APCAS/18/9.3.2P

منظمة الأغذية والزراعة للأمم المتحدة

联合国粮食及农业组织

Food and Agriculture Organization of the United Nations

Organisation des Nations Unies pour l'alimentation et l'agriculture

Продовольственная и сельскохозяйственная организация Объединенных Наций

Organización de las Naciones Unidas para la Alimentación y la Agricultura

ASIA AND PACIFIC COMMISSION ON AGRICULTURAL STATISTICS

TWENTY-SEVENTH SESSION

Nadi, Fiji, 19 – 23 March 2018

Agenda Item 9.3

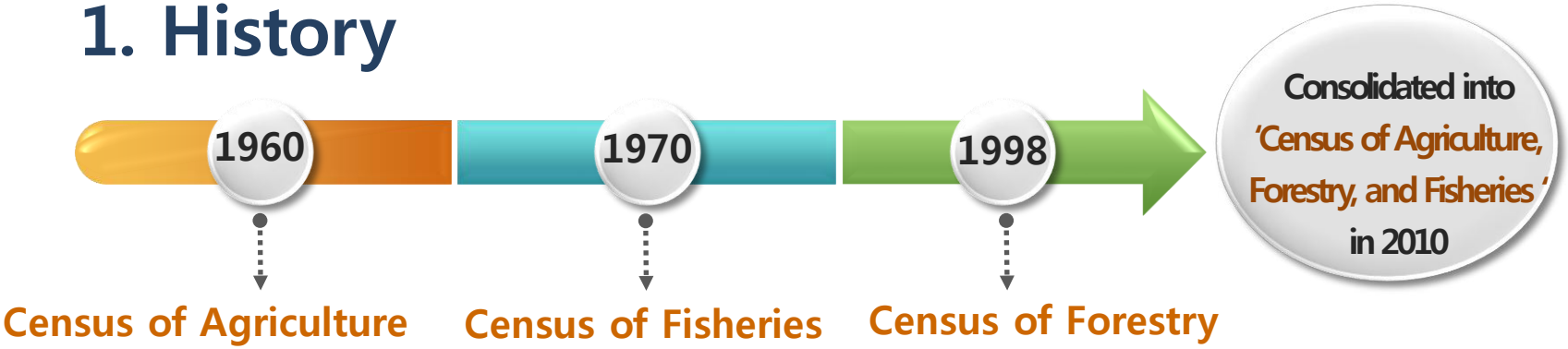
Use of Information Technology in the Census of Agriculture 2015 in Korea

Contributed by: **KIM JIN, Director**
Short-Term Agri. & Fisheries Statistics Division
Statistics Korea
Republic of Korea
E-mail: jinknso@korea.kr

CONTENTS

I Overview of the Census of Agriculture, Forestry, and Fisheries

1. History



Census of Agriculture and Census of Fisheries: since 2000

Census of Forestry: since 2005 → Statistics Korea has been in charge

2. Legal Grounds

- Census of Agriculture, Forestry, and Fisheries is based on the Statistics act and has a separate regulation item.

- Statistics Act (item 3 of the article 5), Regulations of the Census of Agriculture, Forestry, and Fisheries (Ministry of Strategy and Finance regulation number 502)

3. Periodicity : Quinquennial

- Every five years, the years ending in number「0」and 「5」
- The Agriculture, Forestry, and Fishery Survey is carried out in all the years when the Census is not conducted.

4. Reference Date & Reference Period

- Reference date : December 1, 2015
- Reference period : December 1, 2014. ~ November 30, 2015

5. Survey Method

- **Household survey : through interview visits**
- **Community survey : through a village foreman meeting**

+ Accompanied by internet survey

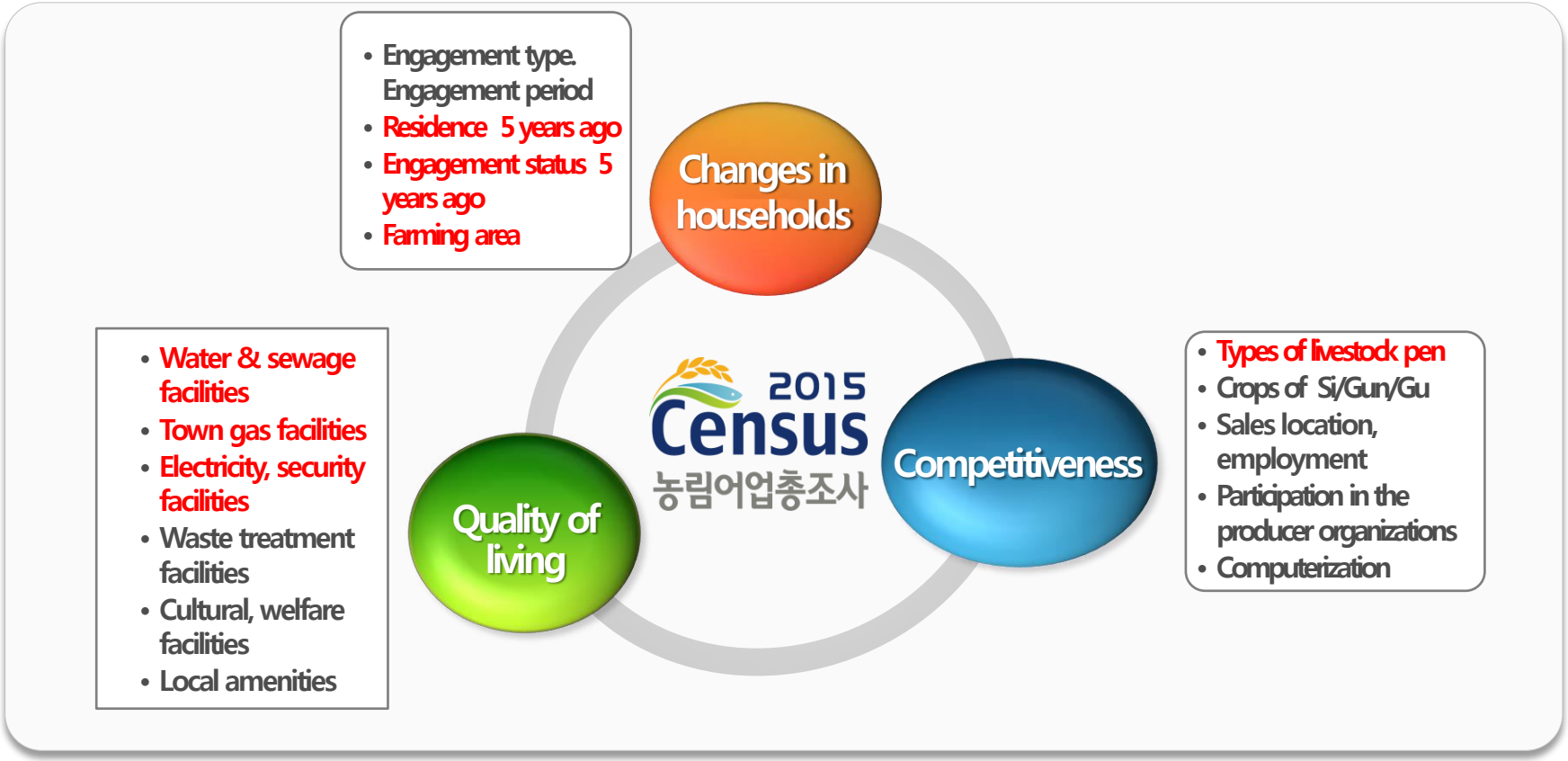
➢ Survey is taken by the administrative unit 'Ri' through the village foreman meetings in each Eup/Myeon

6. Target Population/Coverage

- **All agriculture, forestry, and fisheries households corresponding to the definition of the target household as of the reference period**
- **Administrative unit 'Ri' under Eup/Myeon districts**

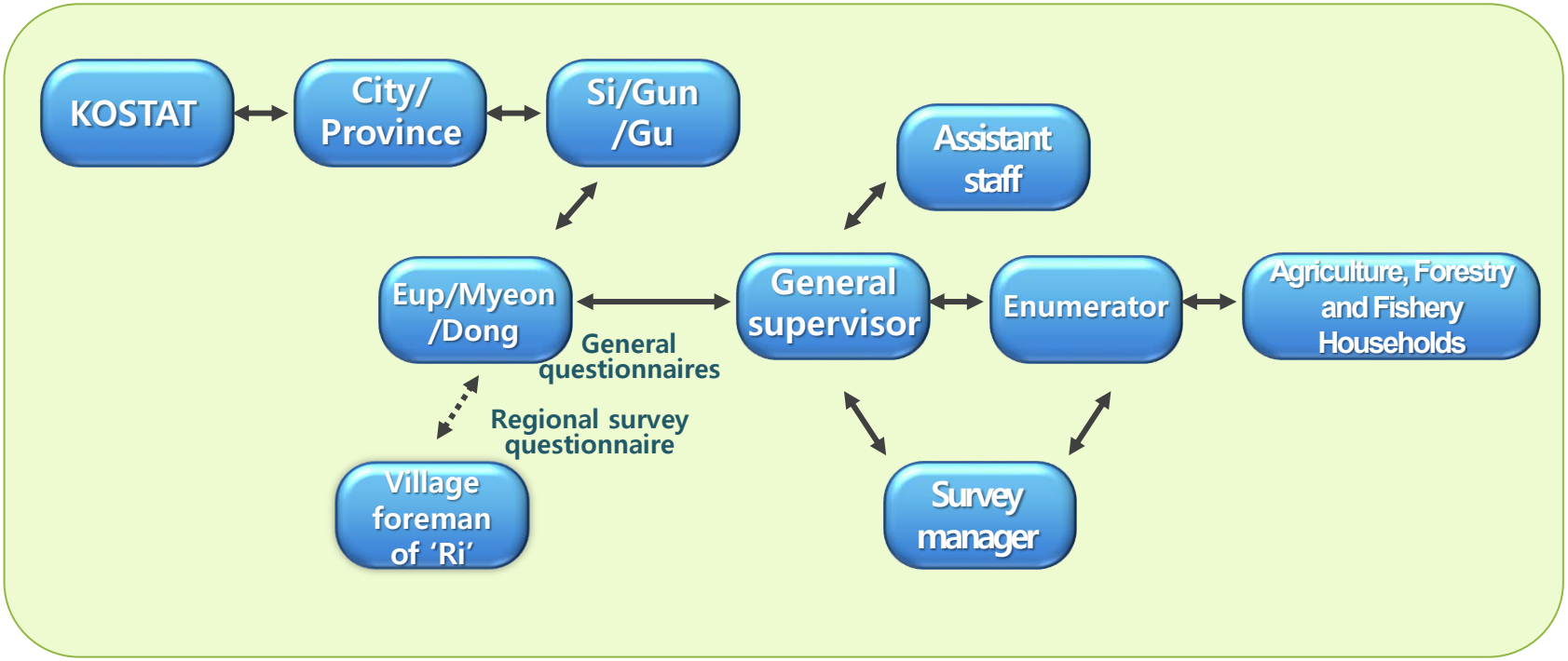
7. Questionnaires and Survey Items

- Questionnaire(4 types) : Agriculture/Forest Households, Sea Water Fishery Households, Inland Water Fishery Households, Regional Survey
- Survey items: 130 items



8. Survey Structure

- **Host agency: Statistics Korea**
- **Implementation agency : Provincial governments**



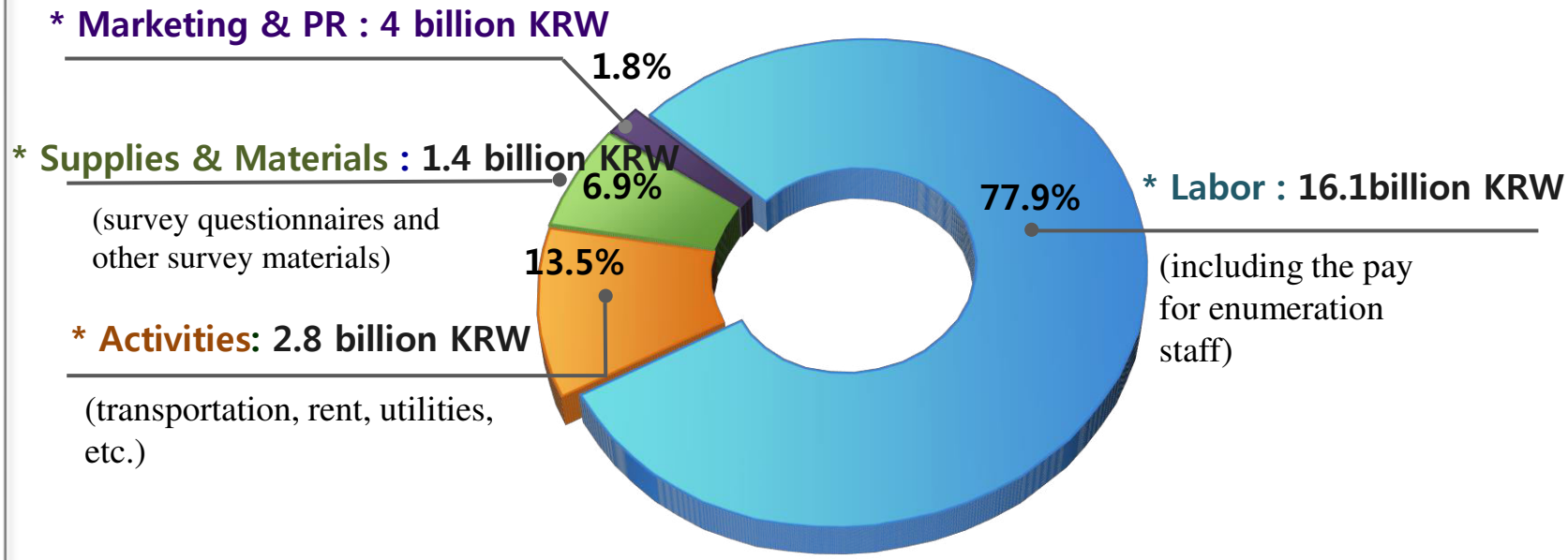
9. Human Resources

- **Total 23,500 manpower**
  - **2,500 civil servants**
  - **21,000 enumeration staff**

1,716 General Supervisors	806 Survey Managers
16,971 Enumerators	1,670 Assistant staff

- **Preferentially hire people with experiences in census such as the Population and Housing Census.**
- **Use E-Census integrated management system for hiring and managing enumeration staff.**

10. Budget


* Marketing & PR : 4 billion KRW
1.8%
* Supplies & Materials : 1.4 billion KRW
6.9%
(survey questionnaires and other survey materials)
13.5%
* Activities: 2.8 billion KRW
(transportation, rent, utilities, etc.)
77.9%
* Labor : 16.1billion KRW
(including the pay for enumeration staff)

11. Linkage with the Population and Housing Census

- **Increased efficiency through the linkage with 2015 Population and Housing Census**
- **Reflect the WCA 2010 recommendations of the Food and Agriculture Organization of the United Nations (UN FAO)**
  * WCA: World programme for the Census of Agriculture

Sharing human resources · physical resources

Human resources

Physical resources

System

Marketing/PR

Meeting

Follow-up interviews

12. Use of Administrative Data

- The census turned into a register-based census in 2015
- The Economic Census and the Census of Agri., Forestry, and Fisheries will seek ways to introduce the register-based census after 2020.

Creating a Database of administrative data

As of June 2016, 19 kinds of administrative data on agriculture, forestry, and fisheries are collected and built into a database.

Description of the administrative date use in 2015 Census

① Compilation of the target household register

② Replacement of the survey items

Replaced 4 survey items regarding the houses and the regions

II Use of Information Technology in the Census of Agriculture, Forestry, and Fisheries

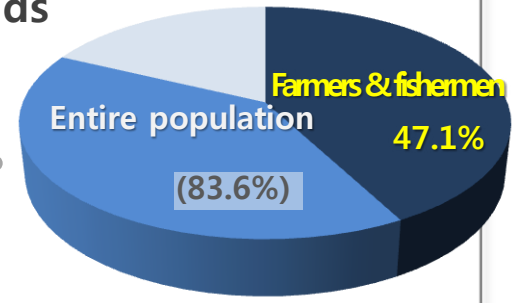
1 Internet Survey

- **Coping with the contingencies (foot and mouth disease, AI, etc.) and refusal to interview visits and response**

- **Targeting young business owners and livestock households**

  ➢ Consider the issues including the aging of rural area and fishing village, low internet usage rate*, and the complication of the survey items.

  *** Internet usage rate of farmers and fishermen in 2014**



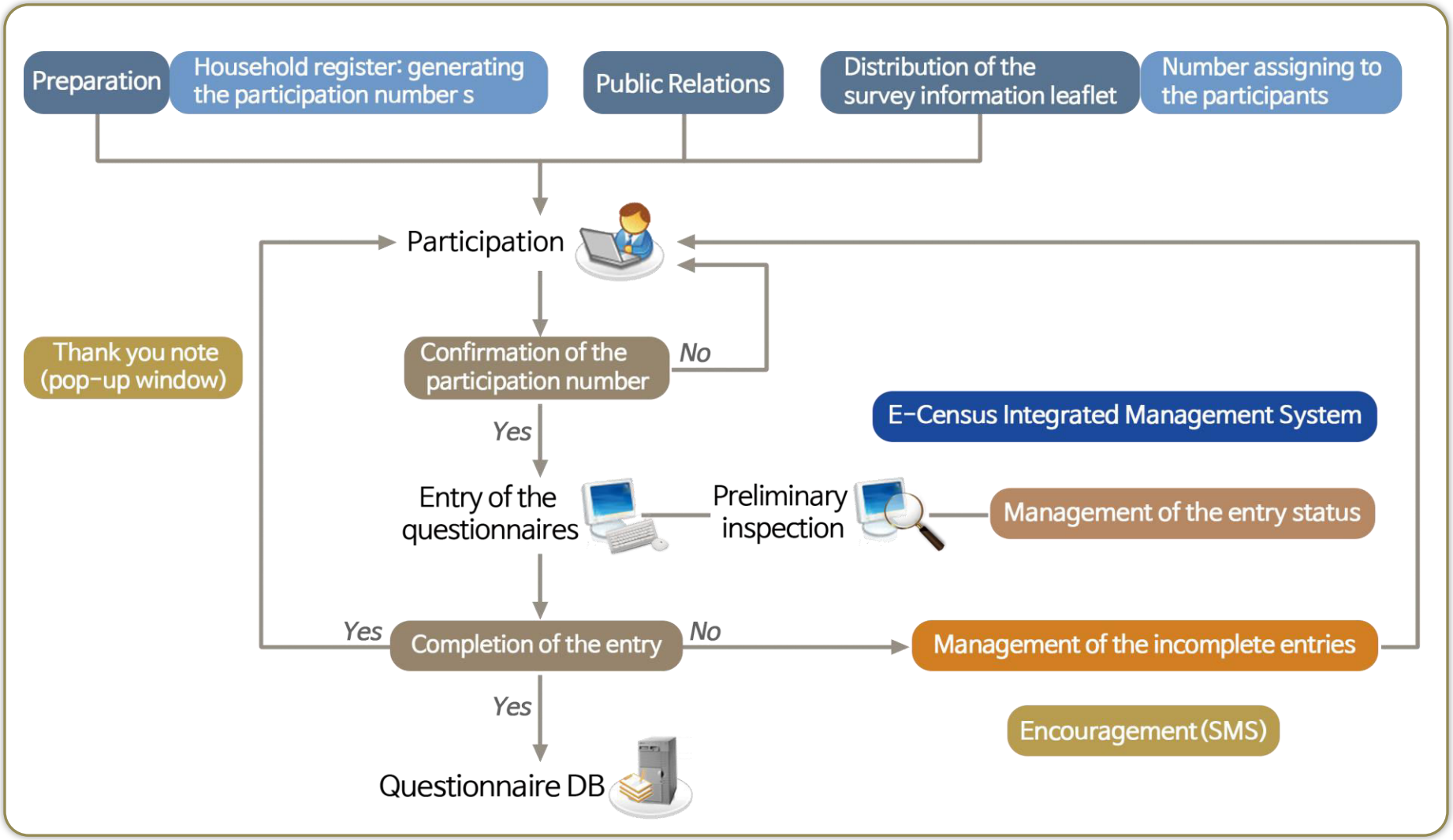
- **Survey method : interview visit + internet survey**

Assigned numbers to the voluntary participating households

- **Participation rate of the internet survey (tentative)**

	Entire numbers	Numbers of internet survey participation	Participation rate(%)
Household Survey	1.2 million households	370,000 households	30.8
Community Survey	36,700 (administrative unit) 'Ri's	10,800 (administrative unit) 'Ri's	29.4

Internet Survey Workflow



2 e-Census Integrated Management System

- e-Census system enables the efficient management of the census by networking the survey fields and the survey headquarters.
  - Provide multidimensional assistance by linking the 080 call center, homepage website, and the internet survey system to the e–Census system.
  - Provide various administrative support in hiring enumerators, linking the household registers, and carrying out the survey through the computerization.

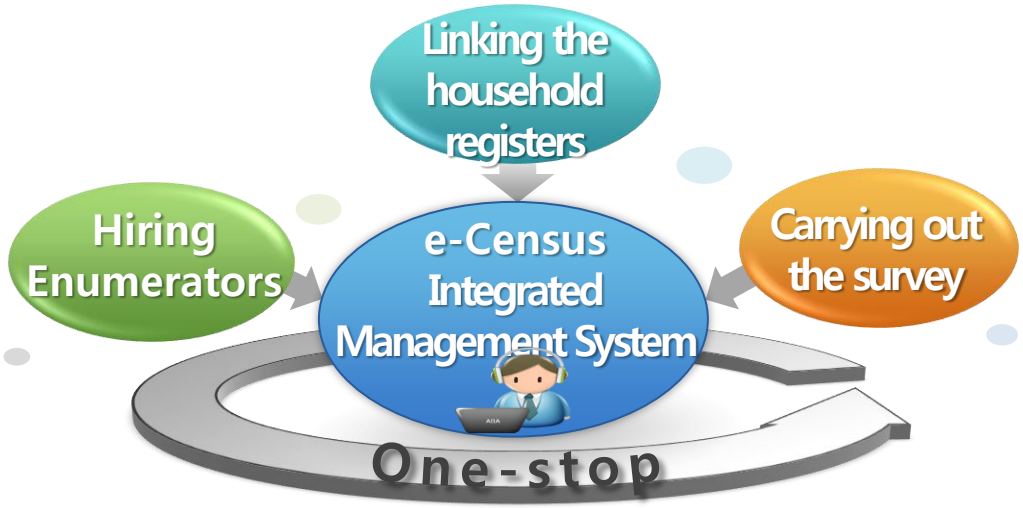
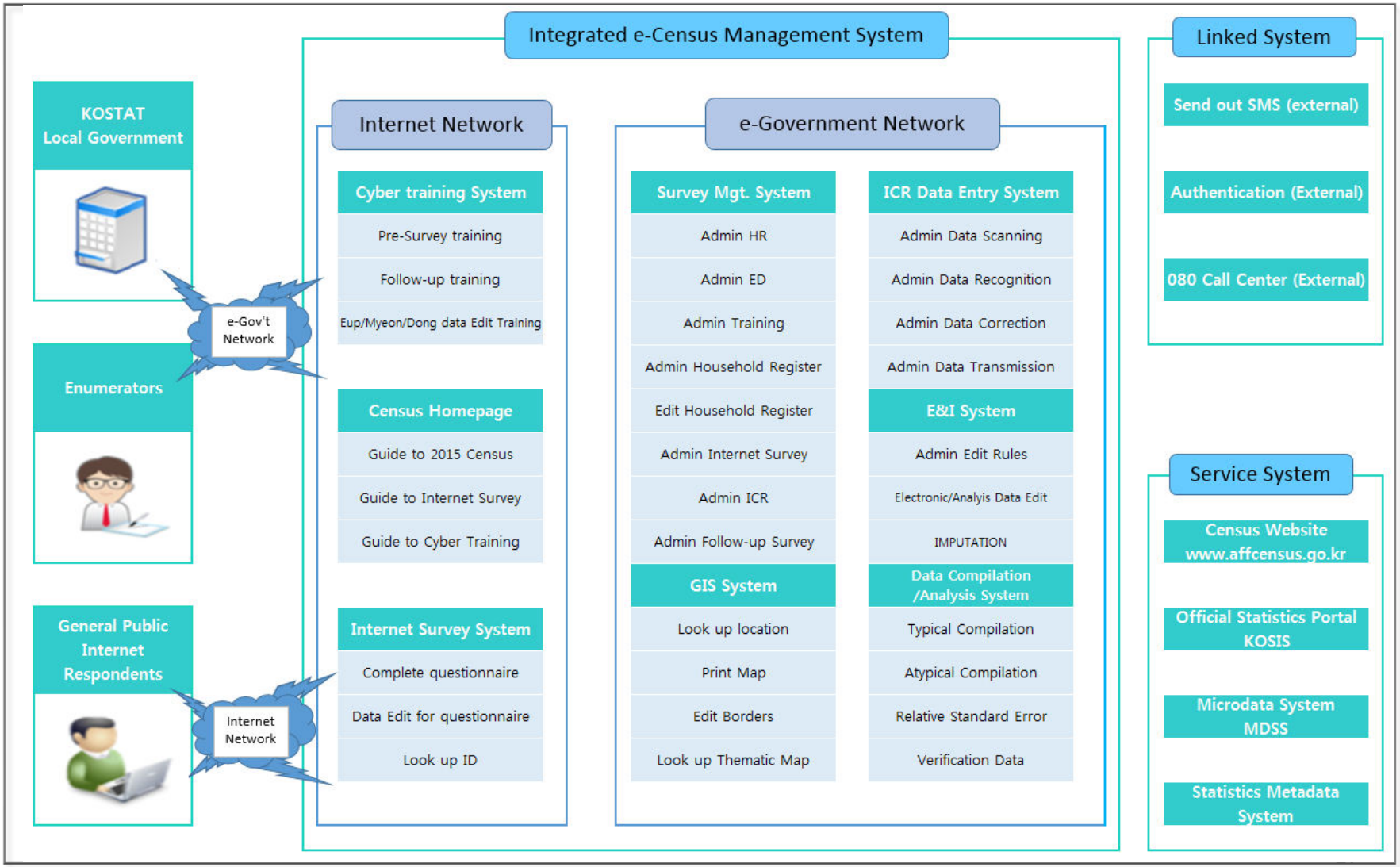
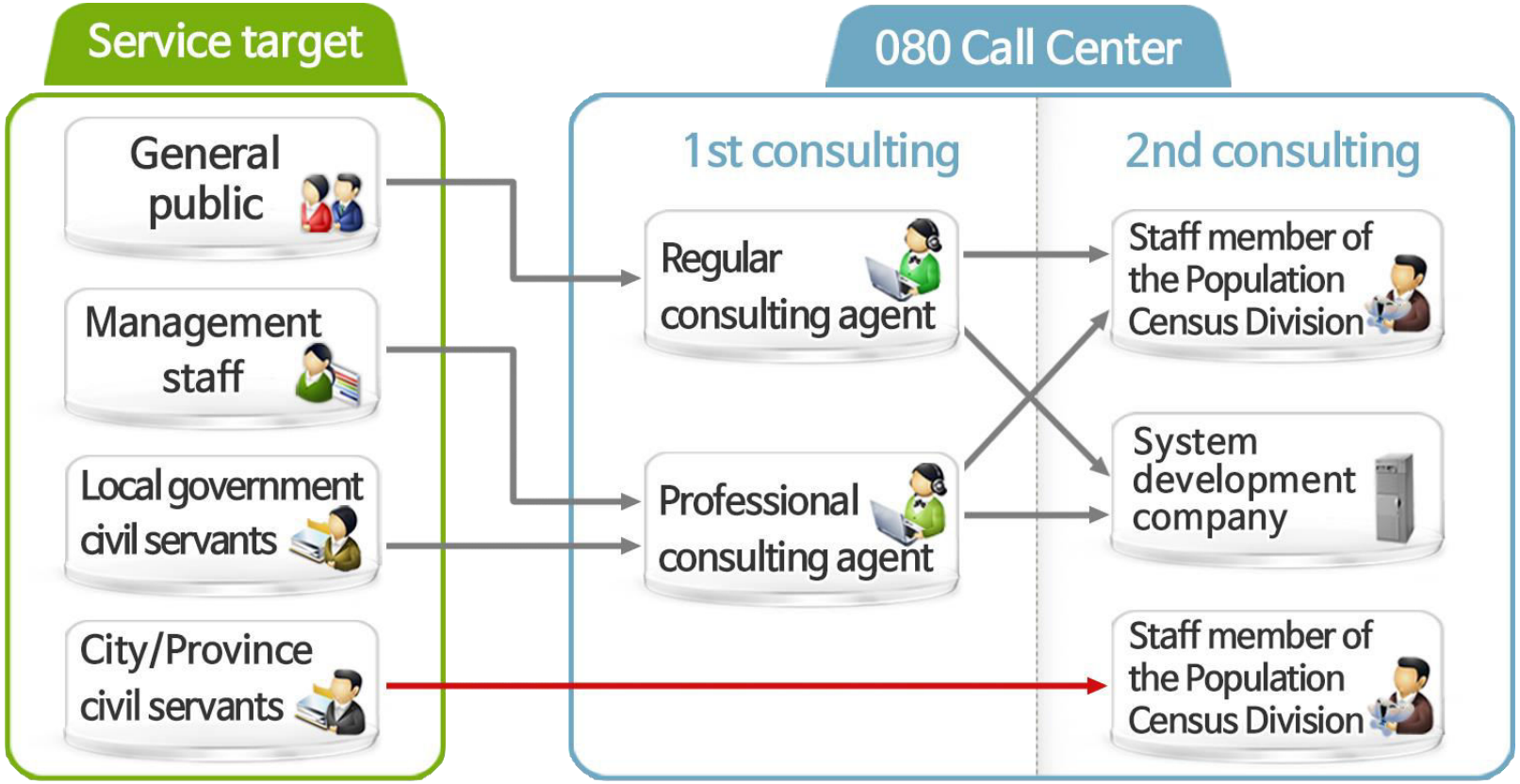


Diagram of e–Census



080 Call Center

- **Provide accurate, fast answers by professional consulting agents**
- **Develop a specialized consultancy program for: management of the consulting, sharing consulting cases, consulting manuals, bulletin board, etc.**

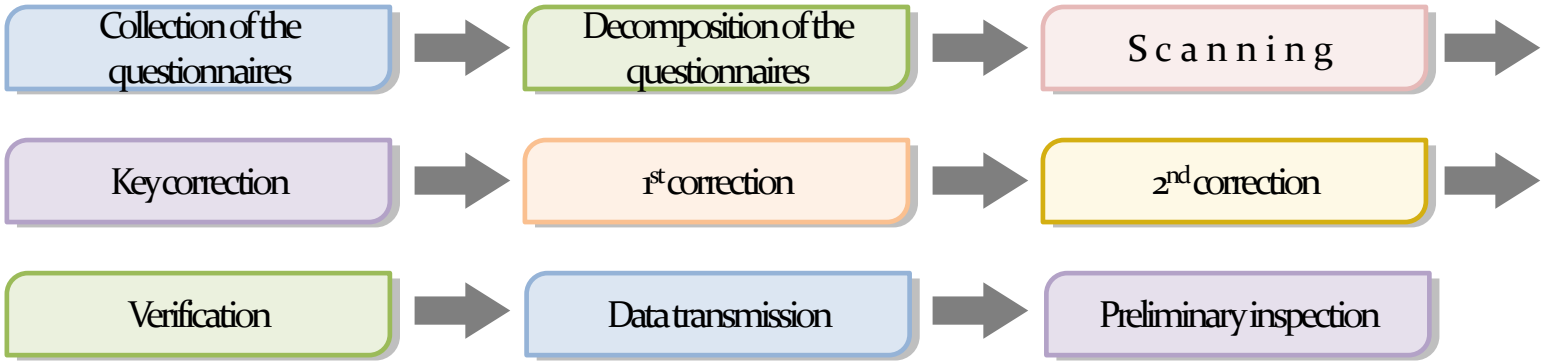


3 Data Entry Using ICR (Intelligent Character Recognition)

A technique converting handwritten numbers, Hangeul, and marks on the questionnaires into data through scanning and automatic recognition

- ⊙ In the year 2010 : Population and Household Census/Census of Agriculture, Forestry, and Fisheries/Economic Census
- ⊙ In the year 2015 : Population and Household Census/Census of Agriculture, Forestry, and Fisheries

ICR data entry workflow

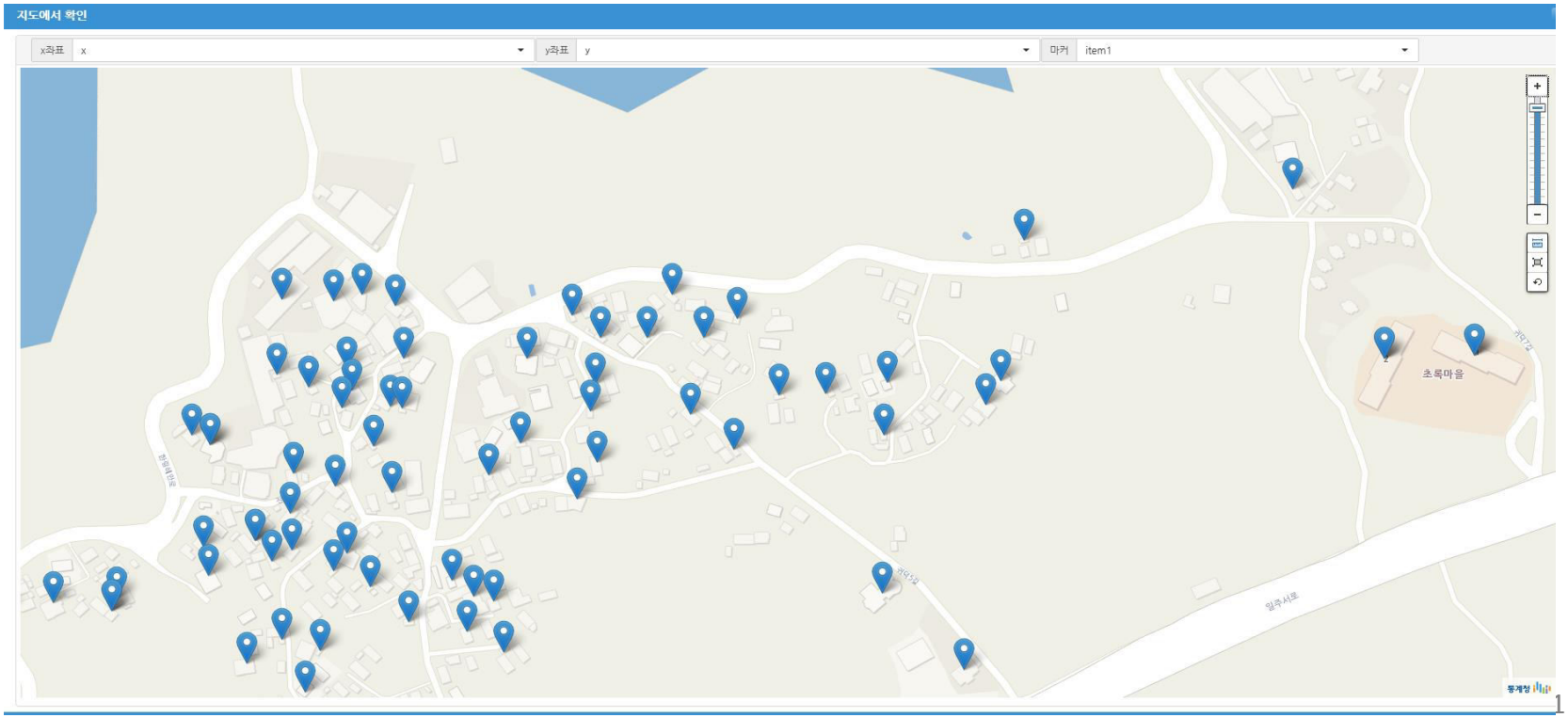


Background

- **Changes of environment for data entry**
  - Amount of data collected increased while data collection time was reduced.
  - Database was set up using the advanced ICR data entry software
  - Data going into questionnaire was linked to household register
  - Accuracy of data was achieved
- **Highly efficient yet low budget census with use of ICR technology**
  - Latest information technologies and infrastructure was developed for data collection, processing and analysis
  - Population Census and AFF Census allowed establishment of basic environment for ICR
  - Large volume data and short-period projects required technical skills

4 Use of GIS (Geographic Information System)

- Building and providing maps which combine the data from the Census of Agriculture, Forestry, and Fisheries with GIS.
- Verifying any duplication and omission in the survey target register using the LBDMS (Location Based Data Management System) (after 2020)



Thank you