



BADAN PUSAT STATISTIK



Pelopor
Data Statistik
Terpercaya
Untuk Semua

Horticulture Household Survey

using the CAPI (Computer-Assisted Personal Interviewing) Technology
for Production Estimation

Widyo Pura Buana

Second Regional Training Course on Sampling Methods
for Producing Core Data Items for Agricultural and Rural Statistics
9 – 20 November 2015
Jakarta, Republic of Indonesia



BACKGROUND

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- Agriculture sector plays important role contributing significantly to national economy around 14.33 per cent (second quarter, 2015)
- The result of the Agriculture Census 2013 can be used as frame for conducting agriculture survey.
- Data collection of strategic commodities is one of effort for improving methodology of agriculture production estimation using frame developed from the Agriculture Census 2013.



Background

Horticulture Data Collection

AREA APPROACH

MoA and BPS

SPH

- Data collection is conducted in district level
- eye estimate method
- Commodities : 90

Data Processing using Web Based System
(Since 2015)

Annual Publication :
Harvested Area, Production, and Productivity

RECENT CONDITION

ESTABLISHMENT APPROACH

BPS

HOUSEHOLD

- Household Survey
- Sample using frame developed from agriculture census 2013
- Commodity : 2 commodities (2015)

Data Processing using CAPI Technology

COMPANY/ ESTABLISHMENT

- Establishment survey
- Census
- Commodity : all commodities cultivated by establishment

Quasi Establishment

- Quasi Establishment
- Census
- Commodity : all commodities cultivated by quasi establishment

Data Processing using desktop

Data: planted area, Harvested area, standing crops, dan production

IMPROVEMENT PLAN

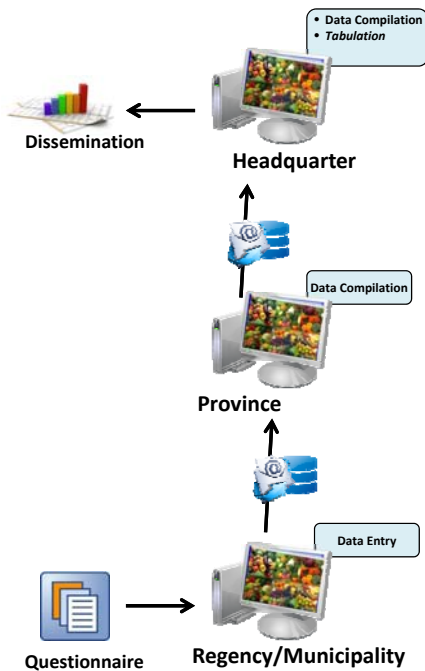
Goals : to Support National Account and Support Government Policy



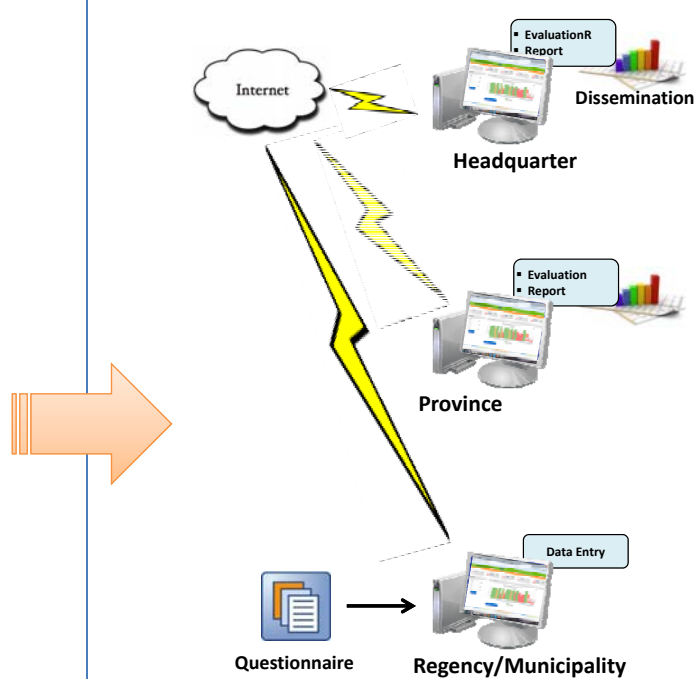
AREA APPROACH: DATA PROCESSING

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Stand-alone



Web-based System (Improvement)





AREA APPROACH: DATA PROCESSING

Stand-alone



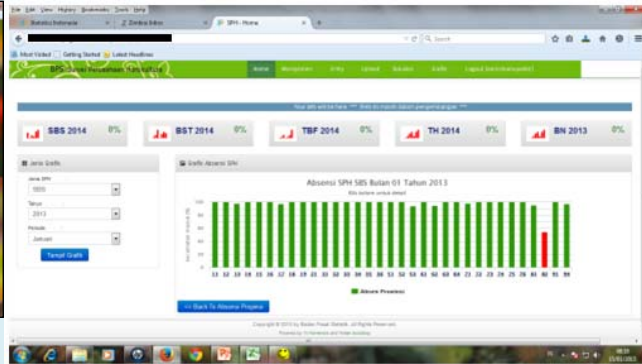
Facilities

- Data Entry
- Tabulation

Primary Data

- Harvested Area and Production

Web-based System (Improvement)



Facilities

- Data Entry
- Tabulation
- Graph
- Online Monitoring
- Data Repository (Data Management)

Primary Data

- Harvested Area, Planted Area, Production, Productivity, Price



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Establishment Approach: Improvement

Pilot Test (2015) – Data Collection for household approach covers :
Horticulture : shallot and chili; Estate Crops : sugar cane and tobacco

TECHNOLOGY IMPLEMENTATION:

Paper-and-Pencil Personal Interviewing (PAPI)



Computer-Assisted Personal Interviewing (CAPI)



**Data Quality
IMPROVEMENT**



SHALLOT



CHILI



SUGAR CANE



TOBACCO

PRODUCT LINE STATCAP-CERDAS HORTICULTURE AND ESTATE CROPS (CAPI TECHNOLOGY)

- **Product line** : Improve the existing BPS methodology for estimating district level production of horticulture and estate crops based on sampling frame developed from the 2013 agricultural census.

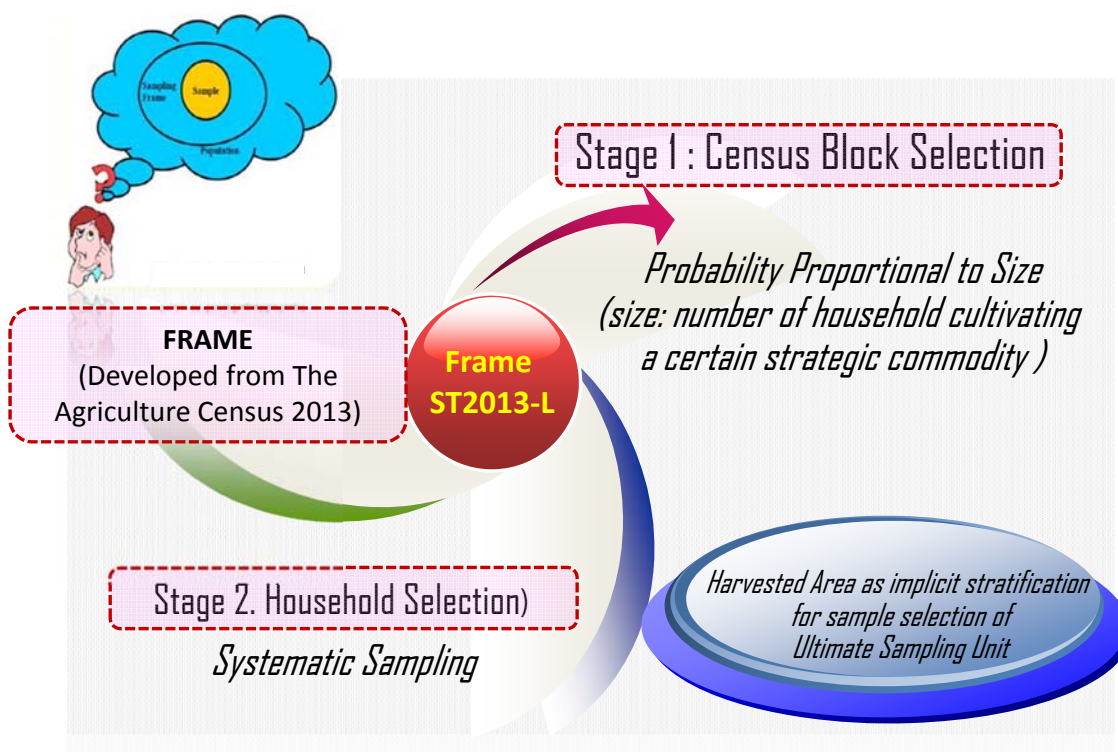
Frame : Developed from Agriculture Census 2013
 Horticulture Household – National Figure : 10 602 147 households
 Strategic Horticulture Commodities Household :
 Chili: 1 641 230, Shallot : 226 234

Pilot Test (2015)

No	Province	Regency	Comodity
1	East Java	Nganjuk	Shallot
2	Central Java	Brebes	Shallot
3	Central Java	Temanggung	Chili, Tobacco
4	Central Java	Grobogan	Sugar Cane

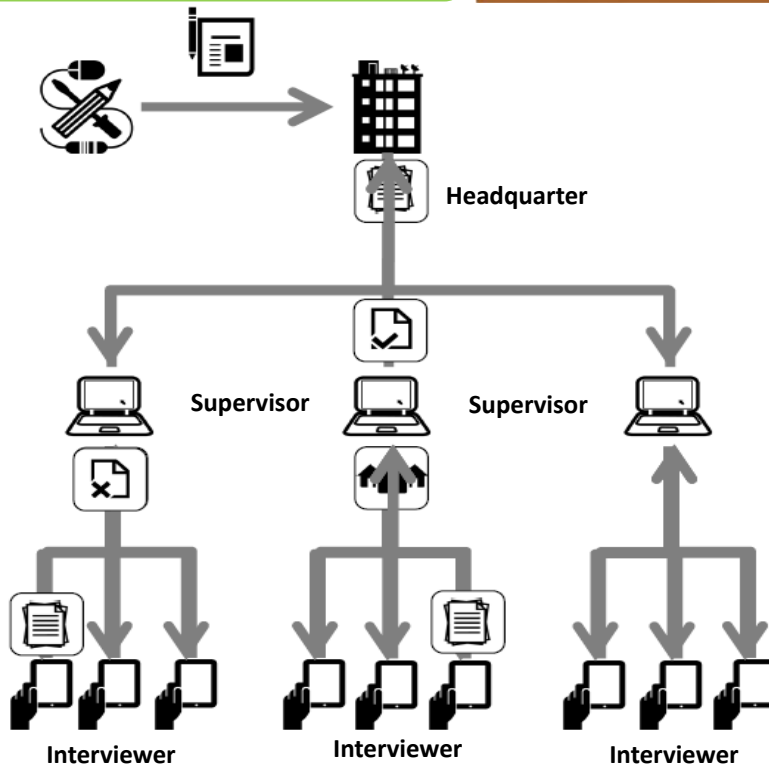
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Methodology



Household Survey

CAPI: SURVEY SOLUTION



Researchers design questionnaires using visual tools and upload them to the central server

HQ distributes the
@ Internet

@ Internet

Supervisors monitor the submissions

Supervisors assign households to individual interviewers

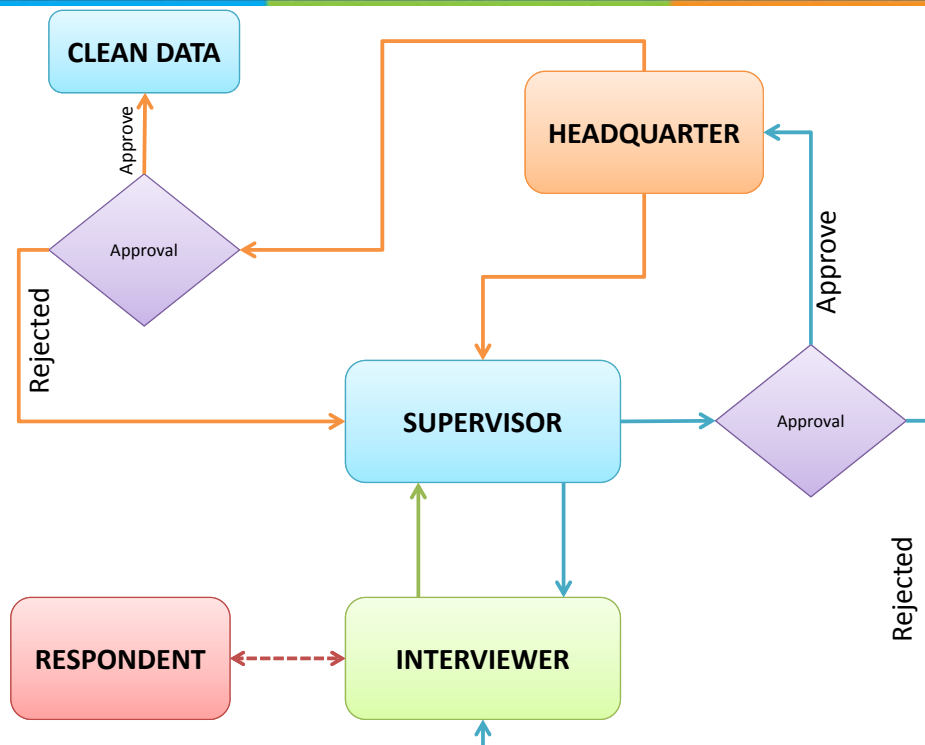
WiFi/USB

WiFi/USB

Interviewers visit households and collect data



Quality Management of Survey





Quality Management of Survey

Supervisor | Reports | Interviews | Team and Roles | Hi, super_horti

JATENG JATIM - Survei Komoditas Hortikultura 2015 Status: **Completed** Responsible: horti1

Approve Reject all enabled (91) answered (90) unanswered (1) invalid (1) commented (1) tagged (0) supervisors (6)

I. KETERANGAN PENCACAHAN

Provinsi	33	Save	Write a comment...
101. Nama Provinsi	JAWA TENGAH		Write a comment...
Kabupaten/Kota	23	Save	Write a comment...
102. Nama Kabupaten/Kota	TEMANGGUNG		Write a comment...

Household Survey

CAPI: SURVEY SOLUTION

Survey Solutions: system components

- **Designer:** online tool for questionnaire creation and validation @ solutions.worldbank.org
- **Tester:** Android app connected to Designer to test questionnaires in real time. @ Google play
- **HQ:** online tool for centralized survey management, validation, data aggregation and reporting.
- **Supervisor:** online/offline tool to manage process of data collection on a team supervisor level.
- **Tablet CAPI:** Android app for data capturing on a tablet.



Questionnaire: PAPI

BLOK IV. KETERANGAN PENGGUNAAN LAHAN PER BULAN

401 Luas tanaman akhir bulan yang lalu, luas panen habis, luas panen belum habis, luas rusak, luas penanaman baru, luas tanaman akhir bulan laporan, produksi habis, produksi belum habis dan harga jual petani per kilogram
Ehancuz tanaman terpilih bawang merah bentuk produksi adalah Uwbri kering panen dengan daun (TABEL KONTERSI)

No	Bulan	Tahun	Luas Tanaman Akhir Bulan yang Lalu (0 ²) (3)	Luas Panen (0 ²)		Luas Rusak/ Tidak Berhasil/ Pusa (0 ²) (6)	Luas Penanaman Baru / Tambah Tanam (0 ²) (7)	Luas Tanaman Akhir Bulan Laporan (0 ²) Kol (3)-(4)-(6)+(7) (8)	Produksi (Kg)		Harga Jual Petani per Kilogram (Rp/ah) (11)
				Habis/ Dibongkar (4)	Belum Habis ****) (5)				Dipanen Habis/ Dibongkar (9)	Belum Habis *** (10)	
1.	September	2014									
2.	Oktober										
3.	November										
4.	Desember										
5.	Januari	2015									
6.	Februari										
7.	Maret										
8.	April										
9.	Mei										
10.	Juni										
11.	Juli										
12.	Agustus										

Keterangan : ****) Hanya teisi untuk tanaman cabai



Questionnaire: CAPI

II. KETERANGAN BUDIDAYA KOMODITAS TERPILIH

Konsep :
Luas baku lahan adalah luas lahan yang digunakan untuk budidaya tanaman Bawang Merah atau Cabai Besar tanpa melihat berapa kali tanam/panen pada lahan tersebut.

201a. Berapa luas baku lahan sawah pada saat pencacahan untuk budidaya komoditas Bawang Merah (METER PERSEGI) ?

201b. Berapa luas baku lahan bukan sawah pada saat pencacahan untuk budidaya komoditas Bawang Merah (METER PERSEGI) ?

Pertanyaan selanjutnya berkaitan dengan panen terakhir tanaman terpilih (period September 2014 - 31 Agustus 2015)

203a. Pada bulan apa melakukan panen dibongkar terakhir Bawang Merah ?

- September 2014
- Oktober 2014
- November 2014
- Desember 2014
- Januari 2015
- Februari 2015
- Maret 2015
- April 2015
- Mei 2015
- Juni 2015
- Juli 2015
- Agustus 2015

III. KETERANGAN PENGGUNAAN LAHAN PER BULAN

- SEPTEMBER 2014
Section not started
- OKTOBER 2014
Section not started
- NOVEMBER 2014
Section not started
- DESEMBER 2014
Section not started
- JANUARI 2015
Section not started
- FEBRUARI 2015
Section not started



Questionnaire: CAPI

100% 40% 10:31 AM

Complete

You are about to complete this interview

QUESTIONS STATUS

4 Answered	76 Unanswered	No Errors
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NOTE FOR SUPERVISOR

Tap to enter text

Complete

AFTER YOU FINISH THIS INTERVIEW IT WILL BE MARKED AS COMPLETED AND WILL BE UPLOADED TO SUPERVISOR DURING YOUR NEXT SYNCHRONIZATION

Photograph,

405. Foto rumah tampak depan beserta responden



404. Lokasi rumah responden

Get Location

GPS



Household Survey using CAPI





Online Monitoring and Evaluation

REPORT

By Status
By Team
By Map
By Quantity
By Speed (Duration)
Interviewer, Supervisor,

Team members and Statuses

Team member	Supervisor assigned	Interviewer assigned	Rejected by supervisor Completed	Approved by supervisor	Rejected by headquarters	Approved by headquarters	Total
hort2	0	4	0	0	0	0	4
hort1	0	3	0	0	0	0	3
super_hort	18	0	0	0	0	0	18

Number of completed interviews

(ver. 1) TES - LISTING KOMSTRAT

Number of interview completions by a team. Rejected and then completed interviews are counted as separate completion events.

Team member	09/23/2015-09/24/2015	09/24/2015-09/25/2015	09/25/2015-09/26/2015	09/26/2015-09/27/2015	09/27/2015-09/28/2015	09/28/2015-09/29/2015	09/29/2015-09/30/2015	Average	Total
isan	0	0	1	0	0	0	0	0.14	1

Type of Data Export :
SPSS, Stata → Analysis and Tabulation

Average interview duration

(ver. 1) TES - LISTING KOMSTRAT

A time difference between the moment when the first answer is recorded on a tablet and when the complete button is pressed.

Team member	09/23/2015-09/24/2015	09/24/2015-09/25/2015	09/25/2015-09/26/2015	09/26/2015-09/27/2015	09/27/2015-09/28/2015	09/28/2015-09/29/2015	09/29/2015-09/30/2015	Average	Total
isan	-	-	5m	-	-	-	-	5m	5m



Example: Analysis and Tabulation

Monthly Data: Production, Planted Area, Harvested Area

Bulan panen terakhir Blok II (r203a) dan distribusi volume produksi Blok III (r301a)

Bulan panen terakhir				Karakteristik Bulan Panen Terakhir Tim Cabai Besar											
		Frequency	Percent	Nama KRT (r-109_at2013)											
Valid	Maret 2015	2	3,6	[Bar chart showing production volume for various KRTs in 2014 and 2015]											
	April 2015	2	3,6												
	Mei 2015	6	10,7												
	Juni 2015	8	14,3												
	Juli 2015	1	1,8												
	September 2014	2	3,6												
	Total	21	37,5												
Missing	System	35	62,5												
Total		56	100,0												

Sedangkan panen terakhir tersebut, jika di cek dengan isian produksi pada blok III sebagai berikut :

Blok III (r301a)												
	Produksi panen habis/dibongk ar September 2014	Produksi panen belum habis September 2014	Produksi panen habis/dibongk ar Oktober 2014	Produksi panen belum habis Oktober 2014	Produksi panen habis/dibongk ar November 2014	Produksi panen belum habis November 2014	Produksi panen habis/dibongk ar Desember 2014	Produksi panen belum habis Desember 2014	Produksi panen habis/dibongk ar Januari 2015	Produksi panen belum habis Januari 2015	Produksi panen habis/dibongk ar Februari 2015	Produksi panen belum habis Februari 2015
komodit s2013 -- Cabai Besar	Sum											
	Sum					20.000		100.000		140.000		525.000
	Sum	320.000	2744.000	25.000	6675.000	1280.000	4780.000	2325.000	180.000	40.000		



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Thank You



Sensus Ekonomi 2016



Mencakup seluruh sektor ekonomi
di luar sektor pertanian



Sensus Ekonomi 2016

Fondasi bagi pengukuran
kegiatan usaha di Indonesia