Children outside Tuo school, Fenualoa, Reef Islands, Solomon Islands. Photo by: Pohopetch

WFP Pacific's mobile Vulnerability Analysis and Mapping (mVAM)

Food Security, Livelihoods, and Markets Monitoring and Analysis Enabled by Remote Data Collection Methods

2020 June

COVID-19's Far Reaching Impacts

- COVID-19 compounds existing threats to food security and livelihoods in the Pacific.

- Rapid assessments are needed to guide coordination, planning, and implementation in response to the economic impacts of COVID-19.

- The Pacific's unique geography makes face-to-face data collection and monitoring challenging; COVID-19 has further complicated field work.

- Due to risks associated with existing vulnerabilities and exposure to natural disasters, **enhanced, remote,** and **ongoing** food security monitoring is necessary for **data-driven coordination**.

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What is mVAM?

- Remote data collection for national level monitoring/analysis.

- Leveraging high 2G network penetration.

- mVAM began in 2013 with Short Message Service (SMS) and Interactive Voice Response and has been deployed in 30 countries.

mVAM provides:

- High frequency data to track food security trends in real-time.
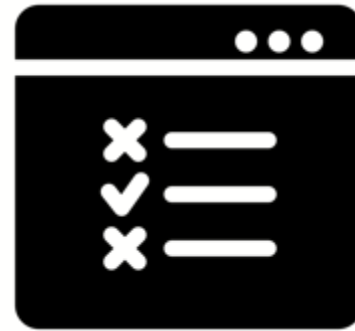
- Sound methodology to manage mobile surveys.

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Why mVAM?

Globally, 95% covered by 2g

High provider coverage

Free and open survey platforms

Call Centers are widely available

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Limitations

Data Volume

Survey Length & time

Bias: literacy and phone ownership

mVAM in the Pacific

Goal

To effectively guide regional and national decision-making through ongoing food security, livelihoods, and market monitoring and analysis.

Purpose: national level monitoring and analysis for improved coordination and planning.

The Role of Coordination:

Note: Digicel works with WFP Pacific as a service provider supporting data collection and dissemination.

Where will mVAM be deployed?

mVAM will reach the following countries:

- Fiji (300+ HH observations collected)
- Vanuatu
- Samoa
- Tonga

- Solomon Islands
- Tuvalu
- Kiribati
- Marshall Islands

WFP plans to reach as many of the Pacific countries as feasible

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How will mVAM work in the Pacific?

Food Security & Livelihoods

Call Centers

Households

Data Collection

400 observations per month per country (rounds are 400 completed calls/month), for a total of 2,400 completed observations.
Sample - proportional to population size.

Market Monitoring

Web-based Surveys

Key Stakeholders + Networks

Data Collection

Purposive sample reaching key informants through networks.

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mVAM – Food Security and Livelihoods Household Survey

Livelihoods

Food Consumption Score Nutritional Quality Analysis

Livelihood-based Coping Strategies for Essential Needs

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mVAM – Food Security and Livelihoods Household Survey

Multi-dimensional Deprivation Index

Health

Food Security

Debt

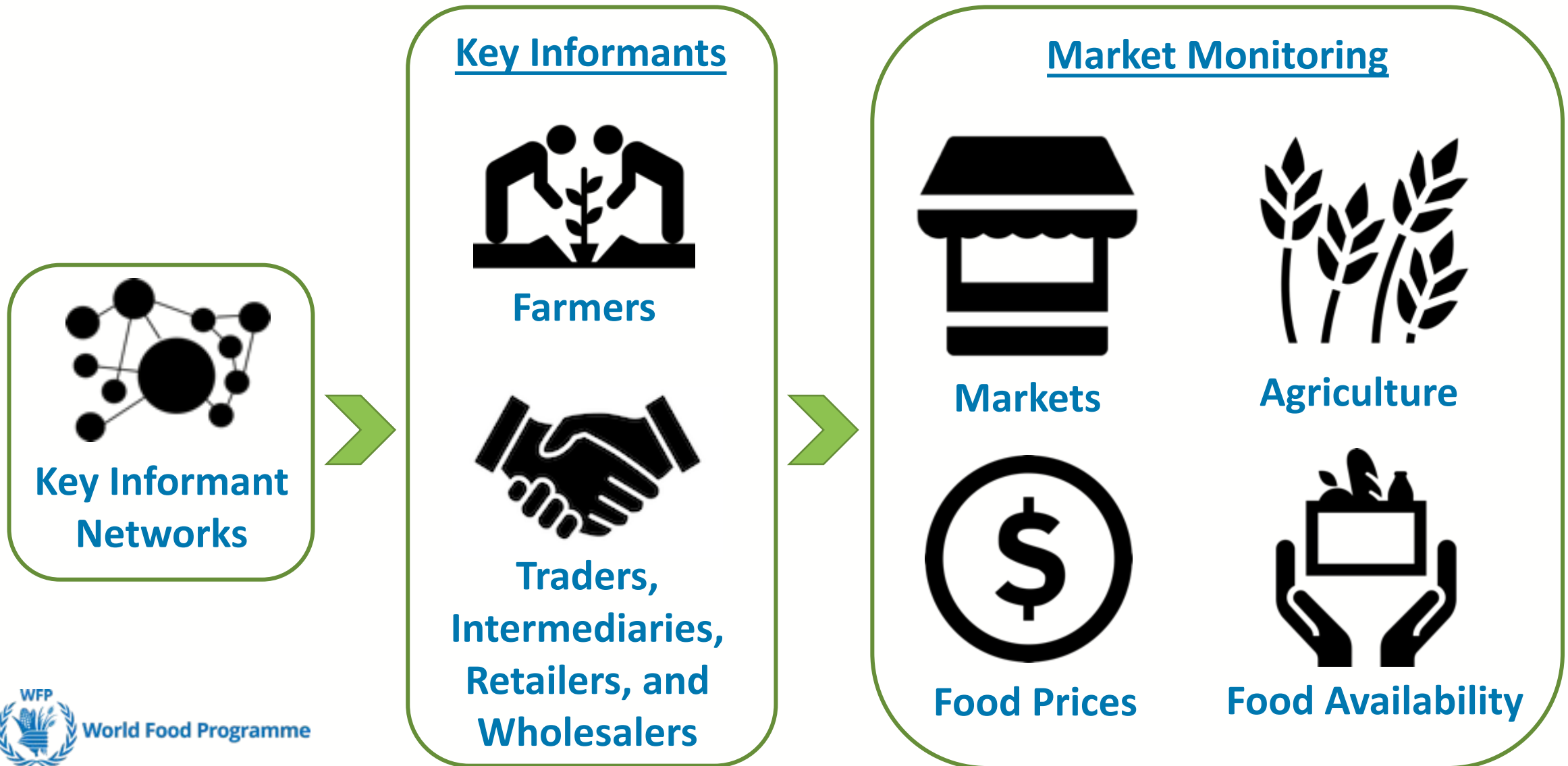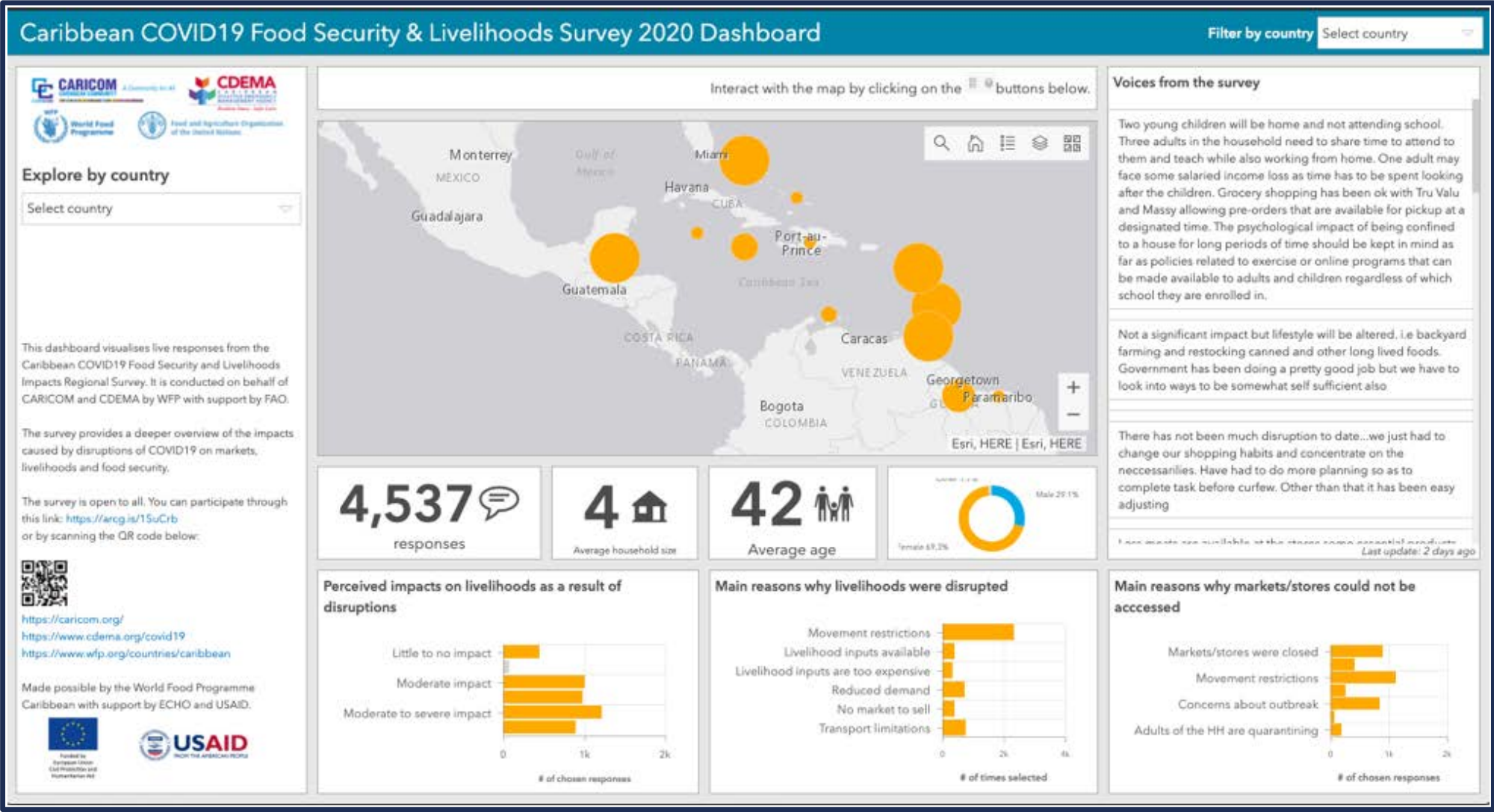Education

Living Conditions

Remittances

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mVAM – Market Monitoring (in collaboration with IFAD + CTA)

Key Informant Networks

Key Informants

Farmers

Traders, Intermediaries, Retailers, and Wholesalers

Market Monitoring

Markets

Agriculture

Food Prices

Food Availability

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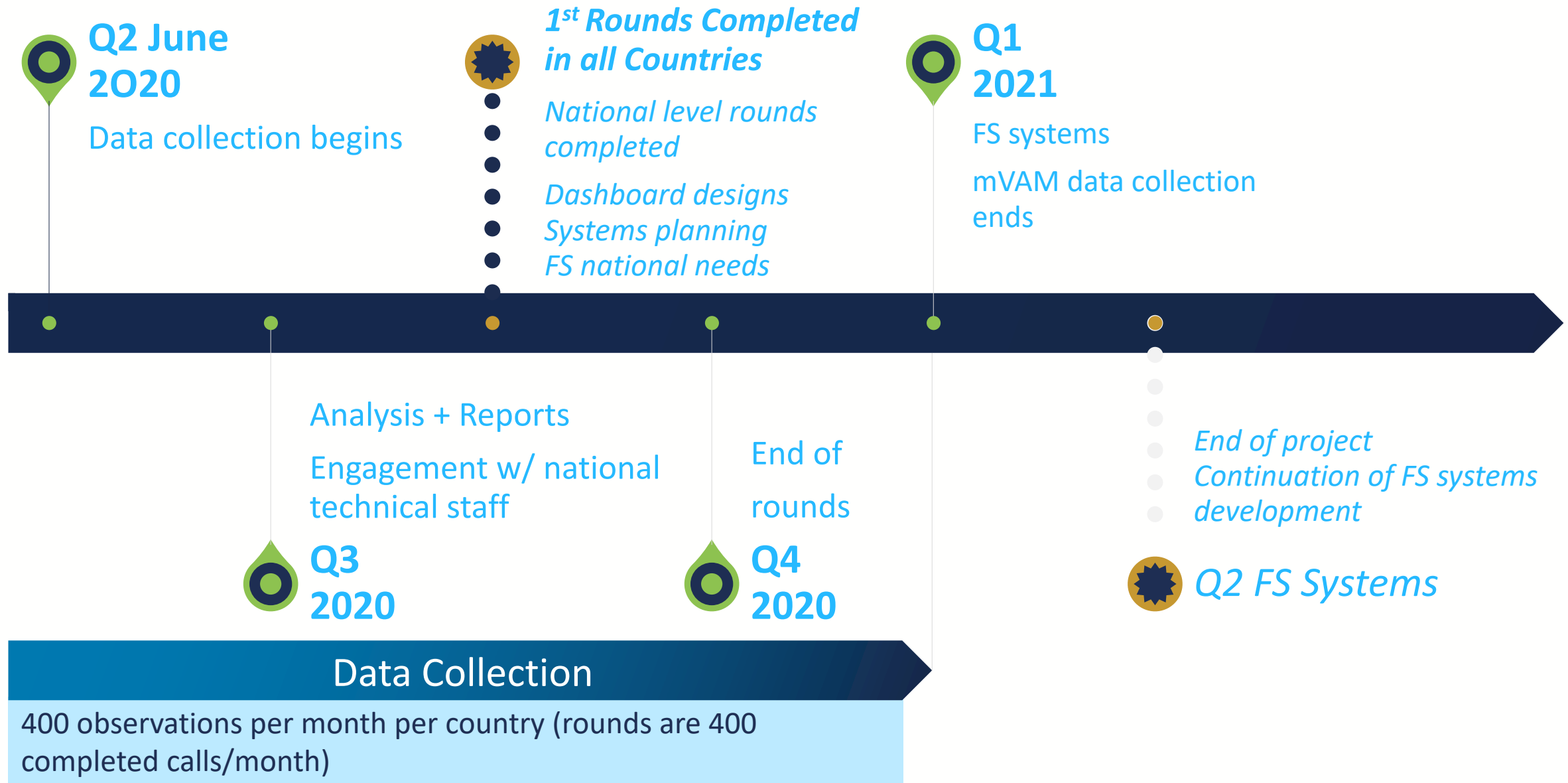# Sample Dashboard – WFP Caribbean (click here)

Global Dashboard – WFP's Hunger Map (click here)

mVAM Pacific - Milestones & Process (subject to change)

Q2 June 2O20

Data collection begins

1st Rounds Completed in all Countries

National level rounds completed

Dashboard designs
Systems planning
FS national needs

Q1 2021

FS systems

mVAM data collection ends

Analysis + Reports

Engagement w/ national technical staff

Q3 2020

End of rounds

Q4 2020

End of project
Continuation of FS systems development

Q2 FS Systems

Data Collection

400 observations per month per country (rounds are 400 completed calls/month)

What is next?

Short-term

- Coordination with national government through Food Security Clusters.

- Government technical staff engagement for analysis, reporting, overall support and guidance.

Mid to long-term

- Data sharing and integration with other national and regional exercises and dashboards.

- mVAM serves as the foundation for a Food Security Monitoring System (FSMS).

- Engagement for coordination of preparedness and response action.

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WFP mVAM Partners

Methodology & Review

Technology

Donors and sponsors

Australian Government
Department of Foreign Affairs and Trade

Ministry of Foreign Affairs of the Netherlands

Google.org

With the support of THE BELGIAN DEVELOPMENT COOPERATION .be

Funded by the Cisco Foundation

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Note: The WFP mVAM team partners with experts from Tulane University, and not the University itself.

Thank you

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mVAM Methodology - Pacific

Household Survey - Sampling Methodology

- Probability sampling using quotas based on Population Proportion to Size (PPS).

- **Quotas are based on province-level population.**

- 400 total observations meet sampling requirements for continuous and discrete measurements based on:

  ➢ Administrative Level **0 (national)** statistically significant sample;

  ➢ Budget and time constraints;

  ➢ Purpose is to produce outputs at national level and ensure **ongoing trend monitoring.**

- Observations collected in rounds: 1 round is 400 completed observations per month for 6+ month period.

- Sample statistically significant at **national level** and it **cannot** provide statistically significant outputs at lower admin boundaries.

- Sampling frame: a **random sampling** approach from subscriber database across target countries.

Disclaimer:
- **Sampling methodology captures national trends in food security and livelihoods to enhance coordination among regional and national stakeholders. This approach is designed for rapid deployment, remote data collection, and ongoing monitoring.**
- **Arbitrary increases in n (# of observations) will NOT increase statistical significance of outputs at Admin Level 0.**

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Household Indicators and Confidence Interval
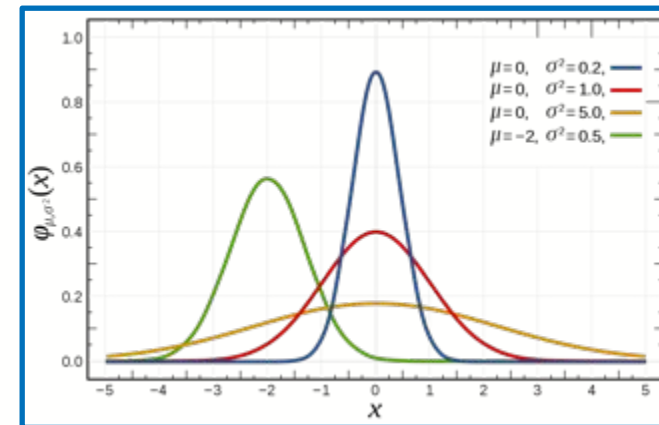
Key household questionnaire indicators include:

1. Demographics.

2. Livelihoods.

3. Food Consumption Score, Nutritional Quality Analysis.

4. Livelihood-based Coping Strategies.

5. Multi-dimensional Deprivation Index.

6. Remittances.

7. Debt.

Sample size formula for continuous variable with confidence interval set at 95%:

$$\hat{n} = \frac{1}{\frac{1}{N} + \frac{(\mu * d)^2}{(1.96^2)\,\sigma^2}}$$

Distribution form is a normal distribution:

Market Monitoring – Key Stakeholder

- **Objective:** ongoing surveys provide additional and complementary data to household questionnaire.

- **Approach:** share web survey through existing partner networks in shortest timeframe possible in each of the selected Pacific Island Countries for one-month period per country. Depending on data management requirements, responses will be visualized on an interactive dashboard and continually monitored to ensure legitimacy by cross referencing data with prior knowledge and secondary data.

- **Data management:** data validation methods are designed into the survey form to mitigate against intentional or unintentional outliers.

- **Data collection:** WFP Pacific performs the data collection, monitoring and analysis and data is analyzed according to age groups and gender.

- **Sampling:** purposive sample that captures data from selected stakeholder groups.

- **Respondent selection - Inclusion Criteria:** all respondents will confirm demographic and profile questions to ensure relevant groups are represented.

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