

CHAPTER 1 INTRODUCTION

1.1. Background

Papua New Guinea (PNG) is among some of the countries in the Pacific region that uses and consume *Areca* nut. *Areca* nut is a fruit that grows on *Areca* palms mostly in lowland areas or coastal areas in almost all tropical regions of the world (Baker and Dransfield 2006:50; Ross *et al.* 2008:391). The *Areca* nut is usually chewed in combination with mustard called betel vine, (*Piper betel*) and lime (*Calcium hydroxide*) obtained from burning sea shells and eventually forming the combination called '*betel nut quid*' (Norton, 1998; Henderson & Aitken, 1979). The WHO (2012) report gave a distinction of the method used in the chewing of betel nut as somewhat differs in some regions and societies. The major ingredients were found to have remained unchanged but the manner in which the nuts are being consumed differs. In some other countries such as Micronesia, the betel quid is usually wrapped and placed in the mouth whilst in PNG and the Solomon Islands the betel nut and mustard are placed separately in the mouth (WHO, 2012).

Mustard is a creeping vine that are used in combination with lime for chewing. The lime which is made from burning sea shells into white powder is usually packed in air tight plastic bags ready for sale and used by betel nut consumers (WHO IARC, 2004). Mustard leaves, fruits and barks can be used together with betel nut and lime in chewing to give a red coloring in the mouth. *Areca* nut chewing is taught to have been the major cause of health and environmental problems in the country. It is in fact a major contributor towards spreading of tuberculosis in PNG as well as a major cause of major environmental pollution. It is considered as a major contributor towards dephasing of public property as well as contributing to environmental degradation among other wastes in the main urban center (Yatmani *et al.* 2022). (The adverse impacts from continuous chewing of betel nut is very devastating in terms of health, social, environmental and economic aspects (Arija *et al.* 2022). The consumption of betel quid and the waste disposal contributes to environmental degradation and pollution.

1.2 Problem statement

The study was intended to determine human behavior and characteristics and identify the impacts of unwise use and disposal of betel nut wastes in Port Moresby. It was aimed at highlighting current status of the disposal of wastes into the surrounding environment. The impacts of mismanagement of the wastes from betel nut consumption has been a major issue affecting the environment and the city. Disposal of wastes derived from betel nut can be seen all over the city. Therefore, this study was intended to understand human behavior and their characteristics towards betel nut waste management and determine the rate of environmental impacts.



Figure 1 Showing women selling betel nut and mustard at a market place in the Port Moresby, National Capital District. Photo: Brian Cassey

1.2. Research Problems

The main objective of the study was to investigate human behavior towards managing betel nut wastes in Port Moresby. The objective of the study was to;

- Investigate the reasons why consumers chew betel nut and determine the rate at which betel nut is consumed,
- Investigate the mode of waste management techniques applied among betel nut chewers,
- Determining the rate at which betel nut wastes are disbursed into the

surrounding environment,

- Investigate the rate at which betel nut is consumed and determine the level of wastes disburshed into the environment,
- And determine their views on the impacts of improper betel nut waste management being applied within the city and how wastes can be managed.

The study was designed to answer the following questions;

- Is the use of betel nut and improper management of betel wastes a major environmental problem within the city of Port Moresby?
- How can human behavior towards betel nut waste management affect the outlook of the city and impact the consumers?

1.3. Aim and Objectives of the Research

The aim of the research tries to determine the following;

- To investigate the human behavior towards the use of betel nut and their waste management approach in the city of Port Moresby.
- And to determine if necessary measures can be implemented to manage wastes within the city

1.4. Significance of the research

The study is crucial to understand the level of wastes that are derived from the use of betel nut among the consumers in Port Moresby. And to understand if human behavior towards betel nut consumption is directly proportional to unregulated waste disposal. The consumers and the relevant authorities tend to turn a blind eye on the management of the wastes from the commercial use of betel nut in the city (Sharp, 2013). The findings obtained from this research may help the government and the city authorities to understand the level of wastes contributing to the environment on an annual basis. And will eventually help in decision making processes that can look implementing policies and regulations that can be used to alleviate the wastes in the city.

The city of Port Moresby is becoming an informal trade center due to uncontrolled measures undertaken to combat the issue of waste management in the

city. Many more people from rural areas seem to migrate into the city only to find themselves unemployed and become involved directly in betel nut trade for the survival. It may seem as the fastest mode of income earner for the traders without the efforts to control the rubbish (Sharp, 2013). Therefore, this study is designed in a way to understand the rate at which betel nut wastes are dispersed into the environment. Therefore, this study is vital and can be used to come up with better waste management system to control the wastes from the sale of betel nut.

1.5.Scope and limitations of the study

Data collection phase has been the toughest due to various reasons. Among the many challenges experienced, financial constraint stands out as travelling has been minimal due to limited personal funding available. Funding for the travels has been the most challenging due to the increase in the public motor vehicle fare. And the number of days taken to conduct interviews were somewhat limited as a result of limited funds available. Most of the interviews requires frequent travels on a daily basis to conduct the surveys and for that, limited funds were expedited and so sometimes travels were limited until funds became available.

Another issue faced was the reluctance of some of the people asked to be involved in the interview. Some people opted not to participate due to other commitments whilst others just ignore being asked to take part. Mostly, betel nut street vendors tend to ignore being asked for an interview whilst few agreed to participate. The working class people that were approached to ask for an interviews tends to be minimal as most people decided to abstain as they had other commitments.

Some questionnaires that were distributed to the working class people for them to respond were never returned. The questionnaire never came back when asked to be collected as their response was that they were busy and didn't answer or have accidentally misplaced the questionnaires. Some survey questionnaires given out to students were not returned due to mishandling or have misplaced them somewhere. The scorching heat of Port Moresby tends to be another hindrance given the fact that it was indeed pretty hard to walk around the streets asking people

to be interviewed.