How the Enga Cope with Frost: Responses to Climatic Perturbations in the Central Highlands of New Guinea

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The adaptive strategy of a population of New Guinea highland subsistence farmers is considered in the light of events surrounding a series of severe frosts experienced in 1972. Coping with frost is seen to be a critical preoccupation for all Enga, and agricultural mounding a universal response, adequate to deal with the mild frosts of Central Enga country below 2250 m but insufficient above. There, among the Fringe Enga, a sequence of responses at three different levels may be identified. These may be called the local, intraregional, and extraregional levels because of their progressively wider geographical spread in agricultural activity and attendant increased population mobility. A correspondence is indicated between response level and frost intensity. This response, while effective, is being modified through cropping innovations and disrupted by a colonial situation. Further, at higher levels, it is incompatible with the prescribed course of political and economic development.

KEY WORDS: frosts; migrations; New Guinea; natural hazards; sedentarization.

INTRODUCTION

During 1972, the Central Highlands of Papua New Guinea experienced a prolonged drought that, through a combination of high altitude and stable weather conditions, generated a long series of frosts that did substantial damage to both the food gardens of the local population and the natural vegetation. In the worst-hit areas, above about 2300 m, in excess of 30 nights of ground frost...
were experienced between June and October, while individual frosts were recorded as low as 1650 m, all this in a region where the subsistence food complex is almost exclusively of tropical lowland origin and therefore not frost tolerant.

Official response to this crisis was to declare a national emergency and mount a Famine Relief Program under the control of the Director of Civil Defense which had as its principal functions, first, to “maintain the existing nutritional status” of the estimated 130,000–150,000 people directly affected and, second, to make available a variety of planting materials to facilitate their rapid return to a state of self-sufficiency. The program ran for about 8 months, cost an estimated 3 million dollars (Australian), and involved a very substantial commitment of human and material resources on the part of several government departments and Christian missions. It proved eminently successful in that no evident hardship or loss of life occurred as a direct result of the frosts and no cases of corruption or discriminating practices in the distribution of relief supplies were reported.

While the relief exercise could not be faulted, the assumptions that underlay it were of questionable validity. A fundamental premise was that the victims had no satisfactory means of their own to cope with the crisis. Hence if no action were taken to provide them with relief, “forced migration” of people out of the affected areas would result, and this would in turn generate a whole series of “secondary effects” of the crisis, identified specifically as “social disorganization, a disruption of sanitation, and the spread of infectious diseases” (Ewald, 1972: 1). In this respect, officials concerned with the relief effort sought simply to follow guidelines established by the World Health Organization on the basis of famine relief experience elsewhere in actively discouraging movement and initiating a program of “replacement feeding” (Malcolm, 1972: 9) in disaster areas. Further reassurance for the legitimacy of the approach was provided by the widespread conviction that this particular climatic crisis was entirely without precedent.

A few officials were, admittedly, vaguely cognizant that a similar crisis had occurred some 30 years previously (just prior to sustained European contact in this part of New Guinea), but they were convinced that these earlier frosts were milder and had nevertheless resulted in widespread violence, starvation, and death. Massive out-migration was known to have occurred on this occasion but no one considered it to have been a structured response to the situation. Rather, it was interpreted as a disorganized fleeing of starving victims from the disaster area. The impression gained was of a severely malnourished population that disputed for the few remaining foodstuffs over a period of several weeks, and then, as a last resort, fled across the mountains in search of refuge at lower altitudes. The further impression was that their poor physical condition resulted in the death of many people en route, while others suffered from the hostile reception encountered at the end of their journey.