The use of education theory to guide the implementation of participatory rural appraisal in the Kingdom of Tonga

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NOTE

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5 METHODOLOGY

This chapter describes the research methodology adopted for this study. A qualitative research methodology was deemed appropriate for the cultural context of Tonga as the deep, qualitative data to be gathered were expected to provide a set of rich findings that could be used to respond to the research questions.

This chapter is organised as follows:
• Restatement of purpose and research questions.
• Justification of methodology.
• The study: describing the cases and process of data collection.

5.1 Restatement of Purpose

5.1.1 Purpose of the study

i. To assess the strengths and limitations of Participatory Rural Appraisal (PRA) as a framework for organising community education designed to improve ecologically sustainable methods of crop pest control in Tonga.

ii. To identify an educational theory that would be suitable to support the PRA framework and also address the reported limitations of PRA.

iii. To use the perspective of a participatory action research framework (PAR) to evaluate the implementation of this theoretical educational model in the context of Tongan community groups who were the focus of the data collection. There were a group of women from a town and a group of young farmers from another village.

To achieve the purpose the following questions were posed:
• What are the strengths and limitations of PRA as an educational framework for community education that focuses on the safe use of pesticides (SUOP) and ecologically sustainable agricultural practices (ESAP) in rural communities in Tonga?
• How can educational theory be combined with PRA to guide the planning and implementation of a community education program designed to improve the SUOP and ESAP within a group of women and young men in rural communities in Tonga?
• How can the key elements of Cambourne’s (1988) conditions of learning be activated to support effective community education within the context of Tonga?

5.2 Justification of methodology

Case study research has been defined in many, often ambiguous, ways. For example, one definition sees case study as “an umbrella term for a family of research methods having in common the decision to focus an inquiry around an instance” (Kemmis, 1982:74). Yin (1984:23) defines case study research as an empirical inquiry that investigates a contemporary phenomenon within its real-life context, when the boundaries between phenomenon and context are not clearly evident, and in which multiple sources of evidence are used. Stake (1995:xi) defines case study as “the study of the particular and complexity of a single case, coming to understand its activity within important circumstances”. Despite this lack of clarity in such definitions, case studies have been used widely in educational research and, as Lincoln and Guba (1985:360) state, “the literature is replete with references to case studies” (although) “there seems to be little agreement about what a case study is”. However, there seems to be an agreement that case study methods in education allow an in-depth investigation of a specific person, place or thing within a specific time frame and context. Furthermore, it is believed that case studies are valuable in creating deep understanding of particular people, problems or situations in comprehensive ways as “case studies help us to understand processes of events, projects, and programs and to discover context characteristics that will shed light on an issue or object” (Sanders, 1981:44).

When conducting case study research, there are a number of issues that need consideration, including the trustworthiness, credibility and validity of the data collected. However the issue of greatest concern according to Burns (1997), is the role of human subjectivity when selecting the evidence and explaining the evidence. Furthermore, Mertens (1998) explains that the researcher decides what questions to ask, what to observe and what to write down. Therefore, considerable interest should be focused on “who the researcher is and what values, assumptions, beliefs, or biases he or she brings to the study” (p.175).
A case study approach was the method of choice. Yin (1988) states that a case study has at least four applications: to explain the causal links in real-life interventions that are too complex for the survey or experimental strategies; to describe the real-life context in which an intervention has occurred; to evaluate benefits in a descriptive mode from an illustrative case study; and to explore real situations, intervention and possible outcomes. The purpose of the case study methodology used in this study was to understand how the PRA-guided intervention affected outcomes as such, of changes in the ecologically sustainable development practices of the participants. First-hand experiences of participants were observed and described as the PRA process unfolded.

Further, a case study is a qualitative research process (Yin, 1984) that is open-ended and is concerned with more accurately depicting contextual factors. Case studies often focus on program activities rather than the specific intents of the program. Case studies are flexible and allow the researcher to respond to changes in the field. As such, they often report on the successes and failures of programs (Stake, 1983). At times, case studies may be deemed to be lengthy, more detailed and too involved for busy policy makers to read and use. However, they can be timely and cost-effective alternatives when applied to the appropriate setting (Lancy, 1993).

According to Merriam (1998), case studies are designed to:

a. understand the phenomenon of interest from the participants’ perspectives but not the researcher’s interest, sometimes referred as *emic*, or insider’s perspectives, as opposed to *etic*, or outsider’s perspectives;

b. employ primarily an inductive research approach to formulate abstractions, concepts, hypotheses and theories; building toward a theory from observations and intuitive understanding gained in the field rather than testing of existing theory;

c. focus on process, meaning and understanding of the study;

d. involve fieldwork where a researcher physically visits the people, setting, site and institution to observe behaviour in its natural setting.

The researcher decided upon a case study approach because it involves “detailed, in-depth data collection involving multiple sources of information rich in context” (Creswell, 1998:61). Context is a key factor. Yin (2003:13) explains that “you would
use the case study method because you deliberately wanted to cover contextual conditions believing that they might be highly pertinent to your phenomenon of study”.

In this study, the setting of the learning context was naturalistic and interpretive to facilitate both optimum application of Cambourne’s conditions and understanding of the local situation, with minimal disruption, by combining the PRA process and Cambourne’s (1988) model. This was done to understand the uniqueness and interactions of many phases of the safe use of pesticides (SUOP) and ecologically sustainable agricultural practices (ESAP) from the participants’ perspectives, not the researcher’s. As such, the individual conditions and how these connected to the whole program were documented and examined. This resulted in findings that were richly descriptive, holistic and sufficiently comprehensive to present case situations (Merriam, 1988; Patton, 1990b). The two cases studied were the group of women at ‘Isileli community in Nuku’a alofa and the young farmers at Nukuhetulu village (Figure 5.1).

The case study approach is often chosen to study an intervention or innovative program, participant interests or negative impact (Patton, 1990; Lancy, 1993). It is more manageable and desirable to complete a few carefully managed case studies, with results one could trust, than large, probabilistic samples with results that are dubious because of a multitude of technical, logistic and management problems, particularly in the context of a study such as this.

This inquiry adopted case analysis in order to explore the impact of combining the PRA process and Cambourne’s (1988) model on stakeholders. Stake (1995:4) explains that “it may be useful to try to select cases which are typical or representative of other cases”. He continues by explaining that a collective case study is designed with a concern for representation (Stake, 1995:16). Thus, two collective cases were selected to represent two examples of the participants that this type of educational program could potentially benefit. These participants were selected for in order to understand how the various phases of the program engaged and empowered participants to apply their new knowledge and skills in their own contexts.
5.2.1 Planning Framework

The PRA Planning Framework, similar to Table 4.2, was used to guide the field activities in Tonga between June-December 2004. The group of women of the Fe’ofa’aki ‘a Kakau, ‘Isileli, Nuku’alofa and the young farmers of Nukuhetulu village, Tongatapu volunteered to participate in the SUOP and ESAP programs (Figure 5.1). Fe’ofa’aki ‘a Kakau could be defined as unending Pacific love, co-operation and companionship existing between people living on two distinct islands. The group of women lived at ‘Isileli, suburb of Nuku’alofa while the young farmers lived at Nukuhetulu village on the rural areas of the eastern part of Tongatapu.

All activities were conducted following a PRA-guided process, e.g., consultations, community talks, group meetings, training workshops, etc. The PRA process fits well with a flexible learning context of adult learning in Tonga. Flexible time allocations to the programmed activities were developed during the implementation phase in response to the “Pacific Way” (Hau’ofa, 1976; Vava’u Press Ltd, 2007). Field notes and minutes of meetings were recorded by the researcher for activities in each phase to avoid problems of forgetting, clashing of social interests and for updating the achievements of the program.

Community talks and meetings were held with the town officer of Nukuhetulu village (where all of young farmers were staying) and the chair of the group of women of Fe’ofa’aki ‘a Kakau, ‘Isileli, Nuku’alofa to discuss the purpose of SUOP and ESAP and their potential impacts on them, their families and the environment of Tonga (Figure 5.1). The town officer was in charge of all community affairs including youth development activities. The chair of the group of women was in charge of village women’s development and was a point of contact for the group. Opportunity was given for the participants to discuss the program among themselves during group meetings and to decide whether to support the project in their respective areas prior to beginning the inquiry.

5.2.2 Selection of field sites

The criteria for site selection for SUOP and ESAP were based on the location of the youth group and the group of women who were engaged in community development. Many local sources such as the International Water Project (IWP) of the Global
Environment Fund (GEF); South Pacific Regional Environmental Program (SPREP); United Nations Development Program (UNDP) and the Department of Environment (Tonga); the Pesticides Awareness for Sustainable Agriculture (PASA) of Tonga Community Development Trust (TCDT); the Tonga National Youth Congress (TNYC) and the Future Farmers of Tonga (FFT) and Ministry of Agriculture, Food and Forestry (MAFF) suggested that the young farmers at Nukuhetulu village and the group of women at ‘Isileli, Tongatapu (PASA/TCDT, 2003 & 2004; UNDP/GEF/SPREP/IWP/DoE Reports, 2003 & 2004; DoE, 2003) were appropriate choices.

Figure 5.1: Field sites at ‘Isileli community, Nuku’alofa and Nukuhetulu village, Tongatapu Island

(Source: Adapted from Ministry of Lands, Survey, Natural Resources and Environment (MLSNRE) TONGA, 2001)

The ‘Isileli community is a part of the outer suburb of Nuku’alofa (Figure 5.1). There are approximately 2000 people who live at the ‘Isileli community. Most of the local families do not grow vegetables on their land due to the sensitive low-lying mudflats environment. This low-lying location needs well-planned reclamation activities to
protect it from flooding, erosion and even for reducing ideal conditions for mosquito breeding. The group of women are mainly engaged in household activities such as cooking, washing, child care, weaving and casual inshore fishing. The majority of local families in the ‘Isileli community, have migrated from the outer islands to Tongatapu (Refer to Figure 1.1).

Nukuhetulu village is a typical rural village in Tonga. It consists of approximately 400 people. The modes of livelihood are farming, fishing and making handicrafts. The men are involved in farming and subsistence fishing where women perform household activities such as cooking, washing, weaving, etc. The young farmers rely on community leaders such as the chief, the church leaders, village officers and their parents to organise activities. The kinship ties, sharing of local resources and blood ties are quite strong in the rural areas when compared to the main urban centres. For instance, the young farmers prepare food collectively during wedding ceremonies, birthday celebrations or the funerals of any member of the village. They all wear traditional black clothes and ta’ovala (waist mat) during a funeral in the village. There are few recreational activities in rural villages compared to the main urban centres.

The current environmental concerns are the overuse and unsustainable use of water, managing sewage, the impacts of animal waste on groundwater, solid waste dumping into mangroves, and continuous pouring of liquid waste into Fanaga’uta lagoon from small industries, electric power stations, resorts, hospitals and their impacts on marine life (GEF/UNDP/SPREP/IWP /DoE/Tonga - Technical Report #2, 2003). The chief of Nukuhetulu village said, “It is important to organize activities such as the safe use of pesticides (SUOP) and ecological sustainable agricultural practices (ESAP) for the benefit of youth groups.”

The intent at these study sites was to investigate first-hand the impact of the project. This enabled the researcher to obtain good comparisons of the impacts of SUOP and ESAP on the focus groups. The focus groups were also able to share their knowledge, skills, attitudes and practices (KSAP) in SUOP and ESAP. Practical considerations such as proximity, accessibility, travel costs, availability of documentary information, and good community contact points were also taken into account (Hammersley & Atkinson, 1983:41).
5.2.3 Community talks and meetings

Introductory meetings were arranged with the local chief, town officers, church leaders and group leaders, and interested citizens of Nukuhetulu village and Fe’ofa’a‘iki ‘a Kakau Women’s Group of ‘Isileli, Sopu, Nuku’alofa to discuss the SUOP and ESAP program. Their comments and experiences gave the researcher further insights into the development and management of the program. The meeting proposed an agenda for the training program, methodology, workshop dates and duration, venue and the internal assessment of the program for improvement. Points of contact within local communities were identified to avoid clashes of interest and to promote cooperation and collaboration among the participants. Prior to follow-up activities, the villagers and communal leaders learned more about SUOP and ESAP so as to ensure greater support and voluntary participation.

5.2.4 Internal group meetings

Local groups of Fe’ofa’a‘iki ‘a Kakau and Nukuhetulu youth groups organised their own meetings to discuss the program in detail and learn more about it. They arranged time to share their experiences and skills relating to the program, and proposed an agenda with topics to be investigated during the workshop. The more experienced participants within the SUOP and ESAP teams helped the less experienced ones. Further, the internal group meetings helped participants to get to know each other better, which supported the development of good working relationships throughout the program.

5.2.5 Training workshops

Time was given for the group of women and young farmers to communicate with each other during community talks, consultations, group meetings, initial interviews and home visits and training workshops. Time was also given for knowledge (K), skills (S), attitudes (A), and practices (P) (KSAP) about SUOP and ESAP to be shared during the training workshop and site visits. Field visits were arranged by the researcher to allow the participants to observe what really happened in the field before they decided what they really needed to learn and how to employ SUOP and ESAP at the sustainable agricultural demonstration plot.
5.2.6 Scheduling Dates

Appropriate times for assigned activities were suggested by the participants. They scheduled times to attend and participate in group meetings, community talks, initial interviews and consultation. Field notes were recorded regularly during the group meetings, consultations and initial interviews by the researcher. Photographs of particular events such as composting, community talks, group meetings, field visits were also taken to capture the “real” situations and to document changes that occurred during the program (particularly on sites). All activities were scheduled with consideration of the research timeframe and other participants’ commitments.

5.2.7 The role of the researcher

During the PAR process the relationship of the researcher to the clientele and the tasks at hand is crucial to success. Thus, the researcher’s own personality and credibility within the community have a strong influence. The researcher was required to keep close contact with his partners in research, and, as a result, it is almost impossible to eliminate subjectivity because the researcher is an integral part of the process.

Before, during and after the field phase, the researcher held different positions that were linked to his previous professional career and status within the Tongan community. His other roles and their influence on the research process are detailed below.

The researcher’s role as a human instrument was facilitated by his status he engaged within the Tongan community as a community educator and developer. He is mature in age, and as a family person understands the roles and responsibility of Tongan people in the community. In 1989, the researcher became a “tangata malanga hoko” (lay preacher) of his local church in Tonga. The Christian faith that has dominated Tongan life for almost two centuries is still influential (US Dept. of State, 2007; Taumoefolau, 2007) and local churches are very influential and powerful in maintaining peace and harmony throughout the South Pacific (Toafa, 1994:38). Thus, the researcher’s status in his community and the church provided him with opportunities to work closely with local communities. In the period of 2000 - 2002, he was appointed by his church as a youth evangelisation coordinator to manage church youth affairs in Tonga.
In 1978, the researcher started his teaching career working in church schools and government schools. In 1996, he moved into community education, environmental education and adult education. In the period 1996-2004, he was employed as an environmental projects officer for a non-government organisation (NGO), locally known as the Tonga Community Development Trust for the Foundation for the People of the South Pacific (FSP). He was in charge of environmental projects, including but not limited to the Tonga Environmental Education Program (TEEP), for twenty secondary schools in Tonga; the Tonga Replanting Environmental Education (TREE); the South Pacific Eco Community Forest (SPECF); the Seed Saving Project (SSP); the Pesticides Awareness Project (PAP) and Pesticides Awareness for Sustainable Agriculture (PASA).

In this position, the researcher worked cooperatively and collaboratively with government agencies, regional organisations and the public sector as an NGO representative in the following projects:

- Development Sustainable Agriculture Project (DSAP) National Steering Committees (NSC) of the MAFF DSAP Tonga and South Pacific Forum Secretariat (FIJI) (2002 -2004).
- Community and Adult Educator for womens’ development groups and community youth groups in Tonga (1996 - 2004).
- Part time tutor in sociology, human and cultural geography for the University of the South Pacific (USP) centre, Nuku’alofa (1998 - 2005).
In addition to this professional experience, the researcher acquired a significant educational background. Between 1983 and 1985 he studied the status of women in the society, social stratifications existing in the traditional society and political sociology during his undergraduate program at the University of the South Pacific (USP), majoring in geography, education and sociology. During the period between 1991 and 1994, he studied marine conservation and resource management for his Master of Arts degree at the Graduate School of the Environment, Macquarie University, Sydney. The knowledge, skills and experiences brought to this study worked to support the participants in feeling confident to engage with the learning activities involved.

5.2.8 Strategies used by the facilitator/researcher to reduce bias

Fieldwork was central in this study. As explained in previous chapters, the researcher became the primary instrument during data collection. Interviews, ethnography, observations, field notes and an inductive mode of analysis were applied during periods of fieldwork. Data were mediated through the human-as-instrument model rather than the use of inanimate inventory, questionnaire, experimental methods or computer technologies (Merriam, 1998; Lancy, 1993). As a result, the data could be processed immediately with preliminary analysis conducted to clarify and summarise key concepts as the study evolved (Guba & Lincoln, 1981).

It needs to be recognised that the status of the facilitator/researcher could influence the outcomes of this study. As a result many people who acted as participants may have done so simply because of the status of the facilitator/researcher. Further, their responses during interviews and meetings may have also been influenced by his status. The steps described below were taken to try to reduce this influence, although it is acknowledged that it is not possible to entirely eliminate the effect of the status of the facilitator/researcher.
5.2.9 Continuous input from village elders

Village elders are the point of contact for a community development project and for councillors (district officer and village officer).

The village elders were initially approached by the facilitator/researcher to discuss the project. Thus the proper channel of information and communication network at the local communities was followed by the facilitator/researcher before the project started. Throughout the project the facilitator/researcher continually reported back to and sought advice from village elders. This ensured that the strategies used were appropriate to the context of the local community.

5.2.10 Continuous liaison with women in local communities

The group of women at the local community informed the facilitator/researcher about what they wanted to learn before the project was initiated. A continuous communication network within the group of women acted to inform the facilitator/researcher about ongoing improvements and refinements needed for the program to succeed. During past programs the group of women were not always communicated with and this ignored the status and prestige of women within their local communities. At all times the status of women, in particular women who were regarded as elders, was respected.

5.2.11 Continuous involvement of seniors citizens in decision making

The senior citizens, who were the parents of the young farmers and the heads of their households are the decision makers at local communities. They give advice and guidance to the extended families and immediate family members in their local communities. The facilitator/researcher continuously informed senior citizens about the programs (SUOP and ESAP) because traditionally, they inherit the land and live all of their lives in their current community. The researcher /facilitator was careful to follow continuously the established communication networks and decision making processes that exist within each community.

5.2.12 Training workshop and ongoing awareness programs

The planning and development of the training programs were initially discussed separately by the group of women and the young farmers before further consultation with the facilitator/researcher. Later group discussions were held with the group of
women and the young farmers to identify what they already knew and what they wanted to learn about SUOP and ESAP. This helped to identifying the topics to be learnt during the training workshops. They then planned and organised a flexible timetable for the training workshops based on their availability to attend the training program.

5.2.13 Photographs selected by the participants
Photographs were taken by the facilitator/researcher during the field visits to the demonstration plots and home visits. Representative photographs were selected by the group of women and the young farmers. The criteria for selection of the photos were based on the cultural beliefs, values and the interests of the participants. As such these photos provide a record of the participants’ view of their first-hand experience.

5.2.14 Garden sites and home visits
During the project the participants identified the garden space they would use and selected the crops to grow. The participants were encouraged to review and monitor the project and to provide feedback and advice about improving it. At the group meetings participants reported what they experienced during the projects. The facilitator/researcher made notes on these comments and read them back to ensure that his notes captured the meaning of the participant’s words.

5.2.15 Village meeting (fono) is an open forum for community hearings
A village meeting is an open forum for local communities to discuss village matters. The village officer and local residents discussed the project before deciding whether to participate or not; and subsequent meetings provided further opportunities for local families to learn about the project and related matters.

5.2.16 Field notes
The facilitator/researcher kept field notes that recorded the development, implementation and evaluation of the progress and achievements of the PRA program. Minutes of meetings, consultation and community talks, and internal group meetings were recorded as basic sources of first-hand information and feedback on progress and other related matters.
This information was accessible to the participants during the group meetings and field days. Also participants were asked to verify and review the notes that the facilitator/researcher made at the group meetings, workshops, field visits and during interviews. In addition the facilitator/researcher read key sections of his notes out to participants in order to clarify particular comments.

5.2.17 Respect for local community

The facilitator/researcher initially discussed the project with the stakeholders such as the village officer, church leaders, youth leader and the chairperson of the Fe’ofa’aki ‘a kakau women’s group at local communities to get a fair understanding about their aims for the project and to initiate a communication network with the stakeholders. This enabled the researcher to inform potential participants about the project prior to confirming their participation. Later the members of this network became key informants and provided useful insights and helped to steer the researcher to relevant information and further contacts.

The researcher always put on a national dress such as ta’ovala and tupenu as a signal of respect for and trust in local values. Awareness of local values strengthens interaction in ordinary settings and helps in the attempt to discern pervasive patterns, events and cultural themes (Creswell, 1998). Once the project started, the researcher could observe the activities carefully, make notes and ask more questions for clarification while participants practised what they learned.

5.2.18 Use of local language

During the workshop, participants read researcher handouts prepared in local language. The content was based upon what they told the researcher they wanted to learn about. Local language was used to help to build up their capacity and confidence (Ahai, 1999).

The use of the local language assisted in the clear identification of local thematic concerns and facilitated the participatory action research cycle, allowing for active engagement in language and cultural classroom activities (Kemmis & McTaggart, 1988). Through education and a bilingual, bicultural curriculum with community members acting as leaders, participants could share their experiences with others as well
as practising what they learned. It was anticipated that, over time, the facilitator/researcher would have a less formal educational role and more of a participant-observer role.

It was also anticipated that the researcher’s use of local language as a mode of communication would reduce communication barriers in local communities and allow local people to engage directly in the project and to make sense of the evaluation process and results (Cuba & Lincoln, 1985; Greenwood & Levin, 1998). In this process, the researcher can act as a discussion partner in a real situation and work with the participants to generate some (systems) models of the situation and uses such models to question the situation and to suggest a revised course of action for further development (Checkland & Scholes, 1990; Kemmis & McTaggart, 2003:343). As Kemmis and McTaggart (1988:9) point out, “action research is participatory, collaborative research which typically arises from the clarification of some concerns generally shared by a group”.

5.3 The cases

Two cases were identified for investigation in this inquiry: the group of women, and the young farmers.

5.3.1 Case One: Women’s Group - A general description of participants

Most members of this group of women, locally known as “Fe’ofa’aki ‘a Kakau” were married and had children to look after. Mostly, they performed household activities such as cooking, weaving, and the collection of seafood from the reef, and child-minding and fulfilling commitments to church, school and the village, with limited recreation and entertainment. Women’s groups in Tonga are often active in fundraising for community developments. Their development activities include health and sanitation, improvements of roads, replanting multi-purpose trees and building cement tanks for rainwater for local families, as well as leading parent-teacher associations and school committees. In this case, the women’s group also displayed their handicrafts and fine mats during Annual Agricultural Shows and were interested in participating in the Environmental Awareness Raising Campaigns, Career Days, Trade Shows and World Food Day.
5.3.2 Case Two: Male Young Farmers - A general description of participants

Most of young male farmers were drop-outs from secondary schools in Tonga and were unemployed and not married. Their main source of activity for livelihood included working as paid labourers on a daily basis on farms. Due to their physical build, these young male farmers were typically talented in sports such as rugby, boxing and wrestling. They normally drank *kava* regularly at least once a week. They needed financial assistance for development projects.

These farmers have the potential to contribute a great deal to the economy, as they can read their mother tongue very well, and can also understand basic English. Due to a lack of regular income, they could not afford to contribute financially to their homes although they had acquired experience in agriculture and farming through their close interaction with, and observation of, their parents.

5.4 Data Collection Phases

The phases detailed in Table 5.1 show how the PRA events were modified to take into account the local conditions and cultural practices. The PRA events that occurred during these phases immersed the subjects in discussions about the project and provided many demonstrations of what was expected. The newspaper articles and radios and television interviews raised the profile of the project and reinforced the original messages presented at group meetings as well as providing even more evidence that the project was valuable and that the women and young farmers were capable of achieving its goals. The drama groups, training workshops and field visits provided ways for participants to approximate the expected knowledge and skills in a ‘safe’ learning environment that allowed them to demonstrate their understanding and skills but at the same time allowed them to receive feedback from peers and the facilitator. The home visits provided opportunities for participants to show how they employed their developing knowledge and skills in their home gardens and for them to receive feedback on their progress from their peers and facilitators. According to Cambourne these conditions increase the probability of learner engagement (Cambourne, 1988).
There were twenty women and twenty young farmer subjects, and five women and five young farmers were interviewed. The people interviewed were all volunteers. All data were recorded as either interview notes, photographs, observation notes or field notes.

5.4.1 Initial and Post-Interviews Protocol
A semi-structured interview, conducted prior to the commencement of the project, was prepared in English and then translated into the Tongan language. The purpose of this interview was to identify the current ESD practices at the household level and uncover current perceptions and attitudes of participants to ESD practices. The initial interview protocol is shown in Appendix Three. A post-interview protocol, Appendix Four, also gathered information about the effects and changes from the perspective of the participants. In both cases the participants were able to verify transcripts that we re-read back to them in Tongan.

The researcher interviewed the respondents from the women’s development groups and male young farmers in Tongan and recorded their responses in English. A tape recorder was not used for recording interviews, as the participants did not like others to hear what they talked about. It became necessary for the researcher to direct participants’ attention, as they easily digressed to different issues from the topic. The Interview Protocol played a crucial role in guiding/directing the interview process. All interviews were less than forty-five minutes. Member checks and rephrasing for verification were used to ensure accuracy in the recording of responses.

Table 5.1: Data collection episodes

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<thead>
<tr>
<th>Phase</th>
<th>Events - the time frame allowed for each phase was 4 to 6 weeks</th>
<th>Data collected</th>
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<tbody>
<tr>
<td>1</td>
<td>Individual interviews</td>
<td>Responses recorded as notes that were verified by subjects</td>
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<td></td>
<td>Group meetings and community talks</td>
<td>Observations and key ideas recorded as field notes</td>
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<td>2</td>
<td>Group meetings and training workshops Visits to demonstration sites and home gardens Drama presentations Newspaper articles and radio and television interviews</td>
<td>Observations and key ideas recorded as field notes, photographs</td>
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<td>Observations and photographs</td>
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<td>Newspaper article and recordings of radio and television interviews.</td>
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<td>3</td>
<td>Home garden visits</td>
<td>Observations and key ideas recorded as field notes</td>
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<tr>
<td>Phase</td>
<td>Events - the time frame allowed for each phase was 4 to 6 weeks</td>
<td>Data collected</td>
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| 3     | Individual interviews about the structure of the remaining phases  
       Updating plans for future phases | notes, photographs  
       Responses recorded as notes that were verified by subjects  
       Recorded as notes |
| 4     | Networking and collaboration with government and village and church committees to form of village planning committees  
       Planning of village cleanup program and the involvement of local high schools (22) | Observations and key ideas recorded as field notes, photographs for all events |
| 5     | Development of training information for the whole community in local languages.  
       Presentation of gardens to local community members and participants, including secondary school students  
       Publicity via newspapers, radio and television. Drama presentation to school students and local community members to reinforce the key skills  
       Ongoing follow-up up and inspections | Observations and key ideas recorded as field notes, photographs for all events |
| 6     | Exchanging and sharing of experience among the participants during discussion (*talanoa*), field trips, home visits and kava circle (*faikava*) ceremonies, group meetings  
       Follow up radio talks and television interviews with two women of the group of women and two young farmers. Follow-up group meetings  
       Follow-up garden visits and sharing and exchanging of information with interested citizens  
       Public awareness program to promote tourism, (SUOP), (ESAP) in Tonga | Observations and key ideas recorded as field notes, photographs of events  
       Recordings of interviews  
       Observations and key ideas recorded as field notes, photographs of events  
       As above |

5.4.2 Field Notes

Field notes were designed to capture what happened during PRA activities in the women’s group home gardens and young male farmers’ mixed farming projects. Field notes described what was observed by the researcher and experienced during PRA activities (Appendix Five). Field notes and photographs were also collected and updated to follow the development and progress of the program. At the conclusion of each period where field notes were taken, the researcher engaged in preliminary analysis to begin to clarify and understand what was happening.
5.4.3 Photographs
Photographs were taken to illustrate specific situations and the progress of the project before, during and after activities. Photographs were shown to the participants during and after activities such as group discussions, home visits, field trips and garden visits.

5.4.4 Meeting Minutes
The minutes of group meetings were recorded and verified with community leaders (Table 5.1). These meeting minutes helped the participants to follow up and to monitor PRA activities, the planning and management of SUOP and ESAP. Basic information about the development of the program and resources were also provided for future reference.

5.4.5 Data Analysis
A contrast-comparative method was used to compare information sources within these events. Descriptions of these events were compared with all other events. The initial and post-interview data were transcribed and changes noted to link any observed changes in responses to specific events.

5.4.6 Limitations and Delimitations
The study was restricted to practical activities such as home gardens, mixed cropping, workshops, television, and radio programs. Data from these events were used to assess the suitability of PRA/Cambourne’s Approach as a framework for the SUOP and ESAP in the Kingdom of Tonga. The focus was on a six-month period and, as such, this study should be reviewed from this perspective.

5.4.7 Ethical Considerations
The chairwoman and participants of the group of women “Fe’ofa’aki ‘a Kakau” of ‘Isileli, Nuku’alofa, and the town officer and young farmers of Nukuhele village in Tongatapu were advised of the nature of the research before they decided whether to participate or not. The data collected through observations and interviews were used only for the purpose of the research. An approval to conduct this research was obtained from the University of Wollongong Human Ethics Committee (Appendix Six). Informed consent was sought from the participants who were then advised their rights to
withdraw or send their complaints and comments to the University of Wollongong Ethics Committee at any time during the study.

The Tonga Community Development Trust (TCDT), a local NGO, gave permission in writing to the researcher to use the information collected during the Pesticides Awareness Project (PAP) and Pesticides Awareness for Sustainable Agriculture (PASA) for the research program, provided that PAP and PASA were acknowledged. The participants and their communities gave written permission to reveal their identities when the data were reported.

The Development Sustainable Agriculture Program (DSAP) Extension of the South Pacific Commission Secretariat (Suva) and the in-country DSAP/Tonga provided project reports upon request to support this research. The International Waters Project (IWP/Tonga), working in conjunction with the Global Environment Fund (GEF), United Nations Development Program (UNDP), South Pacific Regional Environment Program (SPREP) and Department of Environment in Tonga with the Pesticides Awareness Sustainable Agriculture (PASA) of Tonga Community Development Trust (TCDT/FSP) also provided reports about usefulness of PRA for SUOP and ESAP. The information collected during the field activities was used only for the purpose of this research, and was securely and confidentially protected.

The findings from the research processes described in this chapter are now presented and discussed in the chapter that follows.