

PNG Disaster Management: 1997–98 Drought and Frost Impact Assessment— Methods Used and Experiences

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Abstract

Between September 1997 and May 1998, I took part in four national assessments of the impact of the 1997–98 drought in PNG, acting as team leader in each assessment. The first assessment (September 1997) was in Oro (Northern) Province, the second (November–December 1997) was in Manus and New Ireland provinces, the third (March 1998) was in Milne Bay Province and the final assessment (May 1998) was in the mountains of Central and Oro provinces. In this paper, I summarise my experiences during the four assessments. Responses by villagers are noted, including their attitude to government officers and vice versa. It is suggested that villagers' experiences during the drought should be recorded to help people in future national disasters.

IN RESPONSE to the prolonged 1997–98 drought and frost, the PNG Government, through the National Disaster and Emergency Office (NDEO) of the Department of Provincial and Local Level Governments Affairs (DPLLGA), engaged staff within the department and from the Department of Agriculture and Livestock (DAL) to conduct assessments on the impact of drought and frost throughout the country. The assessments were carried out in three phases by 13–18 teams of staff from DAL, DPLLGA and the Department of Health. Staff from the provincial offices including those from nongovernment organisations (NGOs) were also involved.

This paper presents the personal reflections of the author, being observations and experiences on the responses to the drought at both provincial and village level.

Methods and Results

Pre-assessment preparations

Before each assessment, team leaders were identified. The team leaders, other key staff and the drought and frost assessment coordinators met and discussed strategies for assessment. Team leaders were then given funding for assessment of each province.

To prioritise areas for assessment, team leaders, together with key staff from national organisations, met with the provincial staff and administrators to discuss the situation in each province. At these meetings, logistics such as transport and accommodation in the areas to be assessed were discussed. Where the provinces could not assist, team leaders used the limited funding given to them. This was especially useful to hire helicopters or speedboats to access very remote areas.

The types of interviews that the author used were:

- group interviews;
- separate male or female group interviews;

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- health worker interviews; and
- food and water source visits.

The author ensured that separate male or female group interviews were used if it was apparent that the men dominated the group interview sessions. If there was more than one interviewer, the group was divided into male and female groups. The author, who is female, interviewed female groups.

Assessment phases and questionnaires

There were three drought and frost impact assessment phases and a separate questionnaire was designed for each phase. The questions were designed to obtain information from the people, and thereby for the province, on the impact of conditions resulting from the drought and frost. Factors contributing to food shortages were also recorded, while interactions between all parties involved were observed and recorded for future reference. The author visited five provinces during this period (Table 1; Fig. 1).

Phase 1

The first phase of assessment of the impact of drought and frost was conducted in September 1997. As this was the initial assessment, an eight-page questionnaire was used to gauge the situation of the people regarding food supply, water, health and local services and communication.

The questions were designed so that the interviewer could obtain an overall view of the situation. At the end of each day, the condition of the area was given a score from 1 to 5 (with 5 indicating the most severely-affected areas) and a summary was written and faxed to the NDEO.

The province visited in Phase 1 was Oro (Northern) Province. The drought situation in this province was fairly severe, especially where fires had

destroyed the gardens and bush. The response of most people interviewed was not good—many expected aid in the form of food and gave the interviewers a negative reception once they discovered that food aid was not forthcoming.

Some people were making efforts, though, to overcome drought problems, mainly through gardening on riverside plains and storing planting materials in swamps and shallow oxbow lakes. In some cases, food gardens had to be planted away from villages as good garden areas were either occupied by cash crops or burnt by fires. Hunting and gathering of wild plants and animals was another means of obtaining food for consumption where fires had not destroyed the area.

The status of the food and water supply was summarised and given a score from 1 to 5 for all areas in the country. This data was mapped using the Mapping Agricultural Systems of PNG (MASP) database, combined with the 1997 population estimate for PNG.

Phase 2

The second assessment of the assessment was conducted in December 1997 and was designed to monitor any changes since the first assessment. Maps created from the information gathered in the first phase guided the teams in prioritising areas for assessment in the second phase and to assist people who were distributing food (rice, flour and cooking oil) and water containers to the severely affected areas.

A modified questionnaire was developed, based on the first assessment. Assessment of government services and communication were omitted from the second phase and components were added to determine whether people were replanting and whether there was any migration. Also, the food and water supply in the areas at that time was assessed and categorised from less severe to very severe conditions, and a prediction made

Table 1. Provinces or areas visited and mode of transport used.

Assessment phase	Date	Province or areas assessed	Mode of transport
1	September 1997	Oro (Northern) Province	Air (aeroplane or helicopter); road (vehicle and foot)
2	December 1997	Manus and New Ireland provinces	Road (vehicle); sea (speedboat); air (helicopter)
3	March 1998	Milne Bay Province	Road (vehicle); sea (speedboat); air (helicopter)
	May 1998	The mountains of Oro and Central provinces	Air (helicopter)

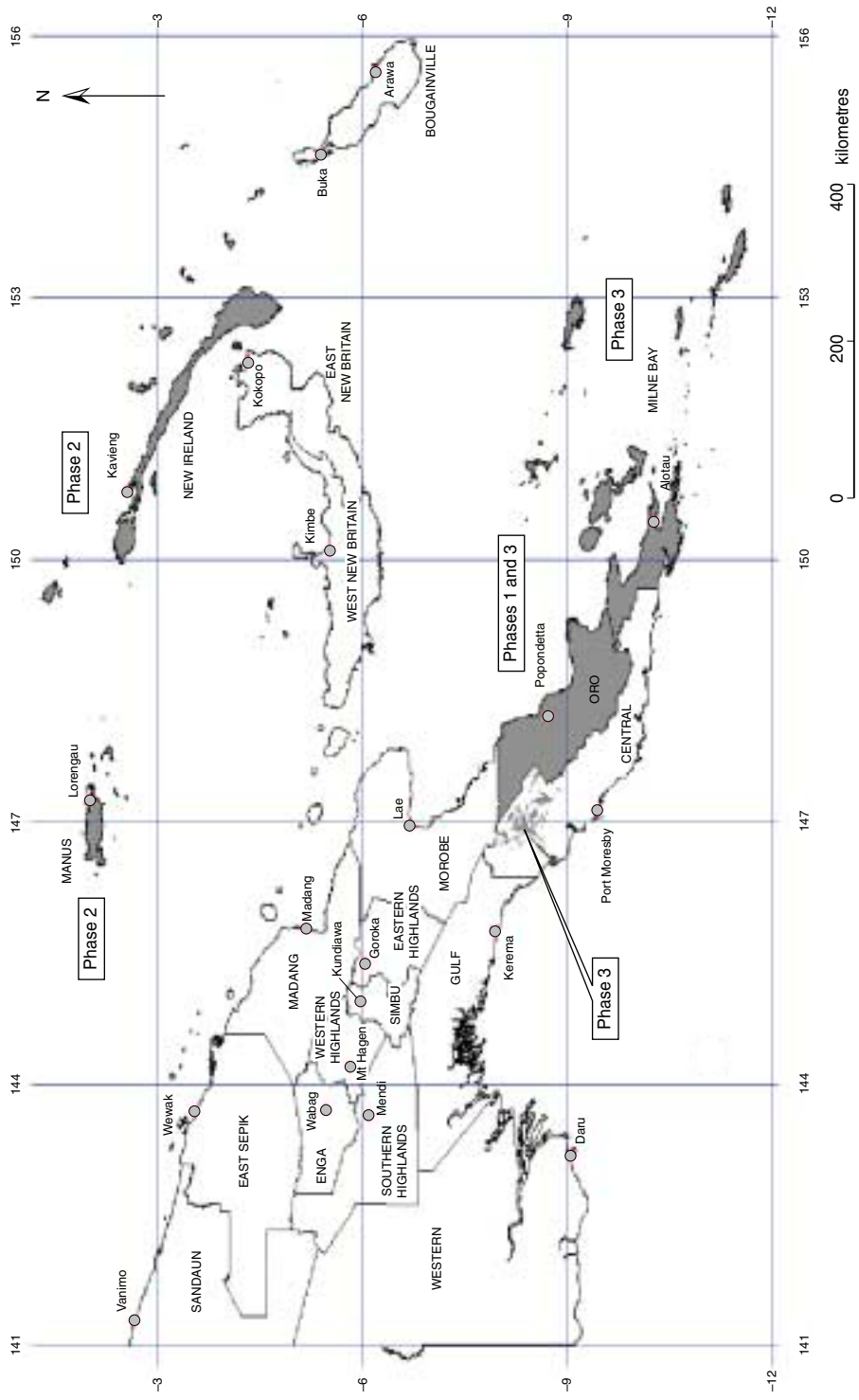


Figure 1. Locations visited and assessed during and after the 1997–98 drought (Phases 1, 2, and 3). Source: PNG Resource Information System, produced through the National Agricultural Research Institute

of the likely categories that would apply in the next 2–3 months (February–March 1998). As in the first phase, daily summaries were written and faxed to the NDEO.

Manus and New Ireland provinces were visited by the author in this phase of assessment. In Manus Province, water was a major problem. Sago is one of the staple foods there and water is essential to process the sago starch. As water was limited, the supply of sago starch was low. Traditionally, people in Manus Province adapted to the situation by using a barter system, and people reported that exchange of food (sago for fish) occurred during this period.

In New Ireland Province, the smaller outer islands were affected to differing degrees. Some survived on *Cyrtosperma* spp. taro and whatever little they had stored, while others harvested very small tubers of sweet potato and *Xanthosoma* taro for consumption. For those eating *Cyrtosperma* taro, one taro plant (corm) could be consumed over a period of two or even three weeks by removing a certain portion of the corm then replanting it for later harvest and consumption. Water was also a major problem on these islands.

Phase 3

The third phase of assessment was conducted in March 1998. By this time, many areas were recovering from the drought. The questionnaires were similar to the ones used in the first phase. The main focus of this assessment was on movements of people and aid received. Also covered were local services and communication, food and agriculture, water, health and general questions on previous assessments. Access to food and water were gauged and categorised into areas least to worst-affected.

The author visited Milne Bay Province and the mountains of Central and Oro provinces in this phase. Most areas at this time were receiving rain. In Milne Bay Province, villagers were leading normal lives regardless of the situation. In the outer islands, both food and water were a major problem while, on the drier mainland, people were starting to replant food gardens. In the mainland, people were familiar with the weather pattern in their area and had adapted techniques such as cultivation of selected varieties or species of food crops at certain times of the year. Gathering of wild food for consumption was also recorded.

In the mountains of Central and Oro provinces, the situation was quite different. The main problem in both provinces was health. Malnutrition (Oro Province) and respiratory problems (Central Province) were observed. Water was in abundance while food was still a problem in Oro Province, but not in Central

Province. Gathering of wild food was only recorded in Milne Bay and Oro provinces. In Central Province, gardens visited were either on sloping land, valleys or backyards that were usually marginal (in terms of soil fertility and erosion). Gardens in the valleys were a long walk away from the houses or villages.

Responses of the people

The responses of all those involved were significant. In terms of alleviation of the conditions resulting from the drought and frost, responses at provincial and village level were, in general, good. In the province, staff divided assessment areas into clear subdivisions such as census divisions, districts and even farming systems. These farming system divisions occurred especially in areas where certain food crops were identified as dominant staples. Based on reports received from district staff or reliable sources (e.g. NGOs), the provincial disaster management offices were distributing food and planting materials either to each household or village or directing the assessment teams sent from the national government.

At the village level, people adapted technologies that had traditionally been passed down through the generations or were from neighbouring areas. These included storage of planting materials in oxbow lakes or swamps, gardening alongside rivers, use of stored food or reserve gardens, hunting and gathering, and cultivation of specific varieties or cultivars of crops better adapted to drought conditions.

The interaction between the interviewers and the people, however, was a different situation. Initially, villagers were reluctant to cooperate with the assessment team. Sometimes this reluctance was even noticeable at the provincial level. Information was either not readily available or few people would participate at group meetings and, sometimes, this made it difficult to collect unbiased data.

Discussion and Conclusions

The drought in 1997–98 in PNG caused a lot of damage to people's livelihood. The destruction of food gardens by fires, coupled with the prolonged drought and frost, affected food and water supplies in many areas of the country. People had to travel longer distances to obtain food and water. Original gardening sites on marginal land gave low yields, and nearby water sources were low or had dried up. Food shortages, malnutrition and other health problems associated with the drought were recorded.

My participation in the drought assessment was personally beneficial and educational. The opportunity to work with people in different fields and professions, including the village people, taught me many new things. People in different areas used different technologies to overcome the drought situation and even had different attitudes and approaches to government officials.

Adaptation technologies, developed either through traditional knowledge or from other people, included gathering and processing of wild food, storage of planting materials and food, use of selected varieties or crop species and use of barter systems.

The interviewers' approach towards the people was very important: the answers to the questions asked and people's willingness to give answers depended on the

interviewer's approach and willingness to work together with the people.

In conclusion, these assessments have allowed people's experiences in the drought to be usefully recorded for further analysis. It is recommended that the ideas and technologies observed be used by:

- researching methods for increasing food production in low-yield situations (drought and frost) and on marginal land;
- researching and publishing information on wild or famine foods that are available and the methods used to process them; and
- increasing and improving agricultural or any other form of extension services with the objectives of improving villager–government officer relations.