# The Future
# of
# Population and Housing Censuses

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REGISTRAR GENERAL &
CENSUS COMMISSIONER, INDIA

4th September 2012

# Approaches to Census Taking

✓Traditional approach

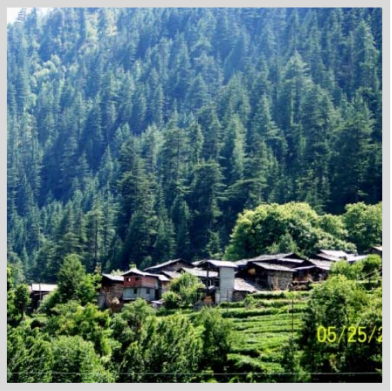
✓Register-based approach

✓Combination of Traditional and Register-based approach

- Register Based Census with Sample Surveys
- Rolling census approach
- Traditional enumeration with yearly updates

# Census of India 2011



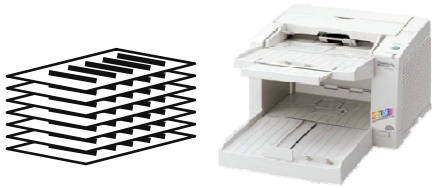


# Features of Census 2011

- Legal Backing – Census Act 1948
- Paper Based - Extended de facto canvasser method
- Extensive use of GIS/ICT in pre Census and Census activities
- Highly manpower intensive- 2.7 million persons deployed
- Complex Logistics
- ICR Technology for data processing

# Census 2011 Process

House to house canvassing (extended de facto)



Scanning



Image based Recognition (ICR)



Image validation



Manual completion of unrecognized characters



Database/ Tabulation



Data Dissemination

# Challenges – Diverse & Vast




- 2.4% of worlds surface area
- 1.2 bn population
- 2nd largest in the world

- 0.6 million villages
- 7935 Towns

- 4,635 ethnic groups
- 80,000 Segments, Synonyms and Titles

# Challenges – Diverse & Vast

**Multi-cultural**

- 655 religions and other persuasions
- 18 languages (training); 16 languages (canvassing); 6661 mother tongues

**Difficult people**

- Nomads, Homeless, Forest/Island Dwellers
- Infants, Elderly women, Disabled

**Difficult Areas**

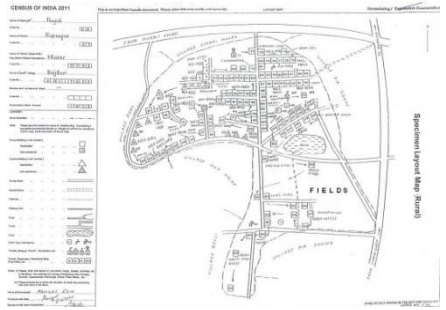
- Disturbed civil conditions
- Inaccessible terrain

# Complete and Unduplicated Coverage








- Digitized boundary of more than 0.6 million villages
- Maps of 8000 Towns at sub-Town level
- Digitized maps at street and house level of 33 Capital Cities
- Hand drawn sketches of  around 2.4 million Enumeration Blocks

# Enhancing Quality

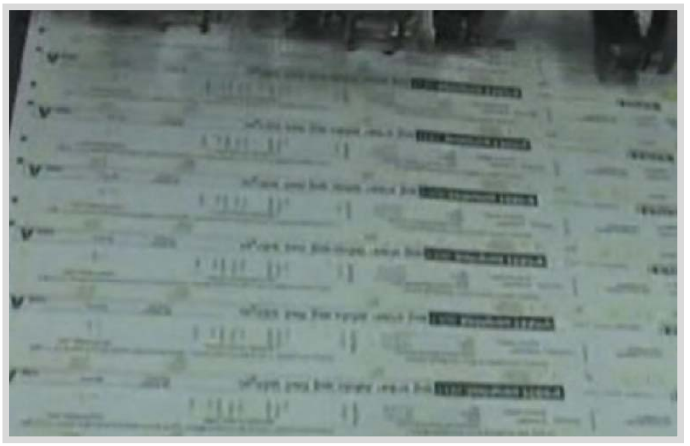
5.4 Million Instruction Manuals printed in 18 languages

340 Million Census Schedules printed in 16 languages

New Features

- Bar Codes
- Form Numbers
- Location Particulars partly pre-printed

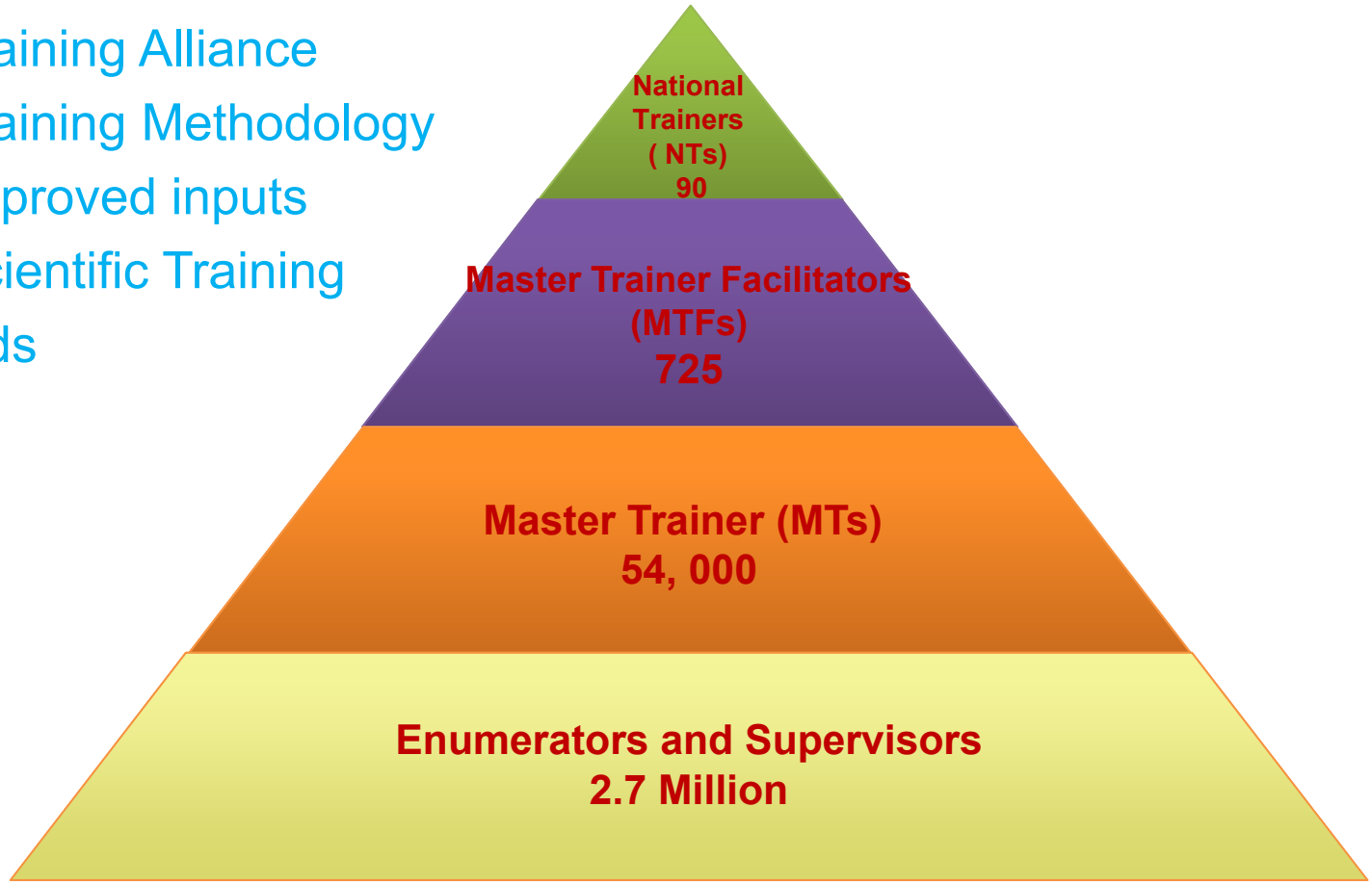
High speed digital printing machines used





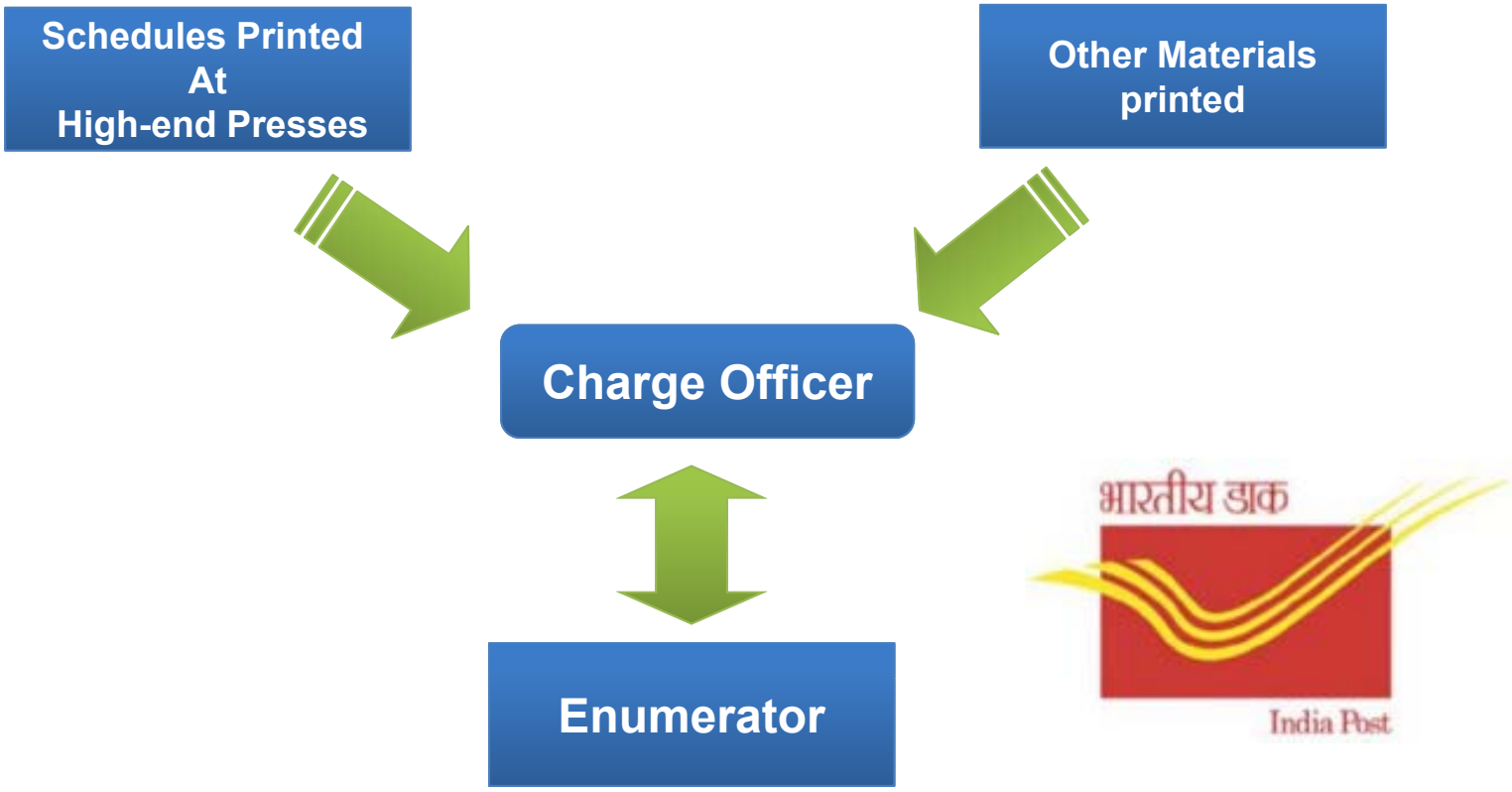
# Enhancing Quality

- Training Alliance
- Training Methodology
- Improved inputs
- Scientific Training aids




Training - a serious business!!

# Logistics - a key factor




- Assessment of requirement of census material by language in each of the 20,000 locations – micro-planning for efficient inventory control
- Packing according to the database - Dispatch and delivery
- Return logistics

# ICT in Training

- Instruction Manuals
- Training Guides
- PowerPoint presentations
- e-Learning Modules
- Internet
- Training CDs
- Community Radio
- SMS/email



# Publicity

## Modes Used

- Campaign included -
  - Mass media
  - Public outreach
  - Digital media
  - Print Ads in 16 languages
  - TVCs and Radio Spots in 12 languages
  - Mascot





# Digital media – an effective medium

- Face Book
- Twitter
- Advertisements in websites
- SMS
- TV Soaps
- Census in Schools
- Local Art Forms









Census 2011

www.facebook.com/Census2011

facebook

Search

Home Profile Account

# Census 2011

Wall Info Contest Census 2011 Photos Twitter »

Share: Post Photo Link Video

Write something...

Census 2011 + Others | Just Census 2011 | Just Others

**Kapil Semwal** i m waiting for the results toooo
about an hour ago · Like · Comment

Kapil Semwal likes this.

Write a comment...

**Priyanka Chanda** results...!???????
M eager
3 hours ago · Like · Comment

Kapil Semwal likes this.

Write a comment...

Write a comment...

**Malvika Nigam** Census ..plz plz annonce the result..i am eagrly waiting for that..
And from 2-3 days i had crossed my fingers...
4 hours ago · Like · Comment

Kapil Semwal likes this.

Write a comment...

**Rajib Kumar Dey** This Census2011 would bring India's population to not less than 1500000000, i.e. 1.5 billion, officially.
6 hours ago · Like · Comment




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Parth Dhingra and Saarthak Choudhury like this.

Like

**Smirnoff India**




Live the Nightlife Experience the Smirnoff way. Get exclusive access to some of the most amazing Smirnoff parties in your city.

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Like

**Reebok Watch @ Rs.299**

Chat (1)


Twitter / Search - Census I...
twitter.com/#!/search/Census%20India%202011
Do you want Google Chrome to save your password?
Save password
Never for this site
Welcome to #NewTwitter! Read up on what's new. You can still access old Twitter for a limited time.
Close ×
twitter
Census India 2011
Home
Profile
Messages
Who To Follow
lotus1949
← Back to Home
Save this search
Results for Census India 2011
Tweets
Tweets with links
Tweets near you
People
maywani mayur ramesh wani
hi friends... the Indian census 2011 taught me something new this time... "India need SOCIAL WORKING more than SOCIAL NETWORKING!"
4 hours ago
jessicakumar_ Jessica Kumar
RT @IndiaCensus2011: Thank you #India for supporting us in one of the largest peace time exercise in the history of mankind - #Census 2011.
8 hours ago
RailwayChi1dren Railway Children
Input from RC: for the first time the homeless population are being counted in the India Census 2011. This i... (cont)
http://deck.ly/~tYhHx
21 hours ago
Aagan86 Agnivo
RT @IndiaCensus2011 Thank you #India for supporting us in one of the largest peace time exercise in the history of mankind - #Census
Trends
Worldwide · change
#BattleLosAngeles Promoted
#saynoto
#twitrelief
Dear Maria
#7bars
❒Single ❒Taken
yOsTiN BiVeR
Juholt
Hana Kimi
Wagner Moura
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# Data Processing

1961 Census – Unit Record machines used

1971 Census – Key-punching (IBM 1401 computer/card Reader

1981 Census –Key to Disk machines. (HP 1000 CD-Cyber 730 & NEC - 1000)

1991 Census - Medha 930 Main Frame

2001 Census –Image based Automatic Form Processing

2011 Census – Advanced ICR Technology









| Census | 1961 | 1971 | 1981 | 1991 | 2001 | 2011 (Expected) |
|---|---|---|---|---|---|---|
| Population (million) | 439 | 548 | 683 | 846 | 1028 | 1210 |
| Collection (%) | 100 | 100 | 100 | 100 | 100 | 100 |
| Capture (%) | 5 | 15 | 25 | 45 | 100 | 100 |
| Mode | Hand Punch | Key Punch | Data Entry | Data Entry | Scanning/ICR | Improved Scanning/ICR |
| Time taken (years) | 8 to 9 | 8 to 9 | 8 to 9 | 7 to 8 | 4 to 5 | 1 to 2 |

# National Population Register (NPR)







## Features of the NPR

- Legal Backing - The  Citizenship Act, 1955 and the Citizenship Rules,  2003
- Biometrics -Largest biometric database in the world
- De-duplication based on biometrics
- Publication and verification
- Technology backbone
- Continuous updating

# Legal Provisions

The Citizenship Act was amended in 2004 to provide for:

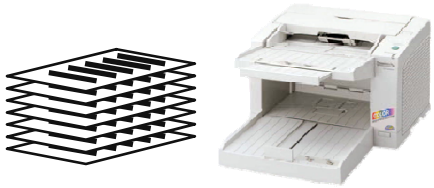
- Compulsory registration of Residents and Citizens
- Establishment of a National Registration Authority
- Creation of a National  Population Register
  - National Register of Residents
  - National Register of Citizens
  - Issue of Identity Cards

# Information in the NPR

| | | | | | |
|---|---|---|---|---|---|
| 1 | Name of person | 6 | Sex | 11 | Present address of usual residence |
| 2 | Relationship to Head | 7 | Date of Birth | 12 | Duration of stay at present address |
| 3 | Father's Name | 8 | Marital Status | 13 | Permanent Residential Address |
| 4 | Mother's Name | 9 | Place of Birth | 14 | Occupation / Activity |
| 5 | Spouse's Name | 10 | Nationality as Declared | 15 | Educational Qualification |
| Photograph, Finger Print and Iris of all Usual Residents aged 5 years and above. | | | | | |

# NPR Process

House to house canvassing for NPR by Enumerators (45 days)



Scanning



Image based Data Entry



Biometric Capture in the presence of Government Servants

Printing of LRUR

Publication in the local area, settlement of claims and objections
Vetting by local bodies



De-duplication



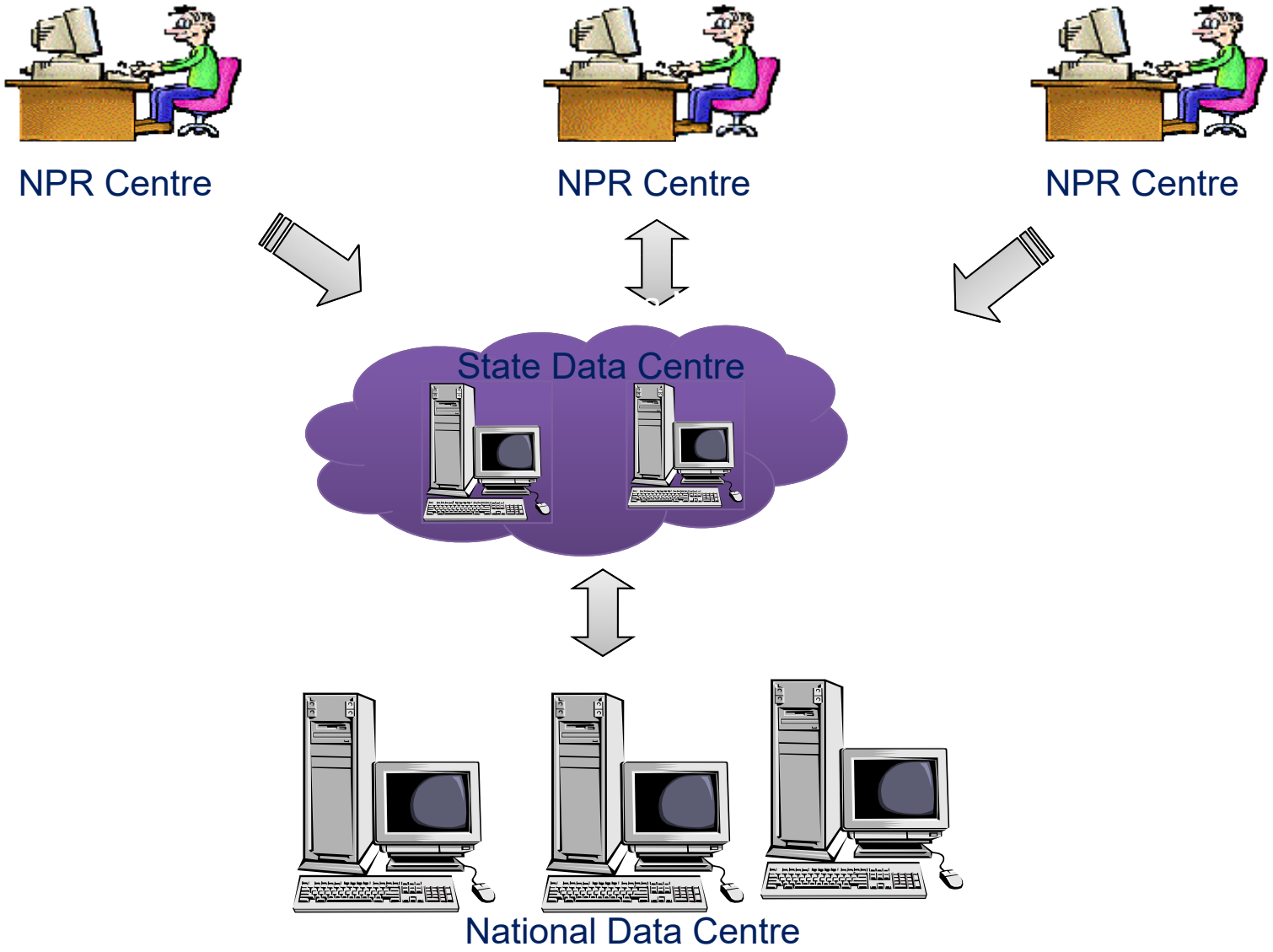
National data base




Proposed Resident ID Card

**National Population Register**

# Updating and Maintenance



# Use in e-Governance

Banking, Insurance Services database

Admission in schools, colleges and hostels

Seed, Fertilizer Pesticide, Marketing credit

Railway, Air, Bus Ticket booking

Registration of Land, Property, Shares




DL/RC

Ex-Servicemen

Health and Medical Services

Voter's List

Employment

Public Distribution System

NREGA

# Implications

- ✓ Dynamic count of population
- ✓ Continuous updating
- ✓ Vital rates/statistics
- ✓ Migration trends
- × No social, economic cultural attributes
- × Recurring costs
- × Technology intensive

2011

# Socio-Economic and Caste Census

# (SECC)



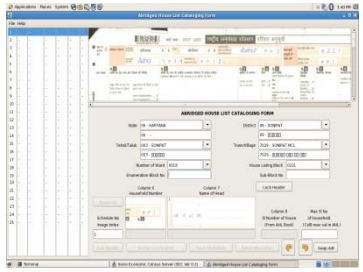


## Features of SECC

- Data collected in the NPR used for SECC
- Control population figures of Census 2011 utilized
- Data collection on hand held devices
- Instant uploading of data
- Concurrent monitoring
- Quality assurance
- Quick tabulation

- The Socio-Economic and Caste Census (SECC) 2011 is being carried out by the Government of India to generate information on a large number of social and economic indicators relating to households across the country.
- Caste refers to a social group peculiar among Hindus, members of which marry within the group, follow the same traditional occupation and enjoy the same rank in the hierarchical scale of all castes.

# SECC Process



Linking NPR and SECC



Data Capture on HHDs



Data uploading




Concurrent quality check & monitoring



Data verification

Supervisory check

- Publication
- Claims
- Objections
- Appeals

Finalization

Socio-Economic and Caste Census

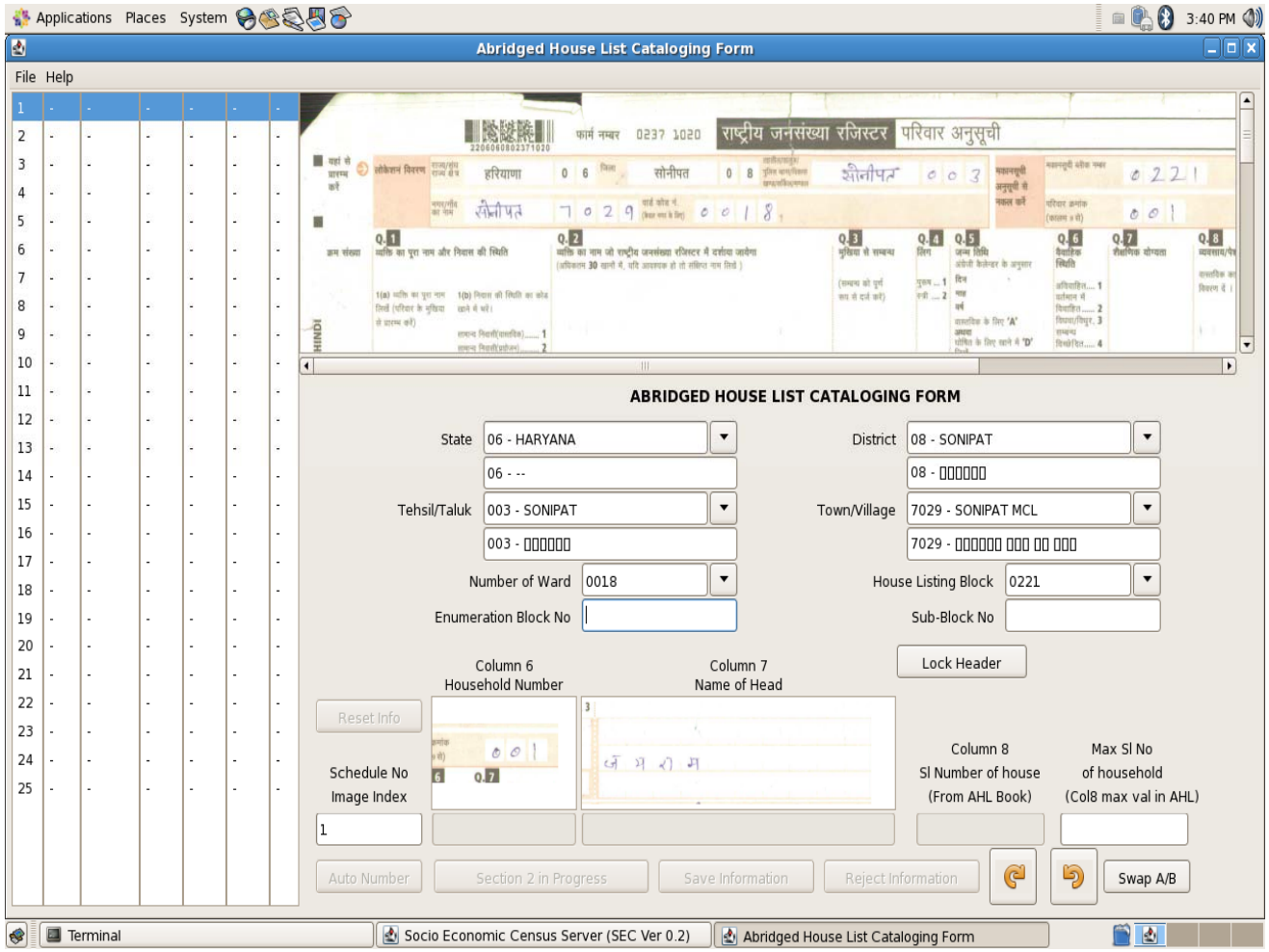
# Hand-held Device used for data collection in SECC

## Key Features

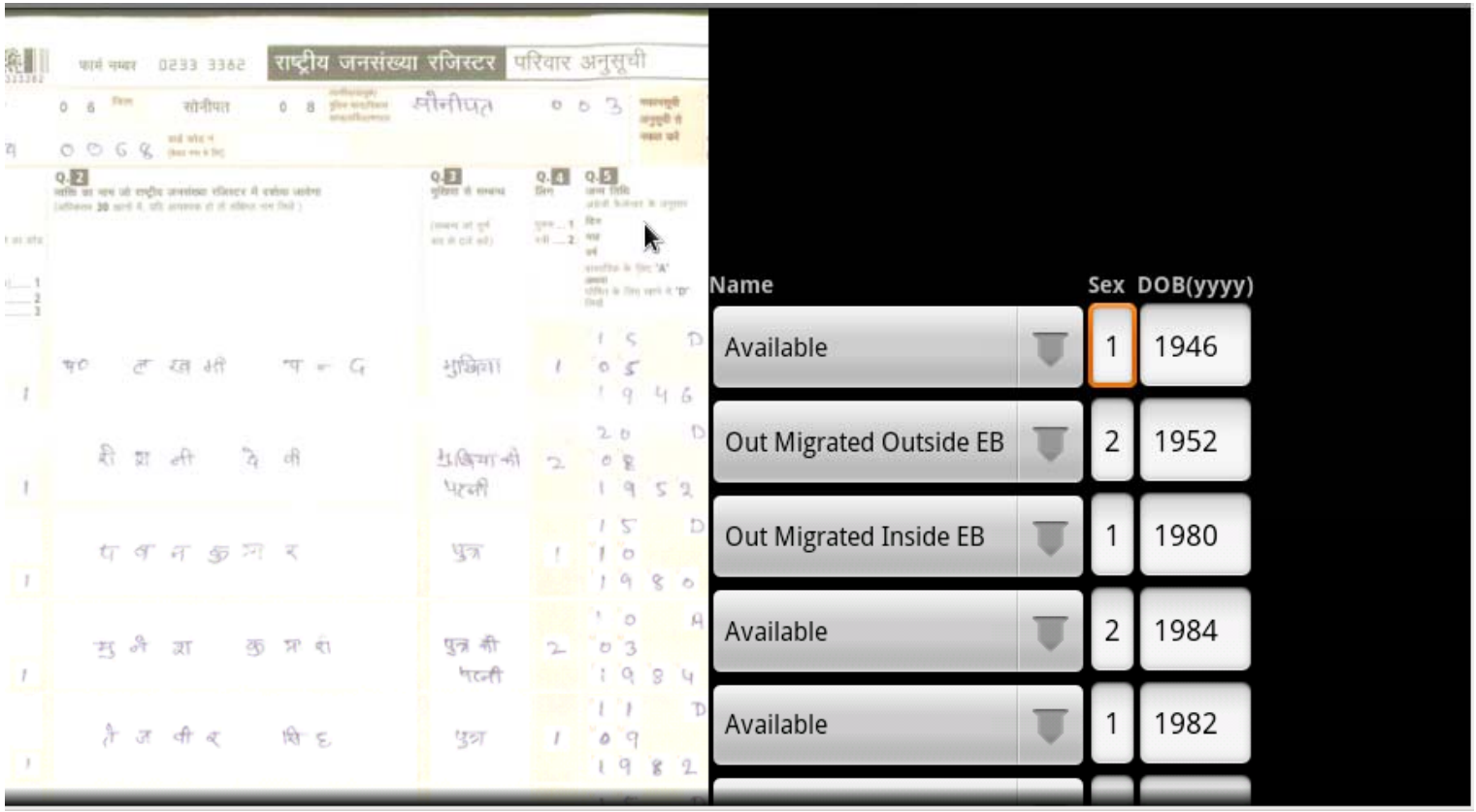
- Weighs 280 grams and can be carried easily
- 7 inch LCD Colour Display
- Touch screen, navigation keys and keyboard
- Internet connectivity through Ethernet; 2 USB ports
- Solar-backed battery supports usage in diverse areas of deployment
- Price: **Less than US$ 80**



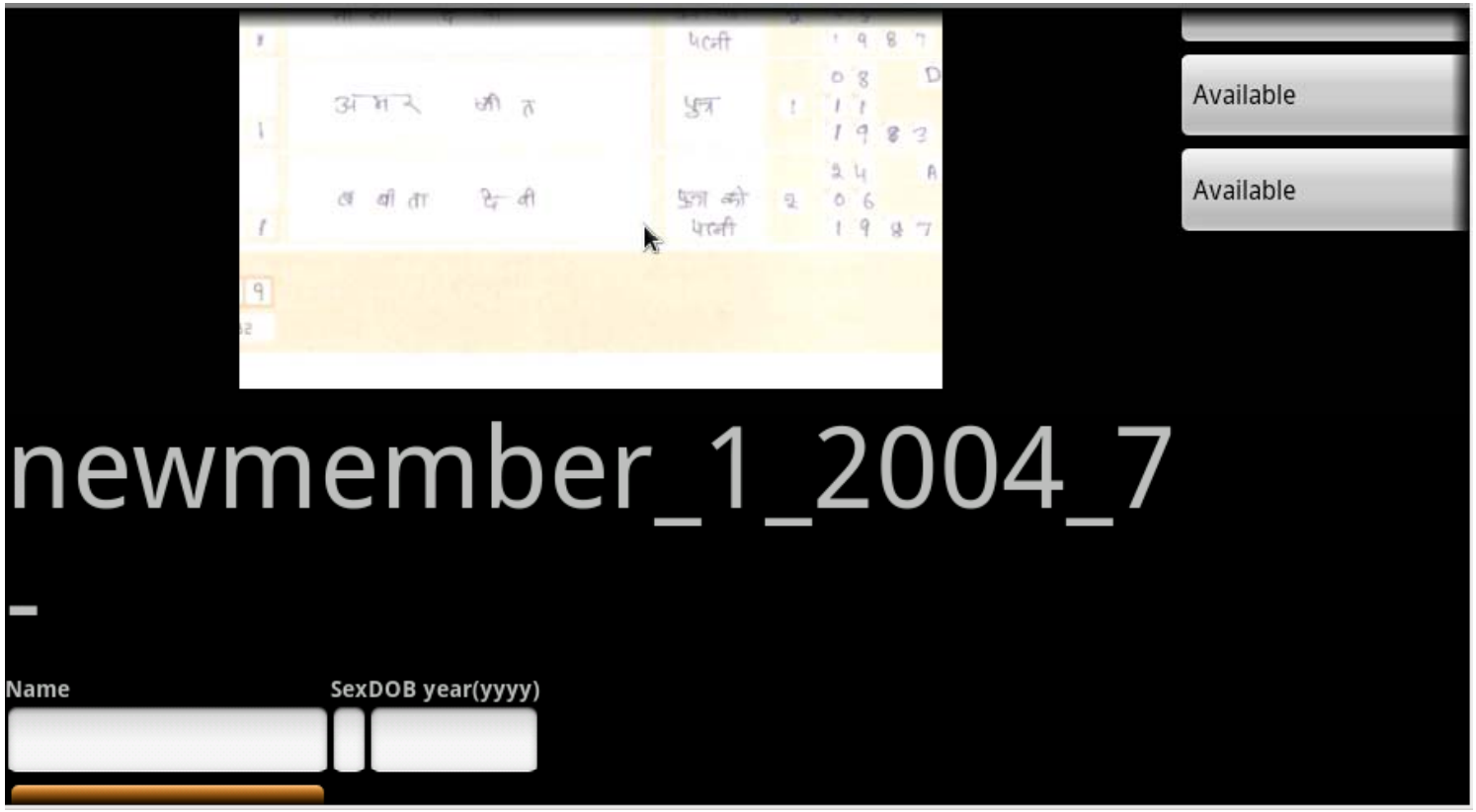
# Linking of NPR image with the AHL at Charge Data Centre



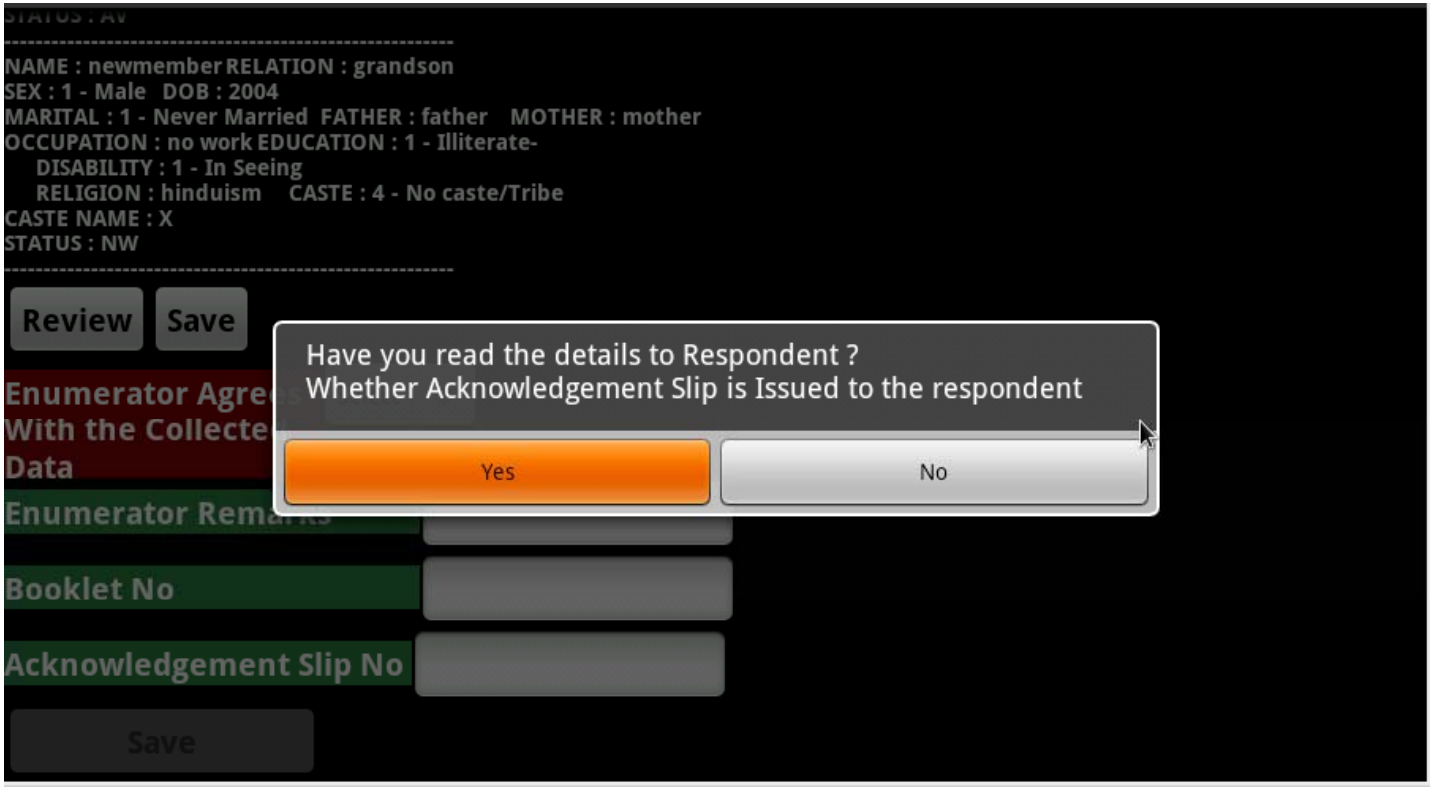
# On typing serial number of Household, corresponding image is displayed



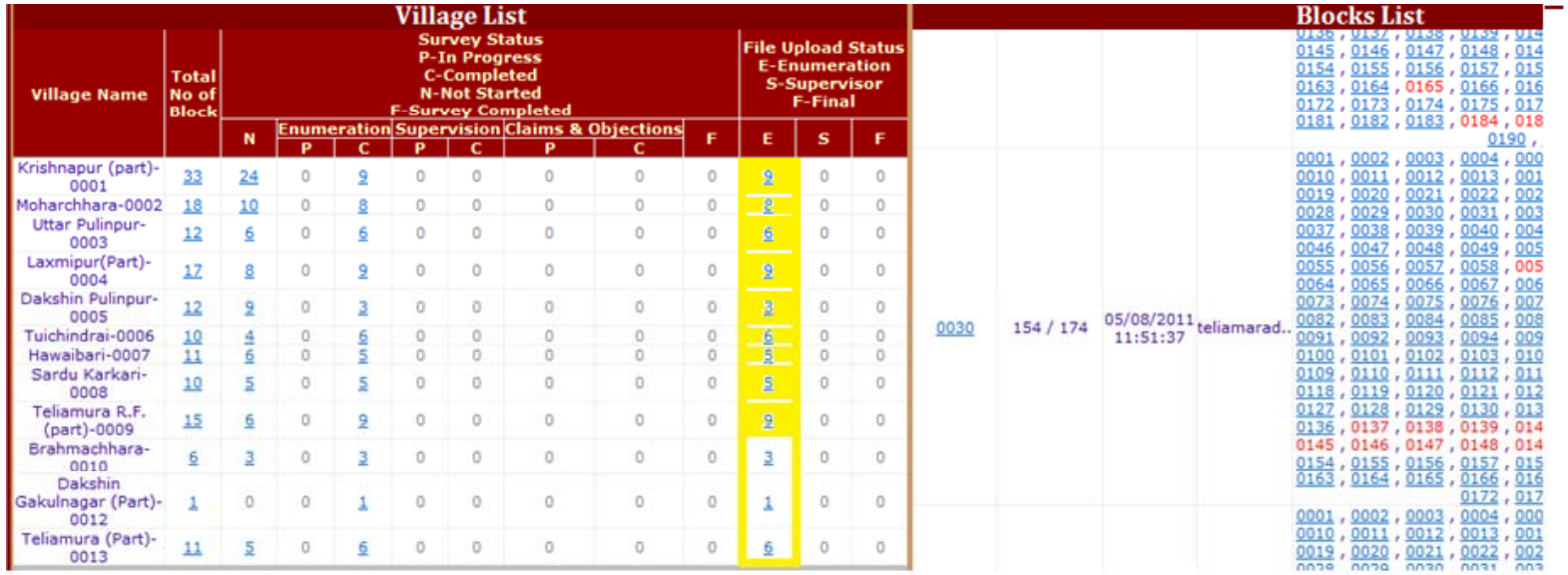
# After recording for existing members, data for new members can be added



# After data entry, acknowledgement slip is issued



# Monitoring Progress: one can drill down up to household and person level data



**Village List**

| Village Name | Total No of Block | Survey Status P-In Progress C-Completed N-Not Started F-Survey Completed | | | | | | | | File Upload Status E-Enumeration S-Supervisor F-Final | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | N | Enumeration P | Enumeration C | Supervision P | Supervision C | Claims & Objections P | Claims & Objections C | F | E | S | F |
| Krishnapur (part)-0001 | 33 | 24 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 |
| Moharchhara-0002 | 18 | 10 | 0 | 8 | 0 | 0 | 0 | 0 | 0 | 8 | 0 | 0 |
| Uttar Pulinpur-0003 | 12 | 6 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| Laxmipur(Part)-0004 | 17 | 8 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 |
| Dakshin Pulinpur-0005 | 12 | 9 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Tuichindrai-0006 | 10 | 4 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |
| Hawaibari-0007 | 11 | 6 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Sardu Karkari-0008 | 10 | 5 | 0 | 5 | 0 | 0 | 0 | 0 | 0 | 5 | 0 | 0 |
| Teliamura R.F. (part)-0009 | 15 | 6 | 0 | 9 | 0 | 0 | 0 | 0 | 0 | 9 | 0 | 0 |
| Brahmachhara-0010 | 6 | 3 | 0 | 3 | 0 | 0 | 0 | 0 | 0 | 3 | 0 | 0 |
| Dakshin Gakulnagar (Part)-0012 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 |
| Teliamura (Part)-0013 | 11 | 5 | 0 | 6 | 0 | 0 | 0 | 0 | 0 | 6 | 0 | 0 |

**Blocks List**

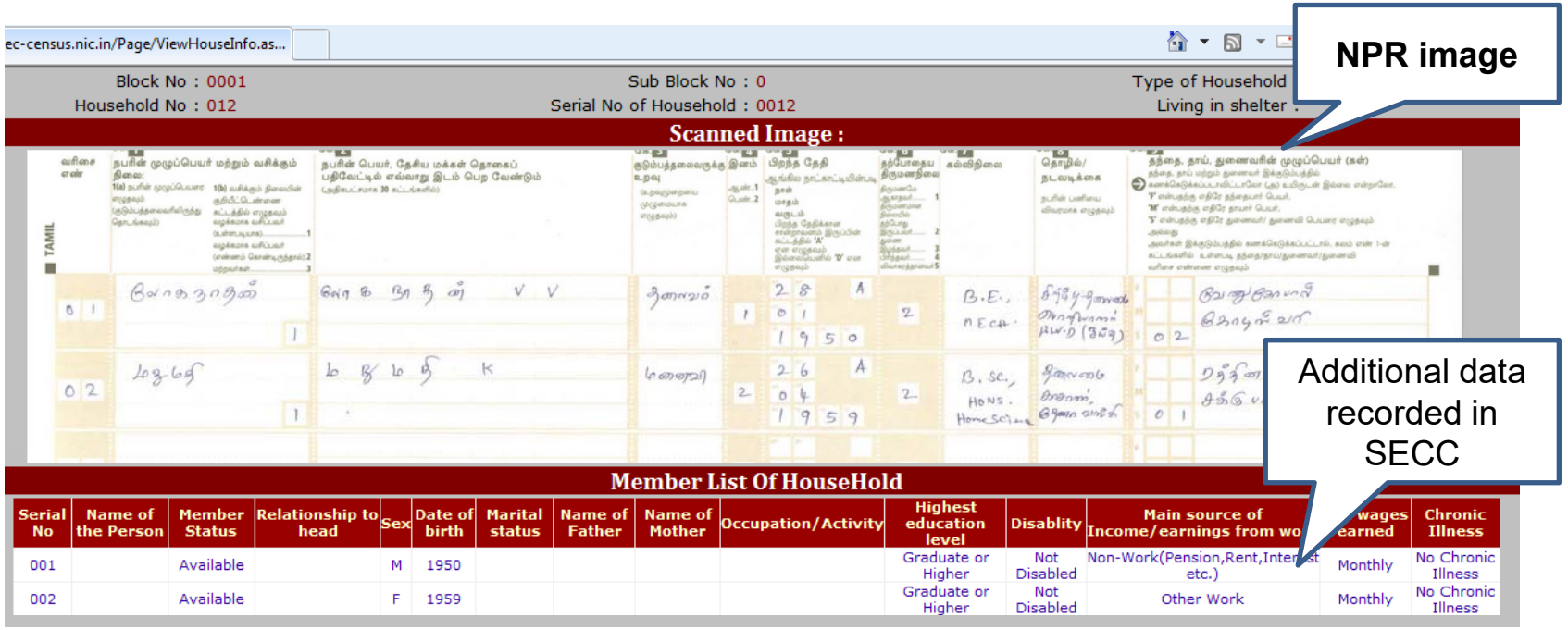
0030 | 154 / 174 | 05/08/2011 11:51:37 | teliamarad..

0136 , 0137 , 0138 , 0139 , 014
0145 , 0146 , 0147 , 0148 , 014
0154 , 0155 , 0156 , 0157 , 015
0163 , 0164 , 0165 , 0166 , 016
0172 , 0173 , 0174 , 0175 , 017
0181 , 0182 , 0183 , 0184 , 018
0190 ,

0001 , 0002 , 0003 , 0004 , 000
0010 , 0011 , 0012 , 0013 , 001
0019 , 0020 , 0021 , 0022 , 002
0028 , 0029 , 0030 , 0031 , 003
0037 , 0038 , 0039 , 0040 , 004
0046 , 0047 , 0048 , 0049 , 005
0055 , 0056 , 0057 , 0058 , 005
0064 , 0065 , 0066 , 0067 , 006
0073 , 0074 , 0075 , 0076 , 007
0082 , 0083 , 0084 , 0085 , 008
0091 , 0092 , 0093 , 0094 , 009
0100 , 0101 , 0102 , 0103 , 010
0109 , 0110 , 0111 , 0112 , 011
0118 , 0119 , 0120 , 0121 , 012
0127 , 0128 , 0129 , 0130 , 013
0136 , 0137 , 0138 , 0139 , 014
0145 , 0146 , 0147 , 0148 , 014
0154 , 0155 , 0156 , 0157 , 015
0163 , 0164 , 0165 , 0166 , 016
0172 , 017

0001 , 0002 , 0003 , 0004 , 000
0010 , 0011 , 0012 , 0013 , 001
0019 , 0020 , 0021 , 0022 , 002

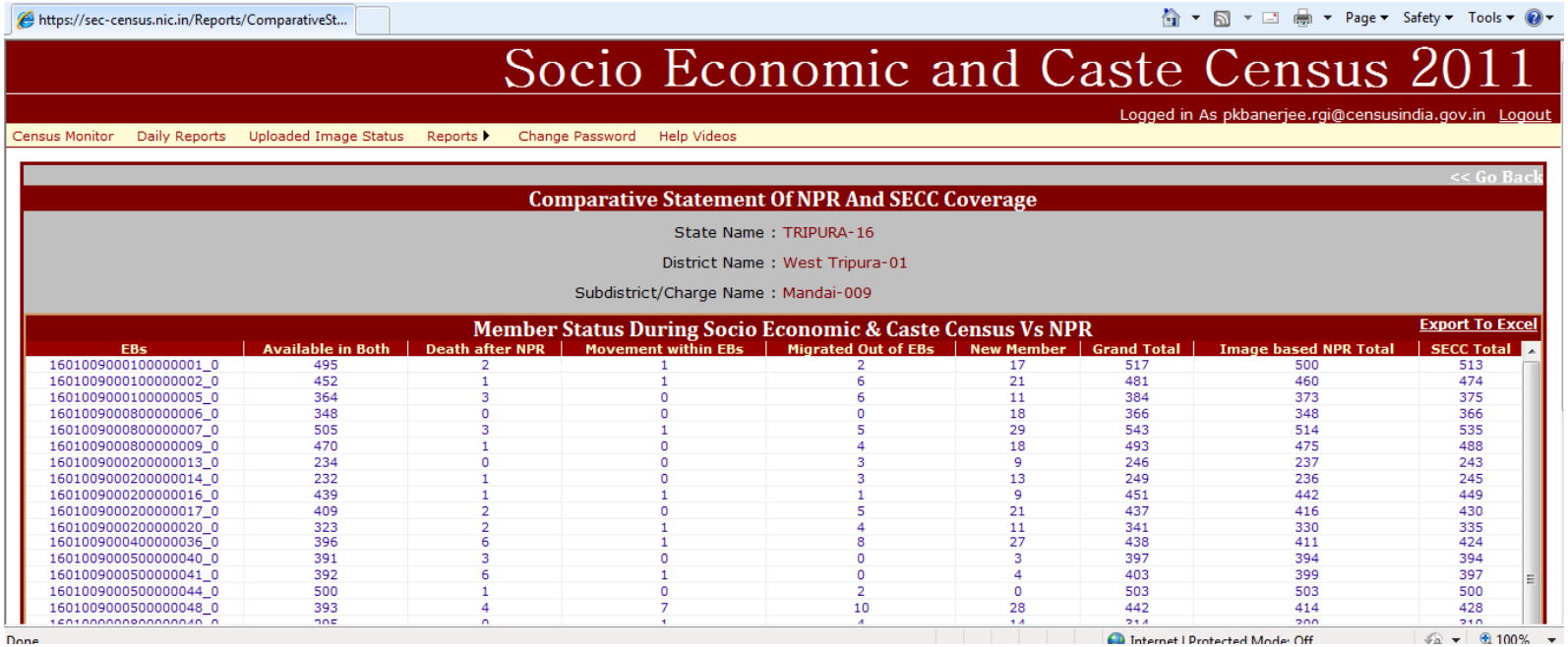
# SECC live data: Household and individual information




| Serial No | Name of the Person | Member Status | Relationship to head | Sex | Date of birth | Marital status | Name of Father | Name of Mother | Occupation/Activity | Highest education level | Disablity | Main source of Income/earnings from wo | wages earned | Chronic Illness |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 001 | | Available | | M | 1950 | | | | | Graduate or Higher | Not Disabled | Non-Work(Pension,Rent,Interest etc.) | Monthly | No Chronic Illness |
| 002 | | Available | | F | 1959 | | | | | Graduate or Higher | Not Disabled | Other Work | Monthly | No Chronic Illness |

- For each completed EB, the monitoring site provides NPR image and rest of the data collected for each person available in both NPR and SECC
- Data update reduces respondent fatigue and enhances data quality

# Control Figures

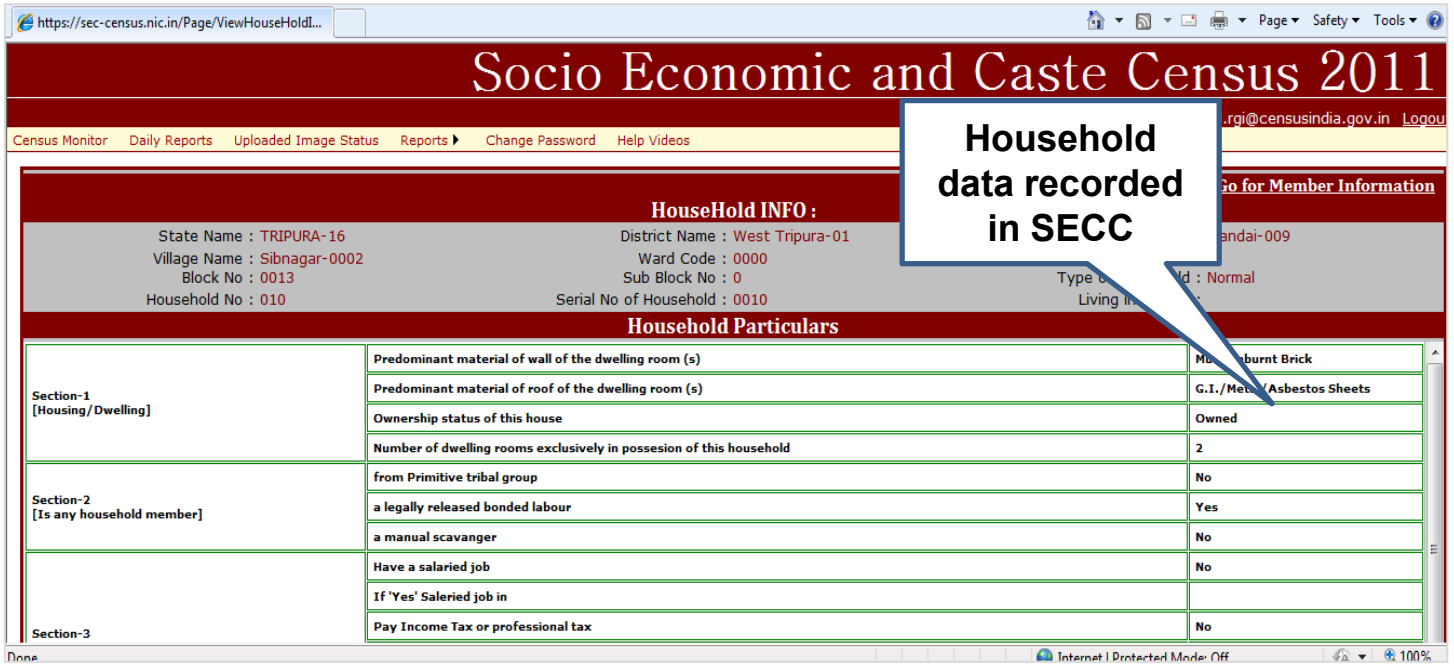



| EBs | Available in Both | Death after NPR | Movement within EBs | Migrated Out of EBs | New Member | Grand Total | Image based NPR Total | SECC Total |
|---|---|---|---|---|---|---|---|---|
| 16010090001000000001_0 | 495 | 2 | 1 | 2 | 17 | 517 | 500 | 513 |
| 16010090001000000002_0 | 452 | 1 | 1 | 6 | 21 | 481 | 460 | 474 |
| 16010090001000000005_0 | 364 | 3 | 0 | 6 | 11 | 384 | 373 | 375 |
| 16010090008000000006_0 | 348 | 0 | 0 | 0 | 18 | 366 | 348 | 366 |
| 16010090008000000007_0 | 505 | 3 | 1 | 5 | 29 | 543 | 514 | 535 |
| 16010090008000000009_0 | 470 | 1 | 0 | 4 | 18 | 493 | 475 | 488 |
| 16010090002000000013_0 | 234 | 0 | 0 | 3 | 9 | 246 | 237 | 243 |
| 16010090002000000014_0 | 232 | 1 | 0 | 3 | 13 | 249 | 236 | 245 |
| 16010090002000000016_0 | 439 | 1 | 1 | 1 | 9 | 451 | 442 | 449 |
| 16010090002000000017_0 | 409 | 2 | 0 | 5 | 21 | 437 | 416 | 430 |
| 16010090002000000020_0 | 323 | 2 | 1 | 4 | 11 | 341 | 330 | 335 |
| 16010090004000000036_0 | 396 | 6 | 1 | 8 | 27 | 438 | 411 | 424 |
| 16010090005000000040_0 | 391 | 3 | 0 | 0 | 3 | 397 | 394 | 394 |
| 16010090005000000041_0 | 392 | 6 | 1 | 0 | 4 | 403 | 399 | 397 |
| 16010090005000000044_0 | 500 | 1 | 0 | 2 | 0 | 503 | 503 | 500 |
| 16010090005000000048_0 | 393 | 4 | 7 | 10 | 28 | 442 | 414 | 428 |



- The status provides, for each EB:
  - Available in both NPR and SECC,
  - Moved out of EB after NPR,
  - Moved to a different household inside the EB
  - Died after NPR
  - New persons

# SECC live data: Household and individual information




- Checking the completeness and correctness of data using the monitoring site
- The individual and household data can be displayed immediately after completion of field work

# SECC Summary data: live

## Socio Economic and Caste Census 2011 - Rural Reports

*Note -The figures are based on the data consolidated so far and are likely to change due to data in transit.*

**Reports Home**

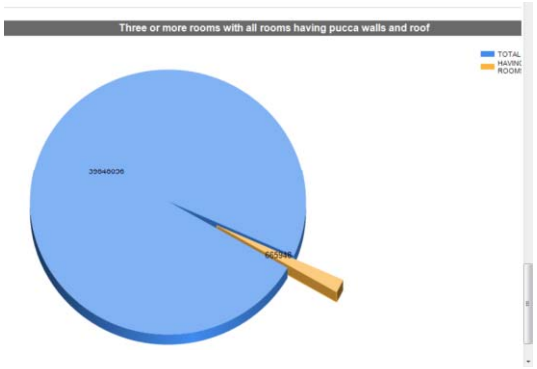
| | | |
|---|---|---|
| Motorized two/three/four wheeler/fishing boat | Mechanized three/four wheeler agricultural equipment | Kisan Credit Card with credit limit of Rs. 50,000 and above |
| Household with any member as a Government employee | Household with non-agricultural enterprises registered with the Government | |
| Any member of the family earning more than Rs. 10,000 per month | Paying Income Tax | Paying Professional Tax |
| Three or more rooms with all rooms having pucca walls and roof | Own a Refrigerator | Own Landline Phone |
| Own 2.5 acres or more of irrigated land with at least 1 irrigation equipment | 5 acres or more of irrigated land for two or more crop seasons | |
| Owning at least 7.5 acres of land or more with at least one irrigation equipment | A set of Households with all excluded parameters | |

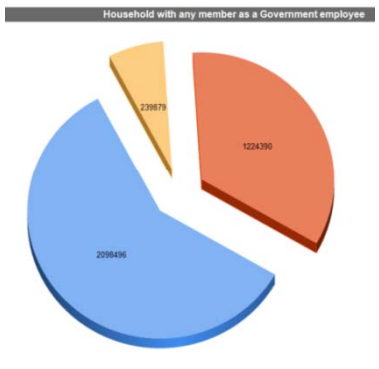
**State**

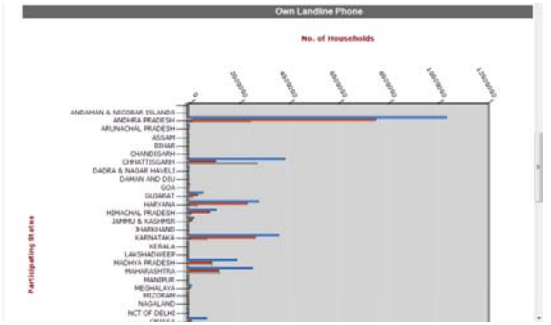
ANDAMAN & NICOBAR ISLANDS
ANDHRA PRADESH
ARUNACHAL PRADESH
ASSAM
BIHAR
CHANDIGARH
CHHATTISGARH
DADRA & NAGAR HAVELI
DAMAN AND DIU
GOA

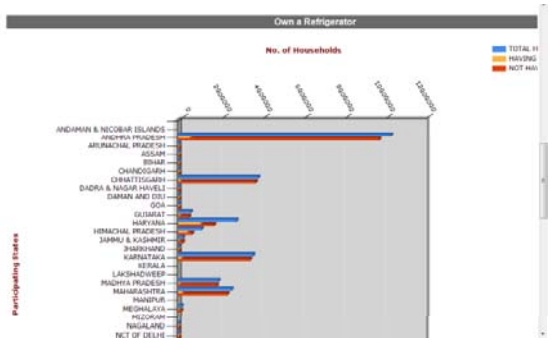
**District**

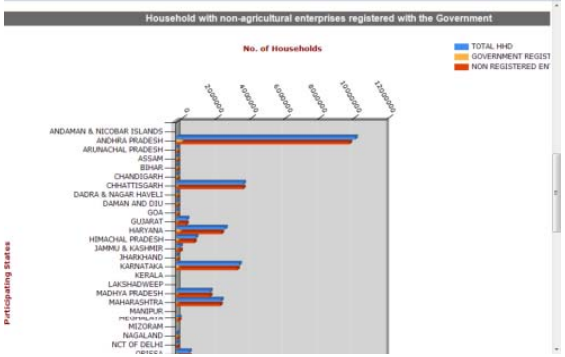
| Participating States | Total HouseHolds | Landline | (%age) | Mobile | (%age) | Both | (%age) | No Phone | (%age) |
|---|---|---|---|---|---|---|---|---|---|
| ANDAMAN & NICOBAR ISLANDS | | | | | | | | | |
| ANDHRA PRADESH | 10399968 | 179098 | 1.7 | 7554512 | 72.6 | 162276 | 1.6 | 2504082 | 24 |
| ARUNACHAL PRADESH | 48040 | 1194 | 2.5 | 20107 | 41.9 | 1471 | 3.1 | 25268 | 52 |
| ASSAM | 7150 | 51 | 0.7 | 3758 | 52.6 | 41 | 0.6 | 3300 | 46 |
| BIHAR | 22857 | 36 | 0.2 | 12853 | 56.2 | 161 | 0.7 | 9807 | 42 |
| CHANDIGARH | 16515 | 38 | 0.2 | 15137 | 91.7 | 524 | 3.2 | 816 | 4 |
| CHHATTISGARH | 3897893 | 5532 | 0.1 | 1109940 | 28.5 | 19001 | 0.5 | 2763420 | 70 |
| DADRA & NAGAR HAVELI | 45919 | 644 | 1.4 | 26865 | 58.5 | 443 | 1 | 17967 | 39 |
| DAMAN AND DIU | 31929 | 388 | 1.2 | 27894 | 87.4 | 942 | 3 | 2705 | 8 |
| GOA | 50327 | 1150 | 2.3 | 36676 | 72.9 | 7430 | 14.8 | 5071 | 10 |
| GUJARAT | 598641 | 4129 | 0.7 | 390903 | 65.3 | 14488 | 2.4 | 189121 | 31 |
| HARYANA | 2836855 | 16541 | 0.6 | 2387076 | 84.1 | 62921 | 2.2 | 370317 | 13 |
| HIMACHAL PRADESH | 1138308 | 18645 | 1.7 | 873215 | 77.4 | 112304 | 10 | 134234 | |



## Implications

- Hybrid approach
- Tight control
- Monitoring/Supervision
- Field quality
- Cost optimisation
- User friendly
- Time saving
- Course correction
- Almost real time data availability




# Emerging Issues in Census

# Coverage

- Migration
- Density
- Difficult geographical terrain
- Difficult persons; seasonal migrants, nomads, homeless
- Difficult areas – Disturbed civil conditions

# Quality

- Manpower
- Training
- Indifference
- Quality Assurance
- Validation
- Consistency
- Editing

# Cost

- Manpower
- Paper
- Printing
- Logistics
- Technology Costs

# Comparative Cost

## Census 2011

| | |
|---|---|
| Cost | Rs. 2200 Crores |
| | US $446 Million |
| Per Capita | Rs.18 |
| | US $ 0.4 |

## SECC 2012

| | |
|---|---|
| Cost | Rs. 3543 Crores |
| | US $723 Million |
| Per Capita | Rs. 30 |
| | US $ 0.6 |

## National Population Register

| | |
|---|---|
| Cost | Rs. 6649 Crores |
| | US $ 1.3 Billion |
| Per Capita | Rs.54 |
| | US $ 1.2 |

# Time

- Decadal/5 yearly
- Data Processing – Long delay
- Data availability – Not timely

# Way Ahead…

- Right Objective
- Right Process
- Right Cost
- Right Time
- Right Technology

**One size will not fit all**

*Thank You*

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