

Terms of Reference

EU Twinning Project IL/12 CRIS 2015/370-467

Date: 05 –08 February 2018

Component D: Methodological and geo-spatial tools for improving the quality and efficiency of field surveys

Activity D.7: Integration of sampling, workload allocation, management and monitoring in a multi-field survey approach

0. Mandatory results and benchmarks for the component

Mandatory results:

- *Optimization of field workload allocation using geo-spatial tools for managing field surveys in designated area*

Benchmarks:

- **ID1:** Definition of indicators to measure the efficiency of field work and reliability of estimates with a view to reduce costs and improve sample quality developed by 3rd quarter (Completed);
- **ID2:** Methodological paper on managing and monitoring field work using geo-spatial procedures during data collection process by 3rd quarter (completed);
- **ID3:** Methodological paper on optimisation of workload allocation of fieldwork using geo-spatial procedures and other tools by 3rd quarter (completed);
- **ID4:** Feasibility test for optimizing workload allocation of field work evaluated, including determination of optimal size of enumeration areas by 6th quarter (August 2017);
- **ID5:** Design specification for an integrated management system for multi-field work load allocation and monitoring survey status in real time in designated areas by 7th quarter (November 2018);
- **ID6:** A roadmap for an integrated management system for multi-field work load allocation and monitoring including milestones, deliveries, time frame, need for resources and responsibility presented to the ICBS management by the 9th quarter (May 2018);
- **ID7:** Multi-year work plan for the organisational framework and training plan for managing field surveys in designated areas 10th project quarter (August 2018);

1. Purpose of the activity

The overall vision for the ICBS is to improve the quality and efficiency of field surveys at the ICBS and thereby reduce cost for the main surveys carried out on a regular basis at ICBS.

The overall purpose of this activity is to discuss how to go from a single survey approach where each individual survey is sampled, allocated, managed and monitored separately into a multi-field survey approach integrating all stages from sampling to monitoring including IT supporting tools.

Focus will be on discussing problems and issues relevant to the four main social surveys in Israel - Labour Force Survey, Household Expenditure Survey, Social Survey and Longitudinal Survey.

- The Israeli Central Bureau of Statistics (ICBS) will present the current situation regarding the planning, management and monitoring of field surveys including:
 - Presentation of the feasibility tests for workload allocation
 - Presentation of use cases for a Multi Survey System (MSS) under development at ICBS – current status and challenges
 - The sampling frame used in Israel for field surveys today and challenges foreseen in the new approach
- MS experts will present MS experience on planning and monitoring of social surveys at INSEE
 - Introduction to field surveys in France
 - The organization and management of field surveys including the management of the different actors
 - The sampling methodology/frame used in France for field surveys
 - Sampling and creation of workload considerations used to balance interviewer workload?
 - Planning and re-allocation of interviewers field work
 - How to estimate and divide the workload by investigation officer
 - Introduction to Activity Planning Tool for Surveys used in France (OPALE: Outil de Planification des Activités Liées aux Enquêtes)
 - IT support for monitoring field workers and progress in each survey
 - Progress reports
 - Re-allocation
 - IT portal and digital communication with field workers
- INSEE and ICBS staff will discuss:
 - Which elements from France could be implemented in the plan for ICBS taking into account the Israeli environment and condition
 - Transforming the ICBS's vision for sampling and management into concrete actions.

2. Expected output of the activity

- Activity report
- Recommendations on how to improve the sampling, planning and work allocation, management and monitoring of face-to-face surveys in a multi-survey approach with focus on the four main social surveys (Labour Force Survey, Household Expenditure Survey, Social Survey and Longitudinal Survey).

3. Participants

From Israel

- **Mr. Nitzan Hachohen**, Senior Director of Survey Department, ICBS. Prior to his current position Nitzan Hachohen was head of domain of the population field work census that was implemented in 2008. In 2009 Nitzan Hachohen joined the Survey Department. The Department is responsible for planning and managing all the ICBS surveys and censuses. Email: Nitzanh@cbs.gov.il
- **Ms Limor Charnotzki**, Director of Households surveys, survey Department ICBS. Ms Limor Charnotzki is working at the Survey Department since 2002. The Department is responsible for planning and managing all the ICBS surveys and censuses. Ms Limor Charnotzki manages the planning and managing of two surveys the longitudinal survey and the Social survey. Email: limort@cbs.gov.il
- **Mrs. Anna Binstok Cohen**, Director of GIS for Census Division, ICBS. Anna Binstok Cohen is in charge of GIS operations for census purposes since 2005. Anna Binstok Cohen works in the GIS Sector that is responsible for providing the geographical infrastructure, geocoding and GIS services for all projects in the ICBS. Anna Binstok Cohen took part and had acquired experience in a variety of GIS projects in the ICBS. Email: annabc@cbs.gov.il
- **Mr. Tzahi Makovsky**, Deputy Senior Director, Statistical Methodology Department, ICBS. Tzahi joined Statistical Methodology Department in 1988 and was part of a team responsible for sampling in household surveys. In his current position Mr. Tzahi Makovsky is responsible for several sectors dealing with sampling and estimation methods for household persons & business surveys in ICBS. Email: Tzahim@cbs.gov.il
- **Ms. Galina Seinberg**, Director of IT Sector for Census, IT Department, ICBS. Galina joined the IT Department in 2000 and was part of a team responsible for computerizing the 2008 Population Census. Since 2012, Ms. Galina Seinberg has been the manager of the IT sector in charge of the Census, Longitude Survey and other surveys. This position includes computerizing for WEB, mobile, tablet/laptop and management systems. Email: galinash@cbs.gov.il
- **Mrs. Luba Faktarovich**, Coordinator of Households Surveys, Survey Department ICBS. Ms. Luba Faktarovich is responsible for the longitudinal survey and the social survey since 2011. The Survey Department is responsible for planning and managing all the ICBS surveys and censuses. Email: luban@cbs.gov.il
- **Mrs. Charlotte Nielsen**, Resident Twinning Adviser since March 2016 where her main responsibilities include planning and co-ordination of Twinning activities with the ICBS, the European Union Delegation, stakeholders and experts from EU member states. From 2008 - 2016 Ms. Charlotte Nielsen, hold a position as Senior Advisor in the Research Services division of Statistics Denmark. Charlotte Nielsen has a Ph.D. in insect pathology. Email: cln@dst.dk
- **Ms. Tamar Rand**, Resident Twinning Adviser Assistant since March 2016 where she assist in the co-ordination and liaison with the ICBS, the European Union Delegation, stakeholders and experts from EU member states; Furthermore, Tamar Rand perform interpretation and translation from Hebrew to English and vice versa. Tamar Rand has a MA in Early Childhood Development. Email: tamarra@cbs.gov.il

MS experts

- **MS expert # 1: Mr. Georges Bourdallé**, Program Officer, National Institute of Statistics and Economic Studies (INSEE) (France). Email: georges.bourdalle@insee.fr
- **MS expert # 2: Mr. Pierre-Arnaud Pendoli**, Statistician, responsible of population census sampling design, National Institute of Statistics and Economic Studies (INSEE) (France). Email: pierre-arnaud.pendoli@insee.fr .

4. The current situation for social surveys at ICBS

The current situation for workload allocation, monitoring and management of field work at the ICBS is that each survey is allocated to an interviewer, managed, monitored and performed separately at all organizational levels - headquarters, regional managers, interviewers.

The Central Survey Headquarters is located at the ICBS in Jerusalem and the three Data Collection Centers are located in Haifa, Tel Aviv and Jerusalem. A District Manager manages each Data Collections Center, and in Tel Aviv the District Manager is assisted by two Regional Manager as well due to its large size.

The Jerusalem District is organized slightly differently since the Data Collection Center is a part of the CATI Center and thus has three managers.

Each Data Collection Center manages a number of Domains i.e. a survey area for which a supervisor is responsible. At present the total number of domains is 35. Each domain has one full time Supervisor for managing the Domain and the interviewers associated with this specific Domain. Each domain/supervisor is responsible for only one survey (except in Jerusalem where each domain is responsible for multiple surveys). The supervisor in each domain is responsible for 8-12 field interviewers. For detailed information about the current situation please consult Annex A.

Current Administrative Units used in ICBS

The country of Israel is divided into three administrative districts, x, sub districts, 1,200 localities and y Statistical areas. In figure 1 the division and approximate number of residents in each of the administrative units is shown.

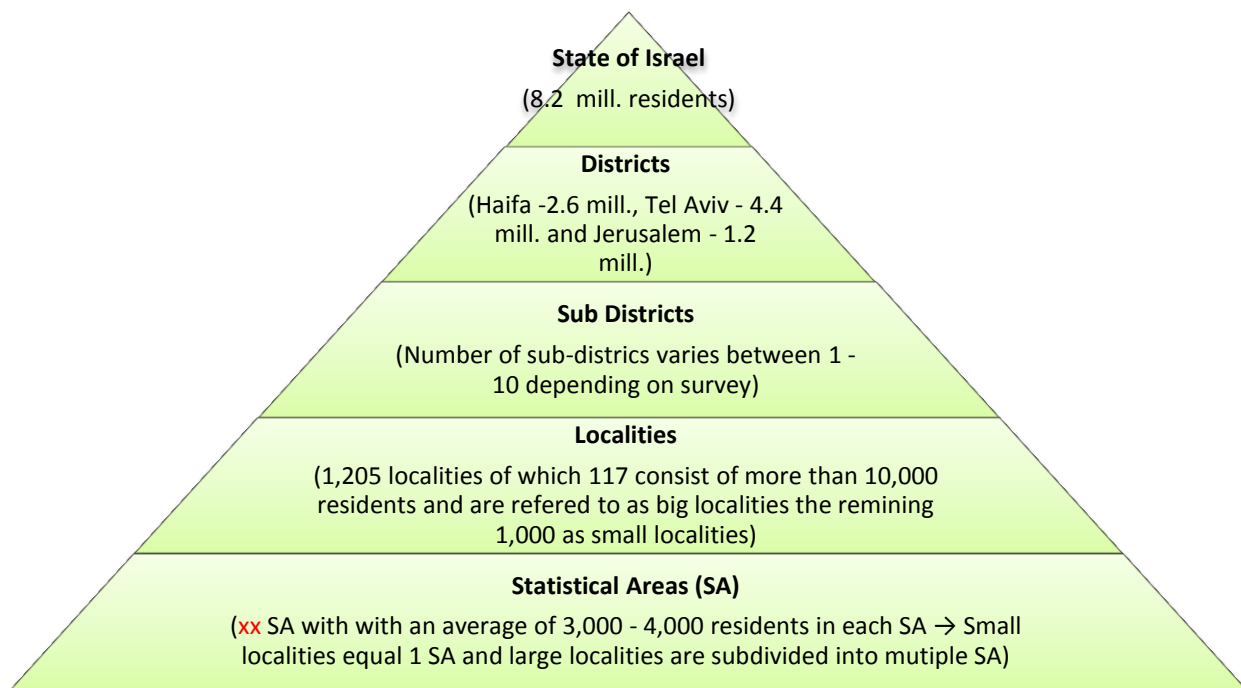


Figure 1: Division of Israel into administrative units

Currently localities are used as the sampled are drawn based on localities. However, the population size in each locality varies, thus in rural areas a locality may consist of a population as small as 200 residents whereas in urban areas a locality may consist of a population of more than 10,000 individuals. Of the 1,200 localities about 1,100 of the localities are so small in terms of population size and are therefore referred to as small localities. The remaining 200 localities have more than 10,000 residents and are named big localities and are subdivided in statistical areas (SA). For small localities a locality is not subdivided but is equal to a one SA.

Table 1: Distribution among large and small localities in the three administrative districts

	Tel Aviv	Jerusalem	Haifa	Sum
Large localities >10,000 residents	48	6	63	117
Small localities < 10,000 residents (equal to SA)	468	141	479	1088
Sum	516	147	942	1205

Routinely conducted social surveys in Israel

The ICBS routinely conducts four social surveys with data collection in the field (face-to-face). They are:

- Labour Force Survey (LFS) – Monthly panel survey with 18.000 respondent
- Household Expenditure Survey (HH) – Yearly Survey with 14.000 respondent
- Social Survey (SS) – Yearly survey with 10.000 respondent
- Longitudinal Survey (LS) – 18.000 respondent

The Central Population Register (CPR) is used as the basis for sampling individuals and households for the Social Survey and for the Longitudinal Survey. The Dwelling Register is used as the basis for sampling dwelling units for the Labor Force Survey and the Household Expenditure Survey. The Central Population Register is updated three times a year and consists of about 9 million individuals distributed among nearly 500.000 addresses. The main supplier to the Central Population Register is the Population & Immigration Authority. The Dwelling Register is updated once a year (May-June) and consists of about 3.7 million records (addresses). The sources of the Dwelling Register are 10 different suppliers that provide service for property tax purpose.

By using the address geocoding application exact x,y coordinates can be found for 74.5% of the addresses in the Central Population Register and for 79% of the addresses in the Dwelling register. However, for each register respectively 98.6% and 92.5 % of the records can be associated with a defined Statistical area (a residential statistical area generally numbers 3,000 – 4,000 persons).

The samples of these surveys are designed independently and field work is basically done separately for each survey. To improve quality and efficiency of field work, ICBS is planning to adopt a new approach in which the interviewer will be responsible to collect data for all four field surveys in a relatively small geographical area (in most cases). This approach should reflect not only the field work but also the way ICBS select the samples, create the integrated workloads and assign the period of sampling in the field.

Labor Force Survey (LFS)

LFS is a monthly household survey on employment. The survey is mandatory. The survey has rotate panels with a pattern of 4-8-4. The panels are introduced into the survey in 12 consecutive months of the year, each panel stays for 4 consecutive investigations (waves 1 to 4), following a break of 8 months and then 4 consecutive investigations again (waves 5 to 8). Only the first wave is collected in the field (CAPI) and for the rest of the waves the collection is by telephone (CATI). Each month 8 panels are investigated, one of them is a new panel (wave 1), one is returning after 8 months of rest (wave 5) and the other panels are continuing from the previous month. The panels of wave 1 and 5 in the current month replace those of wave 4 and 8 in the previous month and they are covering the same areas in big localities. The sample and the rotation panel planned to achieve a balance sample each month in sense of sample size and its geographic dispersion. This characteristic is important to meet the request to have the same quality each month.

The sample is drawn with a two-stage design. In the first stage localities (PSU) are selected with probability proportional to size (PPS), where size is the number of households in a locality. About 90% of the sample is centralized in big localities which are sampled in certainty and included in the sample each year. The rest of the localities are divided into strata mainly by geographical areas and type of localities.

In the second stage dwellings (SSU) are selected in each sampled locality from the Dwelling Register. The records in each locality are sorted by Statistical Areas (localities large enough are divided into Statistical Areas) and other geographic variables and a systematic random sample is drawn separately in each locality. Using this method, a random sample of dwellings spread over the locality is obtained. The final sampling probability is uniform (approximately 1:150) and the size of the sample is 18,000 dwelling each year.

The sample is assigned into the 12 panels of the year (1,500 dwellings in each panel). Each 10 dwellings (in average) are geographically grouped into workloads. Each workload is allocated to an interviewer and a week of investigation (1 to 4). This week remains for the rest of the waves. All of the workload cases should be interviewed in the planned week or at the latest in the following week. After this point, the sampled unit is closed with a non-response status.

Data is collected from one of the adults above the age of 15 in the dwelling and above by PROXY.

Household Expenditure Survey (HES)

The HES is a continuous cross-sectional household survey that deals with expenditure and income of households. The survey is mandatory.

The sample design is similar to the LFS (except for the assignment of sample to panels): two stage sampling design where at the first stage localities are selected PPS. 85% of the sample is in certainty localities which includes each year in the sample. Probability localities are assigned to strata by geographic variables, type of locality, socio-economic level and other variables.

In the second stage dwellings are selected in systematic random sampling from The Dwelling Register and sample is spread all over the locality. The final probability is uniform (~1:200 in most sub-populations) and the size of the sample is just over 13,000 dwellings.

The sample is placed into geographic workloads, 16 dwellings in each at the average. Each workload is allocated to an interviewer and to a week of starting investigation (1 to 52). The data is collected over 4 weeks to enable the interviewers to complete all households in workload, for every mode (fill out demographic questionnaire, 8 days of expenditure diary and income & expenditure questionnaire at the end).

Social Survey (SS)

The Social Survey is a continuous individual cross-sectional survey. The survey is mandatory. The population of the survey includes persons aged 20 and above. The questionnaire covers several topics: a general permanent part and a focused topic that changes every year.

The sampling frame is based on the Population Register. One of the big advantages of the Population Register is the variety of demographic variables. We also add several socio variables from other sources. On the other hand geographic variables, such as locality or address, tend sometimes to be not updated in The Population Register since it depends on the updating by the residents in Interior Ministry offices. Regardless of the quality of the addresses the field staff must locate the sampled individuals and interview them in their actual addresses.

The sample was designed with 86 design groups defined by a combination of three major demographic variables: population groups, gender and age groups. In each one of the design groups the desired probability is set, taking into consideration the relative size of the group and assumptions regarding the expected rate of non-response in each of the groups based mainly on previous years. Anyway, geographic variables are not part of major characteristics of the design and their role is secondary.

The constraints of data collection (minimum cases in each locality) leads to a two-stage design for small localities like in LFS and HES. Almost 85% of the sample is centralized in big enough localities to be in certainty each year and for them the sample is drawn in a single-stage stratified sample, where each design group is a stratum (across localities). A systematic random sample of persons with a uniform probability was drawn from each stratum separately after the records were sorted according to the geographic characteristics and other variables.

The rest of the localities, relatively small ones, are selected in a two-stage procedure where in the first stage localities (PSU) are selected PPS in strata based on geographic variables and type of locality.

In the second stage the persons in each sampled locality were sorted by those variables defined the design groups and a systematic random sample of persons was drawn from each sampled localities. The second stage sampling probability was set so that the overall sampling probability (over two stages of sampling) would be as set in the design.

Each year almost 10,000 persons are selected to the SS.

Geographic workloads are built in a similar way to LFS and HES. A workload in big localities has roughly 30 sampled persons and in small localities a workload consists of two closed sampled localities of ~15 persons in each. In the survey plan each workload of 30 persons is suitable to one month of data collection. Time or period of investigation is less important in the SS and for each workload set, the quarter of data collection with flexibility for field staff to determine the actual period in the quarter and if necessary and in special cases even moving workloads between quarters is allowed.

Longitudinal Survey (LS)

The Longitudinal Survey is household longitudinal survey. The survey is voluntary. The sample of the LS was drawn in 2011 and persons and households in the original sample stay in the sample for 9 waves. The fifth wave has finished lately and 7,000 households in the sample will participate in 4 more waves. After this a decision will be made whether the survey will continue for 10 more waves with the same sample or will discontinue. The decision depends mainly on the budget.

In the fifth wave, for the first time interviewers got shared workloads with cases from SS and LS and this was defined as a successful experience which expected to continue in the upcoming waves.

Summary of the sampling frame for the four social surveys

In general the samples are exposed to low rate of clustering, as we could expect from a small country like Israel (22,000 square km) with high density in most of the country (total population 8,750,000). This increases the quality of the samples. Until now the samples of the 4 surveys have been independent.

The sample design uses the advantages of sampling frames. In the Dwelling Register the best variables are geographic across localities (for stratification of PSU) and within localities (for sorting records before systematic samples). In the Population Register geographic variables have relative poor quality comparing to socio-demographic variables and their roll is secondary.

The limitations and requirements of one survey may be inconsistent with those of other survey. The most important and noticeable are weekly workloads with high and equal quality for the LFS, and on the other hand long investigation in HES due to several modes of collecting data (questionnaires and diary).

In Annex B the characteristics of the three surveys where new samples are created on a yearly basis are summarized.

5. Status and progress achieved in the Twinning project

Creation of Enumeration Area (EA's)

A main achievement of this component until now is a general agreement and acceptance within the ICBS of the benefit of establishing hierarchical geographical areas that are stable over time and space and can be used for any survey both for sampling as well as workload allocation and monitoring. Changes in areas over time should only be done in case the urbanization processes require changes in relation to the size thresholds set for each geographical areas.

Based on the Polish setup and their experiences ICBS tested the optimal size for such stable geographical areas to be used in all processes from sampling to reporting. These new areas have been named Enumeration Areas (EA's).

The multi-field workload approach for allocation of interviewers was tested by using 2015 data from the four largest social surveys in Israel including both longitudinal and yearly surveys of persons and households. The feasibility test showed that the existing statistical areas (SA) with a size of 3000-4000 residents are the optimal size to be used as an EA.

Feasibility test for optimizing workload allocation of field work

Feasibility test for optimizing workload allocation has shown that the number of interviews in the northern part of Israel can be increased from 200 yearly interviews per enumerator to 300 yearly interviews by having each interviewer carry out multiple surveys and not only one survey as it is done today. The feasibility test was done by using the newly defined EA's and by using 2015 data from the four largest social surveys in Israel including both longitudinal and yearly surveys of persons and households. The increased effectiveness is mainly gained by decreased travel time of the interviewers and therefore the same increased effectiveness is not expected in the large cities like Tel Aviv and Jerusalem due to generally shorter travel time. In the south relatively few interviews are performed each year and an increase in effectiveness is not expected. The feasibility test was performed based on integration of the Social Survey, the longitudinal survey and the Labour Force Survey.

First steps taken for management and implementation of a multi-field survey approach:

In 2017, the ICBS carried out a pilot on integrating the management and interviews of the Social Survey and the Longitudinal Survey in all districts in order to get feedback from supervisors and interviewers on the multi survey approach. The integration was done with the current tools. The main complaint from supervisors and interviewers was that they needed to use multiple tools to perform their work and thus, the need for an integrated tool supporting their work is high.

Functionality and design specifications for a Multi Survey System (MSS) initiated

A vision for a Multi Survey System (MSS) for allocation of interviewers' workload in a multi-field survey approach and to manage and monitor field surveys has been outlined. The aim of the system is to integrate all needs at all stages of all surveys into one management and monitoring system, that will serve as a platform for all field collection methods (CAI, CATI, CAPI). In summary the five year goals for the MSS using a stepwise approach are:

- Combine all needs into one management system for all data collection surveys and stages
- Provide a platform for all field collection methods
- Develop the MSS as an online system
- Interact with other service systems (see figure 2)
- Allow moving sample units between data collection methods
- Allow moving sample units between data collection field staff, including transfer between districts
- Allow moving interviewers between districts and managers
- Provide a user friendly interface
- Allow visualization for using data: maps, graphs and tables that are integrated and respond to one other
- Work with GPS tools: for navigating, work plan and monitoring interviewers in the field

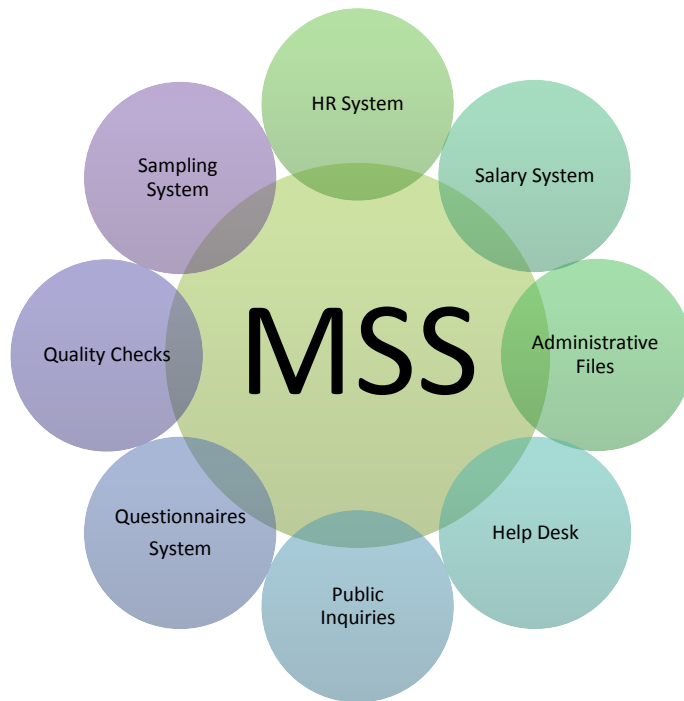


Figure 2: The MSS interact with other service systems

In order to make the vision operational the ICBS has outlined story boards for interviewers, field supervisors, district managers and headquarter coordinators. Based on these storyboards the ICBS has created functionality and design specifications for a stepwise implementation approach.

In figure 3 a first draft for a version 1.0 of the MSS that will integrate the Social Survey and the Longitudinal Survey is envisioned. The draft was created by the MS experts, as an output of the mission that took place in September 2017.

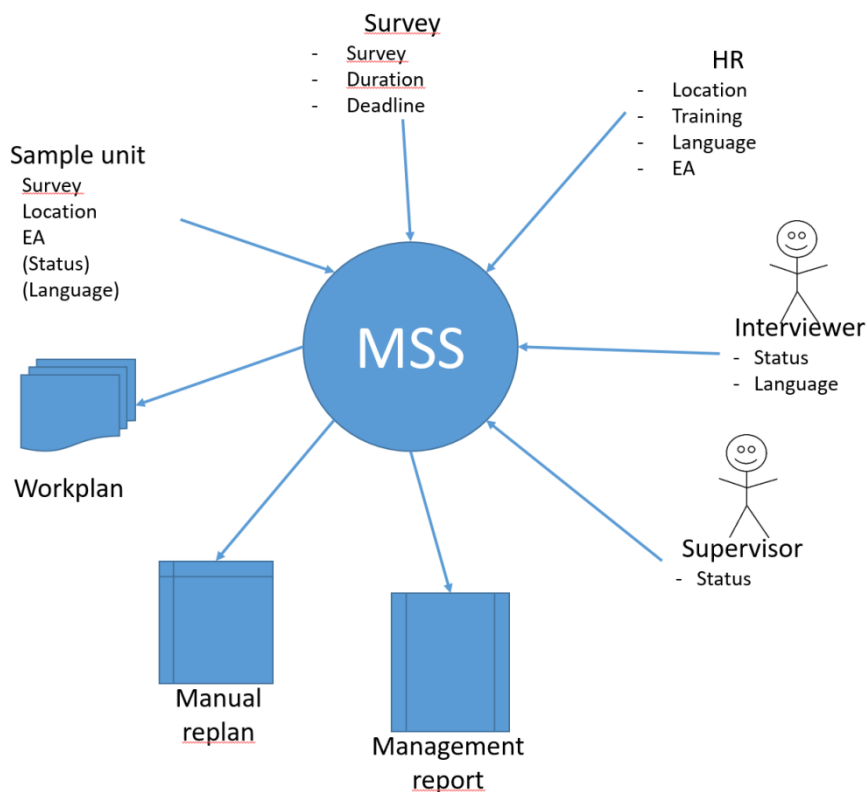


Figure 3: Outline of an idea for a version 1.0 of the MSS that will integrate the Social Survey and the Longitudinal Survey as envisioned by the MS experts.

INFORMATION ENTERING THE MSS SYSTEM:

HR database (A) - information entered into the database by the ICBS headquarter. Updated by supervisors

- Location - Home address of interviewer
- Training - Which surveys each interviewer has been trained for
- Language – Language skills of the interviewer (Hebrew, Arabic and Russian)
- EA - Enumeration area(s) that the interviewer can operate in

Survey database (B) - information entered into the database by the ICBS Headquarter

- Survey – Basic information like - name of survey, size of survey (no. of respondents), collection mode(s), Instructions for the questionnaire, the digitalized questionnaire, name of the ICBS coordinator
- Duration – Length of the survey period
- Deadline - End date of the survey

Sample unit database (C) – information entered into the database by the ICBS headquarter and status updated by supervisors (and interviewers)

- Survey - Surveys assigned to each sample unit
- Location - x, y coordinate for sample units
- EA – Database placing sample unit into enumeration area (and statistical area etc). Visualization on a map should be possible (already produced for the population census by the GIS unit)
- (Status) – Status provided at any given time for the sample unit e.g. invitation letter mailed out, assigned to interviewer, interview completed, appointment set with the respondent, manual re-planning due to non-response (refusal, not found, out of residence, temporary unavailable, permanently unavailable, language difficulties), appointment set
- (Language) – Language(s) of the sample unit (possible to enter information based on the population census)

Interviewer (D) - information entered into the database by the interviewer

- Working days – Days the interviewer is available for work (visualized on a calendar)
- Status – Status of completed and assigned interviews at any given time as a function of the survey
- Language - Language the interview has been completed in

Supervisor (E) - information entered into the database by the supervisor

- Contact – Contact information
- Status – Days the supervisor is working and alternatives contact information during vacation (visualized on a calendar)

INFORMATION EXTRACTED FROM THE MSS SYSTEM:

Work plan (F) - Automated work plan (monthly, weekly and daily) for the interviewer based on a decision hierarchy that includes e.g. training of the interviewer, language skills of the interviewer, language requirement of the sample unit (or dominant language in the EA), time frame, deadline and status of survey, (travel distance). NB - not hieratically ordered here.

Manual re-planning (G) - Manual re-planning due to non-response

Management report (H) Status of completed and assigned interviews at any given time as a function of survey, interviewer, EA, in version 1.0 only as tables in later versions also as maps, graphs etc.

6. Challenges

Moving to an "Interviewer Action Areas"

The desire of the ICBS is to implement a methodology in which the interviewer will be responsible for a relatively small area but for all four surveys. This could be similar to the Interviewer Action Area (IAA) used by INSEE. To move to such a method will require adjustments in the concept of the surveys.

So far, the ICBS has not divided the entire country into IAA, but just a small part of it. Each IAA will include several Enumeration Areas (EA), where EA is equal to Statistical Area (SA) for large locality (usually cities with population of over 10,000 persons), or locality if it is smaller. For example the city of Haifa will be divided into six parts by gathering SA's. It means six interviewers will work in Haifa. The gathering of EA's to IAA should take into consideration geographic proximity and the expected samples size. Also the IAA has to be built separately for areas designated to Hebrew speakers/interviewers and to Arabic speakers.

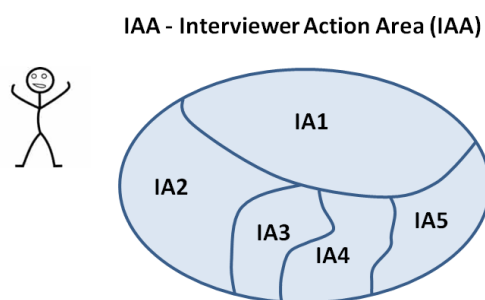


Figure 4: Illustration of the relation between Enumeration Areas (EA) and Interviewer Action Area (IAA)

The definition of IAA should be as permanent as possible over the years, with only necessary changes being made. These would allow planning the samples according to approximate fixed parameters.

The main challenges the ICBS faces are:

- a) **Defining IAA** – along with geographic proximity and the expected sample size, what are the main parameters we should take into consideration in creating IAA. For example, if and how should we consider the density of an area (big cities with high density against rural areas with low density).
- b) **Sampling** – The sampling should relate to the desire of receiving samples of similar size each year in each IAA. Thus IAA should become a parameter in sampling stages. In LFS and HES the first sorting variables in certainty localities will be the IAA and then the rest of the geographic variables. For probability localities IAA will be part of stratification in sampling PSU. Regarding the SS, socio-demographic will still be dominant in sampling design and everywhere geographic variables involved IAA will be the first and main geographic variable.
- c) **Methodology for creating workloads** – Workloads would contain units from all four surveys. The ratio between the four samples is known and should be saved to ensure that the quality of the surveys will be at least as they are today. The big challenge is how to build workloads under the different constraints of LFS and HES. The aim is to limit the action area for a given period of time.
- d) **Automatic tools for creating workloads and set collection period** – Tools that will make it simpler and faster. LFS uses GIS tools that allow a new workload to enter the survey in the same week replacing a workload that comes out of the survey as part of the rotation panels, thus assuring balanced workloads over time.
- e) **Management and monitoring field workers including progress reports and re-allocation process** – Workflow and tools to be used for monitoring of progress, possible warning systems and re-allocation of interviewers if needed. Input and output to the system.
- f) **IT portal and digital communication with field workers** – Content and tools

Program for Activity D7: February 2018

Integration of sampling, workload allocation, management and monitoring in a multi-field survey approach

Date	Place	Time	Event
Mon	Surveys 3 rd floor	09:00	Welcoming, acquaintance, program of the week (Charlotte Nielsen and Nitzan Hacoheh)
		09:30	BC: Introduction to the Survey Department and introduction to activity D7 (Nitzan Hacoheh)
		10:30	Coffee break
		11:00	BC: Presentation of the use case (Anna Binstok Cohen)
		12:00	Lunch break
		13:00	BC: Current progress and challenges – presentation of the MSS (Nitzan Hacoheh)
		14:00	BC: The sampling frame used in Israel for field surveys today and challenges foreseen in moving to a multi-field approach with IAA (Tzahi Makovsky)
		15:00	Final Remarks
Tue	Surveys 3 rd floor	09:00	MS: First day Review
		09:30	MS: Introduction to field survey in France
		10:00	MS: Organisation and management of field surveys in France
		10:30	Coffee break
		11:00	MS: Sampling, creating workloads and allocation interviewers for of field work in France
		12:15	Lunch break
		13:15	MS: IT support for monitoring field workers including progress reports and re-allocation process
		14:15	Coffee break
		14:30	MS: IT portal and digital communication with field workers
		15:30	Final Remarks
Wed	Surveys 3 rd floor	09:00	MS: Second day Review
		09:30	MS/BC: Parallel sessions for (i) Management and IT tools (ii) Methodology
		11:15	Presentation of results from the parallel session
		12:00	Lunch break
		13:00	MS/BC: Drafting a preliminary recommendation
		14:15	MS/BC: Presentation of recommendation
		14:45	Coffee break
		15:00	MS/BC: Final remarks and thanks
Thurs	Surveys 3 rd floor	9:00	MS: Writing up report and ad hoc meetings with BC if needed

NB Tzahi is unavailable due to conflicting meetings on Tuesday 12:00-13:30, Wednesday 9:30-11:00.

Abbreviations:

BC = Beneficiary Country (Israel)

MS = Member State (France)

ICBS = Israeli Central Bureau of Statistics

IT = Information Technologies

GIS = Geographic information system

Material to be prepared and sent before the activity:

Presentations.

ANNEX A - CURRENT SITUATION AT ICBS

Organization and responsibility

The main function of the Survey department at ICBS is to plan, monitor and perform surveys. Surveys include field surveys, telephone interviews as well as web based-surveys.

In figure 1 the organizational structure of survey Department at ICBS is outlined. For field surveys the most important Units are ***The Central Survey Headquarter, three Data Collection Centers, two Regional Centers and 35 Domains*** (Please see organizational structure in Figure 3).

The Central Survey Headquarter is located at ICBS in Jerusalem and the three Data Collection Centers are located in Haifa, Tel Aviv and Jerusalem. Each Data Collections center is managed by a District Manager and in Tel Aviv they are assisted by two Regional Manager as well due to its large size.

The Jerusalem District is organized slightly different since the Data Collection Center is a part of the CATI Center and thus has three managers.

Each Data Collection Center manages a number of ***Domains*** i.e. an enumeration area for which a supervisor is responsible. At present the total number of domains is 35. Each domain has one full time Supervisor for managing the Domain and the interviewers associated with their specific Domain. Each domain/supervisor is responsible for only one survey (except in Jerusalem where each domain is responsible for multiple surveys). The supervisor in each domain is responsible for 8-12 field interviewers (adding up to nearly 300 field interviewers in total). The domain supervisors as well as the regional managers operate from the Data Collection Centers. The geographical area covered by each supervisor/domain differs between each survey.

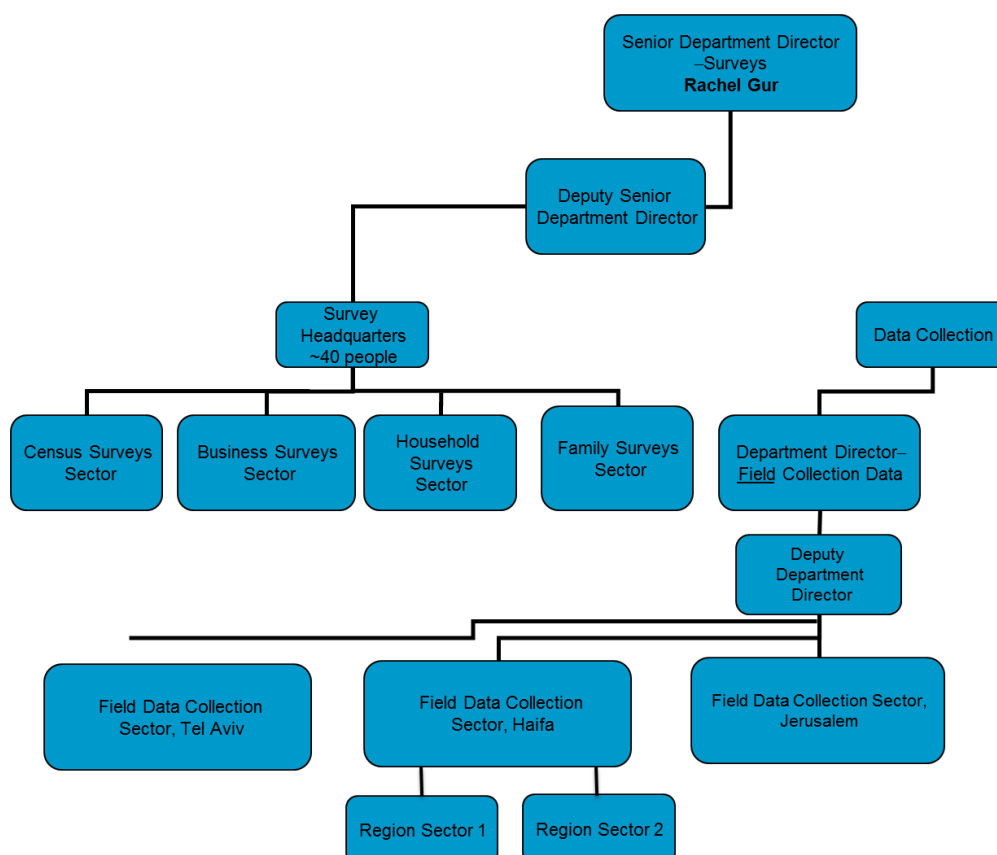


Figure 5: Diagram of the organizational structure for field surveys at the Survey Department at ICBS

Main tasks of Survey Headquarters

The main tasks of the Survey Headquarters are:

- **Thorough study of the survey topics:** written material, meetings with experts in the field (e.g. the subjects Units, the Methodology Department and the IT department)
- **Building tools for conducting the survey:** questionnaire, work procedures, computerized collection systems, training material
- **“Testing of tools”:** Piloting the tools, pretest
- **Training:** creating a training system, classroom training of coordinators and interviewers, planning and conducting individual training
- **Planning the budget required for the survey**
- **Checks and supervision**
 - Quality checking of the interviewers
 - Progress of the enumeration
 - Accompanying field interviewers
 - Keeping to schedule and budget
- **Drawing conclusions and learning lessons:** Writing summary reports for every survey
- **Allocation of workload**

Main tasks for the Data Collection Centers (Center Manager, Region Manager and Supervisors)

The main tasks for the Data Collection Centers are:

- Recruitment of interviewers
- Data collection from the interviewers
- Managing the interviewers and managing the collection of the data:
 - Assigning workloads
 - Arranging interviewers' mobility in geographic areas/between surveys
 - Administrative management of the interviewers
- Handling refusals to respond
- Dealing with response burden
- Training and teaching in guidelines
- Checks and monitoring
 - Checking the enumeration
 - Accompanying interviewers
- Administrative checks
 - Efficiency of enumeration route
 - Time invested in an enumeration unit
 - Work hours reporting

Methods

Field surveys are performed by face-to-face interviews either by means of using a laptop computer – CAPI or by data collection using paper questionnaires in the case of the Household Expenditure Survey.

Drawing of sample units

The Central Population Register (CPR) is used as the basis for sampling individuals and households for Social Survey and for the Longitudinal Survey. The Dwelling Register is used as the basis for sampling dwelling units for the Labor Force Survey and the Household Expenditure Survey. The Central Population Register is updated three times a year and consists of about 9 million records/individuals distributed among nearly 500.000 addresses. The main supplier to the Central Population Register is the Population & Immigration Authority. The Dwelling Register is updated once a year (May-June) and consists of about 3.7 million records (addresses). The sources of the Dwelling Register are 10 different suppliers that provide service for property tax purpose.

Geo-coding

For both registers addresses are not always as accurate as needed e.g. the addresses might only be a partial address, it could be an old address or the record can lack address information entirely. Nevertheless, ICBS has built an address geocoding application that uses algorithm and address dictionaries in order to translate addresses both back and forth in time as well as assigning incomplete addresses to a defined Statistical area.

Statistical areas: Urban localities with more than 10,000 residents are divided into statistical areas. These are small geographic units as homogeneous as possible, which it is possible to reflect the unique characteristics of certain areas within a locality. A residential statistical area generally numbers 3,000 – 4,000 persons

By using the address geocoding application exact x,y coordinates can be found for 74.5% of the addresses in the Central Population Register and for 79% of the addresses in the Dwelling register. However, for each register respectively 98.6% and 92.5 % of the records can be associated with a defined Statistical area.

Geocoding to a statistical area is regarded as sufficient for most field allocation needs.

Allocation of workload

The workload allocation is performed centrally at ICBS. Before workload allocation to specific Interviewers is initiated, the four steps shown in Figure 4 are performed:

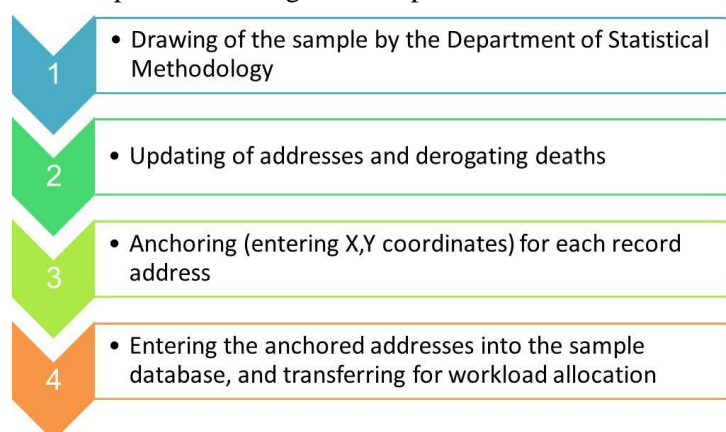


Figure 6: Project stages before workload allocation

For each of the four major recurring surveys the ICBS has developed a workload allocation system.

The system allows creations of monthly workloads containing addresses for each individuals or households in the workload. After that workloads are manually assigned to the interviewers. The workload allocation system provides a geographic display of the distribution of individuals or households in the sample (respondents). The display uses three layers of information:

- (i) Roads and Streets
- (ii) Locality borders
- (iii) Buildings and addresses

The interviewers' home address, qualifications such as e.g. language skill are not taken into account at this stage of allocating workloads.

Monitoring field work and interviewers

Supervisors monitor and guide the interviews.

Remunerating system for interviewers

Each interviewer is hired by ICBS to work approximately 80 hours per month. The interviewers usually work on a single survey only. The interviewer is paid by the hour for training, transportation and interviewing. In addition, the interviewer will be paid separately per kilometer driven or public transportation expenses.

Cost associated with surveys

Cost for conducting field surveys can basically be divided into salaries and cost associated with travel of the Interviewers, IT related costs, rent of Office space and other running costs. Below some of the major expenses are listed.

Salaries:

- Salaries for staff members in the central surveys headquarters ~ 40 full time persons per year (including staff members for telephone interviews and web questionnaires)
- Salaries for staff members of Subject Units (according to time used) ~ xx full time persons per year
- Salaries for staff members from the Methodology Department (according to time used)
- Salaries for staff members from the IT Department (according to time used)
- Salaries for staff members from the HR Department (according to time used)
- Salaries for managers of Data Collection Centers including regional managers and managers in Jerusalem ~ 6 full time persons per year
- Salaries for domain supervisors ~ 35 full time persons per year
- Salaries for interviewers ~ 150 full time persons per year (salary is based on an hourly fee, therefore the calculation is an estimation)

Cost associated with travel of the interviewers:

- Travel distance and time spend on traveling

IT related costs:

- Computers
- Programs

Other Costs:

- Rental of office space

ANNEX B: CHARACTERISTICS OF SOCIAL FIELD SURVEYS

Table 2: *Characteristics of social field surveys* *

Characteristics	LFS	HES	SS
General			
Age cutoff in Survey Population	Households and persons aged 15+	Households and persons aged 15+ (from most of the questions)	Persons aged 20+
Mandatory / voluntary	Mandatory	Mandatory	Mandatory
Type of Survey	Monthly survey with a rotated panel (4-8-4 pattern)	Annually Cross-sectional Survey	Annually Cross-sectional Survey
Final unit sampling	Dwelling	Dwelling	Persons aged 20+
Response rate	75%-80% but drops to 70% in months of long holidays	75% but in the past was around 80%	75%-80%
Sampling			
Main sampling frame	Dwelling Register	Dwelling Register	Population Register
Sampling design	Two-stage sampling design	Two-stage sampling Design	Two-stage sampling Design
First stage: Sampling unit (PSU)	Locality	Locality	Locality
Percentage of sample in certain locality	~90%	~85%	Almost 85%
Number of certain localities in sample	159	112	104
Number of probability localities in sample	186	130	109
Size of locality which distinguish between probability & certain localities	~1,500 dwelling, which is around 5,000 persons	~3,000 dwelling, which is around 10,000 persons	~8,400 persons aged 20+ which is around 13,000 persons
Sample size	~18,000 households	More than ~13,000 Households	Almost 10,000 persons
Final probability	~1:150	~1:200 in most sub-population	~1:575 at the average
Basic estimates	Monthly estimates	Annually estimates	Annually estimates
Workloads			
Average workload size	10 dwellings	16 dwellings	30 persons
Length of investigation	Weekly workload	Monthly workload	Monthly workload
Time of investigation			
Importance of time	Very important	Important	Less important

* since LS based on sample from 2011 the details are not presented in the table