

PALE HORSEMAN ON FIVE STEEDS: SSA THE YEARS OF THE LOCUST

From Drought to Locusts

1. With the end of the 1979-84 drought cycle the rains have returned to the desert margins, the arid area lake borders, the interior deltas and long dry wadis. These are the breeding grounds of the locust. Over the same period the four major locust (and grasshopper) control organisations have been weakened - indeed one was wound up at bankruptcy sale about June 1986.
2. The locust years began in 1985. In 1986 the swarms have consolidated themselves and moved out from their initial breeding grounds. If effective action (compared to which FAO's relatively low key, \$5 million target efforts are analagous to a handful of peasants trying to beat off a swarm of millions of locusts) is not taken by the end of this year, 1987-1990 could see a famine cycle no less grim than 1979-84. Locusts can eat millions of tonnes of grain very rapidly, can breed several times a year (for some species), can move fast and far, can keep on attacking until a series of drought years beat them back.
3. The most recent severe outbreaks were at the end of the 1960s and were fairly short-lived - control, backed by drought, worked. The last long cycle of locusts ended about 1960 after enduring from the early 1940s. The last previous case of all locust cycles moving toward peaks at once was in the 1920s. At present at least 14 and perhaps 18 countries (Senegal, Mali, Mauretania, Sudan, Kenya, Tanzania, Zaire, Botswana, Namibia, Somalia, Ethiopia, Rwanda, Burundi and Chad and probably Uganda, Zambia, Niger, Kenya and South Africa) have serious infestations while 20 more (Nigeria, Cameroon, Ghana, Burkina, Cote d'Ivoire, Egypt, Guinea, CAR, Gambia, Zimbabwe, Malawi, Swaziland, Lesotho, Mozambique, Angola, Morocco, Tunisia, Algeria and under certain wind conditons, Madagascar and Mauritius) are either at serious risk or virtually certain to face locust invasions in 1987.

The Plague(s) of Egypt

4. Locusts are neither new nor always at disaster levels. One of the biblical plagues of Egypt was the locust (whether the migratory locust up from the Yemen, the desert locust revenging the Sudan on its conquerors or the West African grasshopper at the end of a long march is not entirely agreed - any or all are possible). The Latin Kingdom of Jerusalem and the defenders of Cyprus against the Turkish advance were hard hit by plagues of locusts. In Africa in the 1920s millions of tonnes of grain were stripped away for several years in succession.

5. There are five separate locust/grasshopper 'systems' impacting SSA:
 - a. the West African grasshopper whose breeding/swarming grounds are in the interior of Senegal and Western Mali, now affecting Senegal, Mauretania, Mali and quite capable of advancing as far east as Egypt and as far south as northern Cameroon.

 - b. the African migratory locust with - apparently - two breeding/swarming grounds in the Western Sudan and in Mali. The first is alive with swarms and the second has begun to be so. The limits of its potential empire are a quadrilateral of Egypt-Morocco-Chad and northern Mozambique.

 - c. the red locust whose present main breeding/swarming core area is the Lake Tanganyika basin with eastern Zaire, western Tanzania and Burundi heavily affected and Zambia, Rwanda, Uganda and Kenya facing initial invasions. The range of the 'red peril' is roughly from Southern Sudan through Zimbabwe and from the Indian Ocean to Chad and Mali.

 - d. the desert locust is an immigrant from the Yemens which enters via Somalia-Ethiopia establishing secondary foci in the Horn and working its way south at least as far as Tanzania and west to Chad and Mali. At present the swarms are largely still on the Red Sea coasts of the Horn but have established secondary bases there and will advance in a few months with their breeding/weather/hatching/swarming cycle.

- e. the brown locust is fanning out from its Kalahari base. (Why this creature is swarming now is a little less than clear - the drought in Botswana has not broken, albeit it has in Namibia.) 1985 initial swarms were not controlled and late 1986/87 will see advances from heavily attacked Botswana and Namibia into South Africa (probably marginally affected now), Zimbabwe, Angola and Zambia.
6. Locusts are not unique to SSA. When the winds take them the other way the migratory locust is known to have reached the borders of Bangladesh; China has its own locust system fanning out from the Gobi and other inland desert margins. Small numbers of locusts and grasshoppers are endemic and pose only secondary control and grain loss problems (actually less in non-swarm years in Eastern and Southern Africa than grain eating birds like the quelea).
7. A full scale locust invasion can fairly be characterised as "darkness at noon" and "the barren earth". A small swarm looks like a tornado cloud, a large one like a major thunderstorm system - the numbers and density literally do obscure the sun. A before and after (a few hours after) sequence can show nearly mature crops, green pastures and leafy trees and then bare earth and skeletal trees with all leaves and grasses stripped. Drought is rarely as effective a grim reaper as a pattern of major locust swarms.

Portents

8. All five varieties are swarming at once - for the first time since the 1920s. All are well established in their heartlands and are fanning out. On past records they can entrench themselves and advance to the overlapping limits of their ranges in two more years with only the dense forest areas and perhaps some Atlantic coastal areas safe. If that happens (and there are no intervening overlapping drought cycles) the historic record suggests one to three decades before they subside naturally. It is not hyperbole to suggest that if that happens, 1988-2000 African food deficits could be worse, hunger greater, migrations more desperate, human misery deeper and death more common than in 1984.

9. This limning of horrors yet to come is neither a description of a certainty nor a despairing cry of fatalism. First, not all outbreaks do spread and result in long cycles - the late 1960s did not (only 1968 was a crisis year). Why, does not appear to be precisely known. However, one would do ill to count on unknown natural factors rolling back the plague.

10. Second, locusts are reversible and controllable. This is especially true at breeding/swarming stages. Techniques are known - and their application in the late 1960s is probably one of the reasons no lasting crisis developed then. The broad outlines of eradication/control are:
 - a. satellite reconnaissance of breeding areas (huge and isolated) to identify potential swarms backed up by aerial survey to pinpoint them;
 - b. aerial spraying to destroy swarms at pre-flight (hopper) stages or at takeoff;
 - c. aerial spraying of swarms on the move to reduce their numbers and perhaps deflect their course;
 - d. ground action to scare off (deflect), spot spray and beat to death (or drive into killing ditches) once they are landed;
 - e. poisoning of egg infested areas to limit the next swarms.

11. The techniques are not perfect. But they are known and tested and - potentially - offer a much better defence now than in the late 1940s and 1950s (let alone the 1920s). The organisational requirements and infrastructural inputs needed are also known and were tested in the 1940s/50s and the late 1960s.

12. At one time effective regional organisations for four of the locusts existed. Grasshoppers based in Dakar, Migratory Locusts based in Bamako, Desert Locusts (which added grain eating birds when locusts were few and far between) in Nairobi and Red Locusts in Lusaka. It is not clear how

Brown Locust control was organised regionally, apparently from Johannesburg with South Africa acting regionally to prevent the 'brown peril' invading the Vaal. The Dakar based (grasshopper) organisation is moribund though in existence. It has faced lack of funds and lack of perceived need (lack of grasshoppers) since the early 1970s severe drought cycle. The Bamako based (migratory locust) organisation went bankrupt and was liquidated (planes and equipment sold at auction, staff dispersed, supposedly most records sold as waste paper) over the first half of 1986 - although the peril it had been created to contain was known to have re-emerged in 1985. The Nairobi based (desert locust/grain eating birds) organisation is functional but debilitated. Because it added grain eating birds to its agenda, it did to a degree sustain member and international community interest. But the 1973-75 and 1979 on recessions, drought, civil wars in the Horn and the breakup of the East African Community have eroded its financial base and leached away much of its once outstanding personnel, organisational and equipment capacities. The Lusaka based (red locust) body is functional. Apparently it has regularly had minor outbreaks with which to contend and has done so. But in its own view it faces very severe problems in expanding to a scale commensurate with the present growing crisis. Johannesburg - and South African government coordination and planes - are no longer an acceptable base (basis) for brown locust control. The agents of the Afrikaaner state are themselves 'migratory pests' and their planes as unwelcome as locusts. There is, therefore no regional organisation.

13. The regional organisation capacity deterioration or disintegration is paralleled by the national. Planes and helicopters are defunct, out of service or grounded for lack of fuel. Meteorological (wind and rain data and short to medium term predictions on a detailed basis are key inputs into any anti-locust campaign) networks are curtailed, ground level control teams are dissipated and/or immobile for lack of vehicles and fuel. Sprays, poisons, etc. are in appallingly short supply. Farmers in Botswana frantically experimenting with whatever sprays and poisons are available and desperately beating insects to death are showing initiative, innovation and gallantry but the technology is neither adequate nor (given what is known) appropriate and they are losing the war against the brown locust.

What Now?

14. It is too late for prophylactic action. That opportunity was lost in 1985. It is too late to avert spread of severe locust infestation into all or significant portions of over half of African countries. That opportunity was lost in the first half of 1986. It is not too late to make 1987 the year in which the advance of the grim reapers was halted and 1988-90 the years in which they were beaten back.

15. The first thing to be done is to secure a rough working brief on:
 - a. the present state of the five locust/grasshopper vectors;
 - b. their probable spread over 1986-87 including timing of the periods at which they will be most vulnerable;
 - c. national and regional requirements (personnel, hardware, chemicals, fuel, information, institutions, foreign exchange, local counterpart funds) to act effectively;
 - d. a sketch of appropriate national and regional programmes;
 - e. a small crisis team to catalyse action backed by (on the UN side) a steering committee of the Deputy SG's office [**ARJ - I mean Ripert's office**], UNDP, UNICEF, FAO, WFP, ECA.

16. That stage should - if at all possible - be completed by the end of October. Parallel to it should begin the mounting of ad hoc efforts to secure interim support for national and regional organisation control efforts. Following it more detailed and medium term requirement packages for national and regional bodies (which may need technical assistance so the states and organisations can formulate them quickly and accurately) need to be drawn up. What help is needed in getting these financed is not self evident. A general briefing paper and provision of technical assistance to national and regional (e.g. 1986 SADCC Annual Consultative Conference at Gaborone) funding initiatives would probably be appropriate. If WFP could be alerted to raise this issue at its

September 7-11 Abidjan Food Aid Conference (joint with ADB) that would be desirable. Whether a major continental (as the five vectors overlap and over half of SSA is affected or at risk, a continental as well as a regional approach may be appropriate) pledging conference should be targeted for mid-1987 needs consultation with regional control organisations, affected African states and ECA.

17. Publicity is also needed - as soon as possible. There have been feature articles (e.g. Sunday Times, Observer 24-VIII-86) and radio interviews. But these have been rather aridly 'academic', low key and - in some cases - unduly optimistic about the probability (as opposed to the technical feasibility) of control. The message is not getting across. What is now needed includes:

a. magazine/newspaper features highlighting how terrible a disaster overhangs Africa highlighted with photos of a clear sky/same sky black with locusts, a growing field or pasture/two hours later stripped bare;

b. similar TV coverage (analagous to that on drought in 1984/85).

Professionally the same sense of urgency (with visual backup including pictures and video tapes) is needed. Thousands died, hundreds of thousands were driven from their homes, millions were plunged into misery in the SSA drought cycles because alarm bells went unheard and/or unanswered. At present the locust cycle seems to be going down the same rut (to which the definition of a rut as an extended grave is only too appropriate). It need not do so, particularly as locust invasions (unlike drought) can be contained and broken in addition to prompt damage alleviation after the harm is done.



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P.S. The author is not an expert on locusts or locust control. The reasons for this memo are:

- a. that most policy concerned personnel have very little comprehension of the basic facts - especially the impending disaster - relating to locusts because the macro level peril has been dormant for a quarter century; and
- b. the specialists who do know what the portents are and how to fight back do not seem to be getting their message through to key decision takers, let alone the general public either globally or (beyond the eaten up areas) in Africa.

One source of technical expertise is the Tropical Products Research and Development Institute in London. Its Deputy Director (Dr. Jones) is knowledgeable albeit too prone to believe that because control is technically possible it will in fact be achieved promptly. Other sources include the Lusaka, Nairobi and Dakar based control organisations and the International Centre for Insect Pathology and Environment (ICIPE) in Nairobi. SADCC (based in Gaborone) through one of its sectoral units is likely to be mounting a study on what needs to be done in its (sub) region particularly in respect to the Brown and Red locusts.