



Food and Agriculture
Organization of the
United Nations



SPC
Secretariat
of the Pacific
Community



STRATEGIC PLANNING FOR AGRICULTURE & FISHERIES STATISTICS IN THE PACIFIC WORKSHOP

Use of Computer Assisted Personal Interviewing in the Pacific CAPI / Mobile - Android

Contents

- Collection modes (traditional and tablet)
- Household listing exercise
- About the pilot
- Development and deployment
- Experiences and results
- Picking the right collection mode

Introduction

- Benefits of the traditional method
 - Proven
 - Low cost per project
 - Ability to make quick changes with a stroke of a pen
 - Ability to make notes besides related fields
 - Short development time
 - Semi durable and printed medium can be weather proof
 - Portable and wider area of deployment

Introduction

- Benefits of technology based interviews
 - Better data quality
 - Improved data turnaround
 - Improved data management
 - Ability to make and implement consistent changes quicker
 - Moving with times – more sociably acceptable
 - Potential cost savings over the long run

Household Listing Exercise

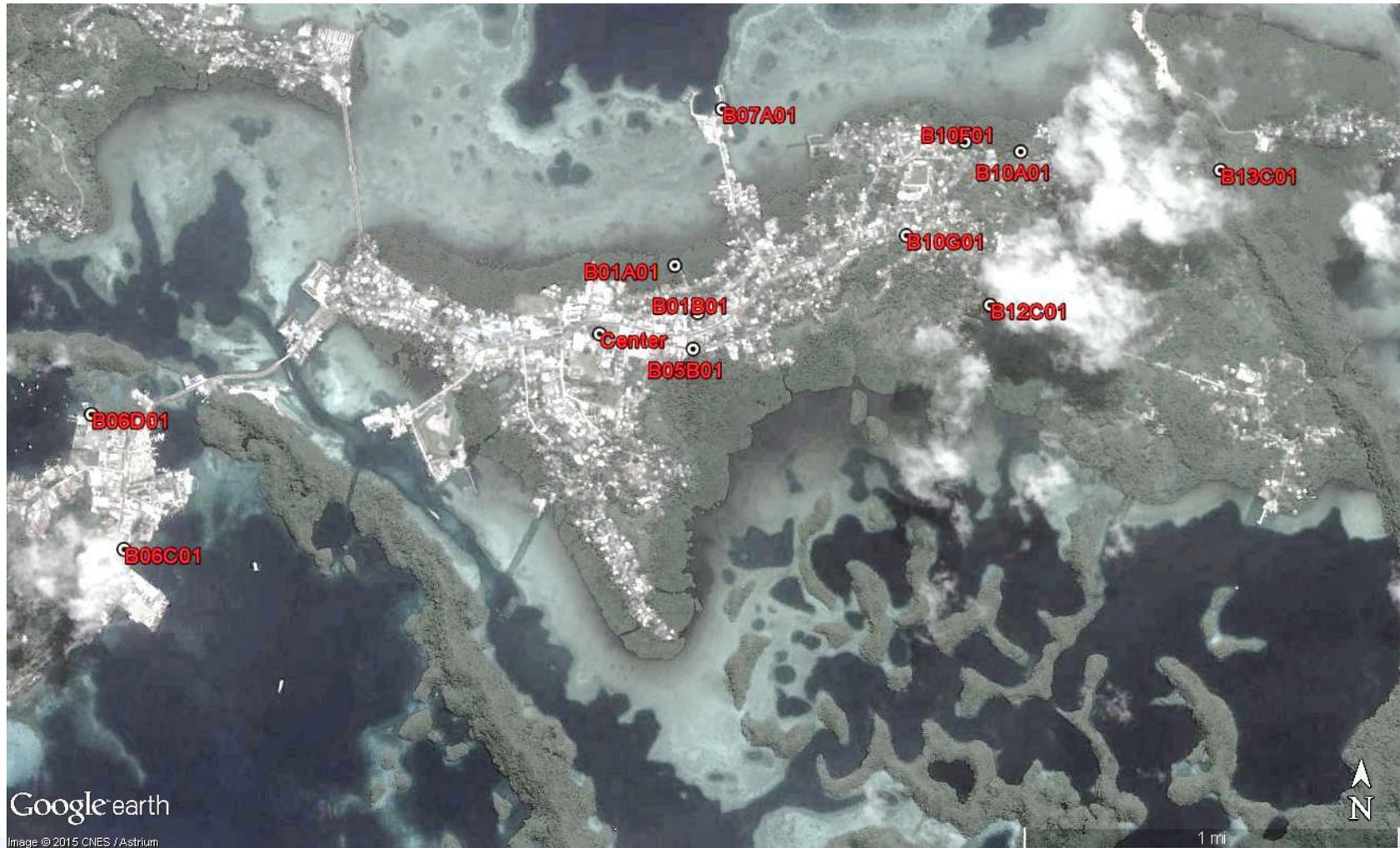
- What is the Household Listing Exercise
 - is an exercise aimed at obtaining specific management information data items.
 - Number of enumeration areas;
 - Number of management areas;
 - Estimated households in each area;
 - Estimates of potential travel requirements;
 - Intelligence about problem areas;
 - Obtain geographic coordinates for study linkages.
- Why is this important
 - Proper planning
 - Provides geographic information with out adding burden and time
 - Can be used as a sampling frame

About the Pilot

- Why trial a TAPI application
 - Regional New Technology Issues surrounding
 - Development
 - Deployment
 - Data management
- Design
 - 11 selected EA
 - 365 households
 - Run in Parallel as silent observers
 - 14 household level data items; no person level information

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About the Pilot



About the Pilot

- Hardware (\$350)
 - Samsung Galaxy Tab 4 – Key features:
 - Android OS 4.4 KitKat
 - Communication: Wi-Fi, Bluetooth, LTE, 3G, Infrared and USB
 - A-GPS, GLONASS
 - 7 inch touch screen
 - 3.5 MP Camera
 - 4000mAh – Battery
 - Battery bank to provide an additional 6 hours continuous use.



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Development and Deployment CSPro Android

- Widely used
- Quick development
- Supported many NSOs and organizations
- Fast
- Light on hardware
- Utilization of device's communication protocols.

PalauListingDE

Dwelling Type

What is the building type?

[1] Single housing unit	<input checked="" type="radio"/>
[2] Apartment w/2 or more units	<input type="radio"/>
[3] Duplex/Row house/Town house	<input type="radio"/>
[4] Barracks	<input type="radio"/>
[5] Dormitory	<input type="radio"/>
[6] Prison	<input type="radio"/>
[7] Hospital	<input type="radio"/>
[8] Boat, yacht, or other live-in vessel	<input type="radio"/>
[9] Hotel/Motel	<input type="radio"/>
[10] Other	<input type="radio"/>

PalauListingDE

Dwelling Number

What is the DWELLING NUMBER of the dwelling?

73

Obtaining GPS Location

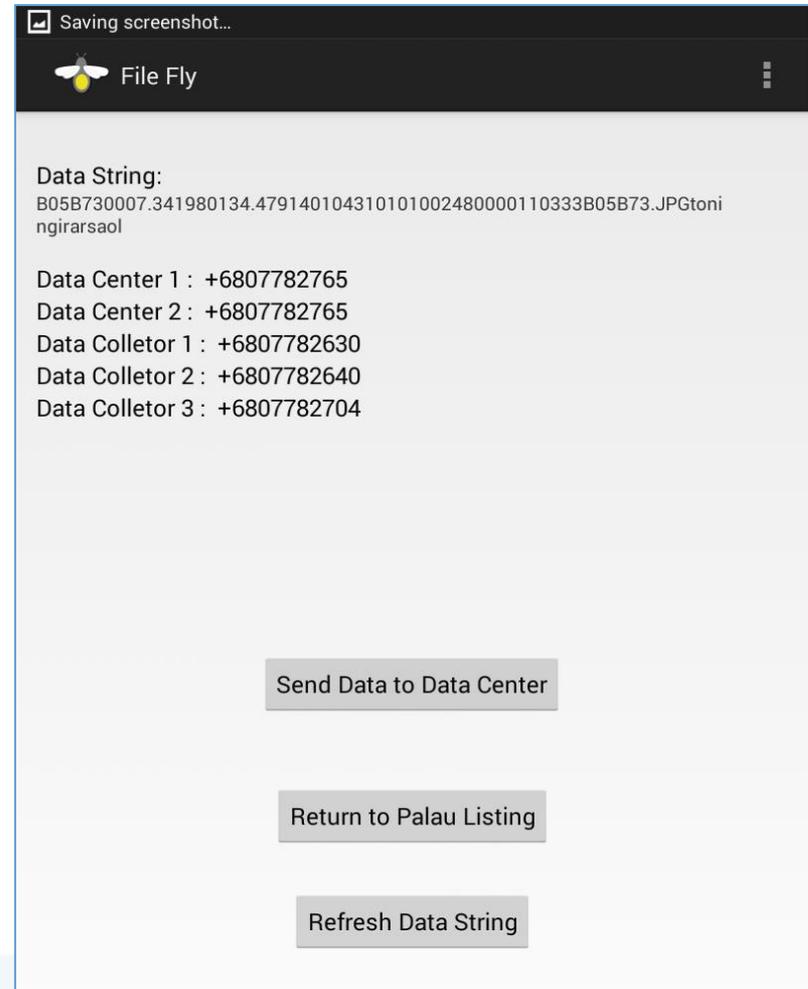
Please wait while a GPS location is obtained. GPS locations are best obtained from an outside location with few objects (such as trees) blocking satellite signals.

GPS Strength

Time Remaining

Development and Deployment SMS Data Management App

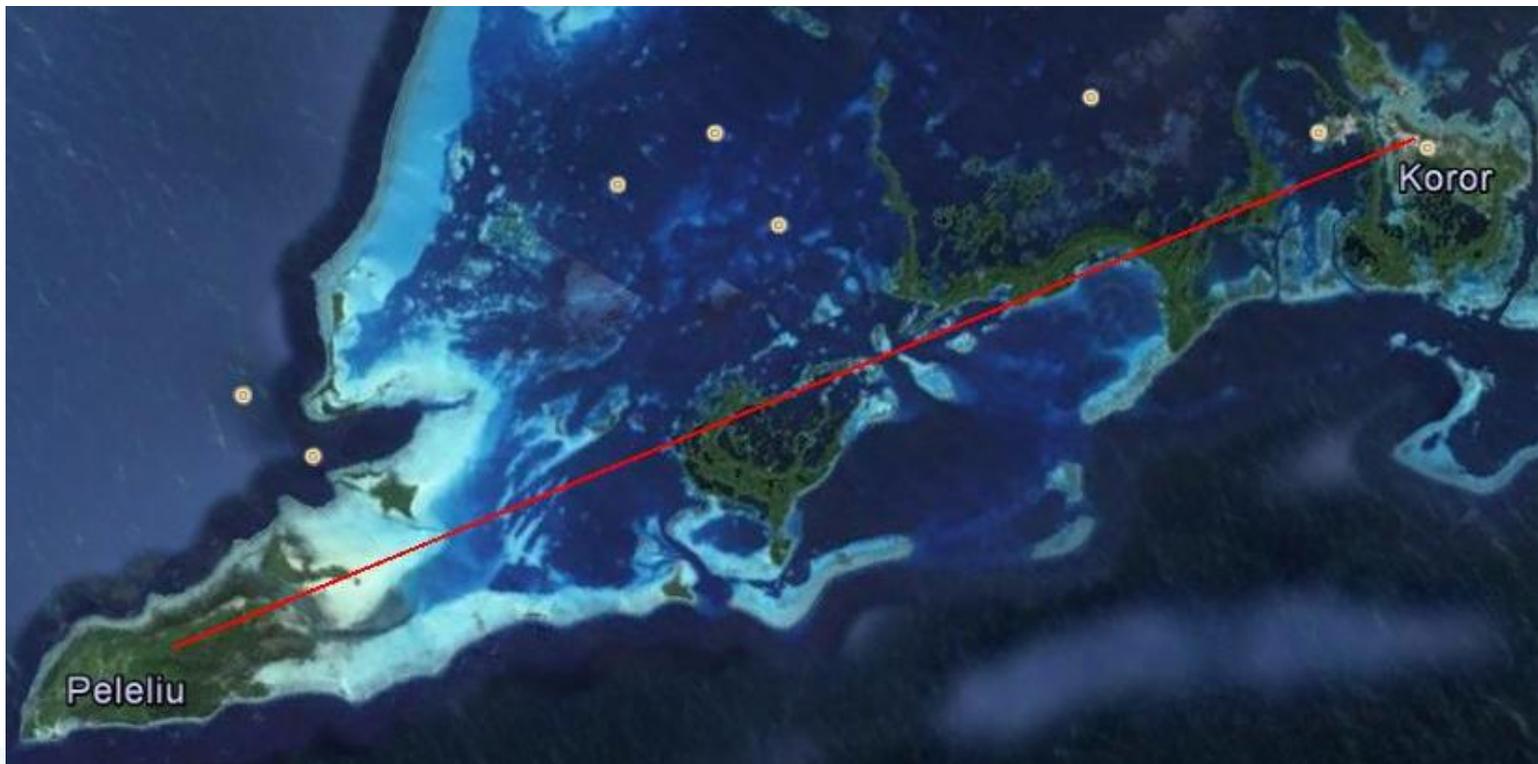
- Why Develop a Separate Application?
 - Use of SMS protocol
 - Any smart phone can act a server
 - Instant tracking
 - Secure Data
- Downside of SMS data management.
 - Limited 140-character text data
 - Does not cover all populated areas
 - App is currently project specific



Experiences and Results

SMS Data Management App

Peleliu	Koror
35 dwellings – 100%	365 dwellings - 100%



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Experiences and Results

- Benefit of Geo-Tagging Pictures
 - Pin-pointing actual dwellings can reduce survey error
 - Better weighting



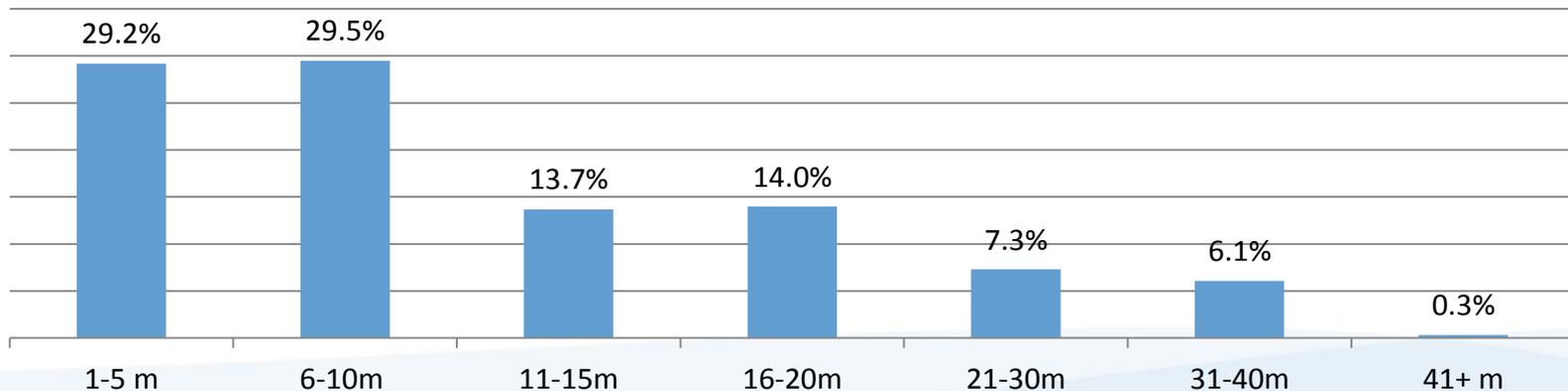
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Experiences and Results

Tablet GPS receiver vs Garmin Handheld GPS receiver
Circular Error Probable (CEP) – 50 percent @ 3 meters
- Comparing 2 GPS units – 6 meters is good

	All	Lower 90 percent
n	365 dwellings	329 dwellings
Maximum Value	315.31 m	41.21 m
Minimum Value	0.55 m	0.55 m
Average	26.01 m	11.59 m
Median	9.54 m	8.74 m
Standard Deviation	53.53 m	9.00 m

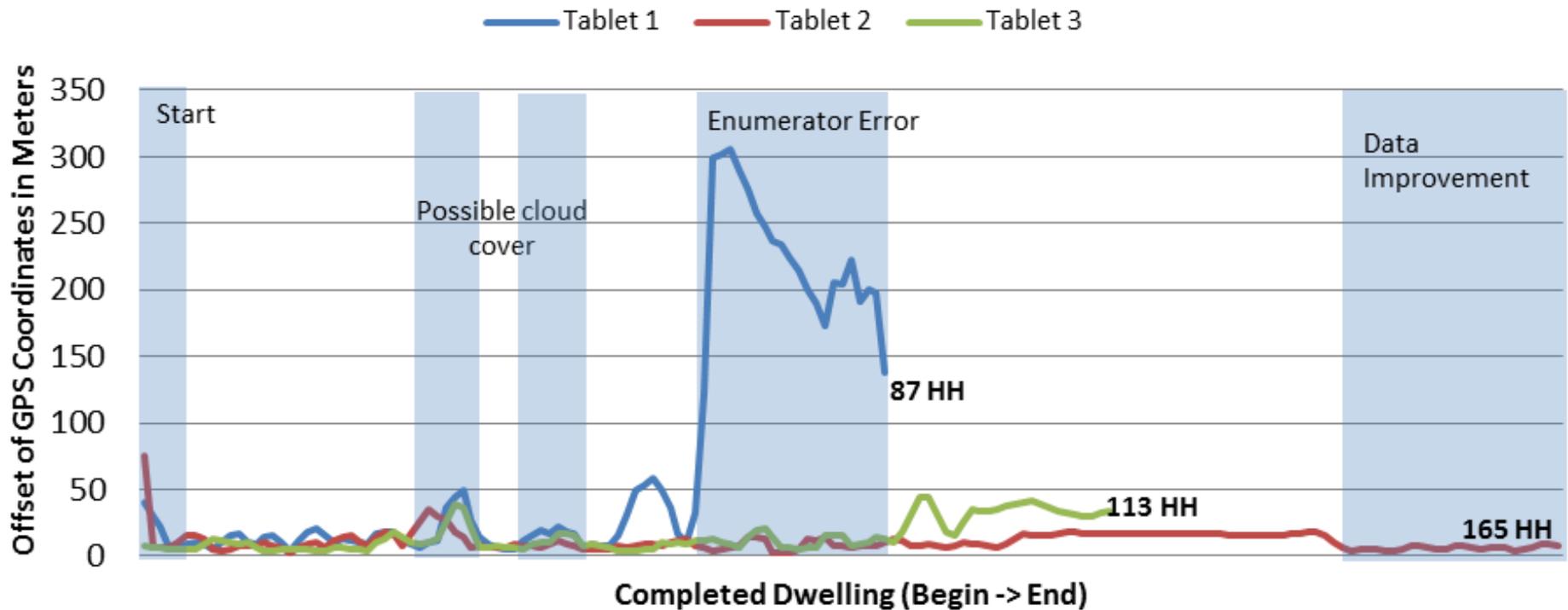
Percent of offsets



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Experiences and Results

GPS Location Offset by Dwelling sorted by time



Experiences and Results

- Tablets can be effectively be deployed in limited areas for simple and complex studies.
- There are associated costs that should be considered.
 - Plans should be implemented to resale or add value to purchased equipment.
- Use is relatively easy because, we limit enumerator decisions.
- GPS receiver is not as accurate but can deliver enough accuracy for our needs.
- Screen content is difficult to read in direct sunlight.
- Development time is much longer and need testing and planning.
- Although we provide the tools to improve quality it is still dependant on field work.

Linking to Agriculture Collections Activities

- Simplifying collections by hiding complex calculations from the user.
- The ability to use multi-media to add value and quality to the data collected.
 - Prompt cards (e.g., fish identification)
 - insect infestation or plant disease
- Improve collection quality and time especially when collecting enumerator based observations such as area measurements.
- The SMS feature can be used with the recommended FRAME items because of its small data packet size.

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Picking the Right Mode

	Uses Paper Instrument		Computer Instrument	
	Traditional	Scanning	CAPI	Tablet
Deployment Coverage	100% Populated Areas	100% Populated Areas	Limited to Environment & Infrastructure	Limited to Environment; Wider than CAPI
Time to Develop	Short	A bit longer than Traditional	Longer than Scanning	Longer than Scanning
Difficulty to Develop	Easy	A bit harder than Traditional	A bit harder than Scanning	A bit harder than CAPI
Data Quality Before Batch	Good	Same as Traditional – can introduce errors	Better than Scanning	Better than scanning

STRATEGIC PLANNING FOR AGRICULTURE & FISHERIES STATISTICS IN THE PACIFIC WORKSHOP

Picking the Right Mode

	Uses Paper Instrument		Computer Instrument	
	Traditional	Scanning	CAPI	Tablet
Questionnaire Management	Hard	Hard	Easy	Easy
Data Turn Around	Long	Faster than Traditional	Faster than Scanning	Faster than Scanning
Other Benefits	Human Capital Development	Use of equipment for different purposes	Use of equipment for different purposes	Use of equipment for different purposes