is now. There was an element of fear. And there was a lot of respect for juniors to seniors. These days you don’t find this; people are very critical. So that contributed also.

Okwaro: So you wouldn’t criticize your Director here?

Muro: No, no, you wouldn’t dare.

Matola: It was serious.

Kilonzo: Not easy.

Matola: There was a certain Mr Chovenye¹⁰² who was executive Director. If you sort of became too involved talking with... ..white seniors.

Machaga:

Matola: [He would say:] ‘You see, white seniors, you know these people are not our people *bwana* [“boss” also “man”], you should not approach them every time and call them by [first] names, you see, you say Dr Fletcher’. So there was that fear that if I get involved talking to a white man, I will be in trouble.

Okwaro: That was in the 60s and 70s, so you now had an African Director. But who says that you don’t speak directly to them?

Someone: Just a feeling.

Muro: There were no don’ts and dos, in terms of freedom of speech. But naturally you find yourself obedient to your senior. You are obliged. And it was not only in Amani, even in the government system. There was a lot of respect to seniors. And there was a lot of fear to criticise anything that is political. So what the government told, what the minister would say – it’s a ruling, it’s final. These days, people even abuse the ministers. [*laughter*] The current President has brought a lot of freedom of speech.

Lyimo: They are abusing it.

Muro: Yah, you wouldn’t dare do that during those days.

¹⁰²See note 29.

- Kilonzo:* But that was due to the general political system of single party. We couldn't just abuse a leader, or criticise him. No.
- Kilonzo:* It is now common all over the world. But [...] this freedom has come after introduction of multi-partyism.
- Muro:* In 1992 multi-partyism [...] started in Tanzania.
- Okwaro:* Another area that I would like to hear your views on is: How were relationships between you as scientists [at Amani], and the surrounding communities?
- Kilonzo:* It was normal.
- Muro:* It was very, very good. The villagers around would come here for medical services.¹⁰³ [...]
- Mtoi:* And for transport. It was very friendly. When we needed something, the villagers would go, I mean there was no isolation between the communities surrounding us and ourselves. Very friendly.
- Magesa:* If I may throw out one question. I grew up in Mwanza where there was a nearby institution like this one ... ?
- Muro:* Ah, *Bwana Matende*.¹⁰⁴
- Magesa:* *Bwana Matende* yah, yah. Well, I used to see Mr Mtoi in his big [*inaudible*]. [*laughter*]
- Matola:* Yah, he was in Mwanza.
- Mganga:* And there was really this kind of fear of the research community.
- Matola:* Vampires!
- Magesa:* Vampires, or *mumiani*.¹⁰⁵ You hear that they suck blood and whatever. Something like that. When I joined the NIMR in Muheza there was that feeling, particularly when we had Jo Lines¹⁰⁶ and he had this red van... [*laughter*]
- Matola:* Red! [*laughter*]
- Magesa:* You see, you would break somewhere, and people just run away.
- Matola:* Run away.
- Magesa:* Run away. In my activity I think I did not see anything that we were doing that was like [stealing blood].
- Mtoi:* Like a vampire.

¹⁰³ Amani had its own small clinic, which complemented the services of the government dispensary and had excellent diagnostic services and drug supplies.

¹⁰⁴ Popular term referring to (European) researchers on filariasis, attributing nefarious intent to these. Variation on widespread rumours on medical researchers stealing blood; see, e.g., White, L. (2000). *Speaking with Vampires: Rumor and History in Colonial Africa*. Berkeley, University of California Press. Filariasis research was particularly prone to rumour, due to the fact that bloodsampling should be done at night, when the parasite larvae can be found in peripheral blood vessels.

¹⁰⁵ A more generic term for bloodstealing researchers, see note 104.

¹⁰⁶ Jo Lines, Professor of Malaria and Epidemiology at the London School of Hygiene, worked in the 1980s, together with Lyimo, Magesa and others, on insecticide treated materials and bed nets in a research programme based in Muheza, in the plains below Amani, which was co-ordinated from the London School. See <https://www.lshtm.ac.uk/aboutus/people/lines.jo>, accessed 15 January 2018.

- Magesa:* Like that, whatever. But then when you go to collect blood, then they say, ‘Oh, you will sell our blood’. Those were the kinds of feelings. But I don’t know, probably those years before... what had actually happened in the 50s, 60s, 70s – this is one of the things that could be a conflict between the communities, research communities and the institute during our time. [...]
- Matola:* The same story [I had]. We were feared. They did say we were sucking blood and selling it outside. Like for example during the [Biafra] war, collection of blood from schools for blood slides; they would say, ‘I do not want my blood to be given to you, because it’s going to the wars’. We said, ‘Sorry, it’s just capillary’. But he says, ‘No, if one capillary plus another one, plus another one, is a whole litre. So I do not want my blood to be taken at all’. And we used, for example in one of the schools, when you take a blood slide and finished, you take a sweet and give it to the boy. There was one boy, Mtoi’s relative. [*laughter*] He was out of the school. He said, ‘I don’t want my blood taken at all’. The teacher would do some beating, but said, ‘Even if you beat me, it’s my blood it’s not your blood’. [*laughter*] So when we said, ‘We are going, *kwaherini* [good bye]. Okay, thank you very much for your cooperation’. Then he said, ‘Now you can take my blood’. So you take his blood, you give him a sweet; he says, ‘For my blood you give me one sweet only!’ [*laughter*]
- Kilonzo:* Although the villagers around were friendly, [...] there were these few, there were a few everywhere, who used to believe that researchers are *mumianis*, blood suckers. Me and Mtoi experienced this in West Usambara, in Lushoto, during the Mozambique war, they said, ‘Ah *damu yangu ipelekwe Msumbiji?! Sitaki!*’ [Will my blood be taken to Mozambique?! I do not want to!] In all the areas there are few. In Mtae area in Lushoto, every morning you woke up, and the car, at the back, had been written ‘mumiani’. Every morning, they come at night and write ‘mumiani, mumiani’. [*laughter*]
- Matola:* And at Gonja,¹⁰⁷ they broke our vehicle.
- Kilonzo:* Yes our vehicle.
- Mosha:* Yes, that was our team with Magayuka.¹⁰⁸

¹⁰⁷Field station of Amani in the Pare-Taveta area; originally created for the Pare-Taveta malaria control project; see Bradley, D. J. (1991) ‘Morbidity and mortality at Pare-Taveta, Kenya and Tanzania, 1954–66: The effects of a period of malaria control’. In: Feachem, R.G. and D.T. Jamison, (eds), 1991, *Disease and Mortality in Sub-Saharan Africa*. Oxford: Oxford University Press for The World Bank, pp. 248–63.

¹⁰⁸See note 90.

- Kilonzo:* So there are some areas, there are some people, who still [believe we are blood suckers] maybe until now. [*some participants disagree*]
- Muro:* No.
- Kilonzo:* Until now, yes.
- Muro:* No, not as much.
- Okwaro:* There was also something that Matola mentioned about the salt. That you were giving them [medicated] salt, but that they also bought their own salt. [...] So did they mistrust your research, and say, ‘Okay, now we are buying our own salt’, or?
- Matola:* You see chloroquine is not tasty because you will put it in your soup, you will put it in your *mboga*,¹⁰⁹ you will put it in your *mishkaki*. You could feel the taste of chloroquine, so they didn’t like it. So they will buy their own salt and keep it [the medicated salt for the project] away quietly, somewhere else.
- Muro:* And [that salt] was not medicated.
- Matola:* And there was only one Indian who was then appointed to do the selling of the chloroquinized salt. He was the only one authorized to sell medicated salt. Otherwise no. So you will say, ‘Okay, bring the pot which contains salt’, [and he replied] ‘Which one, with the drug or without the drug?’ [*laughter*]
- Mwaiko:* Sorry. The approach of research at that time, I think was, well, was not [implicating] villagers to know what we were doing.
- Muro:* Educating.
- Mwaiko:* It was if you were just going to survey.
- Muro:* Sensitisation.
- Mwaiko:* You will only see very few people of the [administrative] hierarchy, and then you go to the village straight. If that was for mosquito collection, there was no problem. But if any specimen: urine, anything, blood...
... stool ...
- Mosha:* ... stool ...
- Mwaiko:* ... stool, then this had a lot of implications. I remember in Taveta we used to collect blood, sickle cells studies. [*laughter*] And at that time there were no capillaries, we had a tube which was this size. [*laughter*] And I used to prepare this myself. These tubes. I used to do glass blowing for those tubes. [...] You put potassium sodium oxalate as anticoagulant. I used to prepare them. Then you go. Now when you prick somebody, then you have a rubber ...
- Mtoi:* ... teat.

¹⁰⁹Common green leaf vegetable.

- Mwaiko:* Teat, and you push it, so and particular for an adult, but for an infant... [laughter] You started, 'This is enough', the mother says, [switches to Kiswahili, mimicking a mother's voice] 'Hii basi inatasha' ['This is enough']. Then you say, 'No, no, no *bado kidogo*' ['No, no, no let's add some little more']. 'All this blood from my child? All this!?'
- Mosha:* 'This bottle is excessively filled'.
- Mwaiko:* 'All those bottles!?! Wait a second, enough!' [*they all enact village mother's responses in Kiswahili*]
- Matola:* There were other jokes of course like in this laboratory we used to examine stools and urine. So the condition was that you put your stool... 'there is the toilet, you put a stool in a matchbox'. 'I don't have matchbox!' There was one old man, who came in and said 'I don't have matchbox and I came all the way from Bulwa'. So we gave him a matchbox and said ['there is the toilet']. So he goes there, he puts the stool, instead of putting it in the container full of [match]sticks, he puts the stool on top of the matchbox. [laughter] And he comes in the laboratory holding that thing as if he was carrying a sacrament. [laughter]
- Malle:* For us, instead of the stool, this particular person put a small stone. [laughter]
- Mosha:* Yah, I just wanted to support [my colleagues]. The problem was lack of enough sensitisation. [*all agree*]
- Mosha:* Because even when it came to mosquito collection, we used to go out with tents. Now you cannot convince these people, why you should go to hide in the bush with a tent? Is it just to collect mosquitoes? What is the value of these mosquitoes that we were collecting? So there must be something fishy. It is not just the mosquitoes. The mosquitoes are everywhere, why do we have to travel all the way to come here to collect mosquitoes?
- Muro:* Yah, 'Aren't there mosquitoes where you come from?'
- Mosha:* 'Yah, there are mosquitoes everywhere'.
- Mwaiko:* What is the commercial implication?
- Mosha:* Commercial implication! So they are suspicious, because of lack of sensitisation and working plan. To the extent that it happened when we went to Mtera to do a pre-survey for the construction of the dam.¹¹⁰
- Mosha:* The onchocerciasis team, which went there, they had a real problem. We went to work to one village and they started doing skin snips. And then when they went to another village, the whole village had been deserted. Word had gone around that there are people from Amani who were

¹¹⁰Large scale hydroelectric dam complex, in 1970; see <http://www.tanESCO.co.tz/index.php/mtera>, accessed 15 January 2018.

chopping people's buttocks. [laughter] So we had to take more time to sensitise them to show them that what we are taking was very thin, and why we are doing that, and why we have to come all the way to their place to take this skin snip. So the problem was sensitisation and I think the problem now is changing because of access to TVs.

[Several]:

Muro:

Radio.

Mosha:

Flyers.

And also that there is now a requirement that before you go to do a survey, you have got to involve the villagers. Discuss with them the proposal, what you are doing.

Muro:

Educate them.

Mosha:

Now there is an informed consent, where you have to discuss with the person and tell the procedures. So the problem was lack of communication.

Matola:

There is what is called Rufiji Basin Development Authority, in short RUBADA.¹¹¹ They wanted to build a dam up, so they could collect the water to reduce flooding in the lower region. So Mwanza Research Institute¹¹² were committed with the job of doing schistosomiasis research and vectors. We were committed to do malaria, filariasis and the vectors. It happened to be, I was their [...] team leader. So we go to a village and say, 'Tomorrow we are coming here to do examination for *mabusha* [hydrocele]'. Then they say, 'Ooh okay, yes, yes... speaking something nasty. Very abusive. So the following day we go there, we see only men. Then *mwenyekiti* [village chairman] ... [He] says to the chairman, Mr Chairman I'm surprised, how do you reproduce?' This men say 'Why?'. 'I can only see men where are the women?' The women are peeping actually through the windows. Then they said, 'Even the women do have *mabusha*'. we can see [...] in Kilwa for example, then they accepted it. Another thing was that [inaudible] they would rather share urine with somebody else. For the stool for example –

Okwaro:

What do you mean share urine with somebody else?

Muro:

That they will remove [urine] from one person who is clear [uninfected]. So she will say 'I am bleeding so give me your urine'. Somebody else's. One person's urine can be labelled for ten people, in small doses. [laughter]

Mwaiiko:

There were lots of problems.

Muro:

Yah, research has a lot of problems.

¹¹¹Development programme under the Tanzania Ministry of Agriculture, established 1975; see <http://www.kilimo.go.tz/index.php/en/stakeholders/view/rufiji-basin-development-authority-rubada>, accessed 15 January 2018.

¹¹²See note 12.

- Okwaro:* What you are saying is important. If you look at [...] the ethics of research currently and then, [...] how does it compare?
- Mwaiko:* Actually we used to know the ethics even before that. But through our own experiences we had to develop a system, which is operating now. Whenever you want to do research somewhere, you send your letter to the regional medical officer, district medical officer, that, 'I want to do this, this, this'.
- Muro:* To the village chairman.
- Mwaiko:* Village chairman. Two weeks or three weeks before, or a month, so he is informing those people, 'There will be people coming to look at these things...'
- Mosha:* But still you cannot force the person.
- Mwaiko:* Of course not, but then through this introduction they know that, because they will be already informed. Actually sometimes you find people there already. So at least, the ethics, we have been using that. It eased our working pattern as opposed to those days. We used not to go to DMO [District Medical Officer] and inform him. We just informed the village chief. This, there is no problem now.
- Matola:* Village chief or village thief? *[laughter]*
- Okwaro:* Yah, but what about the issue of informed consent from the participants, 'We went to the chief and everybody', but the participants still have to be informed and consent. How was that done? Because if you are beating up a boy to produce [a sample], it means they are not consenting. How was that?
- Mosha:* Ethically, even now when it comes to a school child, the person who's supposed to consent is the parent. There is consent and there is 100% acceptance. But the ethics say that you must make sure that no [harmful] effect is going to the children. If you've got to go to that extent of involving children. Now you can take an example, where we want to take a blood slide from a child of two years. You cannot ask that child to consent, and sure he will say no. So it's up to the parent to be convinced that what you are doing is for the benefit of the children, and then it's the parent who even can force that child that, 'I want you to have your blood taken so that I can know your condition'. So, sometimes you find that you are taking blood from a child and the child is crying, because he doesn't want to be pricked.
- Okwaro:* But not a teacher, it's a parent's consent, not a teacher to give the boy's consent, ee?
- Mosha:* I said that was an extreme case. *[laughter]*
- Mwaiko:* It was very difficult to take blood slides.

- Mosha:* But consenting somebody, he is free to leave anytime, to drop out anytime.
- Lyimo:* Yah.
- Mwaiko:* I think the movement [of the] NIMR centres next to hospitals can ease this problem.¹¹³ Particularly if you are good in drug trials, you are next to the hospital, you can get a ward. Like this centre at Korogwe, just next to the hospital, so you can get to outpatients you need. As opposed to going to the villages – it is a very difficult exercise.
- Dr Peter Mangesho:* I have a small question: how was it in the 60s and 70s, when NIMR was going out to the field and receiving per diems? [...] It's not only you go out and experience the world. How was this in the past? Was the salary enough? Or the per diems of going to safaris, was it something people, scientist really, really wanted to do? [...]
- Mwaiko:* No. The field allowances emanated from the regulations, employments regulations. [...] That was [...] service regulations. If you go and work outside your station, you are disturbed from your normal economic expenditure, because you have no home, where are you going to sleep? How do you move? [...] So they said okay [...], you are given, there is the Land Rover so the problem of movement is out. You have fuel, a driver, who takes you there. Fuel expenses you will have to estimate. They had a system of mileage, how much you pay and all. It is in the service regulations; they are here [in the library]. You can read, everything was stipulated.
- Muro:* In other words, I can say it is like it is today. Everything is stipulated by the government and the rates are fixed depending on your rate, [...] where you are going, the status of the place you are going to do research, and so forth. The only difference is, during the 60s and 70s the Tanzanian shilling value was very high. The purchasing power of the shilling was very high, as compared to now. It is very low.
- Mosha:* Can I add? Fieldwork in those days used to be quite comfortable. Because you go to the field with your tents, with your air mattresses...
- Muro:* Cooking utensils.
- Mosha:* And on top of that you have your per diem. It was quite comfortable.
- Mwaiko:* And also if you need the field station, they go there, they prepare it, you go there and work. And the per diems – we called it night allowances, not per diems – they went [with]

¹¹³Referring to the move of Amani to the two centres at Muheza and Tanga, both next to hospitals (see note 2).

- seniority. I remember when we used to go with Tom Fletcher he used to get 6 shillings! [*laughter*]
- Mosha:* It was a lot.
- Mwaiko:* Me, I used to get three shillings. [...] For ten days, I get thirty shillings.
- Lyimo:* I think Peter, your question, the way I understood it was [whether] at that time, people viewed going to the field...
...as a source of income?
- Matola:* ...as a source of income, or just as part of the work. And whether people would fight to go to the field? No I didn't see that.
- Mwaiko:* It was just part of the work. [*other participants agree*]
- Muro:* It is like it is now; if you are not involved in the research you are not going on fieldwork.
- Kilonzo:* Because people [...] should work. They should collect data and establish something. You cannot collect data if you don't go to the field. So it was known on the professional aspect, rather than monetary aspect.
- Mwaiko:* And the night allowance we were getting, it was within the first ten days or fifteen days. If you stay on, if your work needs twenty, more than a month or two months, you get temporary transfer [*laughter*].
- Matola:* I beg to differ, because in the 60s, 70s, especially here at Amani, if you wanted to go into the field, you were told you spend your own money and claim on your way back. If you wanted to go on leave they would say use your own money, come back and they can pay. Then came Honourable Malechela.¹¹⁴ [...] He was then [...] the then Minister of Research and Communication, and he was sitting where Dr Lyimo is sitting, wanting to hear the problems we had. [...] We told him, 'Here, when you go on safari, you have to use your own money then reclaim when you come back. When you want to go on leave, you also have to pay your own money – reclaim'. Malechela said, 'No, no, no, I don't leave Arusha until I get my money. I put it in my pocket I come to Amani. So from now onwards, Mr Director, pay them as you go on holiday, pay them the money'.
- Okwaro:* Who was the [Amani] Director?
- Matola:* It was Wegesa. [*laughter*]
- Okwaro:* Which year was this?

¹¹⁴John Samwel Malechela, born 1934, is a senior Tanzanian politician and former Prime Minister, who between 1969 and 76 served in various functions as Minister in the East African Community, including the portfolios of 'Research and Social Services' and 'Communication and Transport' ('Research and Communication' could not be verified.). Father of Mwelecele Malechela, who in 2010 became Director General of NIMR.

- Matola:* About 1970–71. [...] He was from the East African Community, yes.
- Mwaiko:* But the main thing was: attraction was for work first, and then there were regulations. If you stayed, you were given imprest for minimum days, number of days; if you are going to stay [...] for two months, you get a temporary transfer.
- Lyimo:* Like when you are going to stay at Gonja, Pare Taveta and wherever.
- Mwaiko:* Then they send your salary there.
- Okwaro:* [...] That's interesting about the nights outside and the per diems and the changes. I know you have said this in different ways, but just to wrap up, did you like living in this place at that time? And what made Amani such an attractive place for you, in the 60s and 70s?
- Mwaiko:* First, I think it was a very good place for academic work. [...] To come here from the place where I was, I was surprised. I've come from the neighbourhood here, but when I came here with all this; library, books...
- Matola:* Malaria free...
- Muro:* During those days Amani was malaria free.
- Muro:* Yes, there were no mosquitoes.
- Matola:* Very rainy.
- Kilonzo:* Yah it was very conducive for research.
- Magesa:* These guys were comparatively well paid anyway. [laughter]
- Muro:* Well paid [because of] the value of the Tanzanian shilling!
- Mwaiko:* I think it was the organisation. Mainly – more than the pay, because you come here you get a house. What we did to these gentlemen when they came here; we used to keep them in the rest house first. [laughter] These days where are you going to get a rest house for fourteen days or even twenty, [and where is there] a house in Ubwari [*i.e. at today's Amani Research Center at Muheza township*] that you are allocated? These days it is very difficult.
- Muro:* For those who were students, [they] would stay in the rest house [for] three months on full board.
- Mwaiko:* It was full board.
- Muro:* And you get some allowance. Those days [...] the East African Community...
- Magesa:* I understand that. [...] In Mwanza, it was an open secret that the Director of Mwanza – it was also under community – he was the highest paid civil servant in the region, higher paid than the regional commissioner.¹¹⁵
- Mwaiko:* His salary was about 4,000.

¹¹⁵Mwanza here used synonymously with the Institute for Medical Research of the East African Community; this was in 1979 taken over by NIMR and is today a key site of transnational medical collaboration; see <https://mitu.or.tz/nimr-mwanza-research-centre/>, accessed 25 March 2019.

- Mosha:* Our salaries were actually about three times of those ...
Muro: ... in the government.
Muro: East African Community was regarded as international organisation.
- Mtoi:* And you would move freely within the community.
Muro: If you don't have money, you go to Mombasa, you get money.
- Matola:* You are paid.
Muro: As long you got your identity [card], you go to Nairobi you are paid, you go to Kampala you are paid.
- Matola:* We had what was called [an interstate] pass. So you just move up and down, up and down.
Magesa: You were actually like semi diplomats.
All: Yes. [laughter]
Mwaiko: You go to Nairobi you can say that ...
Muro: To the headquarters.
Mwaiko: 'I want to extend into working in Nairobi'. They will say, 'Okay, you can stay, you go to the pay unit'. We had a paying unit.
- Matola:* You stay at the YMCA.
Mwaiko: Then they ask you, 'How many days', and [they tell you,] 'Come tomorrow afternoon', you get your cheque, you go to the bank. [laughter]
- Lyimo:* You know, a very comfortable life. [laughter]
Mwaiko: 600 shillings. [laughter]
Okwaro: So you had a good working environment, a good pay, what other things maybe?
- Muro:* On Fridays, the singles will leave for Mombasa. Come back Monday morning. [laughter] In Mombasa you get some money, have a nice time in Mombasa. Life was beautiful and better in Mombasa than in Muheza and Tanga. [laughter] You get your girlfriend across the border ... [laughter] and have a nice time there.
- Mosha:* Did you have experience there? [general laughter]
Lyimo: You know there's one thing that they [the men] are keeping quiet about.
Okwaro: Yah?
Lyimo: Most of them they got their wives right here.
Magesa: Can you imagine!
Okwaro: Let's hear.
Matola: *Michepuko* [womanizing]. [laughter]
Magesa: That young lady...! [laughter]
Muro: [Kiswahili] They were not concubines in those days. During those periods there was no womanizing. [...] Womanizing is leaving your wife and you go. Yes, that was not womanizing, then. That was not womanizing, you stayed with her and both travel to Mombasa and come back, it was like going outing, you have a nice time in Mombasa or in Nairobi.

- Kilonzo:* So it was very good centre for marriages. [*laughter*] So girls come here single, boys come single ...
- Mosha:* ... they get married.
- Kilonzo:* That's a 'Social aspect'.¹¹⁶ [*laughter*]
- Muro:* For example, I left the place on transfer to Mwanza with five children, I got hardship [allowance]. And when I went to Mwanza I never got.
- Matola:* Me, also I came single and got married. George [Mwaiko] also came single and got married.
- Mwaiko:* Yah, yah.
- Kilonzo:* Yah, its true, most.
- Mwaiko:* No, I got [my wife] from Magila,¹¹⁷ *bwana*, not here. [*laughter*] She was employed here then.
- Okwaro:* So it was a good place to do your work, get a good pay and start to set up your family?
- Magesa:* Get a good partner.
- Mwaiko:* The most important actually is, is scientific work, people you met here. [*laughter*] [...] They were very good – they were energetic people.
- Kilonzo:* Actually to me, as far as science is concerned, Amani was more conducive than Muheza, for science work.
- Muro:* Even for now.
- Okwaro:* What made it conducive?
- Muro:* If you want to produce some serious work, retreat, come to Amani. [...]
- Magesa:* The weather is very stressful down there. Out here you can work for hours.
- Muro:* No temptations in Amani.
- Mwaiko:* The only problem I think came, came when we had a staff expansions. And there were no houses. The gentleman yesterday has shown in the film that there were [few benches] in the laboratory.¹¹⁸ This was not the only thing they didn't follow-up. They didn't increase the quarters, staff quarters. They were intending to, in the plan there is a flat, three flats. So had it been that they did build, at that time, accommodation would not have been a problem. But later on there was a big problem. Professor Kilama used to recruit more people, and then there was this connotation, that if you come to Amani you will meet a good team, you will work, etc. But when he [a new recruit] comes here, there is no accommodation. This was the main factor. The second one was the transport system. Roads tear and wear of vehicles, and maintenance was very expensive.

¹¹⁶Referring to the organisers' wish to discuss also 'social aspects' alongside science.

¹¹⁷Nearby village and mission with school and hospital, where Mrs Mwaiko worked.

¹¹⁸Referring to a slide and Super 8 film session the previous evening, where participants commented on imagery from the 1950s–70s.

- Muro:* And I think in the [East African] Community there, you go into the house, you find the mattress, you find a pillow...
- Kilonzo:* A furnished house.
- Muro:* ... eating utensils, everything is fully furnished, and quarterly they will come and see tear and wear, and have breakages replaced.
- Mwaiko:* Replaced, repaired.
- Muro:* We worked like tourists. [*laughter*] Comfortable. You just come with your clothes. Life was comfortable during the community days, yah.
- Mwaiko:* I mean we came from university here.
- Muro:* The collapse of the [East African] Community was really like [the] death of a parent.
- Mwaiko:* Imagine!
- Muro:* Life changed drastically, socially and economically.
- Mwaiko:* Imagine! When I came from Makerere just to the rest house. [The] foreman of works, Mr Smith,¹¹⁹ came and told me, 'You know, you have to wait, we are repairing your house and furnishing it'. It was a regulation: once a member of staff is taken on, it must be ...
- Muro:* ... furnished.
- Mwaiko:* Maintained, furnished, polished. So I stayed here [at the guesthouse] for almost twenty days. The other day he came [Mr Smith] with the key. We went there together with him... [*murmuring*] refrigerator, gas cooker ...
- Matola:* ... mattress.
- Mwaiko:* ... mattresses, baby cots. [*laughter*] And he's telling you, 'We supply milk here, firewood, manure, what about your garden?'
- Muro:* And they will cater for firewood, every house had a fireplace.
- Mwaiko:* They give you inventory and you sign.
- Muro:* [*Kiswahili*] We had those [Madova] stoves for cooking.
- Matola:* Yes eee, [Madova] stove.
- Mwaiko:* When cooking, you warm yourself, the water boils and the whole house [receives hot water].
- Muro:* [*Kiswahili*] When it gets damaged you report it to the supplies officer for repairing. [*Different people mention various amenities and appliances*]
- Mwaiko:* Toilets flushing ...
- Muro:* [*Kiswahili*] For the damaged one he goes to sign and brings another one the next day. [*someone laughing*]
- Mwaiko:* Toilets were flushing ... Everything!

¹¹⁹R. Smith was the Maintenance Superintendant and had previously been employed since colonial times as a (technical) Field Officer. As European technical staff seem not to have been entitled to similarly generous 'decolonization' packages as their scientific officers, many of them opted to stay in Africa, even if they did not necessarily support decolonization.

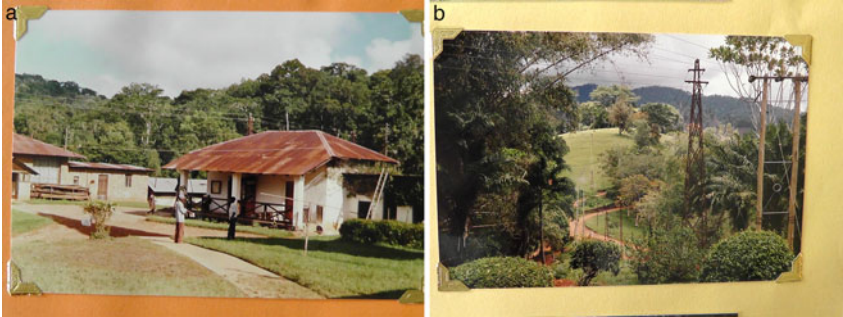


FIGURE 11A–B Views of Amani station landscape in 1970 (personal collection, Jan Lelijveld).

- Matola:* [Kiswahili] There is also grass mowing every day.
- Muro:* [Kiswahili] There were people [responsible for mowing the grass] around every house. Gras cutters. [...]
- Matola:* From here they will go up to the lower houses. [...] Everything was mowed.
- Muro:* You walk around and observe and feel good as you appreciate the environment.
- Mwaiko:* Then they come from the main office, and will ask you, ‘How are your houses?’
- Matola:* You could see cows around there, very nicely, grazing.
- Muro:* You admire staying outside during summer and the trees and flowers; you would admire to go in the yard, and just walk around or just passing.
- Matola:* Unless you are allergic to flowers. [laughter]
- Okwaro:* So everything was made to your condition to do science?
- All:* Yah, yes.
- Muro:* Sincerely yes.
- Mwaiko:* We used to write a requisition form: transport in the morning at your house.
- Muro:* You get picked from the house. [laughter] Life was good.
- Muro:* So there was every reason for this second [group of] people to move out of Amani, because life, it was like, changing drastically.
- Geissler:* If I could be allowed one question; you are talking about housing. [...] There were different grades of housing here. [...] Can you say a bit more about that and who was in which category, and how you moved up between those houses, because you probably started somewhere and went somewhere else? [...]
- Matola:* It depended actually entirely upon your seniority. There was a form you had to fill if you wanted [housing]. And there was



FIGURE 12A–E: Types of Amani housing stock: a German-built senior staff (forester’s) house, ca 1904; b Servants’ quarter and kitchen, attached to senior staff house, probably 1930s; c Senior staff bungalow, middle ridge, probably 1930s; d Junior staff housing, staff settlement, probably 1940s; e Junior staff housing, Market Street, probably 1950s.

a house committee. So: ‘Married?’, yes, there were marks. ‘How many children?’, For each child maybe five points. Five times five, twenty-five points, and so and so. They add up compared to others, you get twenty-five, you get twelve, the other one zero, the one getting highest mark, will get the house. But one observed seniority. At salary between this and this, they go to grade A houses, where

everything is furnished and everything is alright. If you are below this [salary] you go to ... ¹²⁰

- Muro:* ... junior staff quarters. [...] In the lower down [areas], yah.
Kilonzo: Where there intermediates?
Matola: Yah.
Muro: No.
Mwaiko: [*Kiswahili*] Yes, like ...
Kilonzo: [*Kiswahili*] Like where Mr Mganga used to live? [...] Or like the Ziwani?
Muro: [*Kiswahili*] Or like the house I used to live in at Middle Ridge. [Where] used to live Ms Bushrod, down at the hill, the house was very small.
Matola: They used to call it bachelor house.
Muro: Eee.
Mwaiko: But essentially it was based on category of seniority in terms of appointment.
Muro: And family size.
Matola: There is a house, you know [...] where there are a lot of roads meeting, [...] as you go to Muheza. We used to call that one Piccadilly because it resembles Piccadilly in London. So there is a house at the junction, a small one. If you want to go to the toilet you must go through the bedroom even if you are visitors. [*laughter*]
Muro: That's how the house is.
Matola: So everybody who lived in that house either went out to get married, or he got married from that house, me one of them. [*laughter*]
Mwaiko: But I think it was based on the terms of appointment here. From Auxiliary, Laboratory Assistant, Technician, Scientist, and level of salary structure. [...] I remember for Laboratory Assistant and below, they never paid house rent I think, even during Community. [*murmuring*] At that time, Laboratory Assistant and auxiliary, they never paid

¹²⁰Residential housing in Amani falls into the categories of “senior”, formerly European staff housing, and “junior” formerly African staff housing; the former consisted of standard colonial bungalows with 2–3 bedrooms surrounded by gardens, whereas the latter consisted of small, solidly built houses, most with piped water and grid electricity supply, usually with one-bedroom. Housing was constructed partly before World War I (including the director’s house and a few senior staff houses and accommodation for foresters), partly during the interwar period (adding senior staff housing and some accommodation for African staff), and during the late 1940s and early 1950s, when several senior staff bungalows and numerous junior staff houses with modern amenities were built. Senior staff housing was partly within the research station, and on top of surrounding hills and ridges (middle ridge, lower ridge); junior staff housing was on the lower-lying slopes and the valleys. In addition to this institution-built housing, some settlements within the territory of the botanical gardens date back to the workers of the original German agricultural research station which, rather than providing custom-built housing for the workers, allowed them to build their own huts on Institute land.

- house rent. [...] But from Technicians to Scientist, [they] used to pay rents. These days [...] they never pay rents.
- Geissler:* And at the time you started – especially you who started early in the 60s – were all the big houses on the ridges [...] taken by Europeans, or had some of the Tanzanians moved in?
- Muro:* Senior staff, scientist, Tanzanians were living there. Those were researchers.
- Kilonzo:* Any scientist, our guest Otieno,¹²¹ [they] were already living there.
- Muro:* [Kiswahili] Even Matola.
- Mwaiko:* Matola came in 1963.
- Matola:* But I was in the hostel. [...]
- Muro:* [Kiswahili] But you were not well grown up; you were not promoted yet?
- Mwaiko:* After appointment you lived ...
- Muro:* [Kiswahili] After getting promotion. You see [at first] you were still a junior.
- Mwaiko:* You were given those houses. We met Wegesa in this.
- Matola:* All the big houses belonged to whites, because technicians then were also 90% white.
- Muro:* Somebody will come as a scientist. The wife will be a technician. [laughter]
- Matola:* Or a secretary.
- Muro:* Or a secretary, so [also] a senior staff member. So when it comes to scoring, they will score very high. [laughter] With two senior scientists. [...]
- Lyimo:* George, which one was your first house?
- Mwaiko:* My first house?
- Lyimo:* From the guesthouse you went to...?
- Mwaiko:* I went to Segeja's¹²² house.
- Matola:* They don't know Segeja. [...]
- Mwaiko:* Middle ridge.
- Muro:* [Kiswahili] Were you living with Joyce?¹²³
- Matola:* [Kiswahili] That's where Dr Mosha lived.
- Muro:* [Kiswahili] Mosha was in the next house.
- Mosha:* He hosted me initially, and was pocketing some hospitality allowance. [laughter] I didn't know – she told me only yesterday!
- Mwaiko:* I also lived for almost eight, [...] seven months so I can remember – I can remember the guesthouse. [...]
- Okwaro:* Could they bring their girlfriends when you hosted them?

¹²¹See note 51.

¹²²Method Donald Segeja, Research Scientist with NIMR since 1996, trained in Dar es Salaam and Denmark. Apparently he lived or had a house in Amani earlier (many staff who de facto worked in Tanga were posted to, and for periods had staff houses in, Amani); see <https://www.nimr.or.tz/method-d-segeja/>, accessed 17 January 2018.

¹²³Not identified.

- Mwaiko:* You know I gave him a room, we were in the same house.
Mosha: He has sublet. [*laughter*]
Muro: The rooms were very spacious. [*laughter*] The houses were very big, with just two rooms.
Mwaiko: Anyway, after that I went to Lower Ridge 5.
Lyimo: Yah that house had only one bedroom.
Mwaiko: Yes there was only...
Lyimo: One bedroom and then later on they added some outside room.
Mwaiko: But the design was very awkward.

[*Conversation switches to Kiswahili*]

- Muro:* After, it was expanded.
Lyimo: The house was expanded – one was living inside and the other living ...
Muro: ... outside.
Kilonzo: So both of you were allocated together?
Lyimo: Yes.
Muro: We were so many when we came. I lived with Kilimali¹²⁴ almost five years at Forest Camp [House].¹²⁵
Kilonzo: At forest, five years! [...]
Kilonzo: In the same house?
Muro: Yes, in the same house. The house is big enough, having three bedrooms.
Kilonzo: Forest House number one, are there two of them?
Muro: Two, one was at the top the larger one.
Kilonzo: I refused it [Forest House], during that time it was very remote.
Muro: Yah it was. [...] I stayed there until my wife was back with labour pain. I was alone at that site, Kilimali had already moved.
Kilonzo: Surely you were.
Muro: It was around 23 hours in the night. I went down the forest and I didn't even have a torch, then I brought her to Mama Matola¹²⁶ at the dispensary.
Lyimo: Did you carry her?
Muro: We were walking slowly; she had the labour pain for five days.
Matola: If she had delivered on the way people could...
Muro: It could have been a grief, but Jesus Christ helped a lot. [*laughter*] The Holy Spirit was also ahead of us.

¹²⁴See note 42.

¹²⁵Senior staff houses, one originally a German forester's house, in the forest near Amani station.

¹²⁶Matola's wife, who also was a nurse at Amani.

- Matola:* But it's because Jesus was along with you.
Muro: Yes, Mama was taken to Mama Matola for one week. She was then taken to Magila [Mission Hospital] and delivered there. I was moved to Lyimo's house, by that time Lyimo had stopped [working].¹²⁷ He also ran away with some money. Down there at Lower Ridge number two, I was moved because I had...
Mrs Prisca: Which Lyimo?
Mwaiko:
Matola: The treasurer.
Muro: There was a treasurer his name was Lyimo.
Machaga: He was an accountant.
Mwaiko: It was during the period of EAC.
Muro: The EAC had collapsed at that point.
Machaga: When the EAC ended.

[*The conversation switches back to English*]

- Mosha:* He disappeared.
Mwaiko: I can't remember.
Matola: John, John Lyimo.
Kilonzo: He disappeared with salaries.
Matola: He was the only secretary for money. So when the British Medical Research Council had a project, [...] he was the one authorizing payments; so he went there and took 200,000 shillings and disappeared.
Muro: [*Kiswahili*] It was a lot of money during that period.
Kilonzo: And we shared that money. [*laughter*]

[*The conversation switches to Kiswahili*]

- Okwaro:* Yes, so John [Mganga] [*addressing Mganga*], I haven't heard from you and also from Mrs Mwaiko.
Mganga: No, in fact I am not very talkative.
Matola: Just say something.
Mganga: Actually, I came here in 1971. I worked with John Raybould as his assistant in the laboratory. I worked with him and when he left I remained with Professor Kilonzo in plague section. I then worked with him and he also left. Then I moved to and worked at the library, and thereafter I moved – until I retired. I worked with the Directors, Mr Mwaiko, Matola, Dr Irare¹²⁸ and Dr Temu. All these I worked with them. Also I worked with Mr Magesa. I am very thankful meeting him again [*laughter*] as some of the others had already passed away.
Lyimo: You are also glad to meet Mr Mtoi! [*laughter*]

¹²⁷Name could not be verified.

¹²⁸Dr Sebastian Irare was like Dr Temu a Director of Amani in the 1970s.

- Mganga:* I have been meeting Mr Mtoi and I understand him well, so am very thankful.
- Okwaro:* How was your life when you were working here?
- Mganga:* Surely from the period I used to work here, there is big difference to this moment. During that time it was East African Community and things were better than where NIMR is heading now. Amani is totally disordered. In fact when I arrived here, I was very amazed – that this is how it is!
- Muro:* Everyone was healthy – junior to senior – during this time you see a person is unhealthy [*laughter*] as far as his salary is concerned. Surely it is really disappointing.

[*The conversation switches back to English*]

- Malle:* In 1977, when I came to Amani the first time, this is the guy [Mganga] who was doing the work. I was working in the plague laboratory, and when I was assigned to be in that lab, the one in charge was Mr Mtoi, head of department was Professor Kilonzo here. I was working in Kenya region with the East African Community, as a laboratory assistant. Now following the defunct of the East African Community, me being a Tanzanian, I was transferred; I was called back actually.
- Kilonzo:* You were sent home! [*laughter*]
- Malle:* Yes. [*laughter*] So John Mganga is the one actually, because I was doing medical research, leprosy research; in fact I was working under East Africa Leprosy Research Organisation¹²⁹ in Busia. It is at the border between Kenya region and Uganda region; we were doing leprosy research. And by then I had one terminology called [*inaudible*], one terminology *Mycobacterium leprae*, the causative organism for leprosy as a disease. So when I came here I met John Mganga, he invited me and started teaching me about pronouncing the rodents and the fleas, to me.
- Muro:* The scientific names.
- Malle:* it was really difficult because he was mentioning very difficult names, these names of rats [*laughter*] [*inaudible*, scientific names] [*laughter*], and when you go to fleas we have *Zenozila brasiliensis* ... my God [*laughter*]. But as time went on actually, I get used and work went on smoothly. So he is a very important person to me, because he the one who received me and taught me.
- Muro:* Your first leader.

¹²⁹East Africa Leprosy Research Center at Alupe, Kenya, near the town of Busia; originally under EAC, now part of KEMRI. See, <http://leprosyhistory.org/database/archive1018>, accessed 17 January 2018.

Malle: And he taught me, yes.
Okwaro: So, Mrs Mwaiko – how was it at the hospital?
Mrs Mwaiko: I joined at the hospital in 1975.

[*The conversation switches to Kiswahili*]

Okwaro: 1975.
Mrs Mwaiko: Yes, before the end of the EAC, so that's where I ended. Abaru and a fellow Ugandan worked there, he employed me. The work was good; we received many patients. Some of the patients were on the side of research on malaria, and others with normal diseases. Luckily we had enough working equipment. [...] Thus there were no problems. I worked there, and in 1977 the EAC collapsed. Something, which really disappointed us, is that our fellows from Kenya and Uganda were supposed to return back to their countries, and we remained alone. We started feeling lonely, but we continued working, because we had other doctors from Tanzania.

Kilonzo: Mutabingwa.¹³⁰
Mrs Mwaiko: Mutabingwa had not yet arrived.
Muro: Mzirai.
Mrs Mwaiko: Dr Yali came afterwards. [...] We were with Mzirai, he came after Dr Faya, Mzirai came together with Dr Mutabingwa, Dr Bisasya, Dr Makunde, Dr Masanga, Dr Masawe and Dr Kanisara Mtui.¹³¹

Mganga: He died?
Mrs Mwaiko: Yes he died.
Mrs Mwaiko: So briefly, that was my biography when I was working on my side, because the disease business will always be there. [*laughter*]

Machaga: It's a free market.
Mrs Mwaiko: So on my side, I used not to have no problems – drugs purchasing was done as usual, and treating the patients as usual, until I retired in 2011.

Muro: Did you come here married or unmarried?
Mrs Mwaiko: I came here already married. [*laughter*] Surely I wasn't married here, I was imported. [*laughter*]

Okwaro: In connection to that, you said Pringle used to employ men. [...] What contributed to having staff women? [...] Even at the laboratory there were few women.

Mganga: Yah.
Machaga: They were not there.
Mwaiko: I think they were employed during Wegesa's period.

¹³⁰Dr Theonest K. Mutabingwa, MD, was employed by Amani Research Center in 1992–2001; he did his PhD in Amsterdam in 1993 on malaria in pregnancy.

¹³¹Clinicians who worked at Amani in the 1980s and 90s.

- Machaga:* Wegesa started employing.
Okwaro: How was it, working as the only woman amongst many men?
- Muro:* During her time, women employees were many in the laboratory.
- Mwaiko:* They had auxiliary roles. Even in the labs [women were there].
- Matola:* They were many.
Muro: During her time, there were many women employees.
Lyimo: We were the first comers, as scientist.
Mrs Mwaiko: But I remember when I joined here, Dr Abaru was doing research on elephantiasis.¹³² I think it was at Digo. Then it reached a time [when] only men were going there, because of blood collection etc. So people from there didn't like their wives to be touched by men. So then it happened that they employed a female ...
- Lyimo:* ... female nurse attendant.
Mrs Mwaiko: A nurse attendant who will be assisting there in the ...
Muro: ... field.
Mrs Mwaiko: Yes, at the field and that's when I also got my employment.
Kilonzo: Actually during that time I used to collect blood during the night after 22 hours.
- Mganga:* For filariasis.
Matola: Or was it more [drawing blood] for onchocerciasis?
Mosha: We did it both. There was a time we used to do it in the night, sometimes doing [*inaudible*] test.
- Kilonzo:* Yah, the one during the night was troublesome.
Mosha: No, [disagreeing] they came to agree, when we do it [drawing blood] during the night.
- Machaga:* When they were educated, they understood.
Kilonzo: You might say it's unethical if a person say he doesn't want his wife to be examined. [*laughter*]
- Okwaro:* Is there anyone who has something to add?
Kilonzo: Now, this is the current Amani ... I request the NIMR administration ... if they already have some plan to revive Amani ... They should think of making it even better than it was, making it more attractive.
- Mwaiko:* Is it there in the programme?
Kilonzo: Yeah, they have mentioned [...] they have plans to turn this place into a college.
- Mwaiko:* We should discuss this after we come back [from lunch]
Mangesho: So, before we go to lunch we like to know from you what were the major changes after the break up of EAC? [...] Changes that affected life and research work at Amani?

¹³²Outdated disease name; common symptom of Filariasis (see note 11); swollen legs and scrotum.

- Mwaiko:* [Switches back to English] I think we have already hinted a little bit of it. First, it was shortages of staff. Most of the programmes, which were undertaken they were disentangled because some of the staff members left. So [...] we were left with few – me myself and Kilonzo, and the others. [...] We had to continue scientifically what had been done, to that day. The most important thing was to collect Annual Reports. [...] Normally you take Annual Report annually, January to December, but that time we took it from the time it was breaking, 74/75. So we sat down and produced that report. Since that time, everybody who was here continued his own work, and we had already compiled what was there from the people who left; so we could continue with our own research activity, narrowly, until when time came. Those who remained, they continued with their own research work. But others left. The most affected area was filariasis. The entomologist left before the break up, and Abaru left. [...]
- Mosha:* He left just after the break.
- Kilonzo:* And all the Kenyans left, including the Director.
- Mangesho:* What was the feeling now that this diplomatic status was being stripped off?
- Mwaiko:* It was really uncomfortable, it was not easy. Because if you look at the magnitude of output and social life here, scientific work, people contributing. And also we were doing this for the name of East Africans. Now everybody was speaking for his own country, at least it brought a native feeling.
- Muro:* I think the transition period started from July 1977, to July 1981. The East African Community collapsed officially on 30th June 1977. And the then president, honourable Excellency Mwalimu Julius Kambarage Nyerere, had foreseen what was coming up. So he advised his Permanent Secretary to give a circular to all six [EAC research] centres, that the government was aware that the community had collapsed, but people should not panic. They were instructed to be absorbed or to accept responsibilities. The parent ministries were given the responsibility to take care of the centres, the research centres, which were under Tanzania now, in terms of paying salaries, in terms of promotions. I think the promotions were frozen – employment was frozen until after.
- Matola:* Training also.
- Muro:* Training was also frozen. And the government actually [...] during that period, except for the external funded projects ... the government did not have enough money to fund research projects. So the amount of research that was going on was really reduced to a very high degree. And life was uncomfortable, because then salaries were not coming as frequently as

it used to be during the East African Community. And fortunately in 1980, when NIMR was established, somebody called Professor... was he a pathologist? He did research at Muhimbili. [...] The high man who came to Amani. He moved to all centres, Professor Mutoka.¹³³

Kilonzo:

Aaah yes.

Muro:

He listed all the medical research centres in Tanzania, trying to sort of predict the upcoming institution. I think he was [...] hinted from the president's office, Ikulu [state house], that the government was going to establish a National Medical Research Institution. So he thought he was going to be the first Director General. [*laughter*] In fact he was very disappointed when Professor Kilama was appointed. He left Tanzania and went to Botswana, I think, or Zimbabwe. [*laughter*]

Kilonzo:

For good.

Muro:

Kilama got the opportunity, because he was very close to the minister of health. And he wrote a very good proposal on approaches to malaria control using vector control, and the minister appreciated his contribution. So literally, during the transition period, July 1977 to July 1981, it was very empty here. Regardless of the fact that in 1980 NIMR was established, we were not officially inherited by NIMR until July 1981. That's when we were given some forms to sign, to sign that we have accepted or refused to be inherited by NIMR, as NIMR employees, [...] and to retire on public pension scheme, which was thereafter called PSPF.¹³⁴ [...]

Matola:

It was PPF.

Muro:

It was PPS. We later moved to PPF, Public Pension Fund. [*Matola agreeing*] During that period, life was [...] very, very difficult, but fortunately after retirement, we were comfortable, we knew now we got an employer. We knew our Director General. Professor Kilama was very friendly, and fortunately he was at Muhimbili, and during that period he had already made a name internationally, particularly in the World Health Organisation. I think he was the one of the African scientist working as ...

Mwaiko:

...member of the steering committee.

Muro:

WHO steering committee. And Amani actually was NIMR during that time when NIMR started. Amani was *very* active. The scientists made collaborations with London School [of Hygiene], Wellcome Trust and so forth. I don't know if you had come in Mr Matola?

Matola:

Not yet. [...]

¹³³Could not be identified.

¹³⁴Public Service Pensions Fund, current (since 1999) national pension fund for civil servants; preceded by various other schemes mentioned below.

- Muro:* When Kilama came in, life was a bit better because then, because of his influence internationally, he started advising us how to write research proposals. People were given opportunities to go for post graduate training, masters and PhDs. Research grants started coming in. [...] He advised people how to write proposals, and I think the first joint scientific conference was held at Momela, I don't remember the year – 82?
- Magesa:* I think this was when TDR¹³⁵ was beginning. And there was the building of capacity.
- Muro:* Exactly.
- Magesa:* Which came to NIMR and also to [inaudible]. And this was actually having a big budget for training and also strengthening capacity and equipment. They gave us all a lot of equipment. It flowed in, and people were getting scholarships to go [abroad].
- Muro:* And research funding.
- Magesa:* Yah.
- Muro:* So the transition was very difficult – scientifically and even monetary wise. [...]
- Magesa:* Maybe if I can enter here? Because I think from his explanation ... There is this period of the 70s, when the community broke up. So the institution was like not having really a direction.
- Muro:* We felt like orphans.
- Magesa:* It had no owner. It was just pushed for caretaking to the ministry, until the government set up NIMR as an institution, which was responsible. Because the ministry could not do research – it's very difficult for them. And I think this is where now things were like not having a direction – following exactly what? [...] So then Kilama came in as NIMR, as a person for research.
- Lyimo:* Sorry, but [...] where there any projects that were stopped because of the breakage?
- Magesa:* Now, if you are not even getting a salary or it is delayed? [laughter]
- Muro:* The borders were closed in fact. EAC had collapsed. We were on the way to Kampala for an annual conference, [laughter] Mtoi, Kilimali, I – we were not reaching the border.
- Mtoi:* We didn't.

¹³⁵WHO, Special Programme for Research and Training in Tropical Diseases, set up 1974, contributed greatly to transnational research and training activities across Africa, and funded course activities, as well as research and overseas training for Amani during the 1980s and 1990s. See <http://www.who.int/tdr/about/history/en/>, accessed 18 January 2018.

- Muro:* [Switches to Kiswahili] We were crossing through Namanga. This was when CCM was being born.¹³⁶ [laughter] This is when the journey started. [...] [laughter]
- Mtoi:* Did you travel in a *matatu* [collective transportation minibus]?
- Mtoi:* No, it was an official vehicle. We went there and told we will get money the following day.
- Mwaiko:* Nairobi?
- Mtoi:* No, here at Arusha.
- Kilonzo:* What happened in Kampala, did you arrive?
- Mtoi:* We didn't even reach Nairobi, the national border was closed.
- Muro:* We were unable to continue because all the borders were closed. [some noises] We had some little money; we started taking the new Safari beer. [laughter] We were in Arusha going to Uganda, the beer had a wonderful colour, when you take two of them and add the third one, you are drunk [laughter] – it shamed people.
- Muro:* The first Safari was poisonous.
- Mangesho:* So the projects stopped?
- Muro:* What?
- Mangesho:* Projects doing research?
- Muro:* They decreased due to lack of resources.
- Mwaiko:* It's only few projects [...] But life was stagnant.
- Mosha:* But there was an impact on the destroyed building. Then it was left, not constructed.¹³⁷
- Muro:* That was demolished; no building was constructed again, the malaria laboratory.
- Mosha:* Was the laboratory destroyed?
- Muro:* Yes.
- Matola:* It was a plague [lab] on one side.
- Kilonzo:* Yes it was a plague lab, mine, it was a very good laboratory.
- Muro:* That's why I got the site for constructing that insectary. When I came from America for my master's.
- Kilonzo:* Okay it was constructed on that land.
- Mtoi:* Yes, and I thought to remove the omen [laughter] and the building is still there up to this moment. I made an insectary, because when I got back from America, I got a scholarship

¹³⁶In 1977, the CCM party (Chama Cha Mapinduzi) was formed as pan-Tanzanian ruling party, from the the merger of the [Tanganyika African National Union \(TANU\)](#), the ruling party in [Tanganyika](#), and the [Afro-Shirazi Party \(ASP\)](#), the ruling party in [Zanzibar](#). This political moment coincided with the described journey.

¹³⁷Director Wegesa had, shortly before the collapse of the East African Community, demolished the oldest laboratory building of the Amani complex, in order to make way for a new, several storey modernist laboratory block. Due to the collapse of the community, this was never built. See Geissler, P. W., G. Lachenal, et al. (2016). *Traces of the Future: An Archaeology of Medical Science in Twenty First Century Africa*, Bristol: Intellect.

- going for a study tour to WHO TDR Onchocerciasis Control Programme.¹³⁸
- Kilonzo:* To West Africa.
- Muro:* I came from West Africa and they knew I was working with the WHO on oncho.
- Mosha:* [Switches back to English] Which year was this?
- Muro:* I went to OCP, that was January 1981. I stayed in the WHO OCP to May.
- Mosha:* A year before I went to America.
- Muro:* Probably. I worked with some American scientist, Dan Kurtak¹³⁹ [...]. And I visited all the programme countries, the seven programme countries. I had spent a lot of time at Akosombo¹⁴⁰ learning the rearing and identification of blackflies. Anthropophilic black flies. You go in the field, you expose yourself, you get bitten. And there were volunteers who were positive for *O[nchocerca] volvulus*. Those were important, because those would then be able to confirm whether the biting flies were able to transmit *O. volvulus*. If they are vectors or potential vectors. So we would collect the flies, uninfected and the infected. We would maintain them in the laboratory. Dr Raybould had developed a technique, I think in the WHO OCP, or when he left here.¹⁴¹ When the community collapsed, he joined the WHO OCP and he was based at Akosombo. He established a technique of collecting the blood infected flies in the field, maintaining them in the laboratory. He developed a technique I think with somebody Peter Wenk.¹⁴² [...] We induced the infected black flies to oviposit in the laboratory in a glass vial. And collected the eggs, reared them in the laboratory, until you get a mature adult. The adults were all similar morphologically, but there were different cytotypes. You remember, Professor Mosha, there are very many cytotypes, but morphologically, all the adults looked similar. But at larva stage, you could be able to see, this is Kibwezi, this is Sanje, this is Keta Keta, this is Ngusi [names of different cytotypes], and what not. So the only way of knowing the cytotype of the blackflies was through

¹³⁸In 1974, WHO established an onchocerciasis control programme with extensive entomological expertise, across several West African countries. See http://www.who.int/blindness/partnerships/onchocerciasis_OCP/en/, accessed 18 January 2018. See also Davies, J.B. (1994) Sixty years of onchocerciasis vector control: a chronological summary with comments on eradication, reinvasion and insecticide resistance. *Annual Review of Entomology* 39: 23–45.

¹³⁹Dr Daniel C. Kurtak was, at the time, working as an entomologist with the OCP.

¹⁴⁰Ghanaian dam project and site of the OCP headquarters.

¹⁴¹See, e.g. Raybould, J. N. (1967). A method of rearing *Simulium damnosum* Theobald (Diptera: Simuliidae) under artificial conditions. *Bulletin of the World Health Organisation* 37: 447.

¹⁴²See Wenk, P. and J. N. Raybould (1972). Mating, blood feeding, and oviposition of *Simulium damnosum* Theobald in the laboratory. *Bulletin of the World Health Organisation* 47(5): 627–634.

identification of laboratory reared larvae. And even after ovipositing, you continue to maintain the adult, the infected adult in the laboratory, so that you can confirm whether or not that particular fly was able to support the microfilaria, from the patients to infective stage. If it rears after two days or three days, you dissect and see, evaluate the stage of development of the microfilaria and the position, in the abdomen, in the thorax, or in the head, and even in proboscis. You follow them after seven days, or about twelve days; you will, even if it's not dead, you dissect it and see where the infective stage is. With Kurtak, I used to do the [inaudible] susceptibility studies. It was then when Abbot was developing resistance, the *Simulium* larvae developed resistance to Abbot.¹⁴³ Abbot was thought to be the answer to vector controlling in the WHO OCP, control programme. So they developed something called *Bacillus thuringiensis* – H 14 I think, it was a bacterial sort of insecticide. That was to be used as a biological control agent. So roughly, I worked there for about three months. I went into West Africa in the WHO OCP. I flew from Paris to Bukina Faso. I worked in the field in Bukina Faso. I moved from Kumasi, upper Ghana, into Kumasi, Akosombo. I went to Ivory Coast; I went to Mali, Benin, Togo, Nigeria; although officially Nigeria at that time had not been included in the WHO OCP.

Mosha:

Because it was Anglophone.

Muro:

Exactly. But because of reinvasion in the control areas, they were also thinking at that time to extend the WHO OCP [...] to other neighbouring countries. So after three months of my study period, I returned to Tanzania. Actually, I was doing my MSc London School of Hygiene and Tropical Medicine.... Tulane School of Public Health in Louisiana state, they recommended that I continue for PhD, but Professor Kilama, when he was consulted he said, 'No – I got a list of young scientist who are not even master's grade. So, I think the young man, since he has been exposed, he should come to Tanzania to do some work, then give other people the opportunity to go, to do their master's and let him practice what he has learned'. So I came to Tanzania and fortunately WHO gave me a grant to put into practice what I learnt during my master's, and particularly what I learnt in the WHO's OCP. Therefore I wrote a proposal including funds to build that insectary behind there. When I came back I was given some money,

¹⁴³Presumably a reference to insecticides produced by the agrochemical company Abbott. See, e.g., Kurtak, D. et al. (1987). Evaluation of larvicides for the control of *Simulium damnosum* s.l. (Diptera: Simuliidae) in West Africa. *Journal of the American Mosquito Control Association* 3(2): 201–10.

- the centre Director I think that was then Dr Irare, in 1981?
 In 1981 it was still Simon [Temu].
- Lyimo:* Simon left I think 81. [...]
- Mwaiko:* They gave me some money. [...] The maintenance people, they put up the structure, through the WHO OCP rental grants. I went to the field collecting. I started with Amani. In Amani there are lots of *Simulium* black flies, *Simulium damnosum*, but they are not anthropophilic, they don't bite human beings. The vector in this particular area is *Simulium woodi* members of the *S. naevei* complex. But the *damnosum* species here, they don't bite people. I went down to Korogwe near Morui. We collected flies from that area with somebody called Yohana?
- Muro:* Joli Yohana.¹⁴⁴
- Mganga:* Joli Yohana. He was positive for *O. volvulus*. We asked him to volunteer [with] infected flies biting in the area. We collected flies in the area. Unfortunately Professor Dunbar during the 60s and late 70s was here, and he was supposed to have trained me and some other people.
- Muro:* Cytotaxonomy.
- Mtoi:* Cytotaxonomy, how to read the chromosomes to identify the cytotypes of *Simulium*. He wasn't willing. He said the only person he thought was capable of learning the technique was his wife. [*laughter*]
- Muro:* Was she already a wife or his technician?
- Kilonzo:* She was a wife at home. When Raybould left, I think it's me who was continuing with the laboratory rearing of black flies, and establishing the technique. [...] So the flies I came to raise in the laboratory, we sent them to the British Museum where somebody called Bill, Bill, William Proconier¹⁴⁵ who trained Dr Bertha Maegga¹⁴⁶ on the [cytotaxonomy] of black flies. And she later trained me on the cytotaxonomy of black flies, of *Simulium* black flies, also. He identified the flies, and we jointly published a paper.
- Muro:* But there was also Dr Post.
- Mosha:* Dr Post, Rory Post.¹⁴⁷

¹⁴⁴Presumably this study: Muro, A.I. and J. Raybould (1990). Population decline of *Simulium woodi* and reduced onchocerciasis transmission at Amani, Tanzania, in relation to deforestation. *Acta Leidensia* 59(1–2): 153–159. The authors thank 'vector-collectors' but indicate no names. However, the paper includes photographs of these assistants, probably including the said Yohana.

¹⁴⁵See Proconier, W.S., and A.I. Muro. (1993). Cytotaxonomy of the *Simulium damnosum* complex from central and northeastern Tanzania. *Genome* 36(1): 112–30.

¹⁴⁶Dr Bertha Maegga began work as one of the first female Research Scientists at NIMR in 1984. See her obituary: <https://www.nimr.or.tz/obituary-dr-bertha-tsingay-akonaay-maegga/>, accessed 18 January 2018.

¹⁴⁷Dr Rory Post was a blackfly specialist at the Natural History Museum (Department of Entomology) until around 2012. He was a core member of the British Simuliid Group, a collaborator of John Raybould's, and the recipient of some of Amani's *Simuliid* collections. See: Post,

Muro: Rory Post, I think was in the British Museum but Bill is the one who identified the flies, and together they published their paper on incriminating Kibwezi form of the *S. damnosum* complex, as a potential vector of *O. volvulus*.

Mangesho: Thank you. I think we all go for lunch and then we will come back in the afternoon.

[Clapping]

Lunch break

Mangesho: Good afternoon. Welcome back to the afternoon session. Let's continue from where we left. We were talking about the changes that took place after the breakup of EAC. Now, how did you experience the transition of Amani as a centre into the new NIMR? [...]

Kisinja: Dr Steven Magesa and Edith Lyimo are the right people to talk about the transition.

Lyimo: Allright, though it is not really the transition for me, because it was the beginning [...] for me. I was coming from the University of Dar es Salaam, after taking my BSc in zoology, biology and chemistry. What I remember is that Professor Kilama came to the university in our third year, and interviewed a few of us. And he was very interested in recruiting ladies. [laughter]

Mosha: Yah, gender balance. [laughter]

Lyimo: Yah, he interviewed a few of us. And we finished college then, and because I was taking education, I was assigned to go to Kibaha.¹⁴⁸ But I was not interested in going to Kibaha, because I wanted to go to a girl's school, I didn't want to go to a boy's school.

Okwaro: To teach?

Lyimo: To teach yah. So I decided to go home, I didn't report.

Mtoi: Oooh!

Lyimo: Yah, I didn't report. I just went home. Actually, I left Dar es Salaam and I went home. And while I was there, there was a telegram. By then there was no mobile phones or anything, there was telegrams, and there was this telegram calling me to come to NIMR, and so I came and I was interviewed and offered a job to Amani. By then I didn't know where Amani was. I thought, if it's in Tanga then it will be in

R. J., M. Mustapha, et al. (2007). Taxonomy and inventory of the cytospecies and cytotypes of the *Simulium damnosum* complex (*Diptera: Simuliidae*) in relation to onchocerciasis. *Tropical Medicine & International Health* 12(11): 1342–1353.

¹⁴⁸Kibaha School is part of a larger complex of educational institutions, and was founded as a leading National school with support from the Nordic countries in 1963; see <http://www.kec.or.tz/pages/background>, accessed 19 January 2018.

- Tanga town. [*laughter*] I came, I was met by the driver of the Director of the centre, Dr Temu. Early in the morning we drove to Muheza, I stayed there for a little bit, and then we started coming up here. My first impression was, ‘Where are we going!?’ . Because we will climb, and we go, and then I started ...
- Mtoi:* The corners ...
- Lyimo:* ... counting how many corners we were taking, the u-turns, you know – ten, eleven – then we arrived here and I said, ‘Oh there’s life up here’. [*laughter*] I arrived here when they were preparing to go for their first NIMR scientific conference in Momela. So I arrived in the evening and early in the morning we were back into the trucks to go to Momela. We went to Momela and I met all these scientists. By then we were only three women; I was the third one to be employed. There was Bertha [Maegga] who was in ...
- Muro:* Tukuyu.¹⁴⁹
- Lyimo:* Yes, in Tukuyu. There was another lady, Joyce, who came a little bit earlier than me; a month or two months earlier.
- Mangesho:* Joyce who?
- Mtoi:* Sigara.
- Mosha:* Shigara.¹⁵⁰
- Magesa:* So you were in the same class?
- Lyimo:* Yah we were in the same class at the university, but she came early, because for me I was still myself. And I remember people asking us, ‘You girls what are you looking for? Why are you leaving Dar es Salaam to come to this forest?’. So they kind of discouraged us, and especially the women we met here discouraged us, told us we should go back to Dar es Salaam, look for a better place to work. [*laughter*]
- Mtoi:* They were afraid of you.
- Mangesho:* So these women were scientists or?
- Judith:* No, no, no we were the first ladies scientists. Bertha, Joyce and myself. In the whole institute including the other centres. [...] There were no other lady scientists.
- Kilonzo:* So women who were there currently, where they just secretaries?
- Lyimo:* The secretaries, the nurses, you know the technicians. [*laughter*]
- Mtoi:* *Sio kubwa* [‘not big’ people]. [*laughter*]
- Kilonzo:* Lab attendants.
- Mosha:* Most of them.

¹⁴⁹Tukuyu is a research center of NIMR; it was established 1976 in SW Tanzania as part of onchocerciasis control, see <https://www.nimr.or.tz/research-centres/tukuyu-research-station/>, accessed 19 January 2018.

¹⁵⁰Identity could not be verified.

- Lyimo:* Yah, yah, so they thought if you are educated – you know, we were educated – we are coming from the university, why should we come here? But when I met all these scientists and I was just listening, they would talk, talk, talk, because they were talking about what they had been doing, and I said, ‘Ooh it’s interesting’. After a week of conference, we came back and there was this rotation system that you start in a department for two weeks, and then move to another department for two weeks, so that you experience the, the chemistry, the filariasis, the malaria, plague and decide where you want to [...] be. I started with George in the chemistry laboratory. I stayed there, but I thought this one is not so interesting. It will mean just staying in the lab, and then I went to malaria. By then they were starting this resistance mapping. And there was a lot of just going out in the bush. After I finished that, I was supposed to go down to Muheza, but then I decided I’m not going any further I’m staying here. So I remained with malaria and we were up here. I came in May, it was very cold for me who has lived in Dar es Salaam for a long time. It was very cold for me, when the temperature fell to ten degrees, I could hardly [...] function, and I would just sit there, put my legs on chair and sit on them, and just be quiet. [*someone laughing*] In a small office in that laboratory. In the beginning, it was a bit difficult for me because of the weather, although it was very good, but it was too cold for me. But I met a good team, people who were very active. There was late Kilimali, Matola was the leader of the malaria part there, and we would go all over the place, working. I enjoyed the work, but I didn’t enjoy the place. [*laughter*]
- Mangesho:* That’s a sharp contrast to what we got from the others [earlier]. Why? [...]
- Lyimo:* When we came, the road was very bad. It was during the rainy season, you could hardly go downhill, and if you go downhill it will take you three hours to come up here, if you manage to come up here. Otherwise the car will get stuck somewhere, and you know it was really difficult, movement was difficult.
- Matola:* And when you come home it was very, very cold.
- Lyimo:* Yah and then back home it’s very cold. [*laughter*] So, I liked the work, but I didn’t like the place, and I stayed here for one and a half years, and then I decided, no I’m going to Muheza instead. Muheza is easier. You know I can go to Tanga when I want to go to Tanga. I can even go home over the weekend, you know. I come from Moshi, so I’ll take the train on Friday night and come back Monday morning. [...] The

train was moving daily, no problem. So I moved down to Muheza.

Mangesho:

Lyimo:

That was your decision to make, or the administration's? I decided I wanted to go. I just requested. [*laughter*] By then the Director was Dr Temu, and because we were still in the rotation ... aah, no, we were passed that. Because for us we did a one-year probation, it was one-year probation period, then I was confirmed. My colleague Joyce was not confirmed. I don't know what was the problem. So I was confirmed, she was not confirmed. So we continued to work, for her she decided to work in filariasis, and I joined malaria. I just requested that I want to go into entomology instead of parasitology. My argument was saying that, 'Look, I'm not a medical doctor and this blood pricking and things like that I'm not very comfortable with that for me'. Blah, blah, blah, blah, blah, blah...

Mangesho:

Lyimo:

That was just an excuse? [*laughter*] Yah, it was an excuse. I just wanted to be downhill. I'll come up here on occasions, but I'll live in Muheza. So my request was accepted, I moved to Muheza, and immediately after we started the insecticide treated nets [ITN] programme.¹⁵¹ So that's when we started the programme with the London School of Hygiene [and Tropical Medicine] working with the late Chris Curtis¹⁵² and Joe Lines,¹⁵³ and Jasper Ijumba,¹⁵⁴ and we had a good team there. We started the ITN work, right from the beginning until we went into fieldwork. We faced the normal challenges. We were doing science. People understand – because we were working more with people, the villages and all – they understand, or some don't understand, sometimes they would run away from us, and we have to really convince them that you are doing something that will help all of us. But the challenges were not that bad. When I was here, all you needed to do again was to write proposals, you write a proposal you get the funds to do the work.

Mangesho:

Lyimo:

You never had any [...] rejections? Of course it will be reviewed by seniors, mostly the people in your department, and then it will be accepted and you get

¹⁵¹The MRC-funded programme on insecticide-treated bednets (ITNs) that Chris Curtis, from LSHTM, initiated in 1981 at Ubwari station, near Muheza, of Amani Center.

¹⁵²Professor Chris Curtis, 1939–2008; entomologist who contributed greatly to malaria control, especially with insecticide-treated nets. He was MRC External Staff Entomologist at LSHTM from 1975 until his death in 2008. With MRC grants he invigorated research on malaria vectors at the Muheza/Ubwari Field Station under Amani, from 1981. See <http://www.thelancet.com/pdfs/journals/lancet/PIIS0140673608609083.pdf>, accessed 19 January 2018.

¹⁵³See note 106.

¹⁵⁴Dr Jasper Ijumba worked with Lyimo, Magesa and Curtis on the ITN research in Muheza from 1981 or 1982.

funds to do the work. I remember my first independent research I did – because I was working with the other team – was to look at how people are using chloroquine. By then resistance was [...] starting, to chloroquine and Fansidar [also an anti-malarial]. So I was looking at the way people use the drugs, which maybe helps in accelerating the resistance [...] – they are taking sub standard drugs, or they are not taking the full dosage and things like that.

Mosha:

Non-compliance.

Lyimo:

Yah, non-compliance. So I looked at that, and I remember writing my first paper. And you know, was it the second, the third [NIMR] scientific meeting, I had my own data to present. [*laughter*] But then, [*she laughs*] the meeting was at Muhimbili, I remember that, and by coincidence, I don't know if it was coincidence, Professor Kilama was the one who prepared [...] the programme. He didn't prepare it, but he managed the programme, and I was the very first presenter after the opening sessions blah, blah, blah, the first scientific presentation. I had never stood in front of people and, [*speaking slowly, in a low voice, reminiscing*] so I prepared myself, my slides plus things like that. I was shaking like a leaf. [*laughter*] How am I going to start, how am I going to go about this? And then to make matters worse, there was no electricity!

Magesa:

You had to shout.

Lyimo:

No, not only shout, but it was hot! It was so hot in the hall. [...] It was hot, we were in Dar es Salaam, and then my body was also hot. [*laughter*] So, when you combine the two I was sweating like – you know water was running down my face. I said, 'Ooh my God, am I going to do this?!' But I managed, I did that, I presented my paper, everybody was happy. I remember the then Minister of Health was there, and all the dignitaries were there, because it was soon after the opening session, and people liked my presentation and some follow-ups were recommended, and things like that. So I was happy. So I became 'Edith the scientist'. [*laughter*] And after a while in Muheza, then I moved to Ifakara.¹⁵⁵ But most work I did while I was in Muheza was to do with ITNs, use of insecticide treated nets. We did some ... no that was part of the trials, when we were comparing DDT spraying and the nets, and things like that you know, experimental huts. All these things we did, but the main objective was to try the insecticide treated nets. That was the main activity, I think. On the social life, as I said it wasn't that attractive

¹⁵⁵The research site of the Swiss Tropical Institute at Ifakara in central Tanzania; see <http://ihi.or.tz/> accessed 23 March 2019.

or anything. You know, here in Amani we didn't have anything to do – in the evening we will come to the club. but by then I wasn't drinking any alcohol, you know. I started drinking alcohol small by small here. *[laughter]* Because everybody, that's the only thing that was there, some beers and you will stay the whole night just playing darts and maybe half of the night, because if you go home you will sleep, you better stay there and laugh and talk with other people and all that. So it was not that attractive. [...] And then another thing was that then they didn't have all the activities here that they used to have. You know, having bands coming, and parties. There was not a single party during my stay here. Not one. Not even a commemoration of anything. So it was very quiet. And you know for somebody who is coming from Dar es Salaam, you can't go to the cinemas, there is no way to go the way to Tanga. It means you have to spend the night in Tanga, and you have to pay for that, so it was a little bit difficult. But in Muheza you could jump on the train and go to Moshi, and enjoy your weekend with your family and come back, continue work. Yah, that's my life in Amani. [...] I the welcomed Steve into Muheza... *[laughter]* to join me.

Mangesho:

So you had two years in Amani?

Lyimo:

One and a half.

Mangesho:

So what other scientific work [...] was going on and what collaborations were there? Dr Magesa?

Lyimo:

Let me, before Stephen, join in. During that period is when WHO TDR started supporting African countries, and Amani was one of the centres that was supported. I remember Muro was working, the malaria team was continuing with their work. Filariasis was still not very active then, but, for us in malaria, the young people who were coming in, we had opportunities to go to studies if you show effort and interest. So, I went for my master's soon after. [...] I did my master's, while I was still in Muheza, before I went to Ifakara. So by then TDR was giving a lot of support to the centre, especially in capacity building. Capacity building brought in a lot of equipment, cars. You know, when we came there were only two or three Land Rovers. Then, we got more vehicles and lab equipment and the training was very systematic – you come, you have to work hard and go for your master's at least after two years. You shouldn't go past two years!

Mangesho:

Where did they go to?

Lyimo:

By then, because we were supported by TDR, it was not a very wide choice. I remember Professor Kilama was trying to push me to go into toxicology, into chemistry, to study toxicology and we were looking for training in America, in

Europe. But then I ended up going to Nigeria. I studied at Jos University. I went to Nigeria with Njunwa.¹⁵⁶ Njunwa then joined us. That was another scientist, who came after me, shortly after, and Jasper Ijumba went to Nairobi.

Mangesho: What did you study there in Jos?

Judith: In Jos I did medical entomology, parasitology.

Mangesho: Any experiences of the early 80s when NIMR was beginning? It would be nice to hear the comparison between before and after. [...]

Mwaiiko: Let me add a little bit more. I think when Temu left, I was appointed here to become the acting Director of the centre from 1981 to 1983. So, it was the time when Professor Kilama the first Director General under the chairmanship of officer [Honololi].¹⁵⁷ So the first thing, when I got that letter, after a month, [...] or two weeks, he came to Amani. So he said, we met staffs at the Amani Club, and then we sat down at the office, no, in the library, here, just to ask me about what's going on. And luckily enough he was very much [*inaudible*] because he was expecting many other academic guys to visit this institution. He used to attend scientific meetings by EAC, so he knew what was going on here. He knew Wegesa. He knew many other people. So we started sitting down looking at what we are going to start. Not start actually – continue. [...] Being entomologist, [...] he knew what was going on here, he said, 'You know, [...] for all these decades a lot of the best science was done here'. He was an expert. So he told me, 'I think it's high time for knowing the problem of the [drug] resistance. We continue with this issue' [...]. So most of his interest was mainly on drug resistance and monitoring. He started with that one, and he had an idea that we could distribute boxes, a sort of box containing chloroquine, off to all those areas where we know malaria is endemic; and then we dispense these to local dispensaries and see the response in the course of their utilization. If the people were continuing, getting chloroquine, we could detect resistance. But that programme did not really take off for some reason, because we prepared some of the boxes, to Kigoma areas. That was the one of the ... But his main interest was control of malaria and filariasis vectors. Sooner or later, when other members of the staff came in like Edith [Lyimo], I remember the problem she was mentioning on this chloroquine response-compliance. [...] There was very much concern about the efficacy of the drug, and metabolism, and whether they use

¹⁵⁶Kato Jonas Njunwa, Research Scientist from NIMR.

¹⁵⁷Name could not be verified.

the [...] actual dose. Does it reach the parasites as required? And we discovered that some brands, sometimes they read chloroquine falsely, but the actual base of chloroquine per se is almost half of that. It is 50 milligram. So for individual dispensaries 200 milligram, but the effective component is 150 milligram of the chloroquine base. We did, that. Before that, I took the drugs, and analysed the brands in different shops by simple chemistry. I discovered that was the problem. [...] So, that was malaria. Coming to oncho[ceriasis], he was not worried, because he found most on-going projects were just continuing. I had started my programme for PhD on serology and he said, 'You can continue with that one'. But he was very much interested in malaria issues. [...] He did a lot of work on ITNs and so on. [...] The science was developed here. There was another programme, which Matola did, this eeee Icon product.¹⁵⁸ Was it before?

Magesa: It was the phase three.

Mwaiko: Phase three is when they brought WHO experts to confirm the [*inaudible*]. They brought a WHO expert to confirm a little on resistance. It was phase three wasn't it?

Matola: Yes.

Mwaiko: So those were the eminent programmes, which were going on in that time.

Mangesho: [...] Was it purely his vision? Did he, [...] Kilama, first Director, drive the research agenda, or were the NIMR, Amani scientists also [...] driving the research agenda?

Mwaiko: He came with the idea of having a five-year developing programme. [...] Kilama introduced five-year research plan. So we sat down with the scientists here. That one was a package, which involved funding [...] from WHO TDR. There were certain projects, which we did with WHO TDR. Yearly financed; I can't remember exactly, but including transport issues and other, travel assistance, I can't remember. So we were working on that programme five years and then it was reviewed after every five years.

Mangesho: Okay, and Magesa you [came in] 85? What were issues by then – were they the same?

Magesa: Yes, I remember this. [...] The other aspect that probably came in a little bit later was to do with training of basic biology courses, which were sponsored by WHO. These were actually happening. Half of it was happening in Moscow, funded by the Russian government and then six

¹⁵⁸Many of the studies at the Ubwari/Muheza NIMR center are evaluations of insecticide products – following on from Curtis' seminal work on ITN's. For Icon, see: Tungu, P. K., et al. (2015). Evaluation of ICON Maxx, a long-lasting treatment kit for mosquito nets: experimental hut trials against anopheline mosquitoes in Tanzania. *Malaria Journal* 14(225).

more weeks here in Tanzania, funded fully by WHO. Walther Wernsdorfer¹⁵⁹ was the coordinator of those studies and facilitation was actually done by staff from Amani. Matola, Kilimali, and other people were [...] facilitators, and other staff from WHO. So it was a lot of work because [these were] people from all over Africa, I could say 20–30 people to have a big enough class. They were coming mainly from malaria control programmes, from most countries, African countries. So, they were coming, after spending the first and mostly theoretical part in Russia. And then they were coming here for the practical part, the experiences, because most of them were Africans, so this practical training was held in African countries. And for convenience they were staying in Tanga and holding the classes in Tanga, but for most of the field practical things they were coming to Muheza, into the villages and also to the district hospital, Teule. Because it was full of patients, whatever you wanted to do there, it was available. And this was actually [...] the primer that was driving malaria control activities in East African countries. And every programme manager, in any country in Africa had actually gone through that course, and it was happening every two years. [And I would think] that this is probably was one of the very big contributions that Amani Centre made. This training of programme managers in Africa. Unfortunately, when the Soviet Union collapsed in the 90s, it collapsed, then they did not fund the Russian piece, so it was a bit of slackness. But the practical programme continued here, and it was delivered by DBL,¹⁶⁰ which was funding it until later on, when they moved everything to Ethiopia. But then, coming into the 90s, more training came up, with the DBL supporting filariasis control, they were also running a course, and I happened to coordinate that very first course, I think it was 1990. When this happened it was also bringing in a lot of programme managers from many African countries. And this continued for some years, until DBL could no longer fund it. So apart from the research activities that they did mention here, I would say that there is this aspect of training, which was also

¹⁵⁹Wernsdorfer, MD, b.1928, joined WHO 1957 and was 1972 appointed Chief Medical Officer in global malaria control at the WHO headquarters in Geneva. Leading figure in mid-20th century malariology. See Ramharter, M. (2017). Prof. Walther H. Wernsdorfer (1928–2016). *Wiener Klinische Wochenschrift* 129: 650–651.

¹⁶⁰The Danish Bilharziasis Laboratory, Copenhagen, was in the 1980s and 1990s a leading provider of capacity building in tropical medicine and parasitology in Africa; see Ørnbjerg Christensen, N. and T. K. Kristensen (1989) New directions at the Danish Bilharziasis Laboratory. *Parasitology Today* 5(10): 305–306.

- very, very important in terms of scientific contribution and capacity building in many African countries. And this is something, which we should not forget.
- Geissler:* Did you have any Russian trainers here or Russian scientists?
Magesa: No, no, no. They were doing it out there in Russia, and they ended up there, and when they came here, those who joined us were just from WHO, from the secretariat, but also they brought in some other consultants from elsewhere, but most of the facilitation was also done by staff of Amani Centre.
- Geissler:* Where did they go in Russia?
Magesa: They were in Moscow for the period of training. [...] I know that under the malaria programme we had a number of people who were trained.
- Lyimo:* During that time there were no foreign scientists here. No. They just came for a short while. Until when Joe Lines came.
Magesa: There was Marchand in Muheza.
Mwaiko: Yah, Ron Marchand.¹⁶¹
Lyimo: But he left, didn't he?
Magesa: He left, yah.
Magesa: He was from Netherlands.
Mwaiko: University of Rotterdam. [...]
Mosha: But Curtis established his presence at Muheza, and was bringing in people like Tony [Wilkes].
- Lyimo:* This was later.
Magesa: That was very much later, in the 90s probably.
Mosha: Okay, sorry.
Magesa: But, just to mention [...] at the beginning, when I was sort of trying to engage myself with NIMR. It was in a rather very loose way, because I was a student at the university and I was thinking about the years ahead of me. And I was in this kind of confusion, where initially I had thought of going for medical training. And you know this is where the country was also experimenting with this Musoma Resolution.¹⁶² We were the very first people who went through this system. Were the country had said that a university is not for children, who are not serious with this world. So you finish your A-levels and [...] they will give you two years to

¹⁶¹Dutch entomologist specialized in *Anopheles* taxonomy and behaviour, see e.g. Marchand, R.P. and A.E.P. Mnzava (1985). A field test of a biochemical key to identify members of the *Anopheles gambiae* group of species in north-east Tanzania. *Journal of Tropical Medicine and Hygiene* 88(3): 205–210.

¹⁶²The National Executive Committee of the Tanganjika National Union, TANU met at Musoma in 1974 to align higher education with Tanzania's aims of socialism and self-reliance, which included making university admission dependent upon completion of national service; see Biswalo, P. M. (1985). A Study of the Impact of the Musoma Resolution on Student Personnel Services at the University of Dar es Salaam *Utafiti Journal of the Faculty of Arts and Social Sciences, University of Dar es Salaam* 7(2): 75–81.

observe you. And then you go there when they are sure that you are matured enough to be able to go to university. [laughter] These were the strains that were going on, and this was the Musoma Resolution. So what was happening was that after results came out, we were still in the national service, and it was very nice, and selection was there, okay we were going to Muhimbili after two years. So okay, ‘Meanwhile we are giving you a job, at Bugando Medical Centre’.¹⁶³ So I tried to negotiate with Dr Mtawali¹⁶⁴ at the Ministry. I said, ‘I don’t think I’ll be very useful at the hospital. What do I do?’ The doctor [inaudible], ‘You leave me and do whatever you think...’ Then after two years I’ll come here, because I knew in RTC I’ll be doing better rather than Bugando. [laughter]

Mangesho:

What is RTC?

Magesa:

The Regional Trading Corporation.¹⁶⁵

Mosha:

It was a lucrative place. [laughter]

Magesa:

So he said, ‘No, please, if you want to go and do medicine you go to Bugando’. No, she actually said, ‘We will be giving you a job’. She didn’t specify that of going to Bugando. ‘We will give you a job, but we haven’t yet decided where you will be. But we will be informing you. But if you don’t want it, don’t go somewhere else, tell me and I will cross out your name completely’. ‘So I want to go to medical school please’, [I said]. So I will be waiting. So I went back to Mwanza. I was waiting and nothing came out, so I get a call, there was this gentleman who was telling me, ‘Where are you?’, ‘I am in Mwanza’. He said, ‘Report at Bugando hospital’, just like that. So I went there and I was attached to the laboratory there for two years. [laughter] Then when the call up to university came, I had to go for this, they pushed me to go and do education because we wanted more science teachers, efficient science teachers. And I really felt very bad about this, because I had prepared psychologically to go for medical school. So I went to the university and to cut the story short, I really couldn’t go back to medical school because the conditions were ... I couldn’t trust anybody. The only thing they could tell me was that, ‘Okay you can go back

¹⁶³Hospital in Mwanza, NW Tanzania, see <http://www.bugandomedicalcentre.go.tz>, accessed 19 January 2018.

¹⁶⁴Charles Mtawali, one of the first senior Tanzanian medical doctors in the MoH at the time of independence; see Iliffe, J. (1998). *East African Doctors. A History of the Modern Profession*. Cambridge, Cambridge University Press, p. 201.

¹⁶⁵The Regional Trading Company (RTC) was the central mechanism of *ujamaa* inspired socialist goods distribution, which was stocking local cooperative ‘community stores’; see Lal, P. (2015). *African Socialism in Postcolonial Tanzania*. Cambridge, Cambridge University Press, p. 197.

to Bugando and then we will give you a place for the medical school next year', but I couldn't know, I cannot trust these people. So I dropped education, but I did general science. So I wasn't very sure what I should be doing later on [...]. So [...] in my first year I felt that I should try different things. So I wrote to Kilama a letter telling him that I'm a first year student, and I would like to see if there is something of interest for me in medical research, and if you could offer me a place to go and I'll work temporarily during my holidays. Good enough, he did respond and he told me to report in Mwanza for the duration of the holidays, and good enough he was going to pay me for that – salary, ooh wonderful! So I went to Mwanza. I found a lot of activities going on there, and I was attached to a Ugandan gentleman who refused to go back to Uganda after the breakup of the community [...]. So we did some work there. I was assisting them on schisto, looking at snails and whatever. [...] So I went back to college after the holidays. Then I tried to make an appointment to see Kilama just thanking for that and telling him that I was interested. So I went there, spoke to him and we had a lengthy discussion, as a professor asking me a lot of questions, like if I knew what I was doing about these filters, schisto, whatever. Then eventually, he told me that he would guarantee me a job if I got a First-Class degree.¹⁶⁶ [*laughter*] A challenge. And an Upper Second-Class, we can discuss, but really [*laughter*] it's just for First-Class degree. That was a headache for me, I said, 'Okay, thank you'. So I went down. Come second year when I was going for holidays, I wrote to him again. He offered me another opportunity to go to Mwanza. So I built my interest that way. And when I finished my third year, [...] the university wanted me to stay there, and being a teacher. I wasn't very much interested. Then I remember Dr Kilama told me if I have a First-Class straight, he will take me, but then I didn't have a First-Class anyway. And the university had planned for three years before us there was no First-Class and only probably one or two Upper Second-Classes. But good enough I had an Upper Second-Class, so I felt [...] because he has been waiting for this first class for many years anyway, [*laughter*] it was not forthcoming. So I built up courage to go back to see him, that well, I have finished my degree and okay, 'Are you having the First-Class?' [*laughter*] 'Not really but at least I have an Upper Second-Class'. Ooh he was exited, he wasn't

¹⁶⁶In the British and British-derived African educational systems, the best degree is a First, followed by Upper and Lower Second, and Third.

expecting because he was competing for these few Upper Second-Class at the university with other organisations. And at that time, the NIMR salary was actually comparative low. So he lost people to go to other organisations, and nobody was coming to NIMR. So he said, ‘Okay now I shouldn’t be giving you an interview’. [...] ‘Have you been allocated any job?’. I said, ‘Yes’. Where? I said, ‘Game division’. He said, ‘Okay so go back to the Ministry, tell them you don’t want that job at game division. Tell them you have found a job in NIMR and ask them to post you here’. So that’s what I did, and these guys were not amused. [*laughter*] But eventually they gave me that letter and I joined NIMR and I didn’t have to get through the interviews. So that’s how I actually joined NIMR to begin with. Having gotten that job, I knew that my friend Changalucha¹⁶⁷ was struggling, because he had gone through the same, back to Bugando and then he also didn’t go for pharmacy, he wasn’t interested. [...] And he was sad. So I told him, Kilama has got a job and you are having an Upper Second degree, go and talk to him. [*laughter*] So he also came to see Kilama and a few other people so they had to go through an interview, but I didn’t. So there I was posted to Mwanza. So that’s how I actually joined NIMR. And when I came here, I spent some few months here in Amani. After arriving in Muheza, I was trying to find my way here. It was good enough that Matola had come. Some of the studies were downhill [in the lowlands], and I could drive with him up here. Then I found Dr Mwaiko was Director here. He received me, very nice place, quiet. So I moved around here in a number of departments. But then Kilama had instructed that I go for entomology, because he wanted to build an entomology team. And Edith, Njunwa and Mnzava¹⁶⁸ were already in Muheza. So after staying up here for a few months, that was up in Forest House number two, it was very interesting for me because after we closed office. In those days we closed at three in the afternoon. That was the official time. So I’ll go up there and in the other house I think there was Dr Irare in that house.

Lyimo:

He was.

Magesa:

In Forest yes, and he was a bachelor, I was a bachelor.

¹⁶⁷John Changalucha, medical microbiologist, was hired as NIMR staff in 1985 and served as Director of Mwanza Research Center; <https://www.nimr.or.tz/john-m-changalucha/>, accessed 28 January 2018.

¹⁶⁸Abraham Mnzava, malaria entomologist, is a former NIMR staff who worked with Chris Curis’ project. He retired in 2016 as Coordinator of the World Health Organisation (WHO) Vector Control Unit; see <http://events.pamca.org/speaker/speaker-5-2/>, accessed 28 January 2018.

- Matola:* Therefore...?
- Magesa:* And he wasn't staying at his house most of the time. [*laughter*] So it was a very lonely place. And nobody was passing by, unless one is coming to my house.
- Lyimo:* No animals.
- Magesa:* Or to Irare's house. Nobody, we see nobody there till the next morning. [*laughter*] And because I had to do a lot of readings to catch up with this new information, I was also spending a lot of time and drinking a lot of coffee. Till later I realised that I was doing some damage to me. [*laughter*] So I just stopped drinking coffee until today. So, later on I moved to Muheza and that's where I sort of joined the team there, there was Joe Lines at that time and. Tony [Wilkes] was not yet there at that time. Edith was there, but shortly she left for Jos.
- Lyimo:* I was leaving to Ifakara.
- Magesa:* No, no for Jos.
- Lyimo:* For Jos?
- Magesa:* Yes, for Jos. Because it was when you came back that we were starting this ... I think you found us, we had already started the vector project.
- Lyimo:* It was just beginning.
- Magesa:* Yah, yah, it was just beginning from there. And I think I will say that the mentorship that I got as an individual was mainly from Chris Curtis and Joe Lines, who was there, residing just across the road. I was living in a house just across the road. And every afternoon we could sit and just talk about mosquitoes and other vectors to the extent that really, I would say, when I went to London for my Msc two years later, I didn't have to struggle reading anything about mosquitoes, because I had all the knowledge. I was just reading other things and other parasites and whatever. [*laughter*] Not really anything to do with malaria or mosquitoes, because I already had a lot of knowledge. But then I would say that one of the things that I realised was that after that project that Edith mentioned, about these nets, which was very successful, we had a number of publications, then she left for Ifakara. Abraham [Mnzawa], after his master's and PhD, it kept him away for quite a lot of time. He also left for ICIPE.¹⁶⁹ And we were left just to struggle without, like peers, I mean people whom you could work with, following and, learning from.
- Mangesho:* Up here or now down there?

¹⁶⁹International Centre of Insect Physiology and Ecology, located in Kenya; see http://www.icipe.org/about/our_history, accessed 29 January 2018.

- Magesa:* Down there, and it was this isolation that was happening very, very much. Just after that big study where we had already started getting moving and then suddenly the team was disintegrating. [...] We were having this team whom we had worked with in this big ITN project. And then Joe Lines actually left before we finished that study. And came in Tony Wilkes. And then he also left. Abraham Mnzava left. And shortly Jasper [Ijumba] also left. So you can see, this team that we had already started building, actually just disintegrated like that.
- Mangesho:* Which were the reasons for leaving? Just like that?
- Magesa:* People – She [Lyimo] was going for training.
- Lyimo:* I was going for my training, for my PhD.
- Magesa:* Abraham was kept away also, because of his training, which is fair enough. But then immediately after that he also left the organisation. He went to ICIPE. [...] He got a job there.
- Matola:* For greener pastures. [*laughter*]
- Magesa:* Yah, so I cannot blame them for that, it is something that really happened, and I was caught in the middle of that. Yah, in the early 90s [...] there also happened to be a period when the world felt they could do more about malaria. So funding for malaria was really forthcoming, but training, after TDR, also ran down. [...] My master's, for example, was from TDR, but they had also almost run out of money, and for some years they couldn't offer any scholarship whatsoever. So the training came to a stand still for some years, and it was difficult to get people [...] from here for studies, because there was no alternative apart from TDR. So that stagnated the scientific capacity building for the institute. Until in the late 90s when we had more funding being available, new thinking about malaria, and funds started to ...
- Mangesho:* So, [...] during this period, perhaps the old guys of the 70s could complement here: What were the new challenges that emerged during this period from the 1980s, in the new NIMR, to the early 90s? What were the challenges then, that made Amani sort of undesirable?
- Mwaiko:* I think the problem [...] came about when the staff was expanding. Although there were some people leaving, yet the recruitment programme was continuing. Others were leaving but others came in, and NIMR kept on advertising these posts. So I used to interview, and some of my friends I interviewed, expanding the staff positions. Now the problem was, you recruit a person here; when he comes, he doesn't have a house. [...] A critical housing situation. This was the main problem. Professor [Kilama] told me that, 'Why don't you use some estimates and we will renovate certain houses, so that even senior staffs can be

- accommodated'. So we started renovating a few houses; some where at the cowshed. [...] About, 3–4 houses, just to make [...] better conditions. And some of the staffs stayed there, yet more were coming. So the feeling of inadequacy of housing, and transport issues – because there were no grants anymore coming, which could furnish out the required, essential items and transport. The same for cars, with maintenance, and so on. So there was some sorts of fatigue for beginners. [...] I mean for a person who comes here. For me I was housed; for anybody who was housed too, probably they couldn't feel it much. But the young who came here and [found] no transport, no housing. So actually it started so quietly, [*laughter*] very quietly.
- Mangesho:* NIMR?
Mwaiko: No, the movement downhill [Muheza] started little by little; not officially actually. [*laughter*] Yah! It was coinciding when we were building these external laboratories – Tanga station. So most of the people were moving with anticipation, either you go to Muheza or you go to Tanga station. I remember people like Jumba they just moved out, going down themselves. Although later he left somewhere else also. So it started like this.
- Mangesho:* So going down was like going to greener pastures?
Mwaiko: Not to greener pastures, it was the same employer.
Kilonzo: To the same employer. [*laughter*]
Mwaiko: But the facilities were better.
Muro: And the isolation at Amani.
Machaga: And the road of course, you shouldn't forget the road, the road wasn't so good.
- Lyimo:* I thought it was terrible.
Kisinza: But I think also the key issue was the social services available, social services for the people, particularly for the young scientists having been recruited from somewhere else. So when they come here, they don't meet their expectations. That's why most of the people started the thinking of moving down to Muheza.
- Mtoi:* Or down to Tanga.
Kisinza: Yah, or Tanga. Somewhere which offers a bit of social services. So, I think those are the factors, despite the fact that initially there were some [social] activities here. I think by that time, because of the availability of funds, there was a deterioration of the social services, which facilitated that the people hated the place...
- Mangesho:* Where you here that time?
Kisinza: No, I was not here at that time. [...] I was here from 1993–1996, that's when I got the first appointment at NIMR.
- Mangesho:* To come to Tanga.
Kisinza: Yes.

- Mosha:* I add about housing. Something that kept in my mind. I think there was a problem of housing. I remember Malechela's father [...] said that his daughter has failed to get proper accommodation here, and he wanted her to come to TPRI [Tropical Pesticides Research Institute], [laughter] which means there was a problem of housing.
- Kilonzo:* Yah and about the interest to stay down there, we should remember that even the Director, Dr Temu, decided to stay down there, not here at the *boma* [Director's house] [laughter]. He was staying there either for social issues or family issues, but he was staying, he was staying in Muheza.
- Mosha:* To get closer to Moshi. [laughter]
- Kilonzo:* That's similar to him. [laughter] Maybe during the 80s, there were also some changes. I think some research problems faded away, like plague problem. It was when I departed from this. I left this area at the end of 1982. Plague research continued for very few months. It faded away and I think until now. So there was big change, because it was a programme, which had been approved, by the then East African Medical Research Council.¹⁷⁰ But after Kilonzo left, he left with plague. There were, in other words, no young scientists. They had no interest in pursuing plague research. It faded away, as far as Amani is concerned.
- Mangesho:* Sorry, Magesa mentioned [earlier that] when he joined NIMR, he went to Kilama asking for a job. Want to know [more about the issues of] the salary being small and [those aspects]. While just few years ago the salaries were big, was there a recategorization or was it the economy of the country at that time? Why was salary now perceived as small compared to just three year [earlier]?
- Mwaiko:* [...] Yah, that was a very important question, because, [...] when NIMR took over NIMR had to establish a 'scheme of service'. The scheme of service we had was different from any other [normal] sectors, and for salary with Tanzania standards. There was a difference actually from previous East Africa Community salaries, [with this] scheme of services. Even the regulations, some of them were different...
- Mangesho:* They were changed...?
- Mwaiko:* Changed too, so that was one of the problems. [...] East Africa Community was breaking up so everyone was going to his own system. So we worked, but there were some changes actually.

¹⁷⁰The East African Medical Research Council (1957–77) governed medical research in the three East African countries and organized regular conferences.

- Mangesho:* Now, I can remember, when I was young ... How much did the politics of the day influence this science generation? I remember pretty much *enzi za unga wa yanga yani* [those old days of yellow maize flour]¹⁷¹ Tanzania was going through a very tough restructuring of its economy.
- Lyimo:* *Duka la kaya* [community shop].
- Mangesho:* *Duka la kaya*. And life in Amani had been nice, and now they underwent the economic changes of the country, with structural adjustments. How did that reflect on Amani scientists and their way of life?
- Mwaiko:* You know it really affected us. Like anybody else in the village or elsewhere, because there was shortage all over and we used to get some sort of rationing. Whether you had to buy a kilo of sugar or [*unclear*]. There were limited shops. [...] So we had a problem, we had only one shop here, which was managed [...] by NIMR. It was a 'worker's shop'. We used to bring our rice here, and sugar and distribute among ourselves.
- Kilonzo:* And I, I happened to be the chairman of that shop. [*laughter*]
- Lyimo:* That's why, in the beginning, Steve [Magesa] wanted to go to RTC. Because RTC was the Regional Trading Corporation and they controlled. I remember we had to be friends with the manager in Muheza, so when the cooking oil comes, he will just put aside things for us in Muheza ... fifty kilograms of sugar... You know you had to be friends with RTC to get food, and there were difficulties.
- Mangesho:* So it means [with the changes], the salaries were actually cut?
- Kilonzo:* Not cut, but we were in different forms of salaries.
- Lyimo:* For example for you, if you were receiving hundred shillings then, did it come to ninety or?
- Mwaiko:* Yah, let me think. What happened, because I was there for the salary?
- Mrs Mwaiko:* Salaries were frozen.
- Mwaiko:* Actually ... Listen, listen, listen – it is true, because if you looked at some of us at that time; I was a research officer 1. I was already on 2,000,-2,100 something like that. But according to the [scope], 2,000 was very high; it was slightly lower than the EAC [salaries] at that time. That was one factor. And people were given personal salaries here.
- Mangesho:* Personal?
- Mwaiko:* Personal salaries because you are having a post, you are appointed as Research Scientist, under new terms, Research Scientist 2. According to scope regulations this is about 1,500. But during the Community, you were already

¹⁷¹Reference to temporary food shortages related to economic policies in the early 1980s, and the importation of foreign, yellow, maize from the USA.

getting 2,000 shillings. So the employer says, this time, because you are getting the high amount you can't [be promoted] You see my point? That thing affected most of the staff already there at the time. [...] For newcomers there was not a problem, but for those who were here ... people got personal salaries.

Mangesho: You mean that were two scales?

Mwaiko: No, you don't understand. You see, they came with the new scheme of service but ... Say, for example, a person, research officer 1, I, was getting 2,100. Now, scope says research officer 1 gets 1,500. You see the point? So he found me getting this money and here the maximum was 1,700 or 1,500. So me, I was already getting 2,000. He can't really add any more, because I'm already above the even the highest.

Mtoi: You are frozen.

Mwaiko: So it is frozen. [...] Most people stayed with personal salaries for quite some time.

Kilonzo: And no increments.

Mtoi: Quite some time.

Mwaiko: And there were a lot of things. They said, 'We are going to change this, change the scheme of services, we are going to modify the scheme of services, increase salaries'.

Mtoi: It took so much time...

Mwaiko: Then we say okay, now we have modified, we will be happy soon, things will be better. The next thing is, it comes back just the same, not different. If it is 1,500 shilling, this time you get 1,600, you are going on personal salary again. [laughter] It was very difficult; it affected a lot of people here. [...] You stayed with the same salary without the increment, because, you are above the top.

Mangesho: And what about life in general, how did it affect life?

Mwaiko: You know sometimes it affected your life, because if you are researcher officer grade 1, under a normal scheme for any newcomer, you expect if I'm getting promoted, I get with this salary [increment] then. But if you say even to research officer 1 or Senior Scientist 2 it is 1,800 even if I'm promoted to scientist 1. I mean 1,800, the same thing. So it makes no difference, even if you are given Senior Scientist 1 or what, because you are above already.

Mangesho: How did that affect science?

Mwaiko: It was very demoralizing actually, because Kilima used to get a lot of complaints. Now you are promoted to senior Research Scientist 1, but you are still on personal salary because you were already above.

Mangesho: So how did the other research programmes continue, or end, and why, like oncho. Did oncho continue?

- Mwaiko:* Yah, oncho continued. Because that's where I did my PhD. When Wegesa left, I had to continue mapping. All villages I did, [I] had a lot of information actually. If you go to a locality, say Amani, I had to record infection rates on each locality, everything, everything, Mpanda, Kaliuwa [village names] each village, each village, [...] infection rates. And then I decided to take the map, which Wegesa did in 69 and edited that data. But that was not only, I incorporated this with serological data, which I did with these antibodies. I found that there was no protective immunity among infectious onchocerciasis. I couldn't get any. If you got high titers and you have low parasitaemia, [...] and even the serological data was complementary to parasitological data. [...] That was the end of, no, no, not the end of that. After that, filariasis, Professor Dr Ralph Muller.¹⁷² He was a member of the MRC group. He used to come here on quarterly basis. He was the WHO expert on [immunology] of filarial parasite. So, he was the one who used to come here and say okay, we did serology and so on and many people came. So we thought, we were not satisfied with the serology, let's go to molecular genetics. In 1992, no 95, we got a grant from European Commission in Glasgow, to do the molecular genetics of *Onchocerca*. When they found us doing this, Glasgow said, 'Okay, why don't you cooperate with people in West Africa'. So me and Bertha [Maegga], we collected some samples here – male adult worms for DNA test. I went with hundred samples to [WHOPES]¹⁷³ with Bertha. Actually I went there alone first. In [WHOPES] I was alone but she joined me in Amsterdam.
- Lyimo:* But then most of the research that was going on during the 90s was malaria.
- Mwaiko:* Yah I'm talking about the part of onchocerciasis.
- Lyimo:* But was Muro there, when did he [come]?
- Mwaiko:* That time Muro was – what were you doing at this time? [talking to Muro]
- Muro:* What time?
- Mwaiko:* When I was doing the molecular genetics of onchocerciasis here, WHOPES and in Royal Tropical Institute Amsterdam, 86 with Bertha Maegga and Edith [Lyimo], Stephen, Meredith. I think you were doing your PhD?
- Muro:* 96?
- Mwaiko:* Yah.
- Muro:* 1996, I think I had moved to Mwanza. I was doing schistosomiasis and intestinal worms. But prior to my movement to

¹⁷²Muller was a parasitologist at St. Albans Institute for Parasitology.

¹⁷³Possibly the WHO Pesticide Evaluation Scheme (WHOPES); see <https://www.who.int/whopes/resources/978924159927/en/>, accessed 23 March 2019.

Mwanza, and that was I think from 1988/89, I was in London School of Hygiene with Dr Magesa. I went to London [...] to do a PhD in medical entomology, parasitology. But I returned. I had returned from the U.S. in 1981. I stayed dormant from 1981 up to 1987, without publishing or doing research work, and WHO TDR had to send somebody from Geneva to track me, [...] you remember?

Mwaiko:

Yes.

Muro:

[...] When I came from the U.S. there was a difference between me and Kilama. And when you are at loggerheads with Kilama, you are in trouble. *[laughter]*

Kilonzo:

And that was due to a failure to publish or what?

Muro:

Well, there are a lot of reasons. Mr Matola will remember, because even my wife was terminated from employment, because she joined me in London. *[laughter]*

Matola:

Without permission.

Muro:

Yah. So there were lots of problems, in fact WHO had to intervene. And that was the end of the story. But after my completing that insectary, Mtoi, Stephen Fedha, and others were doing some work on transmission studies on kibwezi form of *S. damnosum* complex. We incriminated it as a vector. We published the work with Bill Procnunier of London School [of Hygiene and Tropical Medicine]. Thereafter I went to London to do my PhD. But because I had stayed dormant from 1981 to 87, WHO told me that, ‘You have problems in completing your PhD. You were engaged to do a master’s in public health, you are now going to do medical parasitology entomology, you have been idle for literally six years. If you think you can, consult the Head of Department of parasitology tomorrow so that you register for an MSc in medical parasitology to enhance your PhD studies on the parasitology of onchocerciasis’. The Head of Department asked me to write a letter of application to WHO. And because WHO already advised me to do that, I was accepted. Soon Dr Magesa and John Chungalucha were doing an Msc. I stopped registering for PhD, I did MSc. I completed MSc in 1988/89. When they came to Tanzania, I registered for MPhil. At London you don’t register for PhD immediately. You register first for an MPhil. You do a small project and then you submit a dissertation of that. And in the discussion of your results you say how you are going to expand your research that may lead to a PhD thesis, which I did; I defended in 1990, I returned to Tanzania. The difference between me and Kilama, as I said, it was very big. I didn’t have transport to go to the field to do my work. I stayed here for a whole year without doing any work. Chris Curtis travelled from London to Amani. He came here, we sat with the centre

- Director Dr Irare. Dr Irare had assisted me. I applied for additional funds from COSTECH,¹⁷⁴ me and Moses, Steven Fedha and ...
- Matola:* ... Ramadhani Kupe?¹⁷⁵
- Muro:* I moved to Kilosa. I rented a whole house. I converted one of the rooms as an insectary. I moved my two daughters from Amani Primary School. By then Amani was failing students in primary school. They came to stay with me in Kilosa. I did my PhD, collecting my data for my PhD, they completed their primary education. After one year, they passed, they went to Weruweru Girl's [School]. After one and half months, I completed my field data collection, Chris came, assessed the work I had done. He said that it was enough data. I should go back to London do data analysis, write up. What I was essentially doing in Kilosa was mapping the epidemiology of onchocerciasis, and the extent of the onchocerciasis focus. As Mwaiko mentioned, and as Dr, Mr Wegesa had established, in the 60s – which he published in 1969 – the distribution of onchocerciasis in Tanzania had been established.¹⁷⁶ It was reported to be focal, unlike malaria which is blanket. In every place you go there are mosquitoes you find malaria. There are very many places where you find onchocerciasis, no you find black flies, you find fast flowing streams, but there is no oncho. So Raybould, I and Dr Maegga, tried to associate fast flowing rivers, breeding of *Simulium* black flies – both *S. naevei* and *S. damnosum* species complexes, the cytotypes, and onchocerciasis. [...] I did the epidemiology of onchocerciasis, established the medical importance of onchocerciasis in the focus, established the extent of *Simulium* breeding sites. I think Graham White and Dr Raybould had early on reported that *S. naevei* is also a vector in the Kilosa focus. For the entire sixteen months I conducted research in Kilosa, I found a lot of rivers in the forests harboring crabs, but I've never found a single larva on the crabs. For the entire period I was collecting anthropophilic black flies in the area, I've never collected a single *Simulium naevei* adult biting.
- Mangesho:* Sorry, because of time can I cut you slightly.
- Mwaiko:* Let me go back to onchocerciasis again. Having [...] collected some samples of the vector for molecular genetics, and then we stayed for a month, Bertha [Maegga] joined

¹⁷⁴Tanzania Commission for Science and Technology, see <http://www.costech.or.tz/>, accessed 28 January 2018.

¹⁷⁵Field assistant of John Raybould and successive onchocerciasis researchers.

¹⁷⁶Wegesa, P. (1970). The present status of onchocerciasis in Tanzania. A review of the distribution and prevalence of the disease. *Tropical and Geographical Medicine* 22(3): 345–51.



FIG. 1. Catching-station 1.



FIG. 2. Catching-station 2.



FIG. 3. Catching-station 3.



FIG. 4. Catching-station 4.

FIGURE 13 Field assistants during crab catching, early 1960s (Raybould, J. N. and A. S. K. Yagunga, 1969). Studies on the immature stages of the *Simulium neavei* complex and their associated crabs in the eastern Usambara Mountains in Tanzania 2. Investigations in small heavily shaded streams. *Annals of Tropical Medicine and Parasitology* 63(3): 289–300).

me in Amsterdam. They gave us training and then we started analysing the samples. It was very extensive. We couldn't finish all the samples. But we had friends from Cameroon

who came, we had merged together. We did that analysis together for molecular genetics and then, after the training, everybody went to his country. We came back here, we went to the lab, we got the data. We went to Cameroon, University of Yaoundé we stayed there for fifteen days, for data analysis and reporting. And at the same time we had also an opportunity to go to the field to visit the onchocerciasis areas of Cameroon. Different regions, because my colleague, counterpart came here, to Tukumyu so to see this full site, there was a very big difference. So we submitted. But the conclusion was that we found that there are about five strains of onchocerca. They are quite similar, we got A ... we just designated them A, B, C, and D. A and B and C were common to all this, but Amani was different. The only place we found D for *Onchocerca volvulus* and in this place the vector is *naevei* complex. So, coincidentally, they started the African control programme with ivermectin. They started a fifteen-year programme, distributing ivermectin, in all *Onchocerciasis* focus in this country. I went to Songea we had a meeting with [the] representative to give us the preamble for how they are going to operate. I went there [and] they said this programme will be conducted here in this country for fifteen years. And we decided in that meeting [that in] all those areas in which there is onchocerciasis, one of the medical personnel should not be transferred. And it was very frustrating for those; when we left he kept on practicing medicine here in Tanga, he was not transferred because he was earmarked to follow up ivermectin distribution in Tanga, Amani focus here. So most of the medical officers in those areas were not transferred. If at all you are transferred, there should be another person to take over. So myself I was participating, having done most of the immunology, molecular biotechnology, but I worked for WHO.

Lyimo:

Mwaiko:

Mwaiko:

By then most of the funds were coming from the WHO. And European foundation.

Let me finish. So when the actual programme started, I wrote to WHO. We were doing the distribution of ivermectin here. In case you have resistance, you know the filaria is not a protozoan. Nobody has reported resistance to multicellular organisms. But in case it happens, we were in a position to tell which form, because we've already done molecular genetics typing. So I didn't go further [with oncho], to go into the distribution of Ivermectin. [...] They called me to participate in that project. For me, it was the end of the onchocerciasis science in that area. [laughter]

Mangesho:

Thank you, now, we haven't heard about the 1990s period about life in Amani. Perhaps Dr Kisinza can say something

[...] about life in Amani in the 90s. While the rest of you will start thinking about [...] the future of Amani or whether there should be any future of Amani?

Kisinja:

Thank you very much. [...] I'm going to speak very briefly from my eighteen years working with Amani – that's from 1996 when I came from the University of Dar es Salaam as a marine biologist. Because I was trained as a marine biologist, by then working with the Institute of Marine Science of Zanzibar,¹⁷⁷ before I decided to change to entomology to NIMR. [...] I've observed [...] how the Amani Centre has changed its scope of work to meet the demand of her clients, or to meet the demands according to time. And also I have found that Amani Centre has not only produced research, but it also acted as a spring [board] for leadership, [...] and professional growth. You can see here, there is a diversity of professors, academicians and writers. [...] Amani [has been a] place of creating leadership and training. [...] I have also found that after the change of Amani Centre, down to Muheza and splitting the two centres, major challenges started facing Amani Centre, because most of the infrastructure was inherited from the colonial era, and shifting activities down to Muheza and Tanga meant that most of the activities here were dormant and there were no strategies of rehabilitating and maintaining the infrastructure. [...] There was no maintenance because the government ... because of financial constraints, there were no funds allocated to maintain the infrastructure here. [...] I found also that NIMR, particularly Amani Centre, has changed a lot. [...] Initially you focused on vector control particularly basic sciences, but now there is a diversity of research; new work has been conducted by [...] the new Amani Centre: we have clinical trials, we have health systems research and policy research that were not conducted before. And also there are other activities [...], for instance traditional medicine research. So this is the process of changing the scope of work to meet the demand of the clients of NIMR. [...] When I was joining NIMR from Zanzibar, when I was posted to come here, [...] I was mentored by Dr Mwaiko, but I was very shocked to find the place ... that this is the place that I'm going, [...] starting my life working here. So my work station was supposed to be in Muheza, but I had to stay here at least for a month just to go through orientation, so I did a lot of orientation. In biochemistry I worked with Dr Mwaiko. But actually I found those three weeks in

¹⁷⁷Another research organization under the East African Community; see <https://ims.udsm.ac.tz/about-ims/>, accessed 29 January 2018.

Amani as if I stayed a century, [*small laughter*] and I shifted to Muheza where I worked with Dr Magesa and other entomologists, Dr Njunwa, Mboera¹⁷⁸ and the rest. And actually I was mentored a lot by Magesa. [...] So what I want to emphasize here [is that] there is a lot of mentorship within NIMR, despite the [...] financial constraints. And recruitment of people, particularly for the scientists – actually there is growth. [When] we started there were just few scientists. [...] After the collapse of East African Community, there were about thirteen scientists that were inherited and now we're talking about more than 300 scientists [in NIMR] with a lot of PhDs, more than fifty PhDs, and NIMR Amani has contributed a lot of it. So [...] actually, to me by the time I was joining Amani Hill here, the place was not conducive because I had passed through different places – [...] Dar es Salaam and [...] Zanzibar – so when I came here I was, 'Heeeh this is really a place!' So I decided to go to Muheza. This place was not conducive to me. At least, in Muheza [...] there are some social services available, I might go to Tanga, blah, blah, blah and even transport was very accessible. But here actually sometimes in a week there was one trip from to Amani to town, just one a week, so even if you have your own problem going down, there is no way to go there, particularly during the rain. [...] But now [...] NIMR has a lot of visions [...] for the revival. We have some revival strategies for Amani Hill. This is a very potential area, apart from this weather, but [...] we have huge land and a lot of conducive issues. So NIMR now is converting this place to a training centre [...] to be a more vibrant place. I don't know whether that will be similar [to] during the colonial time or during the EAC, but I think the vision now that NIMR [...] and the government have, we want to revive this place to become a training centre, particularly for post graduates and some specialised courses. Doing so, we hope that we are going to create [...] social services that [...] the scientists were missing here. So we hope [they] might be coming back to this place, because of the social services. We hope that there will be for instance banking and other social services. And even schools, because we have the business plan already in place, and so all those social services are already included, including banking and some other places like a science park and a recreational area. So we hope, because the government is committed, but I'm not sure when, but

¹⁷⁸Dr Leonard Mboera became a NIMR Research Scientist in 1992 and worked on malaria; see <https://www.nimr.or.tz/leonard-mboera/>, accessed 29 January 2018.

very soon and [...] I hope that [...] retired senior scientists, professors, will [...] work with this training centre, because that is your place where you ... where you originated. So I think that is where you can invest your expertise. Retired but not tired; so I hope that you will work with the centre. [...] One other problem was that some of the people they came with their family. With the children that are in school, in good schools somewhere. So here there is no good school, [...] and those are challenges. [...] Now, briefly to my academic career further, I was trained as a marine biologist and also as a microbiologist with the University of Dar es Salaam; I worked in Zanzibar as a marine biologist, [...] I was also trained by American people to be a marine diver and rescue diver so I'm a professional rescue diver. So while I was working in Zanzibar as a marine, underwater researcher, I [had] a lot of problems. [...] I was almost losing my life because of a shark. So, I came back and Professor Kilama by that time was also looking, [for] good scientists from the University of Dar es Salaam, new recruits. He met Professor Kayumbo¹⁷⁹ and he said, 'Ooh so you are looking? [...] We have this guy, William Kisinza, though he is working with us and he is employed by the university, but he is not happy working with Zanzibar because of sharks and things like that'. So Professor Kilama called me to meet him and actually he threatened me a lot, that if you continue working with marine science you are going to lose your life. [laughter] So I just joined NIMR. Then I did my master's in medical entomology at London School of Hygiene and Tropical Medicine, and then I came back to work with NIMR Amani. And then [...] I was transferred to NIMR headquarters to strengthen the integrated disease surveillance [...] in January 2000. And 2011 I was appointed centre Director here. And now I am working with Amani, with a lot of challenges. But [...] our vision is that we are going to get this training centre, [...] not only for the benefit of Tanzanian people, because we will be having some exchange programmes for international students. So we will have a broad scope of training. Thank you very much.

Okwaro:

Yah thanks for the overview. I think we should now think about the question that Peter put about the future of Amani and whether there should be actually a future for it; or should we just close down everything? I want to ask a bit of a provocative question, because there seems to be a

¹⁷⁹Dr Hosea Kayumbo was then Director General of Tanzania's National Scientific Research Council.

time when Amani was so good, the time when Mwaiko and Matola came, who were happy to do these jobs to go into Mombasa and back – Amani was the place to be. Then there seems to have been a free fall [...] to the time when you [Kisinja] come to Amani and you cannot survive even a week without thinking of committing suicide. [laughter] When did things fall apart?

Kisinja: Actually, I think after the collapse of EAC [...] that's where some research programmes phased out as Professor Kilonzo said that his research programme on plague just phased out, and I think also similar to other projects. And also the government commitment to provide financial support for research ... I think that's the gap and that's why I presume that most of the attractive issues, like the clubs there, by that time had almost collapsed. [...] During the colonial era or just after the colonial period, I think even myself, when I joined NIMR, if I could have come and found good social services, with my expectations, probably I could have been attracted to remain here. But because of those lacking social services. So I think those are the issues that most of the people, if they are posted here, they would want to stay longer.

Okwaro: [Dr Kisinja came in] 1996. 80 to 96, that is good fifteen years of comprehensive African ownership of Amani. And this is [...] the time during which things just went down, to the time you were coming. Was this just about funding and lack of renovation by [...] the government? Maybe I hear from those who were here when progressively things just went down. Where did the visions disappear to, or the idea of making this an institution that is thriving?

Kisinja: [...] I think one of the issues was that in 2005, the NIMR management or NIMR councillor decided to shift most of the research work from here down. And this was to avoid some expenses because most of the research was done down because [...] of malaria endemicity in the lowlands rather than highlands. So they were frequently travelling from lowland to Amani so they thought [of] shifting this [...] centre [to] Muheza down there. Actually there was a good [...] objective. But I think there were no succession strategies after you take all the potential scientists down, and all the research down, what's after? So that's why you can find that the area remained dormant, most of the facility remained dormant, and most of the infrastructure here they were inherited from the colonial era, and there was no rehabilitation. [...] The infrastructure deteriorated because of financial constrains, because it was government owned.

- Magesa:* Maybe I should chip in there, because if we talk of this split between Amani Centre and Tanga Centre. [...] I moved there, [...] to head Amani Centre.
- Okwaro:* Amani Centre, here or in Muheza?
- Magesa:* I would say Amani Centre includes this place. However, if you looked at the dynamics of the whole process, I think it can tell us a lot. Kisinza has been saying it was the decision of the NIMR council, but this was responding to a request that was sent to them by people who were up here.
- Muro:* For very many years.
- Magesa:* Very many years, so if you look at that.
- Okwaro:* The people here requested the centre to move?
- Muro:* Yes.
- Magesa:* Yes. If you look at that, it tells you that people [...] already had lost hope about this place, despaired about this place, and all they wanted was to move out. To make it worse, the team that moved from here, actually went to Tanga to set up another new centre called Tanga Centre. They were no longer part of Amani Centre. And it was left to me, the person who was already based in Muheza, to manage even Amani Centre up here. However, this team, which was leaving for Tanga was like... I mean, I reached the point where I had to put my foot down, saying no enough is enough. Because they wanted to take everything they can take from here and move with it to Tanga! But this is still a facility that is supposed to be doing research. Why should that happen? And because of that situation that these people were actually moving there, and that place [Tanga] was almost empty in terms of facilities, then all they wanted was to take everything from here, up to the last test tube. [*laughter*]
- Muro:* Did they take them?!
- Magesa:* They took a good amount of those.
- Kisinza:* Yes it was more than 75%.
- Muro:* At least 75%?
- Magesa:* I would say 90%. [*laughter*] This will tell you really that these people were just moving and they didn't care about what remained here, and what was the future of this place. [...] To me that was a big, big mistake [...]. So there was a challenge. For example, we had a team that was doing good work here and a team that was in Muheza, and now the team from here was actually moving to Tanga, leaving a very, very, very skeleton kind of staff up here. Now, the staffs that were being left here were not very critical for running any research programme. And in Muheza I'm having also a small team. We haven't reached a critical mass to be able to cover the activities that we wanted to do up here and also down there. So, [...] what I did was to say that, 'Okay, let us strengthen our

core activity, our core skills, that we know that nobody else has, so that we make a name in that area where we can identify ourselves' and thanks to Professor Mosha we teamed up with his team to strengthen our entomology and vector control teams and we had very good work established, a very well recognised facility that is conducting a lot of insecticide and entomology trials. We produced a lot of work for WHOPES,¹⁸⁰ tested a lot of products, and that is one area where they identify Amani Centre in the world. And then we saw that as Tanga Centre moved, as the people at Amani moved to Tanga, they were no longer interested in the work that would have been also good, going on at Teule Hospital in terms of clinical research. So I saw that as another opportunity, because conditions at Teule Hospital are quite good for clinical research on malaria. And we had [...] two clinicians, who could [...] lead such studies. And I had to link them with the team at KCMC¹⁸¹ for backup support, and they have done excellent work. But, having another facility up here and at the time when you cannot recruit more staffs. Because that was another problem; here you really needed another team and I was thinking about what can be done from here, but then the facilities have already been moved, you don't have resources to recruit a new team to establish whatever activities up here, it was extremely difficult. And when I got a lot more grey hair on my head, I said 'Kisinja can manage this'. So I had to release it for Kisinja. But what I want to emphasize that really: It's good to hear that there are some very good thoughts about reviving this place, but I think, commitment and availability of resources and good planning should be key to getting this place back to its feet. What I'm saying is, it's a very unique resource, there are close to 250 acres of land in this place.

Matola: 400.

Kilonzo: 400?

Matola: Yah because the area starts from Kisiwani all the land on the right hand side by the river up to the village here, the police station, the church area – 400 acres if you can estimate including the offices.

Mwaiiko: 400 acres?

Magesa: These are hectares I think, hectares.

Matola: Yah, hectares, ooh!

¹⁸⁰WHO Pesticide Evaluation Scheme (WHOPES); see <http://www.who.int/whopes/en/>, accessed 29 January 2018.

¹⁸¹Kilimanjaro Christian Medical Centre, one of the largest sites of transnational medical research collaboration in Tanzania; see <https://www.kcmc.ac.tz/?q=backgroun>, accessed 30 January 2018.

- Magesa:* And you can see this environment is really unique and is very high value. At some point, there was this team manager of Chelsea, it's Dutch this gentleman, what's the name?
- Lyimo:* Manager of Chelsea?
- Magesa:* Chelsea, he was at some point the manager for Chelsea, but also team manager for the Dutch national team. Well, this gentleman, [...] he had met one of the Dutch researchers who had been here and he sent a message he wanted to establish a football academy. [*laughter*]
- Kilonzo:* Football?
- Magesa:* Yes, football academy. Because he was intending to retire from coaching and he wanted to establish a football academy. So that he would [...] be scouting for players from different places and train them here, and then be able to sell them somewhere. [*laughter*] But then after that I think he decided that he was not going to retire and continued the coaching at Chelsea football club, and I couldn't hear again from him, but he had already sent an enquiry about this place.
- Kilonzo:* Yah that's good.

[*Short discussion on football coaches*]

- Muro:* In the early 80s, we started thinking of really moving the centre. And one proposal we had was to negotiate with Sokoine University,¹⁸² Forestry Institute or Agricultural Centre, so that we could swap. So the university looks for a donor outside who is willing to support the forestry department or the forestry component or the agriculture component, so that they can build another centre, or identify another centre for NIMR, somewhere where it is more appropriate, with regard to human medical research and training. Because really, most of the people as we have heard from the very beginning this morning – everyone who has been coming to Amani has been shocked that this place is not as good as one would expect, for his life as a man, as a family person and even as a normal person living with a wife and children. You come here, you enjoy the climate, it's a very nice place to come for a retreat. But to stay, that's why I'm impressed by the proposal put forward by current Director Dr Kisinza, that even the government has promised to support, to continue with medical research and training at Amani. I am real shocked and I think that could be politics. In this country we are very good in talking and planning, but when it comes to

¹⁸²Sokoine University was founded in 1965 as an agricultural college, and became a University in 1984. See <http://www.sua.ac.tz/university-history>, accessed 30 January 2018.

implementation everybody is scared. Everybody is scared. If one would tell me there is a proposal of making this [...] a forestry research centre and training, I would accept and even donors I think would be forthcoming. But people to settle here, against all the odds that everybody has been repelled [...] That's how I look at it.

Mwaiako:

I think the idea of reviving can be good, but you must be very tactful. Because already we had been here, we really moved out with this place. [...] But myself I'm just thinking of admiring the land size, 200 hectares, is very enormous for NIMR too! A very enormous land. From previous history, when NIMR started with medical research, we never managed the land fully. Just a few, just only one part of the area, which we could really maintain. As a result nobody even, for a newcomer, would not know that even Kisiwani belongs to NIMR. We just managed a small area. So we had been neglecting other parts of natural resources, which you can't really maintain. I think to me, it is better to invite more people who can utilize this resource more effectively, these 200 hectares. And the most convenient people, because of the nature of their job, is forestry and agriculture. But we can't exclude human science. We can incorporate this within, as a part of it, to do training in medical science for some, certain circumstances.

Kisiza:

Perhaps if I can respond about that. With the current land plan for this huge land, actually what has been suggested is [...] that we are going to have this training centre, actually it is a very huge area, but a first priority is a training centre for health sciences. And also we are going to have partnership with private ... I mean this private-public partnership. And actually there are several institutions now that have sent their request. And [even] the tourists [...] they have come with the ideas that [...] they want to take some part as their area [...] for their business; also, we have here some indigenous organisms like butterflies,¹⁸³ that won't be found anywhere in the world. And birds.

Muro:

Kisiza:

And birds and even flowers, even medicinal plants actually. There are some medicinal plants that are only found here, no place else. So we have that [...]. [...] with this national housing corporation. So actually there are some discussions already that they are coming to invest for the social services, like providing some rental offices and like that, because eventually there are some infrastructures like banking, like banks will be coming here, so they need buildings and some

¹⁸³ Although the use of butterflies for income generation might seem an unlikely proposition, a flourishing butterfly farm few kilometres from Amani does breed local butterflies and exports these to collectors around the globe.

- infrastructure. So there is a lot of integration of investment. But the main lead is the training centre with the other complex.
- Lyimo:* I'm just listening and thinking that what I see is that the medical research, I'm not saying NIMR, but the medical research people should be looking at what has happened here since then, because this centre as Amani Centre did a lot, in malaria and filariasis, in onchocerciasis. The medical research in Tanzania came out of this place [*agreeing*]. So, for them, it's, 'Ooh we can't leave this place'; but if we shift everything to elsewhere and we continue working there, what's the problem? We leave this place for others.
- Muro:* For more appropriate users.
- Lyimo:* Yah, for the forestry, for tourism and all that.
- Muro:* Who can use it to the maximum, use the land to the maximum.
- Lyimo:* Yah.
- Matola:* So you are saying we are dog in a maize farm? [*laughter*]
- Lyimo:* What Dr Kisinza is saying is that they are trying to bring in other people, you know, bringing other groups you know tourism, banking.
- Muro:* Bankers will be surprised to be invited to Amani, bank for whom?
- Lyimo:* For whom, yah?
- Kisinza:* Because there will be trading listed here! A lot of people.
- Lyimo:* First you have to build a community of people. What we need here is resources.
- Kilonzo:* Join the community, it is there! [*he laughs*]
- Kisinza:* It is not a push, there are so many people around here!
- Lyimo:* We need resources to make this place.
- Kisinza:* It is viable, because we have already the business plan.
- Mosha:* I think NIMR should continue maintaining this place. If well developed, this can even support research activities. It can be economic, you can have economic activities, which can support other research activities. Now, we also have to take into consideration that the Tanga of tomorrow is not the Tanga of today. Tanga is growing. We are told that there is oil, so very soon Tanga is going to be quite prosperous. So, it will be possible, as you have said, to initiate tourist activities here, [...] and conference centres, resort centres. This then would be able to generate income to support research activities. Not here, but even in Muheza, considering that the government now is cutting down research funds. So you can use this as economic area. And you can also incorporate the training, which you are talking about – it can be health related, but also bring in other aspects, which will take advantage of the resources here. Like tourism you can talk of ecotourism. So there are lots of

things, which can be done here. But then what we need then is to have a business plan.

Kisinza:

We have already.

Mosha:

When I've said this, I thought this was a business plan? [laughter] You can put all the strengths for this place, all the potentials for this place, and then your projections for the next thing, yes, and what kind of people you want to invite to invest here, what types of activities you want to station in this beautiful mountain. And once you have got that plan, you can easily have a short document to share it with interested parties – institutions, universities, investors. And I don't think we should let this go, we require, we are required to generate funds and we can use this facility to generate funds to support research.

Kisinza:

Yah, I wanted to chip [in] on what Professor Mosha has said: now the government is trying to pull out from supporting research: [...] the government institutions, they have to support themselves. So one of the strategies should be income generating facilities providing [funds for] research, not only for Amani Centre. Actually, even the name of the university proposed is 'NIMR Amani training centre of health science', something like that for postgraduate. So [...] it is the NIMR training centre. It is not for Amani meant alone. Just to provide resources for research for other places, to support the entire NIMR. [...] I mean the government now is trying to pull out; so we must make sure [...] the institutions find their own means of surviving and making research. So that means that one of the strategies for NIMR is to establish here as one of the income generating facilities, and in Muheza actually we have also a huge land for its Amani Centre. Now we have initiated creating a diagnostic clinical trial centre for NIMR Amani. So, for those who know the place we have this Ubwari [Muheza] Health Centre,¹⁸⁴ it is now very huge. So we have now partnership with the district council and other people from abroad, so now we are at the final stage of erecting some beautiful infrastructure there for providing health services at the same time as clinical trials. So those are the visions that we have to look on, how we can use the land, the available huge land of NIMR.

Mwaiko:

200 hectares.

Kisinza:

Yes. And not only here for Amani, but actually we also have a huge land for Amani owned by NIMR, [...] in Handeni, [...] and here in Muheza, and even in Mwanza we have

¹⁸⁴ See note 2.

also a very huge area. So now the National Housing¹⁸⁵ have already, they are almost at the final stage, they are now investing [in] some building for rental offices and like that. So there are some visions with NIMR to make sure that we have our own income generating activity, to support the research of this country.

Magesa: I think that one thing that I would caution NIMR from doing, is to let this piece of land go to anybody. Because in the first place, when you look at this Amani Hill as it is, there is no other place where you can find open land of this magnitude, apart from the tea estates. So whatever major development programme that should be taking place, would either have to compensate people from their shambas, or you buy land.

Mwaiko: At a higher rate!

Magesa: At a very high rate, from tea estates and those people know the value of land. Most likely they will not sell you. [...] So the only piece of land that will probably be available if you make it available, to share as you are planning in a PPP arrangement, would be these 400 acres, and this place should be growing, because of all those potentials in front of us that we are looking at. And therefore to me, I think that – it might not [...] sound very, very attractive right now – but this is something that is viable, not in the next two weeks, but certainly the next few years, it should be something that can sort of be appealing to quite a number of sensible investors, because this is where you can discuss and be able to sort of move ahead, so this is.

Kilonzo: Yes, my view is just like yours that Amani should not be let to anybody else. It should remain the property of NIMR; but the plans to develop Amani should be properly made and sellable. Because the promise by the government to provide funds to establish whatever you are planning ... to me, that promise may never take place. Because we know a lot of these promises have, in the past, mostly been of political nature. [...] Just blah, blah. [*laughter*] It may not be possible to get any funds from the government to establish whatever NIMR has planned. But if a good plan is put in sight – sell it. I know there is somebody, there will be, we can get donors. For example there are donors who are establishing [*inaudible*], that's not government money, that's donor's money. And also there is, even TAFORI [Tanzania Forestry Research Institute] in Morogoro, because formerly there

¹⁸⁵The Tanzanian National Housing Corporation was established in 1962, when it, among other things, was crucial for the redistribution of housing assets; it was reconstituted with the shift towards neoliberal economic policy in 1990; holding considerable land assets, it is responsible for construction and development in key locations, including the rapidly changing city centres of Tanzania. See <http://www.nhc.co.tz/en/>, accessed 30 January 2018.

- was that idea of exchanging [sites], TAFORI coming here.
 Yah.
- Muro:* TAFORI, but somehow they have decided to build in Morogoro, they have already built.
- Kilonzo:* They look at the environment!
- Muro:* There are new buildings and they got some donors to support that. So if this plan is well made and sold to potential interested donors, I think we are likely to meet some support to establish this training centre. And the training centre should not only concentrate on [...] health aspects. I think it can diversify, why not? We can even have some natural resources courses, forest courses, I know even SUA [Sokoine University of Agriculture] will bring their students here, because it's very suitable for forestry training, practical training, and they will pay. But the important thing is to be able to establish whatever NIMR is planning, to finance it. But it will need a lot of money, it's not easy, thousands of ...
- Mwaiko:* And actually when [...] these people say to establish a university, it is a very huge system, a complex system. It is a very enormous undertaking. There are lot of things, which are requirements to establish a university. They are so huge, that for NIMR alone it can look as very huge project or view. So, I think in a way to utilize this place, although we have an idea to create training, I think we should change the title. Not think of a university or NIMR University, because that is a huge thing. [...] You just imagine, KCMC Medical School¹⁸⁶ when did it start? Twenty years or thirty years ago? No, 97.
- Mosha:* 97 eeh, how many years?
- Mwaiko:* Eighteen.
- Muro:* Eeh, it takes time. Because of a university establishment there is a lot to be expected, [...] a lot of logistics. So, [...] however we have the idea to utilize this space to invite others but ourselves, what would be the title of training? Although you need a training component, [...] but NIMR per se to establish university!?
- Mwaiko:* Yah, [...] I just wanted to ask, not Dr Kisinza but all of us – do we have ideas of maybe groups or people who can sit and think with what Kisinza is telling us? To think and come up with a good plan of establishing whatever they want to establish here or bringing in all these other PPP people – and you have to be careful when working with PPP because they are business oriented – and other things like that. Do we have any ideas of who, because building this as George [Mwaiko] says is not an easy task. And NIMR as NIMR,

¹⁸⁶See note 181.

we can't do that. [...] So who do we think can help us develop a good plan that we can sell to investors?

Kisinja:

Yah so perhaps I can answer that. Actually, the initiative is not only for NIMR, and we decided to start with the government, because we wanted to have the political will and support. It is a government commitment, because NIMR is a government institution. [...] That's the first approach. [...] But our business plans are not meant to get funds from the government only, but this just was an entry point to get the support from the government, and we have already involved different stakeholders and actually most of the logistics we are discussing here, they are even gone far, and we are now even talking, we are discussing with the TCU [Tanzania Commission for Universities]. [...] And the issue of [...] the title, it is very narrow to start with and then we will be developing, [...] widening up the scope of work. [...] And the name NIMR doesn't mean that it will be for NIMR purposes only. But I agree that we have to widen the scope of work and think of incorporating other disciplines like forestry. [...] So there are lots of players already involved, there are some government machineries already working with NIMR, and not with NIMR alone. We have this Commission of Science and Technology, it is fully involved in this, that is COSTEC, I think you know about this. And other [...] players and partners from different places. Like now we have this SEKOMU¹⁸⁷ University, so already now we have agreements with them, and we are discussing with other universities, international universities, that have shown interest to join hands particular for exchange programmes with international students. So there are lots of efforts being made. But actually it should be lead by the government as well, because it is the government to finish activities.

Okwaro:

We haven't heard from Matola all afternoon.

Matola:

No, you have heard my laughter! [*laughter*] One of the other things, which you should be very careful [about] is [...] that I've noticed there is some encroachment from the forest. They have gone to the extent of planting trees and developing some areas, which belong to us. I wonder whether NIMR does know about these things?

Muro:

The boundaries ...

Matola:

... the boundaries properly, like the area after the junction to down Kiloko. I've seen plants have been planted there, new ones, and they are growing very fast. When we develop this

¹⁸⁷Sebastian Kolowa Memorial University, located in the West Usambara Hills, was founded in 2007; see <http://sekomu.ac.tz/index.php/en/#>, accessed 30 January 2018.

- project, are we assured that whatever body is trying to encroach will not continue to do that?
- Kisiza:* Yah, well we know that there are some encroachments. That is historical. And we have this village, small village called Mgombani.
- Matola:* Mgombani, yah.
- Kisiza:* Yah, and actually the start of that village was, because they were retired people from here, that were foreigners; so they stayed there. And then after they died, the land was inherited to other people, their people.
- Muro:* Children.
- Kisiza:* So they started to own that place. But actually, the government knows about that and we have a lot of discussion with them. And we know that even this forestry [...] department is now planting. So we are aware about that, but we know that the place is protected. Though yet we have to be very curious about that, because otherwise people think that the area is left by you, is falling apart, not belongs to anybody. But I've the title deed here, for all these areas. So it's not only having the title deed, but also making sure that there is no encroachment [...].
- Matola:* And are you aware that there was a time when there was actually a case filed by the villagers to say that they have been pushed away from the [...] places where they have been for more than forty years? Do you know there were cases in *Halmashauri ya Muheza* [Muheza town council]?
- Kisiza:* We know about that and it includes that Mgombani village. Actually, it's now almost at the end, because they were given three years to shift to go somewhere else. So, well we don't ... I'm not going to discuss that, but there are a lot of issues. [*animated talking in the background*]
- Mwaiko:* I want to ask you one thing. You see, when you are owning all these 200 hectares, does NIMR pay land rent?
- Magesa:* The law says NIMR shouldn't be paid.
- Kilonzo:* It's a government institution.
- Mwaiko:* Alright, okay.
- Magesa:* But of course if you go to Muheza *halmashauri* they will tell you to pay, because they want money. But technically you are not supposed to pay land rent.
- Mwaiko:* If it is an institution of the government?
- Matola:* You know how much it was?
- Mwaiko:* I was wondering, 200 hectares!
- Matola:* In about thirty years, how much was the land rent for the whole place? Five shillings!
- Okwaro:* To follow up on the thinking about the future of this place, and also the good ideas that are coming from your side: If your plan to revamp this place succeeds, what are the

things that you need to keep as heritage here. I mean like: ‘this should remain, this should go as heritage’.

Kisinja: Yes, because we have [...] inherited these beautiful buildings, infrastructures, actually this is colonial and actually even their, you know. The way they are designed... So definitely you are not going to demolish some of the ... most of the houses.

Matola: Like the *boma*.

Kisinja: Yeah.

Okwaro: So do you know which ones and for what reasons you will want to keep?

Kisinja: The reason is that you have to keep the history. [...] We have to study that history of NIMR Amani. [...] The German here, and all that. So we have to keep those structures.

Okwaro: All of them, or just few that you have said?

Kisinja: No, for those already condemned and falling down actually, we are not going to keep them, unless there is any perhaps historical way that they should be [kept] as a *makumbusho* [museum].

Okwaro: That is just what I’m talking of: what do you want to keep as heritage?

Mwaiko: Aah, that will come on its own. It is a separate task for ...

Magesa: I think, if I may comment on that. [...] Just looking at a building, that this is too run down, let’s just push it, because it takes little effort to push it over, I think that’s not right. Because if there is a value of it, you may try to rehabilitate it and keep it. I think your question is very valid: What do you keep and for what reason? And probably this question has to be thought of right now.

Okwaro: For everyone: What do they have some attachment to?

Magesa: For me I think the *boma* house is very historical, and this library.

Kisinja: Even this one, even some of the rest houses.

Magesa: So this needs to be reviewed to see.

Kisinja: I think there is a social centre there [Amani Club]. Actually, even if you [don’t] rehabilitate, it should be kept there, because it has historical background. And [...] they have here a dairy, they keep animals, [...] and if you can trace why this animal keeping was there and actually is still there, so that it was not for the purpose of business, but actually was for ...

Matola: Was for what?

Kisinja: So, [...] even if the production is not good, blah, blah, we want to keep them out of the business. So we have to make sure that it continues, because that’s kind of historical, you know.

Okwaro: Mwaiko do you want to keep your house?

Mwaiko: Yah, if I’m given permission. [*laughter*]

- Okwaro:* What other places do we suggest to [keep]?
- Lyimo:* But you know, if we are thinking of building a training centre, for me I'll say that all these [buildings] are kept, even the central lab when it's renovated. Let the other developments take new places, and this one here is just where the tourists come. There's a lot of things you can say about this place. So, they keep all what they have, or try to. OK, there are some buildings which can go down, but keep all these things, and then let the new developments take the new areas. And even the big residential houses.
- Kilonzo:* Yah, they shouldn't demolish them.
- Lyimo:* The outskirts.
- Mwaiko:* It only needs some rehabilitation.
- Kilonzo:* Rehabilitate them, keep them as your training [centre] and let the other developments, the new ones take ... If you will bring Mchechu¹⁸⁸ here, he will just ... shooting things up, and you know. Watch out for Mchechu, otherwise we won't have any medicinal plants left. [laughter] He will fell the trees and ... So it will be so different, you know, [...] it will stand out of all this, you know, glass, metal and glass structures, that will come up, you know.
- Mangesho:* To add on that, I think [...] perhaps all the German original buildings are rehabilitated and remain the way they are. If you see in countries like Denmark or Norway, I think people like to go there because of this old type of buildings that are still there. If you think of how [...] some of the buildings in Tanga town, Tanga city are preserved. I think this should remain.
- Kisinja:* You can see that now we have started maintaining this place? [pointing to the ceiling of the library]
- Lyimo:* What happened here?
- Kisinja:* It was leaking and some of the [...] woods were deteriorating. So we decided to make sure that they [beams] are similar with the structure though different a bit.
- Matola:* May I ask a question please?
- Mangesho:* Yes.
- Matola:* What happened to the hydroelectric plant, that we had at Chemka?
- Kisinja:* Still there.
- Matola:* But it's not working.
- Lyimo:* No.
- Mwaiko:* It has remained untouched for some time.
- Magesa:* At some point we had one of these guys who is Director for one of these tea factories. He was interested in it. So he sent

¹⁸⁸At the time of the reunion, the Director of National Housing Cooperation.

his people to look at it, but then I think they found that it couldn't work as much as they had anticipated.

Matola: And it was installed in 1938.
Kilonzo: 1938?!

Matola: Yes, there are two good generators. Alternatively, on Sundays they were doing services. We were not allowed to use motor driven refrigerators, you were not allowed to use electro cookers and things like that.

Magesa: So maybe unless they feel that they can invest in a completely new generator of high capacity ... but I think one may just pull it aside completely?

Kisinja: Yah.

Magesa: I heard their interest was to get enough power even to run the factories and other Things.

Kisinja: Yah, actually now we have an agreement with TANESCO. I think you have seen that most of the houses here they have new meters. So we have installed about 22 meters, [...] and that's the phase one. The aim is to cover all the residential houses with individual meters. And I know the problem with that machine is that because the electric poles fell down, so now it needs some rehabilitation to make sure that all those facilities are connected. So there is a project going on with TANESCO.

Magesa: Okay so they are going to change the network here?

Kisinja: Yes, they have changed a lot actually – they have already started to change.

Magesa: That should be very good, because even this lack of power right now it should be one of the

Okwaro: Yah, thanks a lot for your very, very interesting experiences. [...] As we are now wrapping up, I'm [...] opening for the final round of comments. [...] Does Amani have any role as a national heritage even if nothing else happens now? [...]

Lyimo: Yah, national heritage. Amani, yes! I'll say yes, a big yes. Because when I look at medical research as medical research in Tanzania and East Africa, Amani played a big role, and we can preserve it for that, you know. It's only that we need a good ... to put historical events together and really to bring out what this centre contributed to medical research in the world. Because before, a lot of international researchers worked here from this point, to bring out a lot of medical answers out there. So yes it does.

Kisinja: Yah, and actually we have a real preference that Amani Centre is one of the world leading malaria research [places]. Because it has contributed a lot, as Dr Lyimo has said. The innovation of use of bed nets, this was evaluated by Dr Magesa and the team, they did a lot on it, so we are proud of that. At the same time, on the leadership side, as I've said, now we have leaders nationally and internationally

- from Amani Centre, so we have people now working at national level, or [...] they are working [...] outside the country at the international organisations, international agencies, so we're really proud of this. I think you know Martin Alilio.¹⁸⁹ So he is now with the lead for the PMI [President's Malaria Initiative].¹⁹⁰
- Magesa:* Abraham Mzava...
- Kisinja:* Abraham Mzava – there are several people – we have Professor Njunwa and we have also Magesa who is [...] one of the leaders of NIMR, but also [*laughter*] of an international organisation. Yah so, you can find that the Director General for NIMR, the national figure, the presidential appointee, is also from NIMR [Amani], and most of the Directors from NIMR [came from Amani] so you can see here.
- Muro:* Professor Kilama.
- Kisinja:* Professor Kilama is the product of NIMR [Amani]. So we have a lot of ...
- Mwaiko:* Professor Mosha, KCMC Medical School. [*laughter*]
- Kisinja:* Yah, and all these academicians. Professor Kilonzo. So there is a lot to say about NIMR Amani.
- Kilonzo:* Actually, when you are talking of ... when you mention Amani it means NIMR. Other areas like the tea estates, those are just subsidiaries. But when you mention Amani, actually you are talking about NIMR Amani. So that alone, actually is [...] something very, very important, and it should. That's why we say it should remain. We should never kill Amani.
- Lyimo:* Amani shall never die.
- Kilonzo:* Yah. [*laughter*]
- Magesa:* Yah, just a very quick one. When I first came here to the rest house, there was this guest book, a very big one. And I was looking at this book, which had stayed there for probably more than ten years, the whole time until I came here. You could see that really Amani, due to its contribution to malaria in this world, not just in Tanzania, you could see it by looking at the personalities who had come to Amani just visiting and had signed in that book. [Massawe], I did ask you to keep it in the safe, I think you kept it. Please, if you could bring it at some point so that people look at it there. All the big authorities in malaria in this world have signed in that book. So this is just to give you the value of Amani. And that is why I'm saying okay whatever happens, don't

¹⁸⁹Alilio is a social scientist and malaria researcher who, after working at NIMR, worked with a range of international programmes and institutions.

¹⁹⁰US funded global health initiative, commenced in 2005; see <https://www.pmi.gov/>, accessed 23 March 2019.

just let it go like that. Something should be done, and [...] as has been asked by Professor Kilonzo here, we need to think very carefully, to be very elaborate in that plan, and I think it should be quite sellable, at some point.

Mangesho: So I have [a] question to the rest of the people. Actually, I have tried to look on the name Amani, how it came to be Amani. The name Amani is Swahili and means peace, but I didn't see anywhere how this name came. It's a very important name – Amani, peace. So because of the presence of all the old people, now we can get how it got its name.

Malle: Amani should be left to continue because it's not only national heritage, but international. Because most world known scientists actually have visited Amani or worked with Amani, so I think Amani should be able to continue.

Matola: I think we should give Amani a legacy. And let's not disintegrate Amani. Because even if you go to Ukraine now and you say Amani, they know everything about Amani.

Mtoi: They know about Amani.

Matola: In fact better than what we know. The name Amani, as I understand and learned [comes from] that house, the boma, there is that side where [...] the walls are short but it's all glass everywhere. The administrator in 1903 was a lady and she said, 'Okay peace, peace Amani'. And they had a telescope there, [...] to look into Tanga port.

Muro: And Muheza.

Matola: Yah, so the Amani actually originated from this lady, who said, 'peace'.

Okwaro: I heard a different story.

Matola: It's not unlikely.

Muro: What's the story?

Okwaro: I think it must be the same lady, that initially, before she built in that place, she tried to build a house elsewhere and it kept on being [...] blown away, the walls would be blown away. And she thought that the locals there did not want her, and so they sent spirits [*laughter*] to the house, so [...] the house was haunted. So she came back and asked to build a house here. The locals asked her to pay some money to them and they accepted that she would build here. She made a house and it was peaceful. There were no attacks by storms or winds or ...

Lyimo: ... spirits.

Okwaro: And she said, 'Look, I have peace'. So what's the Swahili name for peace? I just picked it from the village any way.

Mwaiko: I think what Mr Matola is saying could be synonymous to what you are saying. If you go to that village they all know that the first Amani was somewhere else, not here, but the reasons I don't know. But these villagers all know that the first Amani started near Mlesa [village]. All the way up there

- at the top, [...] if you go to Bomole Hill. There across the ridge you see this part, it looks just like Amani, very high.
- Okwaro:* Okay, Mtoi, your views on Amani as national heritage?
- Mtoi:* So how do you say, old is always gold. For me in fact, to be here today, I feel so much honoured. I'll never forget it, there will never be another place like this one. Anybody playing around with Amani is a traitor. [*lots of laughter*] Therefore, I would go out to quarrel with anybody who is playing around with Amani. Old is gold – this place will never diminish its importance. In fact, it was only yesterday I said the scientists were the men who allowed this place to become this way. I don't like to say it, but what I'm saying is this: We do not see the value of this place, but our fellow *mzungu* [foreigners] will perceive us as stupid, strange people, so let's not continue behaving like stupid people. There was one point – if we invite these PPP people, this private partnership people, they may destroy this. They will want to build houses in between around there. They will destroy the original scenery of Amani. So, what is important is, that whatever you want to do please ...
- Mwaiiko:* You must be strategic.
- Mtoi:* ... please keep the place and be very smart, not just be cheap. If somebody say 'I'll give you 200 million dollars, but I want this place here', do you accept? No, because you will never be able to buy the value of Amani. You will never be able to buy the value of Amani.
- Kisinja:* Thank you very much.
- Machaga:* Well as others have said, I will say that Amani should remain. And we should look for ways to develop it, so that we keep Amani as a historical [...] thing, and that if we allow others, they should not interfere in the central area. They should be given other areas...
- Mosha:* [...] I wanted to get clear about two things: The Amani Botanical Garden is that a separate entity?
- Machaga:* Botanical?
- Mosha:* The Amani Botanical Garden.
- Mtoi:* From Zigi [River] up.
- Mwaiiko:* Is it separate?
- Matola:* In the Director's office, there used to be a very big map and it's entitled Amani Botanical Garden and it shows the demarcation from Kisiwani, the first bay after Kisiwani, on the right hand side, all the way up to Gula Msasa near Kilemwa and Kijijini, police station, Chemka, all of these are under botanical garden. And when I came in 1963, they were sort of looking after it by making sure that it was cleared, and looked after.
- Muro:* That container at the botanical garden, who has put it and for what reason?

Matola:

Agriculture people, that used to be a spice garden.

Mosha:

So now I can answer your question. Considering that we have got this national botanical garden, which is one of the rare botanical areas in Tanzania, it has got a good number of medicinal plants, which are not found anywhere else. So when you talk of Amani heritage, that should also include the botanical garden. And we shall view it as a place where you have a lot of medicinal plants, which can be explored in the future for their medicine properties. And if we are winding up, [...] I would ask Dr Kisinza to work hand in hand with Magesa, who is here and who has got a master's in business administration, to see how we can. I know you have said that you got a document, a business plan, but it's good [...] to share that even with us, and see how then we can improve that plan. You must make sure that we have got a title deed. You must make sure that the land is properly surveyed. You must make sure that we involve land planner people, to be sure where you are going to put what and what structures. [...] All those should be condensed within the strategic plan. Now when you have got an approved plan, and you want to engage some partners, it means that they have agreed with the plan as there is no way that they can build structures, which are outside the plan. So I think we should all be prepared to support Kisinza in this idea. When required we can still continue giving our ideas. But I was just asking if Magesa should, considering his background, and also because there is Matola around. When it comes to the surveying, I think you will be very useful, because you know the history, [...] the history of the land itself. So there are people that you can use to help when you are preparing the final document. Those are my last comments. [laughter]

Mtoi:

We expect more. [laughter]

Kisinza:

I think before we close, [...] I've to say a word. Just a small word, and perhaps I'll stand up. I'm really inspired with this work we have been discussing here. If I was a battery being charged, it will be fully charged by now. [laughter]

Matola:

Fully charged.

Kisinza:

Yah, fully charged. [...] I'm going to share with the NIMR authority what we have discussed here. This workshop has been very useful, very important. I did not expect that we could have this lot of inputs. This old man said, 'Old is gold', that's the truth, that's what have showed here. So thank you very much, thanks a lot. So may God bless you and give you long life.

Mtoi:

You too.

Mwaiko:

Thank you.

[All clapping]

Okwaro:

Mangesho:

And on that very good note we will go for ...
... going to drink coffee. [...] But [...] first we wish to thank all for coming. [...] I have received some special greetings from the NIMR Amani station head Dr Malima,¹⁹¹ who was actually supposed to be here with us but he didn't make it because he has other important issues that needed him. He just sent me a message via WhatsApp to say thank you for your attendance. [...] And I just need to emphasize that this is not the end of the research [...] [and we hope that you] do not get tired of receiving us and talking to us. And on that note I will [...] say thank you to you all!

¹⁹¹Dr Robert Malima, based at Ubwari, is the current head of Amani Hill Field Station, which since 2005 is under the Ubwari/Muheza research center, which now carries the name Amani Research Center, NIMR.