



Support to the Israeli Central Bureau of Statistics in Improving the Quality of Official Statistics

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

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Mandatory result



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

If we simplify the MR:

- 1. Optimization field workload allocation using
geo-spatial tools***
- 2. Using geo-spatial tools for managing field
surveys in designated areas***



Activities 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*

ID2: *Methodological paper on managing and monitoring field work using geo-spatial procedures during data collection process*

ID3: *Methodological paper on optimization of workload allocation of fieldwork using geo-spatial procedures and other tools*

ID4: *Feasibility test for managing and monitoring field work evaluated*



Activities Benchmarks – cont.

ID5: Feasibility test for optimizing workload allocation of field work evaluated

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);



ICBS GOALS

Improve fieldwork Quality & Efficiency



Methodology that would yield optimized planning and allocation of workload units to interviewers:

- ✓ Lower costs – by having the same interviewer conducting several surveys in defined geographical areas
- ✓ Improve coverage quality – our assumption is that geo-spatial tools can help visualize and identify problematic areas of regional under coverage. Improving the ICBS ability to manage the field work during midst of data collection will enable to reallocate resources for optimal treatment



Background 1

➤ *Sampling Frames:*

- *The Central Population Register (CPR): for sampling individuals and households*
- *Dwelling Register: for sampling dwelling units*



Israeli Population Register



- 🏠 Received: 3 times a year at ICBS, arrives coded
- 🏠 Source: Population & Immigration Authority
- 🏠 Geographical coverage: National
- 🏠 Description: 9,116,537 records
- 🏠 Addresses geocoded: 563,811 - 98.6%



Building and Dwelling **Register**



- 🏠 Received: Annually, May-June
- 🏠 Source: 10 different suppliers (5 of them are localities and the rest are computer companies)
- 🏠 The register holds information for 1,214 localities in Israel
- 🏠 Main use incentive (for the localities): property tax services
- 🏠 Geographical coverage quality defer by locality & supplier
- 🏠 Description: 3,749,181 records in 2015, contains information for dwelling and other land use.
- 🏠 Addresses geocoded: 3,160,220 – 92%

Sampling Frames *and Geocode*

After geocoding of each record in the sampling frames, field surveys are sampled, and then allocated for fieldwork



Geocoding status

The system gives each record a status that indicates the geocode level of spatial accuracy reached.

Examples:

Data source	Accuracy	Status	Code
Addresses	high	Exact match	2001
One building in parcel	high	Exact match	2002
Chosen building from parcel	medium	Refined match	2003
Building 4 building away in addresses	medium	neighbors	2007
Statistical area from postal id's	low	Interpolation	3008
Statistical area from landmark table in none-Jewish settlement	low	Interpolation	3009





Background 2



➤ *Main field surveys:*

1. *Labour Force Survey (Lfs)*
2. *Household Expenditure Survey (Hh)*
3. *Social Survey (Ss)*
4. *Longitudinal Survey (Sampled from the CPR in the first wave 2012)*

The samples of these surveys are drawn separately for each survey



Background 3

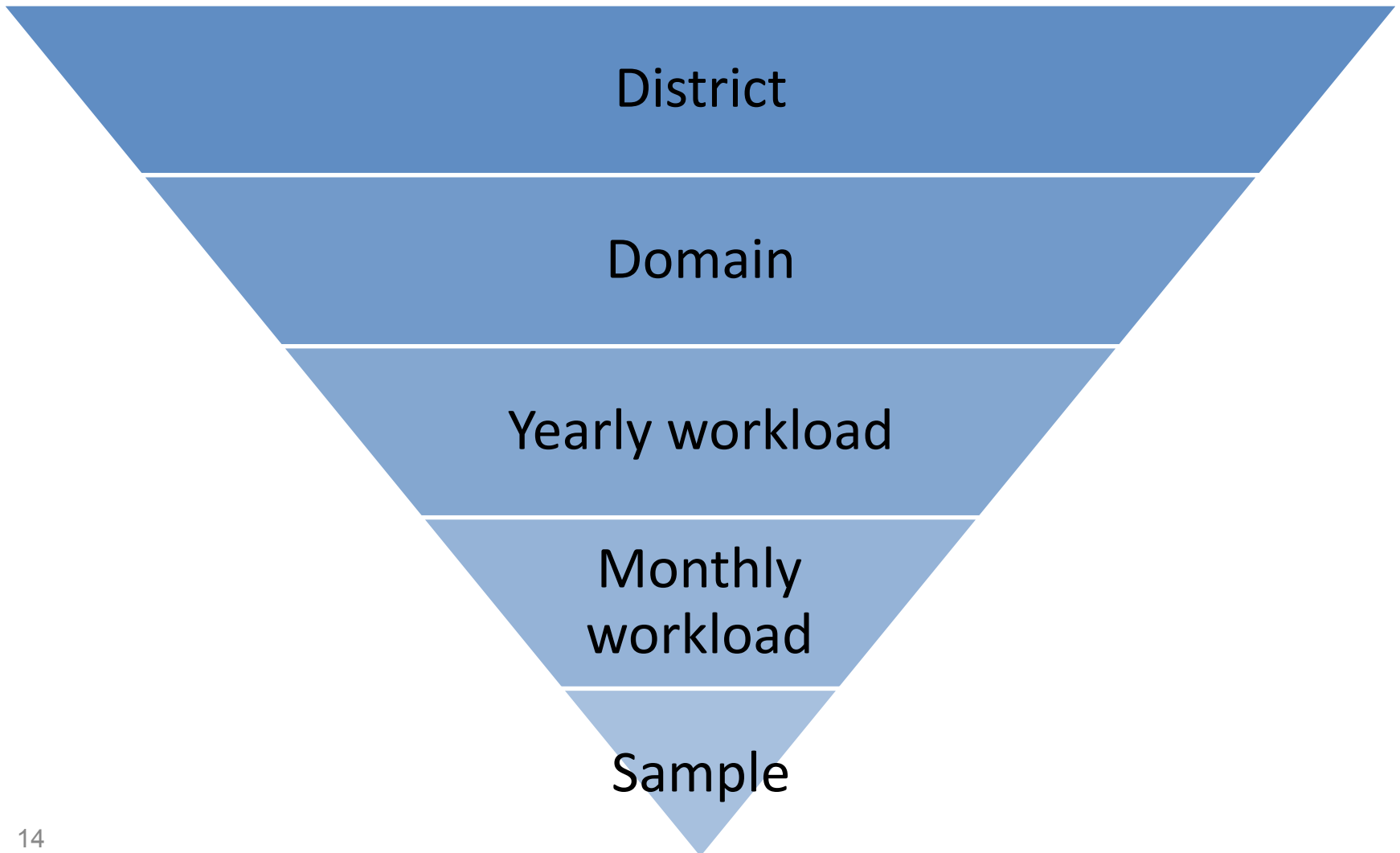


- *ICBS interviewers work on one survey*
- *The workload distribution thereby is performed independently for each survey*
- *Each survey has its own constraints created by its methodology:*
 - *Data collection period*
 - *Time span feasible for collection*
 - *Reference period, and so on.*

Differences Between Surveys

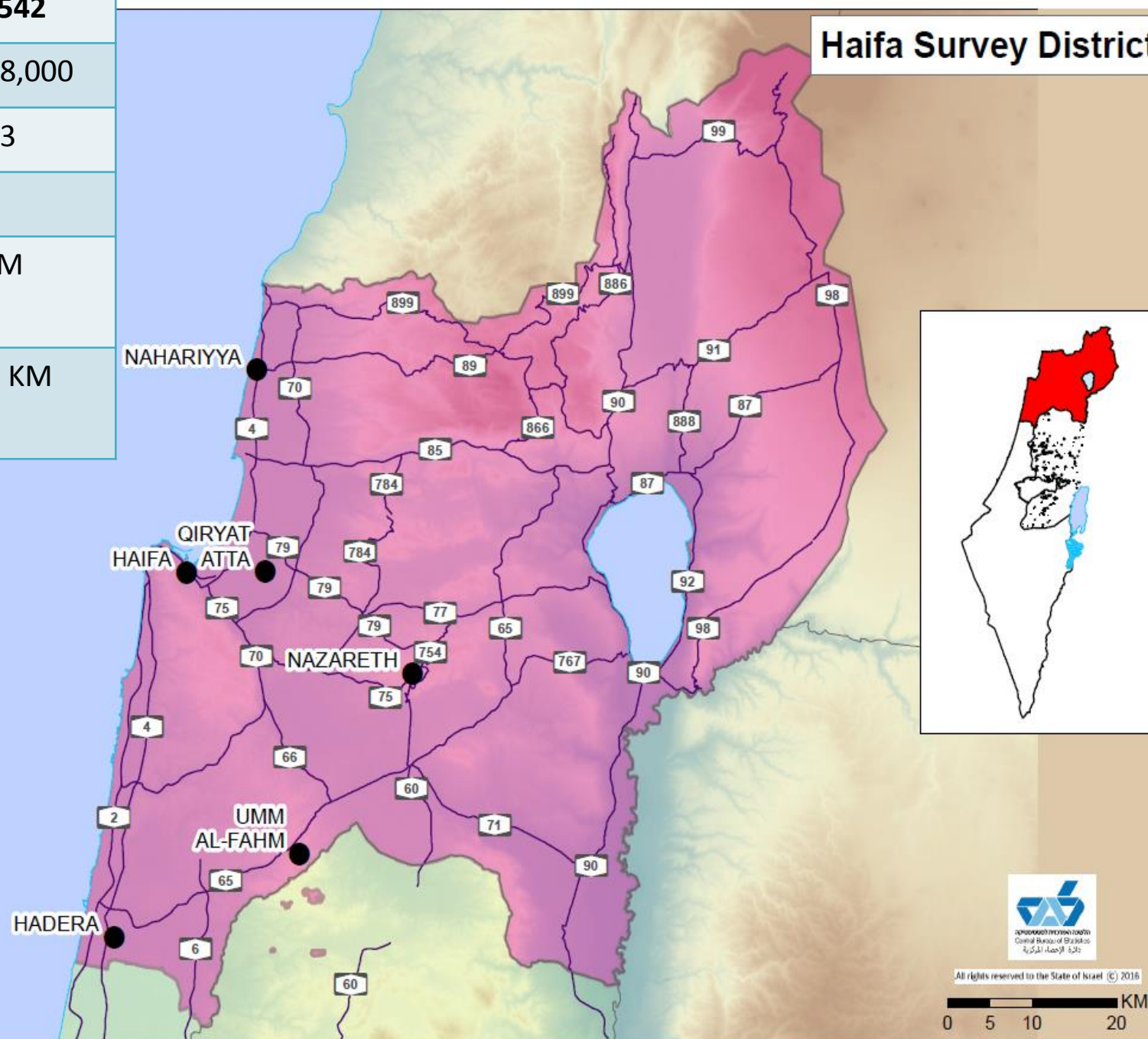
	constrains			
	Duration of investigation	Length of interview	Workload	paper / laptop
Labour Force	Two weeks	15 minutes	10 per week	Lap top
Household Expenditure	4 weeks Minimum 4 visits over 8 days of calender filling in	Vary by stage of interviewing	16 per month	paper
Social	Three months	45 minutes	30 per month	Lap top
Longitudinal	One month Flexibility of 1 month	1 hour +	25 per month	Lap top

Nesting output hierarchy for each survey
per district:



Localities:	542
Population:	2,618,000
Area (SKM):	5,353
Distances:	
From Haifa south east	65KM
From Haifa north east	87.5 KM

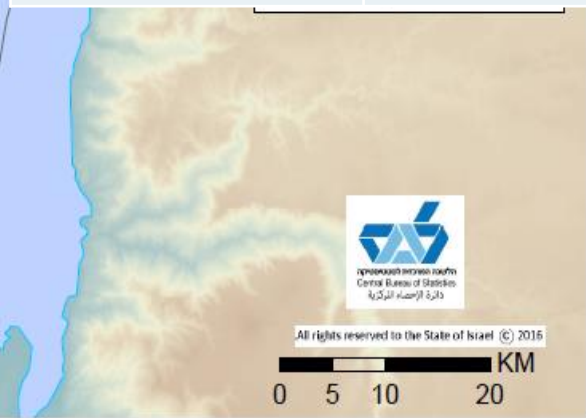
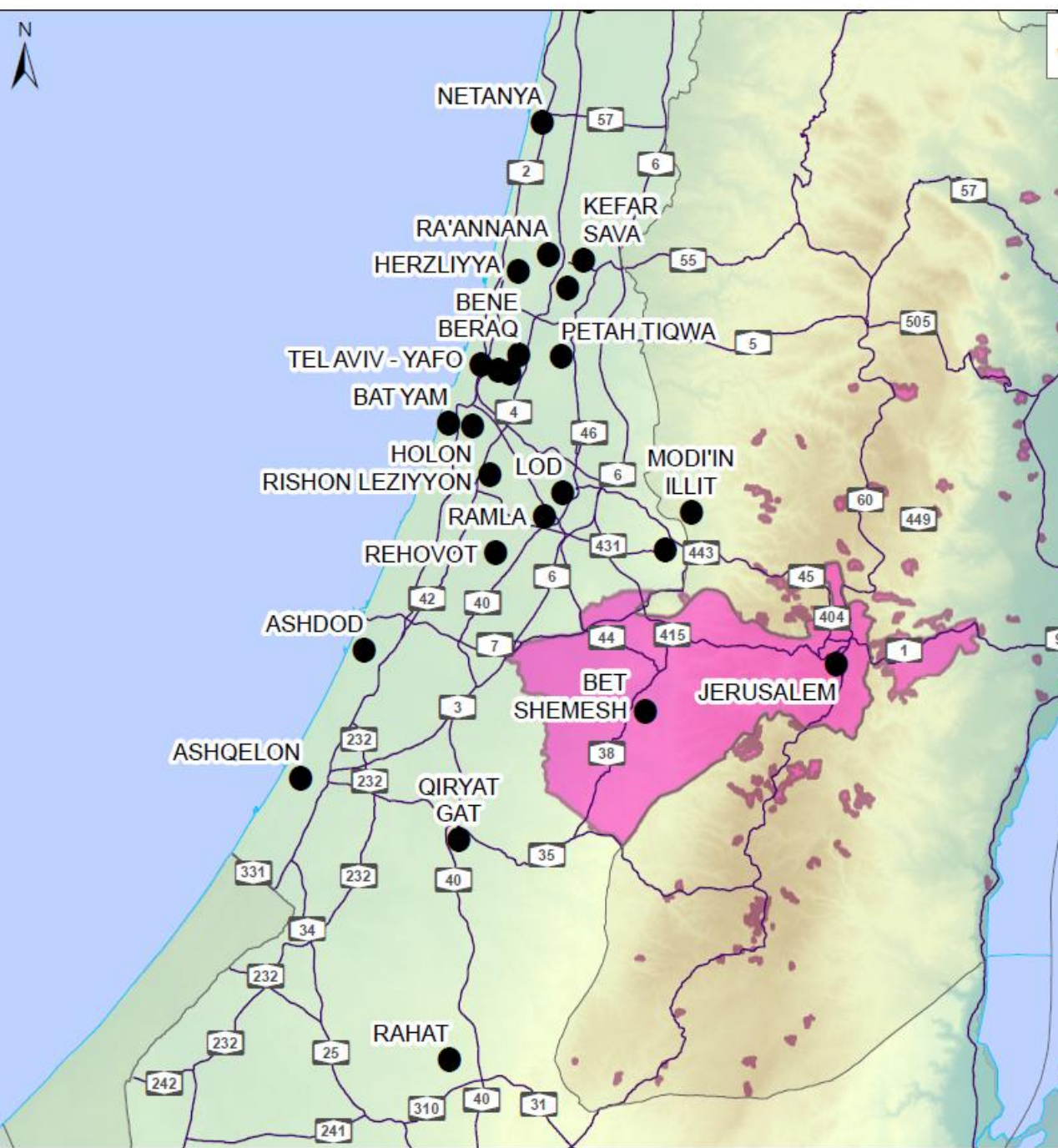
Haifa Survey District



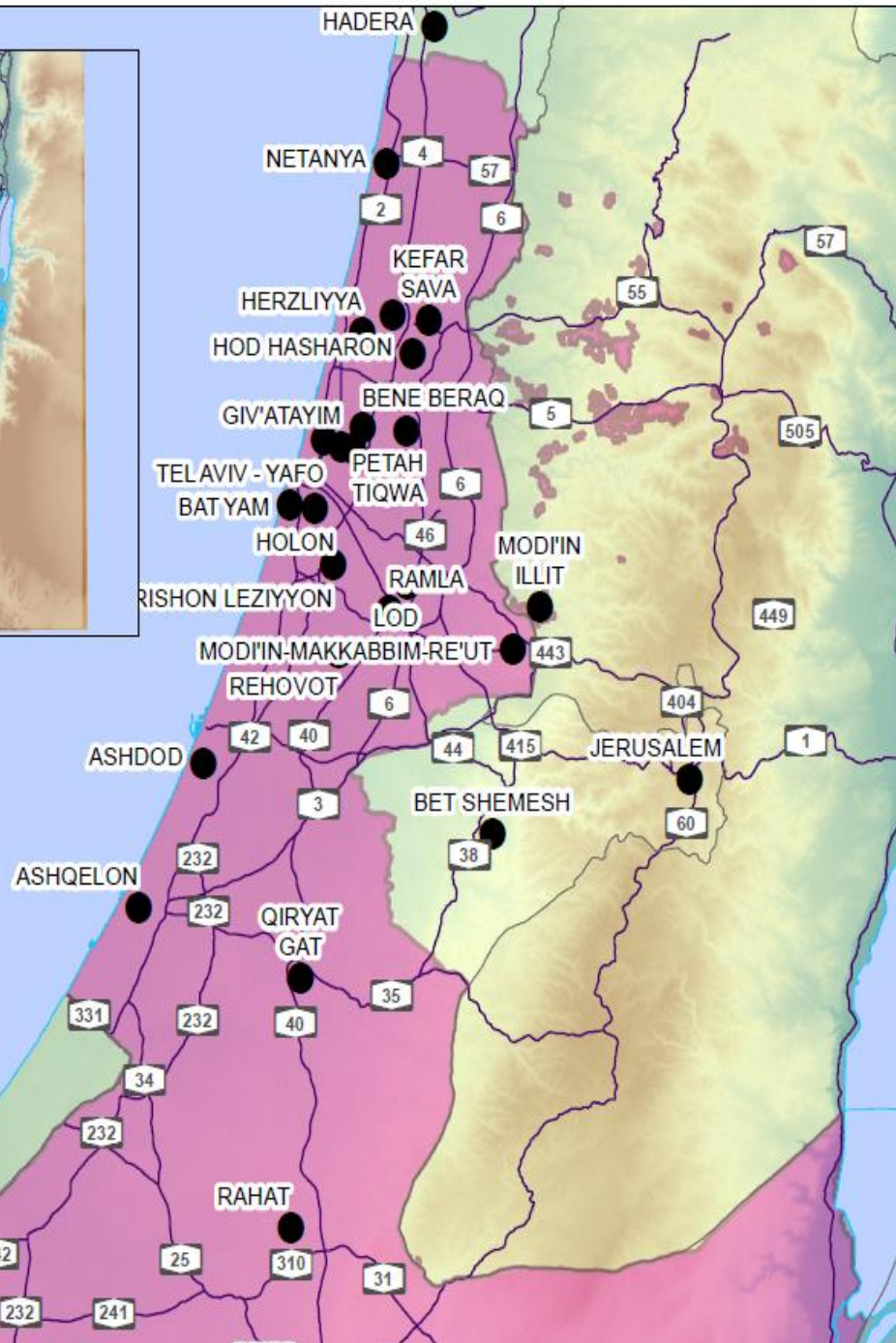


Jerusalem Survey District

Localities:	147
Population:	1,237,000
Area (SKM):	775
Distances:	
From Jerusalem south	47KM
From Jerusalem west	32.5 KM
From Jerusalem north	70 KM



Tel Aviv Survey District



Localities:	516
Population:	4,376,000
Area (SKM):	15,702
Distances:	
From TLV south	161 km
From TLV east	138 km
From TLV north	39.5 km

Category of Localities

	Haifa	Jerusalem	Tel Aviv
Localities over 10,000 persons	63	6	48
Localities under 10,000 persons	479	141	468
Localities with full addresses	147	14	48
Localities without full addresses	374	133	468

Main citys population

		Total pop	Jewish localities	Mixed localities	Non Jewish localities
Tel Aviv	sum	516	513	3	0
	Population	4,375 M	3,805,000	570,000	0
Jerusalem	sum	147	141	2	4
	Population	1,231 M	370,000	850,000	11,000
Haifa	sum	542	416	4	122
	Population	2,617 M	1,031,000	386,000	1,200,000



Lets have a great time together

