Policy piece

Climate and Society

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Climate, in particular rainfall, is one of the main determinants of ecological productivity, which in turn is the basis of agricultural economies. However, the distribution of rain varies enormously, not only in space, but also in time. For example, in the Sahara huge lakes have come and gone as global climate changed in the last 10,000 years (Gasse, 2000), southern Africa has experienced extended periods of both warm wet and cold dry weather over the last 1000 years (Holmgren *et al.*, 2003) and eastern Africa has suffered severe droughts within the last few hundred years (Gillson, 2006). This variation would be expected to have a major influence on human societies (Weiss & Bradley, 2001). Indeed, drying of the Sahara from about 5300 years ago can be related to development of pharaonic civilisation on the Nile and spread of pastoralism (Kuper & Krpelin, 2006). In southern Africa, sudden collapse of the city of Mapungubwe in 1290 AD and subsequent rise of Great Zimbabwe can be linked to first drought and then wetter conditions (Holmgren & Öberg, 2006). Whilst, in eastern Africa the disastrous Emutai period for the Maasai from 1883 to 1902, when cattle disease, small pox and famine devastated the population, was associated with drought (Gillson, 2006).

However, we still have much to learn about African climate fluctuations and their socio-economic effects. Firstly, just when we thought we could relate climate change in Africa to fluctuations in sea surface temperatures in the Pacific Ocean, the so-called El Niño Southern Oscillation (Cane, Eshel & Buckland, 1994), a remarkable discovery has revealed a previously unknown climate driver, the Indian Ocean Dipole (Marchant *et al.*, in press) which helps to explain observed divergence between ENSO activity and east African climate (Latif *et al.*, 1999). Secondly, the relationship between society and climate is complex and unpredictable. For example the Mahlatule droughts in southern Africa in the early 19^{th} century coincided with war, famine and dislocation amongst the Nguni peoples (p. 257 Newitt, 1995). This political instability was probably due not only to drought, but also increasing population and reliance on water-demanding maize (Holmgren & Öberg, 2006). The contrasting simultaneous rise of the Zulu Kingdom has been associated with changing environmental conditions leading to reorganisation and consolidation of control (Guy, 1980). Even more complicated, and in keeping with the principle of unintended consequences, drought-induced northward migration of the Nguni at this time into the Southern Highlands of Tanzania led to military development of the Hehe people as they coped with the incoming warlike Nguni (p. 56 Iliffe, 1979). This meant that when German colonisers arrived in Iringa at the end of the 19^{th} century they encountered an efficient Hehe fighting force, which inflicted a famous defeat at Lugalo (p. 109 Iliffe, 1979) and which was subsequently avenged by strict German military rule. The upshot of this was massive socio-economic disruption resulting in vast tracts of unpopulated forested land which were later gazetted as forest reserves in the 1950s and as the Udzungwa National Park in 1992 (Lovett, 2003).

Another interesting Tanzanian tale of the interplay between climate and politics is the strange case of the Ground Nut Scheme in the 1940s. The then British administered Tanganyika government implemented a massive public-works scheme devoted to cultivating ground nuts in a huge area of arid bush at Kongwa. The scheme was forced to end because of a drought in 1949, but not before £35,870,000 had been spent, equivalent to the total expenditure of the Tanganyika Government in the four years between 1946 and 1950 (p. 441, Iliffe, 1979). Speaking later, the Governor at the time, Sir Edward Twining, put a positive spin on the debacle:

''Among the assets that the Ground Nut Scheme has left us was a great deal of knowledge of how to farm in dry areas and research work which has been of considerable value.'' (p. 18, Twining, 1959)

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However, scientists were a little more sanguine in their evaluation, pointing out that, had a little more thought gone into planning and analysis of the climate, the scheme would have been shown to be unworkable:

''The failure of the groundnut scheme in Tanganyika was in large measure due to a failure to take into account the existing meteorological data which, though scanty, would have shown beyond much doubt that Kongwa was an unsuitable site.'' (p.50, Keay, 1965).

Political impacts of the drought which lead to the scheme's failure were far-reaching and difficult to predict at the time. Ultimately it was to prove to be one of the last throws of the colonial dice. If the weather had been kind and rain plentiful, then financial success would have boosted the depressed Tanganyika economy, making it difficult for Britain to disengage investment from the country (p. 442, Iliffe, 1979). As it was, the British Prime Minister, Harold MacMillan, perhaps unintentionally making a climatic reference, gave his 'Wind of Change' speech on 3 February 1960 in Cape Town saying:

''The wind of change is blowing through this continent. Whether we like it or not, this growth of national consciousness is a political fact.''

A short time later, on December 9, 1961, Tanganyika sailed on that wind to independence and self-determination.

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