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TRANSITIONAL GOVERNMENT OF ETHIOPIA

CENTRAL STATISTICAL AUTHORITY

MANUAL FOR CENSUS MAPWORK



JUNE, 1984
ADDIS ABABA

*Eddy A.
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CHAPTER ONE

1. INTRODUCTION

The second Population and Housing Census of Ethiopia is going to be undertaken in May 1994. As in the case of the first census of May 1984 the second census will be carried out by the National Census Commission in collaboration with other government agencies. The mapwork exercise of the first census covered only eighty percent of the country. However, in the second census unlike the first census, it is expected that hundred percent geographical coverage of sedentary population including areas which were not covered by the first census will be realized.

In general, census operations comprise the following phases: a) preparatory work, b) enumeration, c) data processing, d) analysis and evaluation of the results, e) systematic recording of census experience, f) dissemination of the results. One of the tasks to be undertaken during the preparatory phase is Census Mapwork. The entire country has to be divided into smaller areas, usually called Enumeration Areas (EAs) and Supervision Areas (SAs).

The mapwork has to take into account the administrative divisions of the country. Ethiopia is divided into fourteen Administrative Regions or Kilil, a number of ~~Zones~~ or Awrajas and Weredas. In the rural areas, weredas are divided into Farmers Associations (FAs) and in the urban areas the urban centers are divided into Urban Dwellers Associations (UDAs).

The census mapwork will have to start from the weredas. When every Wereda and urban center in the country are divided into EAs on the basis of the lowest administrative units, it means that census mapwork of the whole country is accomplished.

It has been over nine years since the first census map was prepared. Since then the country has undergone various changes in cultural and physical features. It has experienced changes in population size, number of households, spatial distribution, etc. Moreover, these changes include formation or disappearance of land marks and physical features (partially or completely), merging or splitting of Farmers Associations. Thus, these changes make the existing census maps out of date.

Due to the various changes, up-dating the first census maps will be a task of paramount importance for the successful conduct of the second census. Up-dating census maps involves utilizing the maps which had been produced during the cartographic work of the first census and adjusting for changes that took place in the last ten years on the maps by employing cartographic techniques. The census cartographic field staff play a crucial role in the accomplishment of this task. Their task is to do the census mapwork in the settled rural areas and urban centres of the country. Thus, all field staff must have adequate knowledge about

* census mapwork and how these maps are prepared as well as how these maps are used in undertaking the population and housing census.

Major purposes of the census mapwork are given as follows:-

- a. Determination of the Size of Manpower:- The formation of EAs and SAs enables the census office to know in advance how many enumerators and supervisors are needed for the census. Arrangements will have to be made accordingly in order to avoid any manpower shortage at the time of the census.
- b. Determination of Field Logistics:- The results of the census mapwork assist in determining the number of questionnaires, vehicles, ..., etc, required in organizing the field activities and undertaking of the census.
- c. Distribution of Workload:- It is important that during the census enumeration each enumerator should have approximately the same amount of workload, which should be completed within a specified enumeration period. This applies also to the supervisors. This can be achieved by dividing the country into EAs and SAs.
- d. Coverage Control:- EA and SA maps assist in avoiding serious omissions or duplications of households or housing units in undertaking the census.
- e. Quality Control:- SA maps are important to organize the supervisions and control of the census field operation.
- f. Establishment of Statistical Frames:- Dividing the country into EAs provide frames for conducting subsequent surveys (e.g. agriculture, health, household budgets, small scale industry, demography, nutrition, etc.)

This manual contains technical instructions for i) Census mapwork in settled rural areas (whether or not Farmers Associations have been formed) and urban centers (whether or not Urban Dwellers Associations have been formed) which were not covered by the first census mapwork and ii) up-dating the census maps prepared in the first population and housing census. Areas which were not covered by the first census mapwork were the whole of rural part of Tigray, sixteen weredas in Gondar, six weredas in Wello and three weredas in Shewa and some other areas. (List of the areas is attached in Appendix I¹). The manual does not provide instructions for preparing census maps in areas inhabited by nomads and shifting cultivators. It is expected that a supplementary instruction for undertaking pre-census activities in these areas will be prepared and issued in due course.

CHAPTER TWO

2. CONCEPTS, DEFINITIONS AND BASIC PROCEDURES OF CENSUS MAP MAKING

In this chapter a number of concepts and definitions are provided. In addition, basic procedures of census map making are described.

2.1 CONCEPTS AND DEFINITIONS

2.1.1 Subdivision: It is the lowest administrative unit in a wereda, i.e., Farmers Associations (FAs) in rural areas and kebeles or Urban Dwellers Associations (UDAs) in urban areas. But in some areas where FAs are not formed, such as in Tigray kushet is considered as a sub-division. In general a sub-division is a geographically defined area within a wereda under the jurisdiction of a local official.

It is important to note that the size of the Farmers Association areas (sub-divisions) in terms of household, population and area vary considerably from one another.

a) Farmers' Association (FA):- It is the lowest administrative unit in a settled rural area with its own jurisdiction. It is an association of rural dwellers formed by the inhabitants of a given area. The members are engaged either in agricultural or non-agricultural activities.

b) Urban Dwellers' Association (UDA):- It is the lowest administrative unit in an urban center with its own jurisdiction. It is an association of urban dwellers (commonly known as kebele) formed by the inhabitants, and usually constitutes a part of the urban center.

2.1.2 Locality:- A locality is defined as a nucleated and physically distinct settlement (also designated as inhabited place, populated center, etc.) in which the inhabitants live in neighbouring housing units (buildings, huts, etc.) and has a name or a locally recognized status. A locality may include a hamlet, a village, a market center, a town and any other population cluster which meets the criteria specified above.

2.1.3 Urban Center:- It is generally defined as a locality with 2000 or more inhabitants. However, for the purpose of census mapwork urban center includes the following regardless of the number of inhabitants.

- a) All administrative capitals
 - i. Regional capitals
 - ii. Awraja capitals not included in (i)
 - iii. Wereda capitals not included in (i) and (ii)
 - iv. Localities with UDAs not included in (i-iii).

b) Municipal towns not included in item "a" above

c) All localities which are not included either in items "a" or "b" above having a population of 1000 or more persons, and whose inhabitants are primarily engaged in non-agricultural activities. Note that localities with population less than 1000 persons should be considered as rural.

2.1.4 Higher Urban Dwellers Association (HUDA):- It is a larger administrative unit in an urban center formed by two or more contiguous Urban Dwellers' Associations. It has also its own jurisdiction and its major duties are to coordinate the functions of the UDAs under it.

2.1.5 Central (Atekalay) Urban Dweller Association (CUDA):- It is the highest administrative unit of an urban center formed by two or more Higher Urban Dwellers Associations. Its major duties are the coordination of the function of HUDAs under it.

2.1.6 Enumeration Area (EA):- An enumeration area is a unit of land delineated for the purpose of enumerating housing units and population without omission and duplication. For the purpose of the census, an EA in rural areas usually consist of 150-200 households, and on the other hand an EA in urban centers constitutes 150-200 housing units. During the census an EA is usually assigned to an enumerator.

An enumeration area should be related to a UDA, an FA or a subdivision in one of the following ways.

a) An EA may be equal to a subdivision or a Farmers' Association area, if the number of the households in the FA/subdivision is less than or equal to 150-200 in rural areas and equal to a UDA in Urban Areas if the number of housing units in the UDA is 150-200.

b) An EA may be a part of a subdivision or a Farmers Association area or an Urban Dwellers Association area.

Whatever form an EA takes, it is very important that an EA is properly delineated and described. Note that an EA should not cross an FA/subdivision boundary in rural areas and a UDA boundary in urban centers.

2.1.7 Supervision Areas (SAs):- A supervision area is a grouping of continuously located EAs to be under the control of a supervisor for the purpose of attaining complete coverage and quality control at the time of census enumeration. It usually consists of 5 EAs with 750 to 1000 households or housing units. The supervision area should not cross a Wereda. It is important to note that the SAs will have to be formed when all the EAs in a Wereda and urban centers have been delineated.

* 2.1.8 Household:- A household denotes a group of persons who often live in the same housing unit or in connected premises and have common arrangements for cooking and eating their food. A household could consist of a single person, but usually, it consists of a husband, his wife, his children, relatives, etc. The members of a household could be composed of relatives and non relatives. The non relatives could be friends, servants, employed agricultural workers, etc.

It is important to relate household definition with pattern of marriage. If marriages are monogamous (if a husband has only one wife) a household is most likely to consist of a husband, a wife, their children, adopted children, parents of the husband or wife or both, other relatives, servant(s), etc. All these persons should reside together and have the same cooking arrangements in order to be considered members of that household. If marriages are polygamous (if a husband has two or more wives) and if the husband, the wives, the children, etc. live in the same housing unit or closely located housing units and have common cooking arrangements from which they share their principal meals, they form a household. Conversely, if the wives and their children (including relatives and servants, if any) live in separate premises and each wife and her children have separate cooking arrangements and meals, then, each wife should be considered as having formed a separate and distinct household of her own, and the husband should be considered as having formed a household with his first wife among those alive.

In order to prepare EA maps the Geographical Assistants (GAs) will have to first list the households in the FAs in rural areas and the households as well as the housing units in the UDA, in urban centers.

2.1.9 Head of Household:- Any member of the household who is recognized as the head by the members of the household is called head of the household. The head of the household can be male or female. In a polygamous marriage where the wives have separate households, the wife or any other member (e.g. elder son) should be considered as a head.

2.1.10 Housing Unit:- A housing unit is a separate and independent part of the whole of a building or a group of buildings used or intended to be used for habitation by a household; or if not so, used or intended to be used as a school, store, a bar, barber shop, a manufacturing establishment or for other non-residential purposes. You should consider even a mobile housing unit such as tents and trailers and any kind of shelter used for habitation purposes by a household at the time of census mapwork.

2.1.11 Collective Quarter:- A collective quarter is a premise (a housing unit, a building or a compound) in which a number of

and/or related
unrelated persons reside together, and share common facilities. Examples of collective quarters are monasteries, prisons, boarding schools, hostels, hotels, home for the aged, children's home, work camps, military barracks, rehabilitation centers, etc. It is important to note that in the premises of some collective quarters, there may be private households.

2.2 BASIC PROCEDURES OF CENSUS MAP MAKING

2.2.1 Categories of Maps and Some Facts About Mapwork:- The purpose of cartography is to collect data and analyse the various patterns of the earth and to represent them graphically on a reduced scale that the elements of the pattern can be made clearly visible. For revealing the earth's pattern, the chief instrument of the cartographer is a map. A map is a conventionalised picture of the earth's pattern as seen from above, to which lettering is added for identification. A map represents what is known about the earth and all that can be seen from any altitude. Maps commonly exhibit many features that are in themselves not visible such as international boundaries, administrative boundaries, geographical names, etc.

Maps vary in scale and detail and may be classified with reference to their scale and to their content. For the purposes of census cartographic work the following broad categories of maps and some of the facts about mapwork should be understood well.

- *A. Topographic Maps:- A topographic map portrays the natural and cultural features of the earth's surface in measurable forms showing both their horizontal and vertical positions. The vertical positions, or relief, are normally represented by contours. For the purpose of this manual topographic maps could be classified into three categories according to scale.
- | | | |
|------------------|------------------------------------|-----------------------|
| i. Large scale | <i>to include more information</i> | 1:20,000 and larger |
| ii. Medium scale | | 1:20,000 to 1:100,000 |
| iii. Small scale | | 1:250,000 and smaller |
- *B. Township Maps:- Usually they are large scale maps that represent the road network of urban centers and location of buildings and other prominent features. *They are usually called street maps.*
- C. Cadastral Maps:- They are large scale maps showing the boundaries of plots of land, usually with the bearings, length and the area of individual tracts for purposes of describing and recording ownerships. *It shows only holdings.*
- D. Planimetric Maps:- Maps which present only the horizontal positions of the ground features are called planimetric maps. They are distinguished from topographic maps by the omission of relief in measurable forms.

- E. Special Purpose Maps:- Maps designed primarily to meet specific requirements, e.g. land use maps, geological maps, census maps, etc. Usually the information portrayed on special purpose maps is emphasised by omitting or subordinating non-essential or less important information. They are small scale maps. *(Showing only EA's maps) physical features, elevation, contour, level, etc. while subordinates any information*
- F. Aerial Photography:- They show physical, natural and cultural features in their correct perspective and are of great help in base map preparation. However, their uses are limited because of the constraints imposed by time and cost. Whether the aerial photographs are used directly or converted to maps all pertinent names, administrative boundaries and other important details have to be shown.

Photo maps are the reproduction of aerial photographs or mosaics made from a series of aerial photographs, upon which arbitrary grid lines, marginal data, place names, important elevations, approximate scale and direction have been added. Photo maps are not usually contoured. They are used to supplement other maps or to serve as a map substitute.

- *G. Base Maps:- It is any type of map showing certain fundamental information, used as a base upon which additional data are compiled, or map containing all the information from which maps showing special information can be prepared.

A base map can be used to make any other type of map by adding or subtracting information

For the purpose of preparing census maps some of the above mentioned types of maps may serve as base maps if found suitable in terms of scale and detail. Other less detailed maps could also be used when there is no sufficient time and skilled staff to prepare better maps.

- H. Map Detail:- Map detail represents ground features as they existed at the date of map compilation or latest revision. Since man is continually building, demolishing and/or changing ground features, the details appearing on a map may not match with those appearing on the ground. This is specially true in areas where substantial socio-economic developments take place. To tackle such problems, the methods of generalization and symbolization have always to be applied.

- I. Generalization:- The amount of details shown on a map increases with its scale. A map attempts to show the maximum detail without impairing legibility. In areas of heavy cultural density, fewer items are omitted. When deletions are necessary because of the density of detail, care is taken to retain the general pattern of the features in the area. Similarly, where numerous ditches and streams exist, the less important ones are omitted and the more important ones are retained to show the characteristic pattern of the features in the area. It should however be understood that the extent of generalization depends on the purpose of final map.

Map detail is the information that we include in the map basically on the purpose of the map

The generalization depends on the importance of the detail and the scale of the map.

J. Symbolization:- A symbol is a design or letter of abbreviation placed on maps and charts which by convention, usage or reference to a legend is understood to stand for or represent a specific characteristic or object.

Whenever symbolization is used a mapped feature is shown by the same symbol on maps of different scales, but certain modifications are necessary because of varying map uses and scales. The centre and the orientation of symbol usually correspond to the true centre and orientation of the feature represented.

Different Types of Symbols:-

i. Point Symbols

a. Qualitative point symbols:

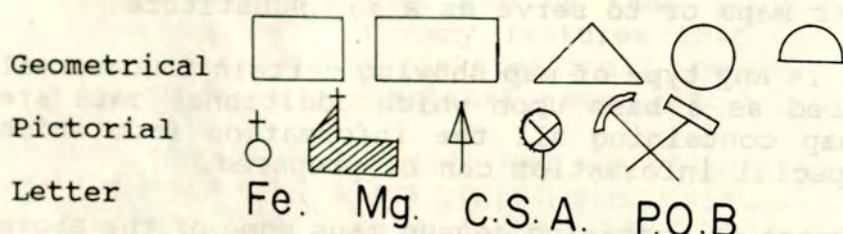


Fig. 1a

b. Quantitative point symbols

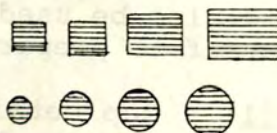


Fig. 1b

ii. Line Symbols

a. Qualitative line symbols

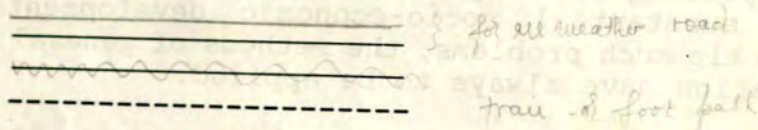


Fig 2a

b. Quantitative line symbols (thickness)

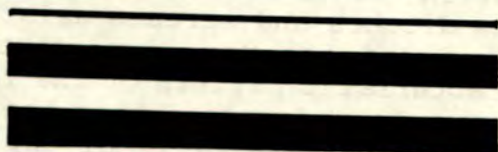


Fig 2b

iii. Area symbols

a. Qualitative area symbol



Screen

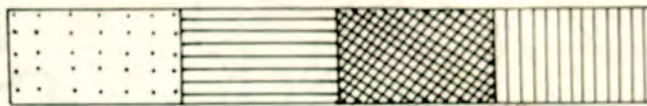


Fig. 3a

The dotted lines follow the same pattern

b. Quantitative area symbols

Screen

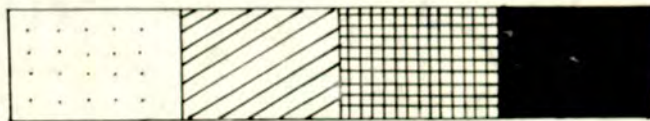


Fig:- 3b

Low

High

Screen is used for qualitative, line lines for quantitative

when to use screen to show qualitative of quantitative details depends on the decision of the person which is going to define the legend

- K. Physical Features:- Depending upon the accuracy of information, the shapes of the terrain are shown on a map by lines representing contours, approximate contours and form lines. Any one or all of these methods may be used on a single map. On medium and small scale maps, significant relief features may be shown by hachures when available data are insufficient to warrant the use of contours.

- i. Contours:- They are imaginary lines drawn on a map showing points on earth's surface of same elevation above a fixed datum or mean sea level.

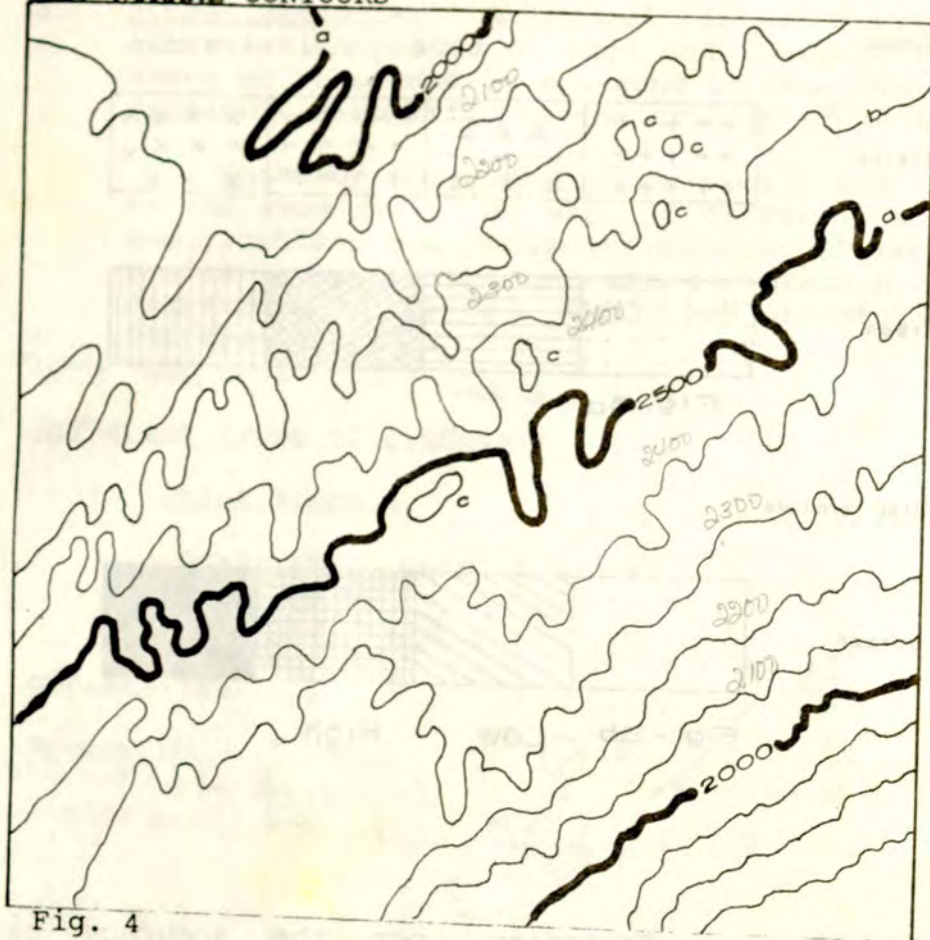
it is a method of shading that to show mountain (to show vertical features) which is different from contours but does not show actual height

One of the three types of contours can be used depending upon the intended purpose. These are:

- a. Normal Contours:- To aid the map users every fifth contour is a heavier line. These are commonly referred to as index contours. The remaining contours are called intermediate contours. In certain areas on the map, the normal contour interval is sometimes too large to present significant topographic formations correctly and supplementary half-interval contours or spot heights are added.

Topographic Map - Shows two-dimensional only, the width and height.
Photographic Map - It shows 3-dimensional, depth, length and height of the space.

(a) NORMAL CONTOURS



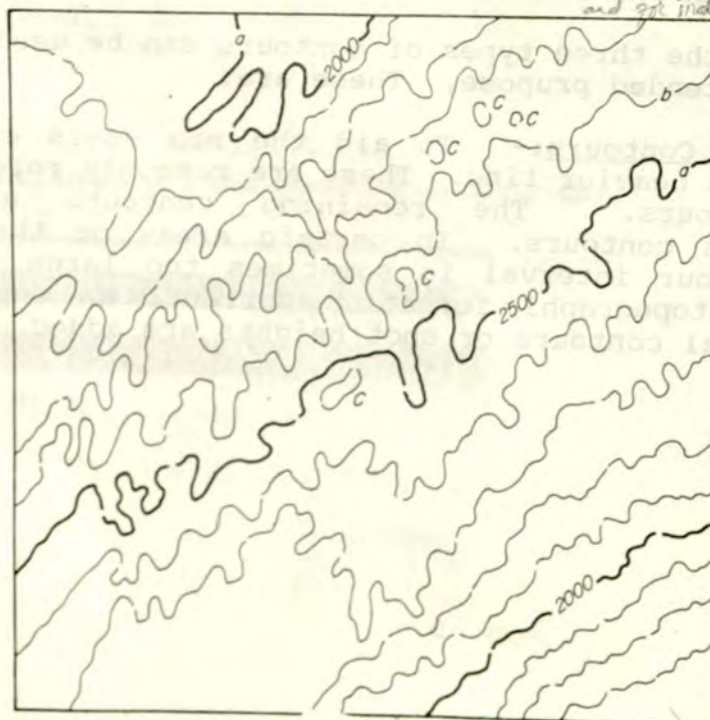
a= INDEX CONTOURS
b= INTERMEDIATE CONTOURS
c= SUPPLEMENTARY CONTOURS

Fig. 4

b. Approximate Contours:- An approximate contour on a map represents an imaginary line on the earth's surface all points of which are estimated to be of the same elevation. Whenever there is any question as to the reliability of the source material or of the survey, approximate contours are substituted for normal contours.

(b) APPROXIMATE CONTOURS

An approximate contour is used for all contours, intermediate and index contours.

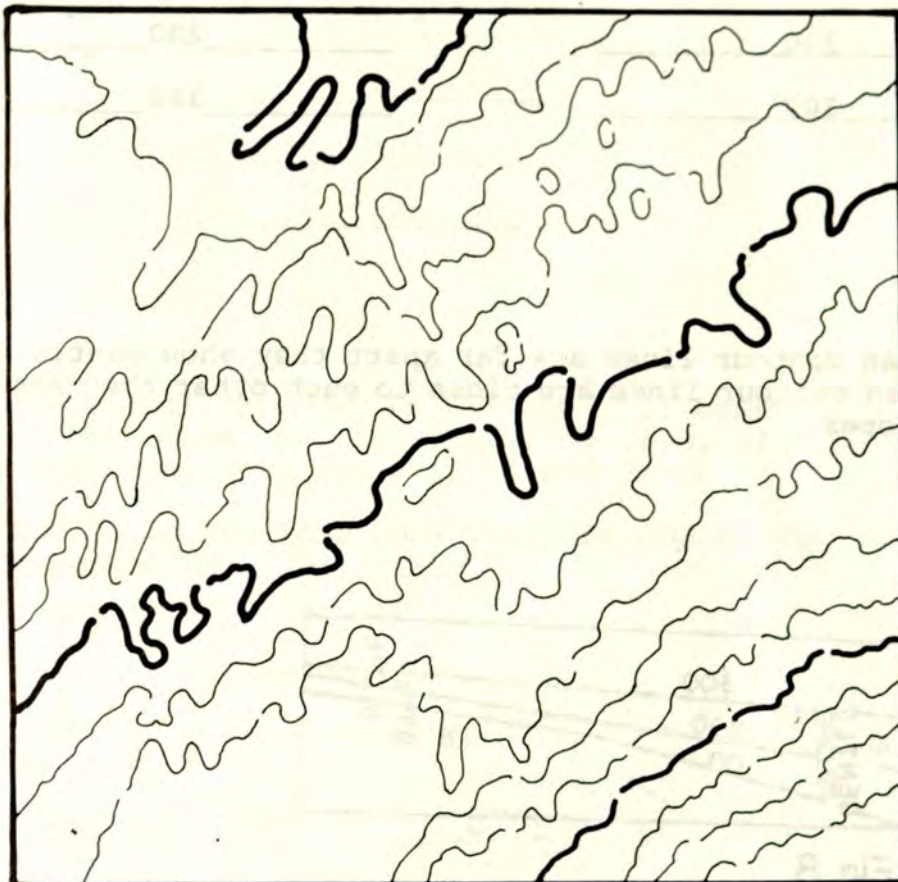


a. Index Contours (approx)
b. Intermediate Contours (approx)
c. Supplementary Contours (approx)

Fig. 5

c. Form Lines:- When available information is insufficient to warrant the use of either normal or approximate contour, form lines are used. Form lines collectively portray the general shapes of topographic features, but with a little or no reference to sea level. They do not present an accurate representation of the terrain, but illustrate the general topographic shape of the area.

(c) FORM LINES



Note that the lines are broken and unnumbered

Besides the Contours are approximate their Contour number or elevation value is not known.

///

Fig. 6

ii. Characteristics of Contours:- Understanding the characteristics of contours is a prerequisite of using contours for all practical purposes. Thus, the main characteristics of contours are considered below:

- a. Contours are smooth curves.
- b. Contour lines are numbered on the direction towards which altitude increases. Sometimes the numbers are written in the breaks of contour lines.



Fig. 7

- c. When contour lines are far apart they show gentle slopes.
- d. When contour lines are close to each other they show steep slopes.

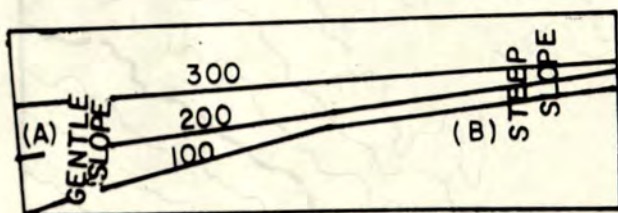


Fig. 8

- e. Contours never cross or touch except at vertical cliffs and waterfalls.
- f. Contours tend to parallel to streams and to parallel to each other. This reflects the fact that changes in ground forms are usually gradual.
- g. Every contour closes on itself, either within or outside the limits of the map.
- h. The vertical interval between any two contour lines is constant unless otherwise stated:

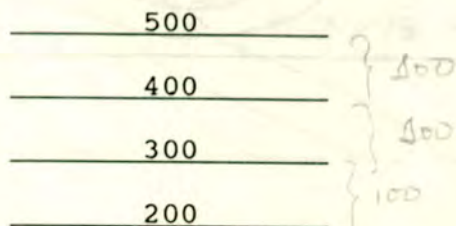


Fig 9

Here, the vertical interval is 100 and it is constant. Let us now see how hills, cols, knolls, spurs, valleys, cliffs, ridges and plateaus are shown with the help of contours:

Hill:- A hill is any land form which is higher than its surrounding. (775)

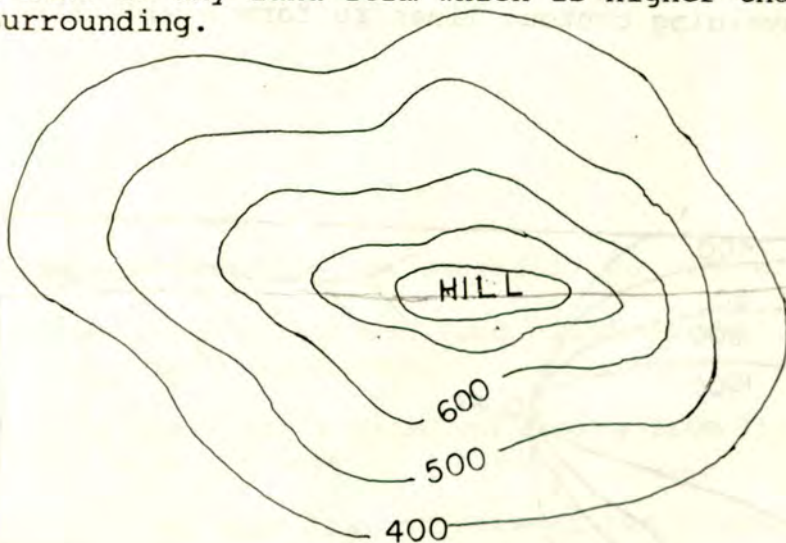


Fig. 10

Valley:- A valley is a v-shaped lowland on the surface of a highland.

Spur:- It is an outward projection of ground into a lower one.

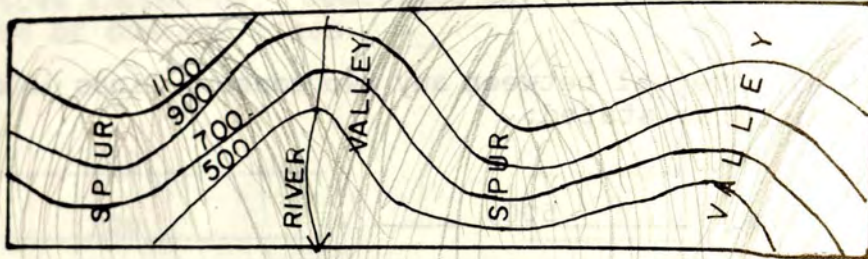


Fig. II

Cliff:- It is a vertical part of a highland. A spur with a vertical height is also a cliff. It is represented by converging contour lines to form a wide line.

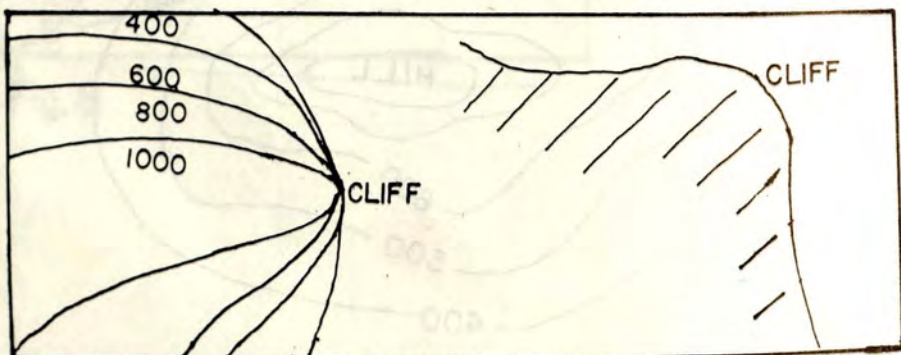


Fig. 12

Waterfall:- It is a sudden drop of a river due to a vertical slope on the floor or a valley.

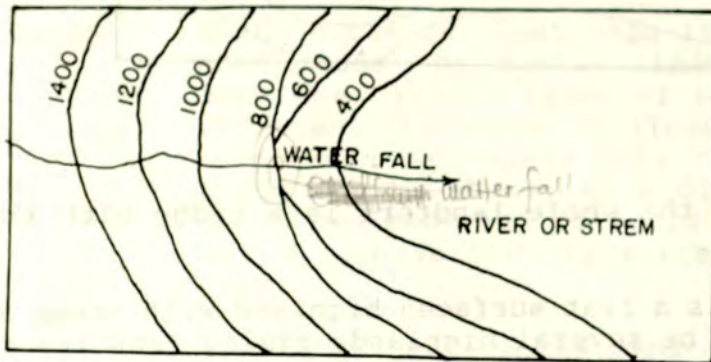


Fig :- 13

Note that contours merge at the waterfall to form a wide line.

Ridge:- A ridge is a narrow and long highland with steep slopes. It has a narrow surface.

Knoll:- It is a small scale highland rising from the surface of a plateau, or a ridge or a plain.

Col:- It is a relatively lowland between two highlands. It is also called a pass or a saddle.

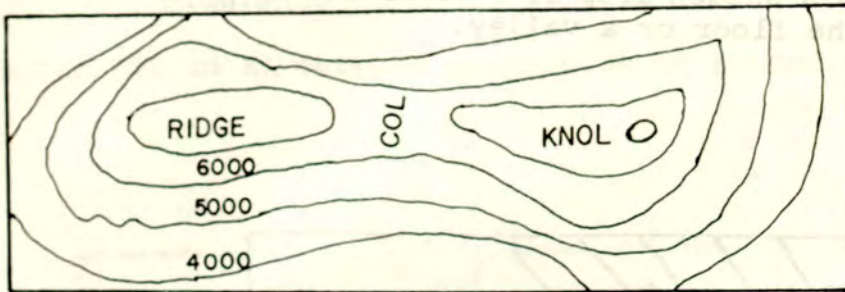


Fig. 14

Note that the whole landform is a ridge with knolls and cols on its surface.

Plateau:- It is a flat surfaced highland with steep slopes. There may be several highlands rising from its surface. (see Fig. 15)

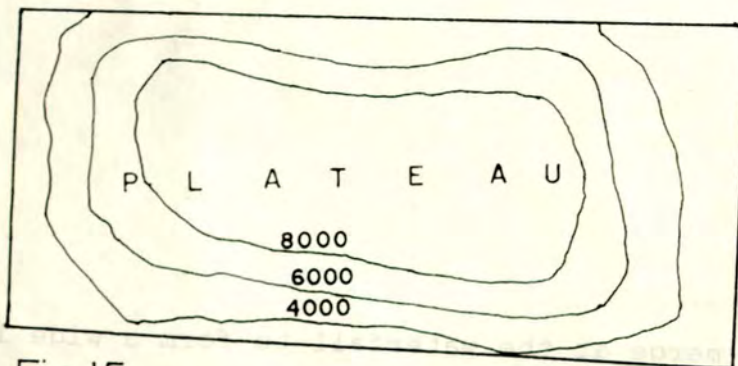


Fig. 15

L. Cultural Features:- Cultural features are features of the terrain that have been constructed by man. The major cultural features are:-

i. Cities:- On small scale maps cities are represented by circles. On large scale maps where the actual extent can be shown, the city can be represented by cross lines indicating a street system, even though it does not exactly follow the actual pattern.

ii. Roads:- Even in the earliest maps it was customary to show roads by double lines. On large scale maps the various types of roads are shown by different thickness of lines. On small scale maps, however, where only the most important roads can be shown, this differentiation is not often made and to avoid over crowding the map, a single line is preferable to a double line.

Most small scale maps do not contain any cultural symbols besides cities, roads, railroads and boundaries, but on large scale maps various other features such as churches, mines, schools, etc., are shown. Man made features, such as cities, roads and railways are exaggerated on maps.

M. Map Scale:- A map scale is a device by which the proportional relationship between the actual size and its representative is shown.

The Scale of a map is very important in order to make the map more detailed one.

i. Types of Map Scale

a. Representative Fraction (RF):- This is a simple fraction or ratio. It may be shown either as 1:250,000 or 1/250,000. This means that one unit on the map represents 250,000 units on the ground.

b. Verbal Statement:- This is a statement of map distance in relation to ground distance. For example the RF 1:250,000 works out to be approximately 1 cm to 2.5 kms.

$$\text{Scale} = \frac{\text{MAP DISTANCE}}{\text{GROUND DISTANCE}}$$

(Linear Scale)

i.e., $\frac{250,000}{100 \times 1000} = 5/2 = 2.5 \text{ kms.}$

Note that 1 km = 1000 m, 1m = 100 cm and hence
1 km = 1000 x 100 cm.

$$\text{Scale} = \frac{\text{MAP AREA}}{\text{GROUND AREA}}$$

(Area Scale)

c. Graphic or Bar Scale:- This is a line placed on the map that has been subdivided to show the lengths of units of ground distance. One end of the bar of the scale is usually subdivided further in order that the map reader may measure distance more precisely.

This gives a rough estimation of length by changing the scale

We use this Scale (Bar) for Inter-cada RA map only.

e.g:

5 0 5 10 15 20
! ! ! ! ! kms.

PROB. 8791

791 Common Map Scale and Their Equivalent

Map Scale	One Centimeter Represents	One Kilometer is Represented by
1:1,000,000	10.0 km on the ground	1.0 mm on the map
1:500,000	5.0 "	2.0 " "
1:250,000	2.5 "	4.0 " "
1:125,000	1.25 "	8.0 " "
1:100,000	1.0 "	1.0 cm = 10mm "
1:50,000	0.5 "	2.0 " = 20mm "
1:25,000	0.25 "	4.0 " = 40mm "
1:20,000	0.2 "	5 " = 50mm "
1:10,000	0.1 "	10 " = 100mm "
1:5,000	50 meters "	20 " = 200mm "
1:2,000	20 " "	50 " = 500mm "

ii. Changing Scale:- When there are no suitable large scale base maps for census purposes, enlargements or reductions have to be made from different sources or different scales and details are added.

The scale of a base map or a source map may be changed in a number of ways, namely, by optical projection, by photography, by pantograph and by similar squares.

a. Changing Scale by Projections:- It is a process of projecting from overhead onto a drawing surface (reflecting projector, map-o-graphy) or from underneath onto a translucent tracing surface (optical pantograph). A source map is placed in the projector and by adjusting the enlargement or reduction, the projection of the image to the map being compiled. When properly aligned then the desired information is transferred.

b. Changing Scale by Photography:- Changing scale by photography is a very easy process but expensive. It may be accomplished either by photographic enlargement or reduction through the use of the conventional film process.

c. Changing Scale by Pantograph:- It is an ancient device of enlarging and reducing but very popular, easy to operate for reduction. However, enlargement is relatively difficult and accuracy is hard to obtain.

d. Changing Scale by Similar Squares:- In some instances we are forced to change scale by a method called similar squares.

As its name implies we use similar squares which is a simple method to change the scale of the map. This involves drawing a grid of squares on the original and drawing the same squares but larger on the enlargement paper.

One should not change the direction of the map
Step by Step Procedures to Enlarge a Map Using Similar Squares

- Step 1 - Draw a grid of squares on the map to be enlarged.
 Example 1cm x 1cm squares
 Step 2 - On the enlargement paper draw similar grid squares but larger in size.
 Example 2cm x 2cm Squares
 Step 3 - The lines, positions, and other details are then carefully transferred by observation from the original grid system to the corresponding grid system of the enlargement paper.

For enlarging EA map you will be supplied with A4 size millimeter graph paper. Example see fig. 17.

Size of an EA on the Original Map.

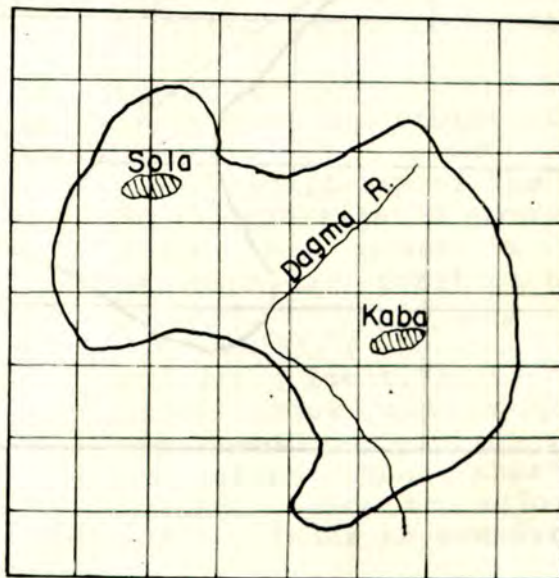


Fig:-16

$$\begin{aligned}
 1\text{ km} &= 1000\text{ m} \\
 1\text{ m} &= 100\text{ cm} \\
 1\text{ cm} &= 10\text{ mm} \\
 1\text{ km} &= 1,000,000\text{ mm} \\
 \frac{25,000}{1,000,000} &= 0.025 \\
 1\text{ cm} &=
 \end{aligned}$$

Enlarged EA Map on A4 size mm graph paper.

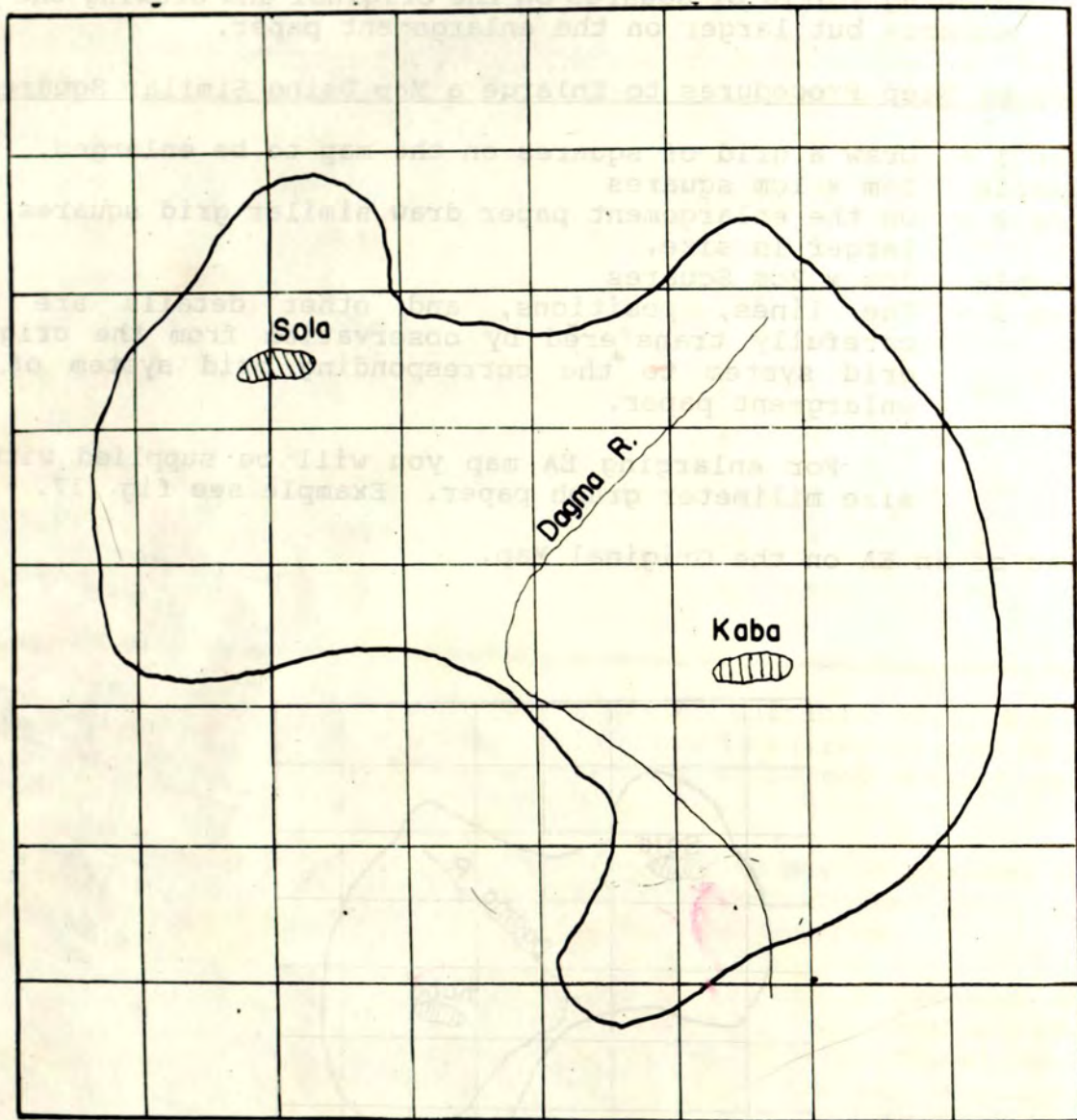


Fig. 17

N. Direction:- Direction on earth are entirely arbitrary since a spherical surface has no edges, beginning or end. By definition, then North-South is along any meridian and East-West along any parallel, because of the arrangement of the graticule. These two directions are everywhere perpendicular except of course at the poles. The meridian and the parallel form the basis for the directions of the compass.

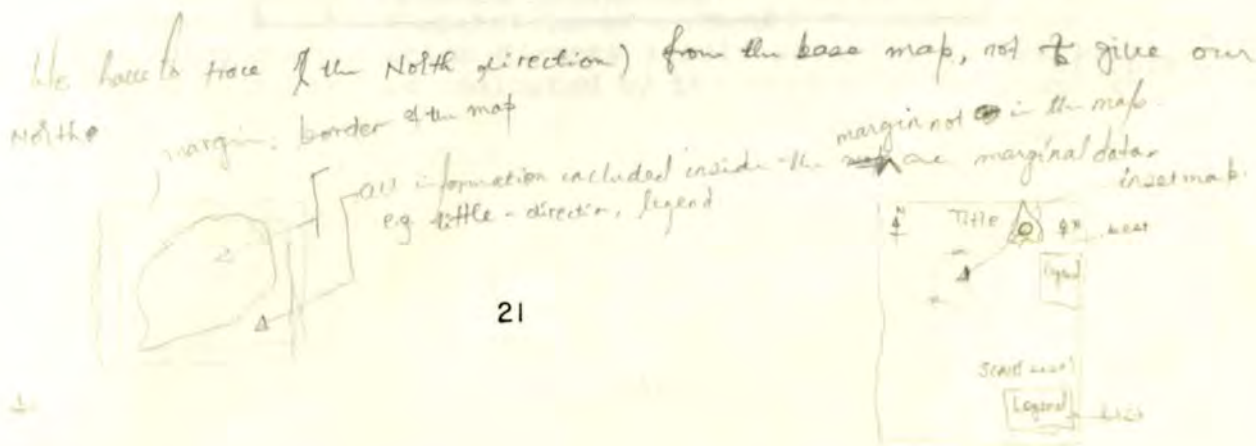
Since the needles of the magnetic compass aligns itself with total magnetic force it is not parallel to the meridian, that is, it inclines away from the meridian. Consequently most areas will have different magnetic north from true north.

O. Marginal Map Information (Marginal Data):-

Marginal map information are items appearing in the margins of maps. They help in the identification of maps.

These are:-

- i. **Title**:- the title should give the name of the area and the subject of the map.
position: at the middle top of the map.
- ii. **Scale**:- the scale of the map should be indicated. It is advisable to give scale in numerical and graphical forms.
- iii. **North Arrow**:- the direction of the geographic north or true north is indicated with an arrow. Although it is common to orient the map with the north to the top, the shape of the area very often dictates another orientation.
- iv. **Legend**:- the legend, or key, should contain an explanation of every symbol and abbreviation used in the map.
- v. **Inset Map**:- a very small map of the country with location of an investigated area in the form of a small black dot gives a good idea of the geographical position of the area within the country.
- vi. **Index map**:- for quick identification of maps when filed, index maps in opposite corners of the map sheet are provided. These maps contain the series number, sheet number, edition number, index to adjoining sheet number, index to boundaries, etc.



P. Area Estimation by Square Method:- Measuring the area by square paper or grid paper is a simple method by which one can roughly calculate the area of an irregular figure. The squares are systematically spaced in such a way that if the scale of the figure or the scale of the map on which the figure is based is known the area could be computed.

The following steps are used to estimate the area of an EA.

Step 1 - Draw your figure or sketch it on a transparent paper.

Step 2 - Superimpose the figure or the sketch on the square paper or the grid paper (for area estimation you will be supplied with A4 size mm graph paper)

Step 3 - Count the numbers of full squares engulfed by the figure

Step 4 - *Count half squares and above as full square*
~~Sum up fractional squares to make up full square~~

Step 5 - Count the total number of squares (from step 3 and step 4) and multiply the sum by the scale of the map. This value gives you the area of the EA.

EXAMPLE

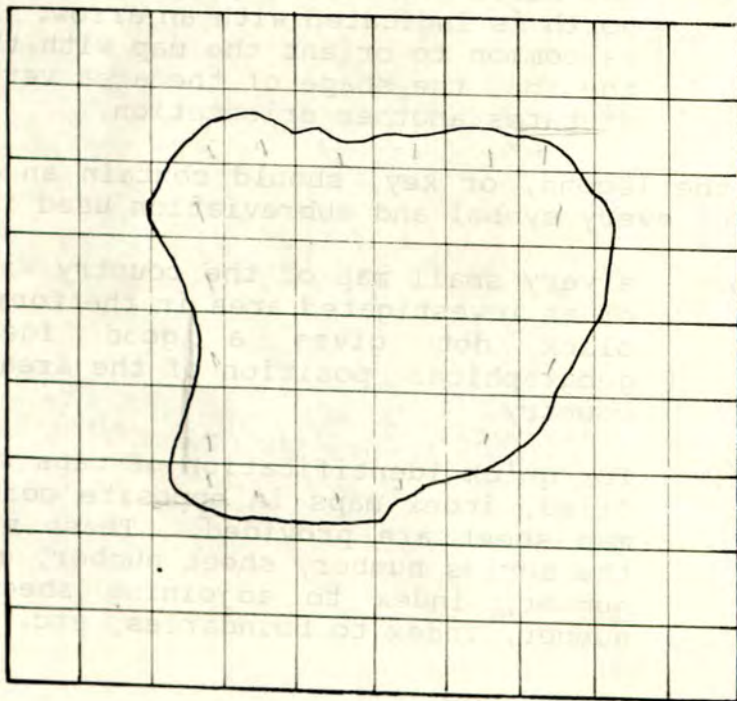


Fig. 18

17 1/2 squares

The above figure or sketch covers 25 squares and each is 1cm x 1cm = 1cm²

Suppose the scale of the sketch is 1:50,000. Then to convert the scale into km: $\frac{50,000}{100 \times 1000} = 1/2$

That is, 1 cm = 1/2 km

2 cm = 1 km

4 cm² = 1 km²

Converting 25 squares in cm² into km²

$$\frac{25}{4} = 6.25 \text{ km}^2$$

Thus the area of the sketch is 6.25 km² approximately.

2.2.2 Map Sketching: A sketch map is a hand drawn map of an area which is usually constructed with the aid of simple tools. Sketch maps are generally made in one or more of the following situations.

a) Where there is no map of any kind for the area, or where the only map available is of small scale to show sufficient details.

b) Where the map sent to the field turns out to be out of date, it would be easier to draw a sketch than to try to make changes on the available map.

For these purposes, the sketch ^{map} should include necessary features such as church, school, mosque, market places, etc. so as to make it sufficiently detailed to enable the geographical assistant (GA) to carve out the EAs. The sketch should be consistent in scale and direction and features should be indicated by standard map symbols.

A. Sketching Techniques:- Map sketching involves locating ground features in relation to each other and measurements of the distances between them, it consists of two main operations:

- i. Measuring angular direction and
- ii. Measuring linear distance.

i. Measuring Angular Direction:- A simple device for carrying out this operation is a magnetic compass with a free swinging needle which directs itself parallel to the earth's magnetic North, as indicated by the needle of the compass and

the line of sight between the observer and the object. The angular direction of each object is measured from both ends. Measuring from both ends will serve as a check on the accuracy of the first reading. The two readings should differ by exactly 180°.

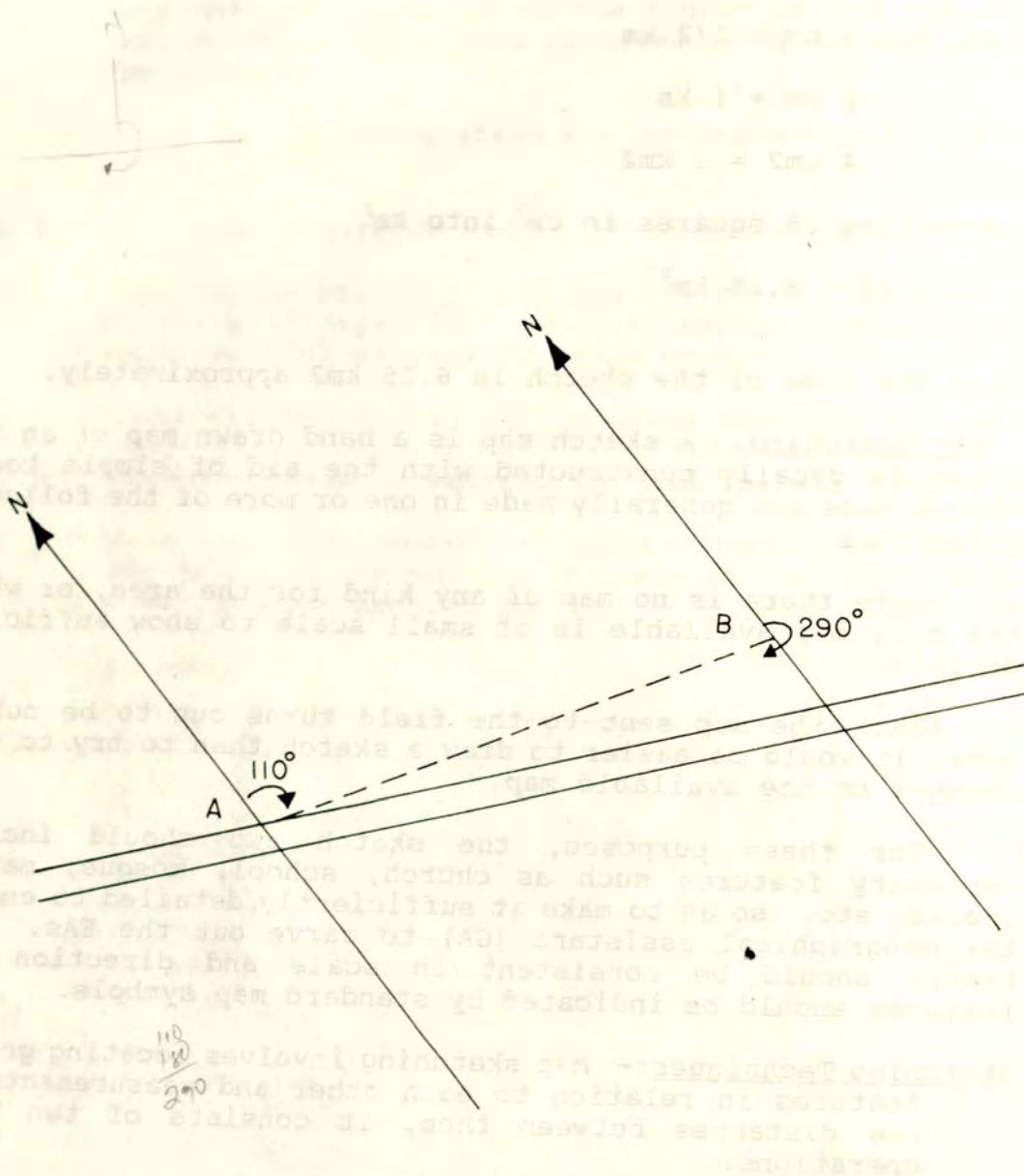
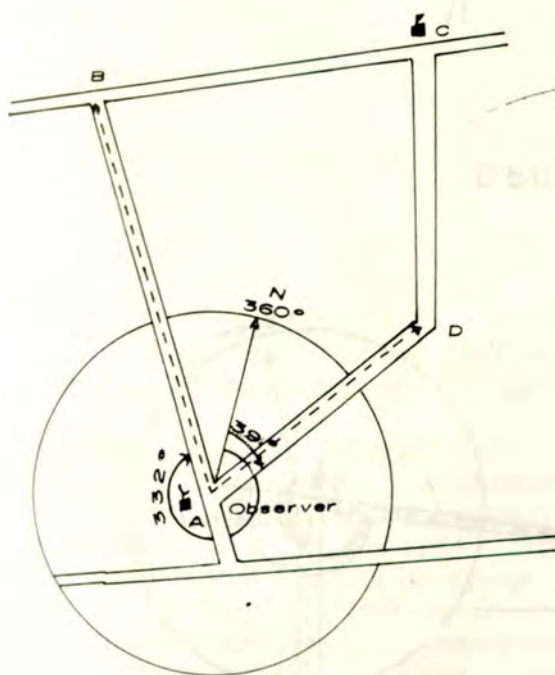


Fig. 19

In Fig. 19 the observer first finds the north direction at point A. Then turns or makes an angle in clockwise direction and observes through the small lens and lines up the vertical wire or line with the object B. Let the angle measured from point A to point B be 110° . Now the observer goes to point B and finds the north direction and measures the angle in a clockwise direction to point A. Then the reading at point B is 290° . Note that the difference between the two readings is 180° .

The Fig. 19 given above shows how to measure the angles between two points. The same procedure is repeated when measuring angles of more than two points as shown in the following figures.

Observation from A to B and D



AB = 332
AD = 38

it uses to locate local
and other in the map.

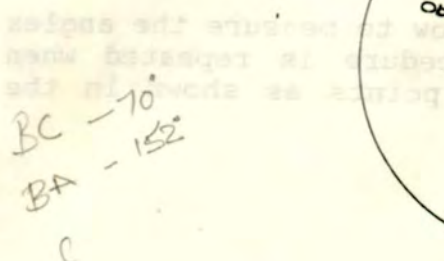
rough sketch of the map
with the points A, B, C, D
and the angles measured
from A to B and D.

We have to see the north direction
and follow the clockwise direction in
measuring the angles and sketching
the rough sketch.

five degree error.

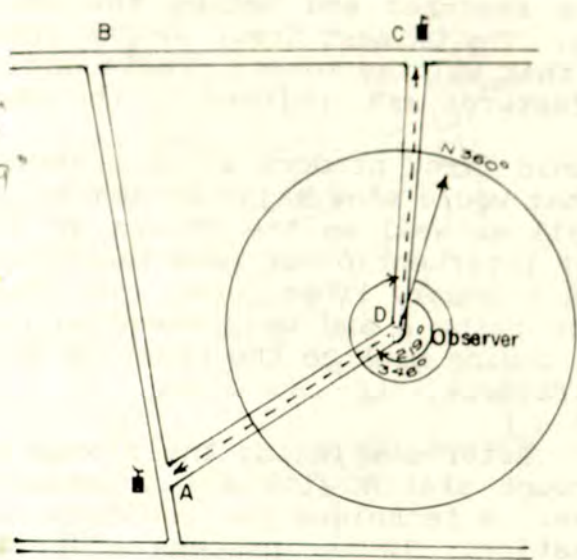
Fig. 20

Observation from B to A and C



— — —

$$\begin{aligned} \angle D &= 166^\circ \\ \angle B &= 250^\circ \end{aligned}$$



+ 3 mol of H_2O
at L

AB
BA
BC
CB
CD
DC
DA

7000 $\rightarrow$ A $\rightarrow$ 7000
fully selected

* Note that of
the North of

* The distance
is

7000 → 700
fully sketched

1 m = 1.17 paces
1 pace = 0.85 m = 85 cm

- Living: Very important.

五

B. Procedures of Operation in Map Sketching:-

- i. Traversing:- Traversing means walking around and within the area to be sketched and noting the distances and the directions. The GA must traverse the area several times to ensure that all the roads, trails and other prominent cultural features are included in the sketch.

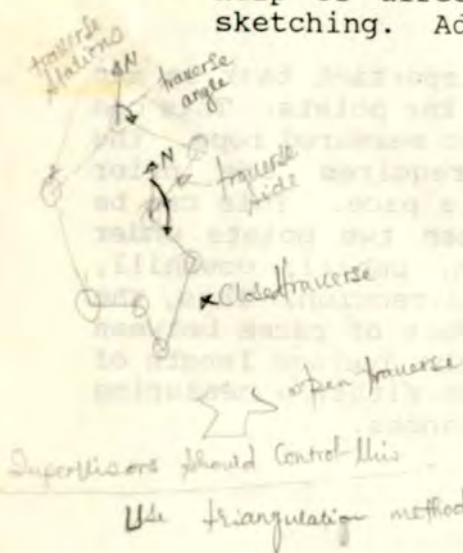
The GA should first produce a rough sketch as indicated in figure 24a that would show major landmarks on both sides of the road or trail as well as the points of intersection and the direction of intersection of land features such as roads, trails, streams, boundary lines, etc. The traversing is done by starting from point A and by proceeding clockwise around the area, until coming back to the starting point A. This is called closed traverse.

- ii. Triangulation:- After completing the closed traverse the GA fills in the rough sketch with all important cultural and natural features. A technique for locating such features is called triangulation. In the process of triangulation, if the location of two points is known the third point could be established with a magnetic compass. The technique for measuring distances and angles in triangulation can be done as explained previously.

- iii. Establishing Boundaries:- In making the sketches the GA should first establish the boundaries such as limits for urban center or Farmers Association or sub-division in rural areas. This is to be done by a closed traverse system. If the area is large the sketch can be done in segments starting with the outer segments first and the internal segments next and so on.

- iv. Adjusting the Sketch:- The sketch prepared in the field is a rough drawing done in pencil. It should be adjusted with the help of directional information given on record form for sketching. Additional details have to be inserted from your

observation. Then a fine drawing of the adjusted sketch as shown in fig. 24b is to be done in ink. All marginal information must be put at their appropriate places.



I. ROUGH SKETCH

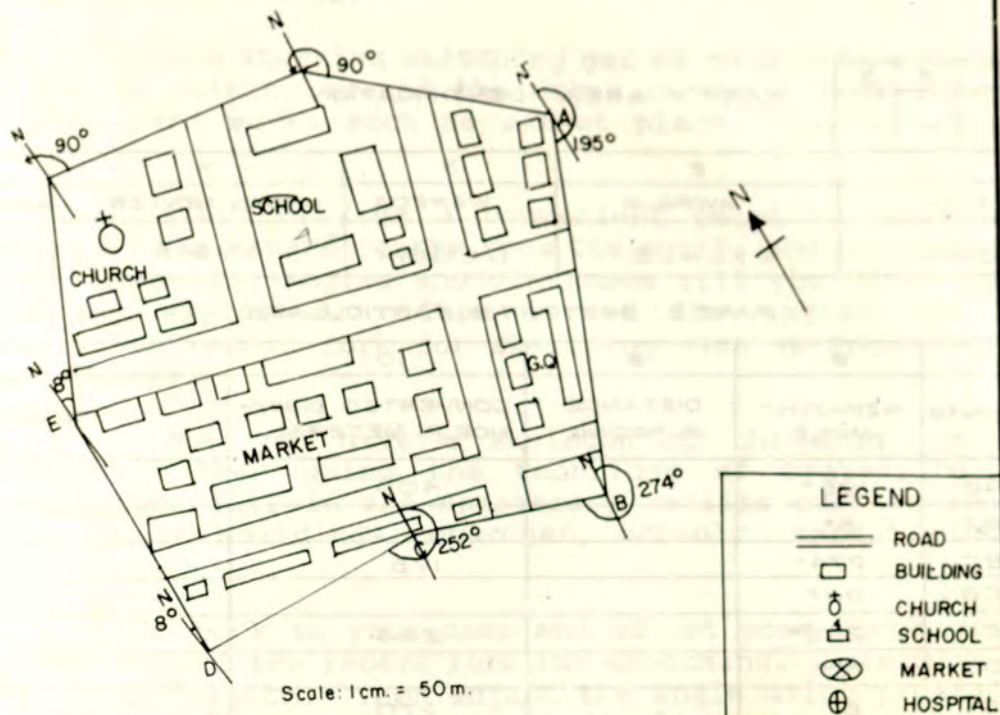


Fig. 24a

2. ADJUSTED AND VERIFIED SKETCH

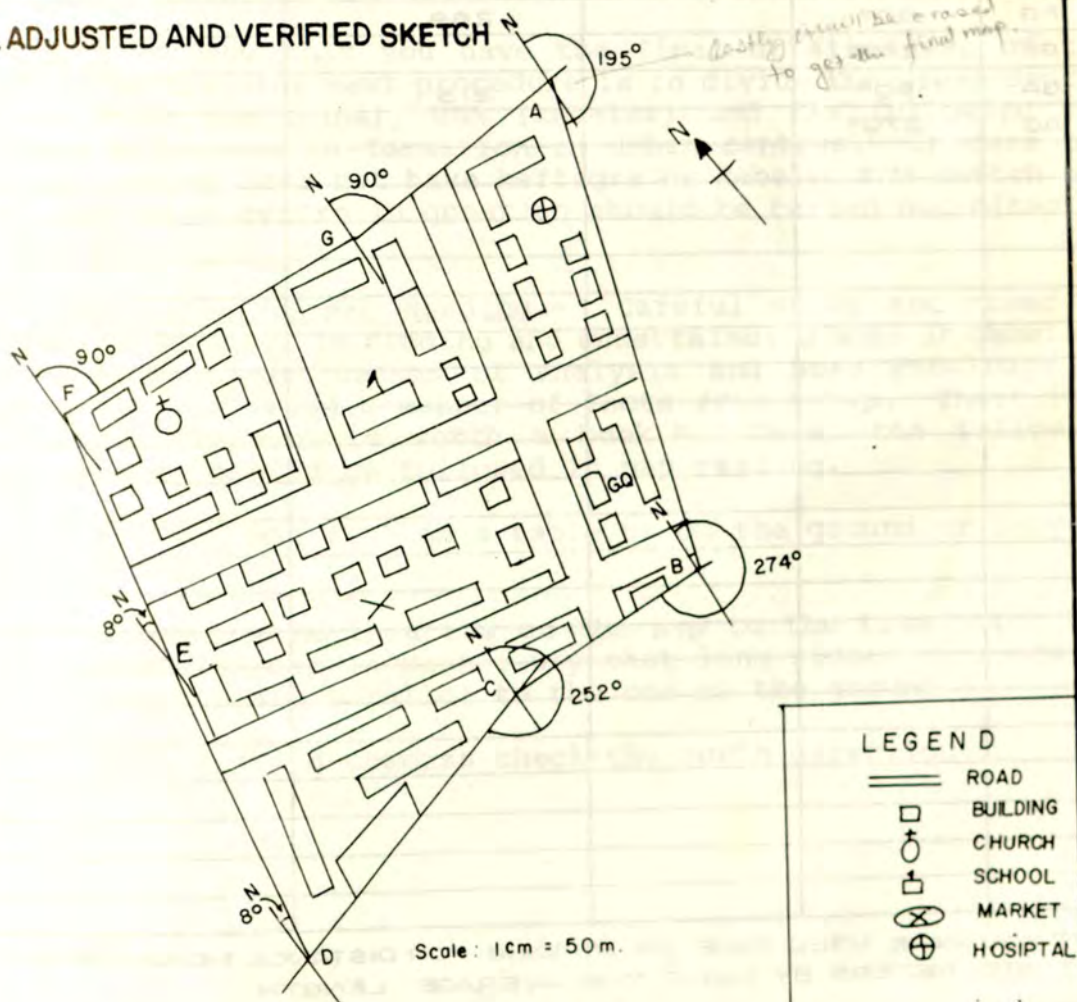


Fig. 24 b

PAGE ____ OF ____ PAGE

FORM U-6

PART 1: AREA IDENTIFICATION

1	2	3	4	5
REGION	AWRAJA	WEREDA	URBAN CENTER	STATUS OF URBAN CENTER
SHEWA	SELALE	DEGEM	AMBIS	1

PART 2: SKETCHING PARTICULARS

[illegible]

Name of G.A. _____ Signature _____ Date _____

Name of Supervisor _____ Signature _____ Date _____

c. Step by Step Procedure for Making Sketch Map:- The following procedures of making sketch maps are described in relation to urban centres. In addition, some of these steps could be followed in rural area.

Step 1 - Before starting sketching get as much information as possible by walking around the urban centre. Make note of prominent land marks such as market place, church, school, etc.

Step 2 - Starting from a convenient point of the outer boundary of the urban centre from the north, and traverse the area by measuring angles and distances till you close up as previously explained. Then record the angles and the distances on record form for sketching such as Form U-6 for urban centres.

Step 3 - Now you have a skeleton of the area you are sketching. Then using the technique of traversing and triangulation fill in the necessary details such as roads, trails, major buildings, churches, schools, market places, etc.

Step 4 - Go back to your camp and adjust your rough sketch with the help of the record form for sketching. Determine the scale of the sketch. Then adjust the angle using protractor and distances using scales. Here, if you have any doubt about the accuracy of your sketch, that is, if the end points do not close up go back to the field for verification. Finally make a fine drawing of the sketch on a clean tracing paper in ink.

Step 5 - Now that you have the final detailed map of the urban centre, the next procedure is to divide the urban centre into HUDA (keftegna), UDA (kebeles) and EAs following the steps given for EA formation in urban centres. In case the urban centre does not have keftegna or kebele, the sketch map of the urban centre in question should be carved out directly into EAs.

2.2.3 Procedures of Map Reading:- Careful study and power of imagination help in reading and understanding maps in general. A man with keen senses of analysis and some knowledge of geography can read a number of facts from a map. There is a saying. "A map is worth a book." Thus, the following procedures should be followed in map reading.

- a. Put the map flat on a table or on the ground or in your hands.
- b. Align the north arrow on the map to the true north, or turn the map in such a way that long ridges or roads on the map are parallel to the one on the ground.,
- c. With a field compass check the north direction.

- d. Face north direction with the map in front of you.
- e. Check the other directions, too, i.e., south, east and west
- f. Identify some prominent features such as churches, market places, villages, etc. around you.
- g. Identify these features on the map.
- h. Make sure the identified features are correct and in their true positions.
- i. Look for some evidences in your surrounding to be sure of your position.
- j. Estimate distances according to the scale of your map.
- k. If you find new constructions on the ground that have not appeared on the map, check the date of the map.
- l. Look at the marginal data or legend and identify the details on the ground.
- m. Make sure that you identify ground features step by step thoroughly and exhaustively.
- n. Do not hesitate to ask the local people, farmers or shepherds about the area.
- o. Do not ask leading questions about place names, counter check place names with the local people, for they know better about their area.
- p. Identify and check places and rivers that have more than one name.
- q. Boundary identification is very confusing. To be sure ask the villagers and any other knowledgeable person.
- r. When you have completed reading the first map (sheet) look at the index to the adjoining sheets for the next sheet of map.

Note:-

- i. If the maps you are using do not have index to the adjoining sheets, use longitude and latitude or grid lines to join. If the map has not such grid lines use details for joining.
- ii. On some maps place names are written with the orientation of the map to the north. If there is no north arrow use the details to help you orient north.

- iii. If there is no any help from the map, the direction of the sun has to be used which is naturally east to west. Based on this north and south directions could roughly be indicated.
- iv. The best method of asking place names is to start from a point and to go in a serpentine form.

CHAPTER THREE

3. CENSUS MAP WORK IN RURAL AREAS

- 3.1 CRITERIA FOR EA FORMATION IN RURAL AREAS:- The delineation of EAs in rural sedentary areas will be based on Farmers Association areas or subdivisions in cases where FAs are not established.

In general the following three main criteria should be considered when delineating EAs.

- 3.1.1 Number of Households Within an EA:- An EA should have about 150 - 200 households. However, in some cases it may be necessary to violate the range in order to maintain the integrity of the lowest administrative units and areal extent of the EA.

- 3.1.2 Areal Extent of an EA:- This is another important consideration in the EA formation. On an average an EA in rural areas containing 175 households would occupy an area of 12.45 sq.kms*, However, the size of an EA in rural area may deviate from 12.45 sq.kms depending upon the density of the population.

As a general guide, we may say:

- a. In sparsely populated areas the areal extent of every EA is large. Thus, the number of households in the EA should be kept nearer to the lower limit of the range, i.e., 150 households.
- b. In thickly or densely populated areas, the areal extent of every EA is small. Hence, the number of households in the EA can possibly be kept around the upper limit of the range, i.e., 200 households.
- c. In exceptional cases, the number of households in an EA may be lower than 150 households due to difficult physical barriers and very sparse population settlement pattern, such exceptional cases ^{should} be considered ~~in close~~ ^{in close} consultation with the supervisor.

- 3.1.3 Geographical Limits of an EA in View of Administrative Set Up:- An FA/subdivision could comprise one or more EAs. However, an EA should not cross FA/subdivision. An FA/subdivision should exclusively be limited to one particular Wereda. In other words, an FA/subdivision should not lie in two or more weredas. Therefore, the limits of the EAs should not be ambiguous and should be well defined and described.

* The area is obtained by dividing the total area of selected weredas by the number of enumeration areas formed in the weredas during the first census mapwork.

.2 STEP BY STEP PROCEDURES FOR EA FORMATION IN RURAL AREAS:- The core of the whole census mapwork is EA formation. Different maps have to be used for different areas according to their suitability for the work which involves several stages of mapping and listing operations. Therefore, it is essential to consider these operations and strictly follow the step by step procedures for EA formation as listed below.

* planimetric map
* topographic map, base map

Step 1 - The Cartography Department of the Census Office has taken an inventory of all available base maps at wereda level. All maps which have been collected and produced for the delineation of EAs in your place of assignment will be supplied to you. However, it is your duty to determine the position of your wereda on these maps. In other words, you have to check whether the maps you have received cover your wereda. If your wereda is covered by the maps, put a mark on every map to show the relative location of your wereda. If you have received a wrong map or a wereda not completely covered by a base map, you should report immediately to your supervisor and get correct one. These should be done before you leave for your areas of assignment.

Step 2 - Go to the wereda administration office and contact the wereda administrator or his designate. Tell him the purpose of your mission and ask him to give you the lists of the lowest administrative units, towns and collective quarters in the Wereda. Then list the lowest administrative units and the towns on listing form for FAs/subdivision (Form R-1) and the collective quarters on listing form for collective quarters (Form R-3).

The Farmers Association Areas would provide a frame for the census mapwork wherever they have been established. If Farmers Associations have not been formed in the wereda, you have to identify subdivisions in forming frames in collaboration with the wereda administrator, and representative of the Ministry of Agriculture. In such cases the last decision as regards the frame for the EA formation should be communicated to your supervisor for approval. Remember that you can use any form of subdivision as a frame of your mapwork without attaching to them any political or administrative significance in a wereda where the FAs have not been formed.

Step 3 - You should be familiar with your wereda after the completion of the listing Forms R-1 and R-3, since some of the places which you have registered may be located on the base maps supplied to you. Now try to establish the boundaries of the wereda on a base map provided to you with the help of the wereda administrator or his designate. You should bear in mind that the wereda administrator or his designate cannot tell you automatically the stretch and boundaries of the wereda. It is upto you to pose to him some questions in order to get detailed information. First of all show him the

cardinal directions roughly. Then ask him to tell you the boundaries of the wereda in the North, in the East, in the South and in the West. Study your map and mention to him some place names and ask him whether or not they are located in the wereda. He may tell you that some of the places you have mentioned to him are in the wereda and that the rest are beyond the boundary of the wereda in that particular direction. This means that the boundary of the wereda lies somewhere between these places. This boundary may be a river, a highland, a valley, a highway, a trail, a stretch of forest or even a plain. Mark this boundary lightly on your map in pencil. Do the same thing till you complete the delineation on all sides.

* Step 4 - It is now time for you to discuss either with the wereda administrator, the FA official or an official of the Ministry of Agriculture from where you should start the actual field work and how you should reach there. He will tell you how to go about it. When you have reached your destination contact the FA Chairman or the subdivision official. Handover to him the letter you have collected from the wereda office. Also give him a verbal explanation of the purpose of your mission. Ask him to show you the aerial extension of the FA or the subdivision. You have to go physically around and check the boundary of the FA or subdivision and mark the boundaries on your working copy map. If this is a border area of the wereda, you have to verify and correct the wereda boundaries. Then, starting from the northern part of the FA, list the households by localities on household listing form (Form R-2) within the FA by going from house to house in a serpentine manner. In the process of listing the households you should limit the listing within the imagined EA taking into consideration the criteria given for EA formation. Give serial numbers within an EA starting from 001, 002, ..., etc. After finishing the listing of households within the FA delineate the EAs according to the given criteria. To avoid omission or duplication during household listing put RCC (Rural Cartographic Census) mark on the front door of every house using chalk. Locate and mark symbolically all the localities as well as other reference points such as rivers, hot springs, hills, roads and trails, spiritual places, markets, historical places, etc.

If all households in the FA are located in one or more localities due to villagization/resettlement pattern, and if only the resettlement pattern is complicated, i.e., if the village or the resettlement has no regular or geometrical pattern, and if you think there is any danger of making omission or duplication make a sketch map for that locality and then divide it into EAs according to the criteria for EA formation. Use the step by step procedure for making sketch map as explained on page 31. However, these decisions have to be made in consultation with the supervisor.

The knowledge about the size of every village in terms of households will help you in forming an EA. Mark the limit of the EA on the base map. In addition to the criteria stated earlier, an EA may be formed in one of the following ways.

- a. By taking the FA/subdivision as it is,
- b. By dividing the FA/subdivision into two or more parts, i.e., by grouping localities.

Step 5 - Go back to your camp and prepare a fair map of the EA by transferring all the details you have collected from the field. But if your area of assignment is a densely populated and hence the areal extent of the EA is too small to locate the necessary details on the 1:50,000 scale base map, you should prepare a larger EA using the A4 size graph paper supplied to you and the enlargement technique described on page 25.

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Step 6 - The next job is to go back to the field in order to do verification. Now evaluate how much your EA map is correct and reliable in terms of exhaustively including all the important land marks. If you think your map needs correction do so while you are right in the field. Since you are now carrying a large scale map you can locate and mark additional reference points, that are not shown on the base map. Furthermore, mark the limits and places of the adjacent EAs on the EA map you are preparing. The common boundaries of these EAs should be shown on every EA map. Then write the description of the boundaries of the EA on the description form for rural enumeration area (Form R-5). The description should be completed clockwise. This EA has to be given a provisional serial number to avoid any confusion till the final coding is done as indicated in Step 9.

Step 7 - After completing delineation of about ~~six~~ EAs you should spend a day in a camp and prepare a final copies of the EA maps on tracing paper in ink (see fig. 27). In addition, prepare two more identical copies of every EA and put together all the documents of the EAs. Follow this procedure until you finish dividing the entire wereda into EAs. Note that the day you stay in the camp could preferably be a market day or a holy day when it is not convenient to do the field work.

Step 8 - The map of the EAs should have about the same scale. Remember, if you come across disputed areas you have to settle these problems in collaboration with the wereda administrator, the representative of the Ministry of Agriculture, the FA Officials and local elders. If it is an inter-wereda border dispute it should be settled in the presence of the officials of the adjacent weredas. This should be immediately brought to the attention of your supervisor. There should be no "no-man's land." Your map should cover every inch of the land. When you are sure that every part of the wereda has been

households in a

Locality should be listed exhaustively.

Step 8 - The wereda map will be prepared by

-the team, 8 GAO 2 technical Supervisor
and one administrator of the team

divided into EAs, go back to the wereda capital and prepare a map of the wereda by transferring all details from the base map. This map should show the relative locations of the EAs as well as other important reference points. Do not forget to mark the limits of the adjacent wereda on this map. Also print their names in proper places (see fig 29).

01, 02, 03 - the wereda

Step 9 - By now you should have known into how many Farmers Association/subdivisions and EAs the Wereda has been divided. First draw the relative position of every FA/subdivider on the Wereda map. Then assign code numbers for the FAs/subdivisions in the Wereda by giving two digit running number (01, 02, 03 ...) starting from the northern part of the wereda in a serpentine manner.

The coding of EAs is to be done within an FA/subdivision. To code the EAs within an FA/subdivision two digit numbers should be used. If an FA has one EA, then the EA code is 01, if an FA has more than two EAs the codes within the FA will be 01, 02, etc. Then, show the relative position of every EA within its respective FAs/subdivisions on the Wereda map you have already drawn. For example, if the Wereda has 33 FAs, and that the first FA has two EAs, then you should mark these two EAs on the wereda map by the code No 01 - 01 for the first EA in the first FA, and 01 - 02 for the second EA in the first FA. If the last (33rd) FA has three EAs then the EAs will carry the numbers 33-01, 33-02, 33-03. However, coding of special EA within Farmers Association area will be S1, S2, S3, ..., etc. Such a scheme will show the relative position of every EA along with its FA on the Wereda map. Finally, the final code numbers of every FA/subdivision and EA have to be transferred to the EA map, the description Form (Form R-5) the household listing form (Form R-2) and other relevant documents.

01, 02, 03 - the wereda

01, 02, 03 - the wereda

01, 02, 03 - the wereda

Step 10 - After you have finished coding the FAs/subdivisions and the EAs divide the entire wereda into supervision areas (SAs) in pencil. Each SA should have five EAs including special EAs. In special cases the SA could have slightly less or more than five EAs. However, in the process of forming supervision areas, the following points should be taken into consideration.

- 01, 02, 03 - the wereda*
- 01, 02, 03 - the wereda*
- 01, 02, 03 - the wereda*
- a. When the EAs areal extent is large the SA may contain less than five EAs or when the number of households on the EAs that makes the particular SA is high (i.e. most of the EAs having more than 200 households) the number of the EAs could be less than five. On the other hand, when the number of households in the EAs that make an SA is low (i.e. most of the EAs having less than 150 households) and at the same time the areas extent of the EAs in question is not large, then the SA could have more than five EAs.

01, 02, 03 - the wereda

01, 02, 03 - the wereda

01, 02, 03 - the wereda

1 SA = 5 FAs, if one FA contains one EA.

- b. The EAs of each SA should be adjacent to each other. It should be noted that there should not be any major physical barriers (rivers, mountains, etc.) between the EAs of the same SA that create transport problem. The existence of these barriers may decrease or increase the number of EAs in an SA.
- c. An SA could consist of one or more FAs. However, an FA should not lie in more than one SA.
- d. After completing the SA formation in pencil give two digit running code numbers 01, 02, 03 ... for each SA by starting from the northern part and proceeding in serpentine manner. Then consult your supervisor for approval and finalize the delineation of the SA using red marker. follow
of person
fashion
code the
SA by
two digit
- e. Prepare two more identical copies of the wereda map, take one of the three identical copies and cut it into separate SA. Glue the independent SA map that you have cut on to a blank folder and add to it the details as indicated under the title "Supervision Area Map" on page 46. Finally place the SA map files on the top of the files of the documents of their respective EAs and bind or tie them together.

Step 11 - At this stage the geographical assistants assigned in a wereda have completed the map work described in the step by step procedures. Now it is the responsibility of the technical supervisor to check every step carefully as instructed in the check list of activities for the supervisor. If you are fully satisfied that the EA mapwork, the listing, the EA description, the SA delineation as well as all the wereda mapwork had been completed, make lists of the FAs, EAs or subdivision maps, the number of EA descriptions, the number of EA household lists, the lists of urban center, kefitegna and kebele, the kebele EA maps, the number of kebele EA description, the kebele EA housing unit lists and other relevant documents regarding the census map work on the provided form. Such a list should be done in three copies and signed by both the technical supervisor and the administrative supervisor to approve that the list is complete. Based on these lists the technical supervisor has to transfer all the above mentioned documents to the administrative supervisor and retain one copy of the lists duly signed by both.

Step 12 - Now it is the responsibility of the administrative supervisor to check that the documents he has received from the technical supervisors are correct and complete and should take great care of these documents until he transfers them to the regional cartographic technical officer. The regional cartographic technical officer should sign for the documents he has received from the administrative supervisor.

Step 13 - Before receiving the documents the regional cartographic technical officer assigned at the Administrative Regional Capital have to recheck and make sure that the documents are complete and should take care of these documents until they are transferred to the Head Office.

Note:- Use Form- TMF, i.e., forms for transferring maps and forms for rural and urban as shown on page 105.

3.3 SPECIAL PROBLEMS EXPECTED DURING EA FORMATION

EAs may take different forms and sizes, dictated by deferent factors. That is, an EA containing one FA or subdivision, or an EA consisting a part of an FA or a subdivision. In each case the boundaries of the EA and the lowest administrative unit/units should be shown clearly. (see fig 25).

A MAP OF PART OF A WEREDA

E A MAPS

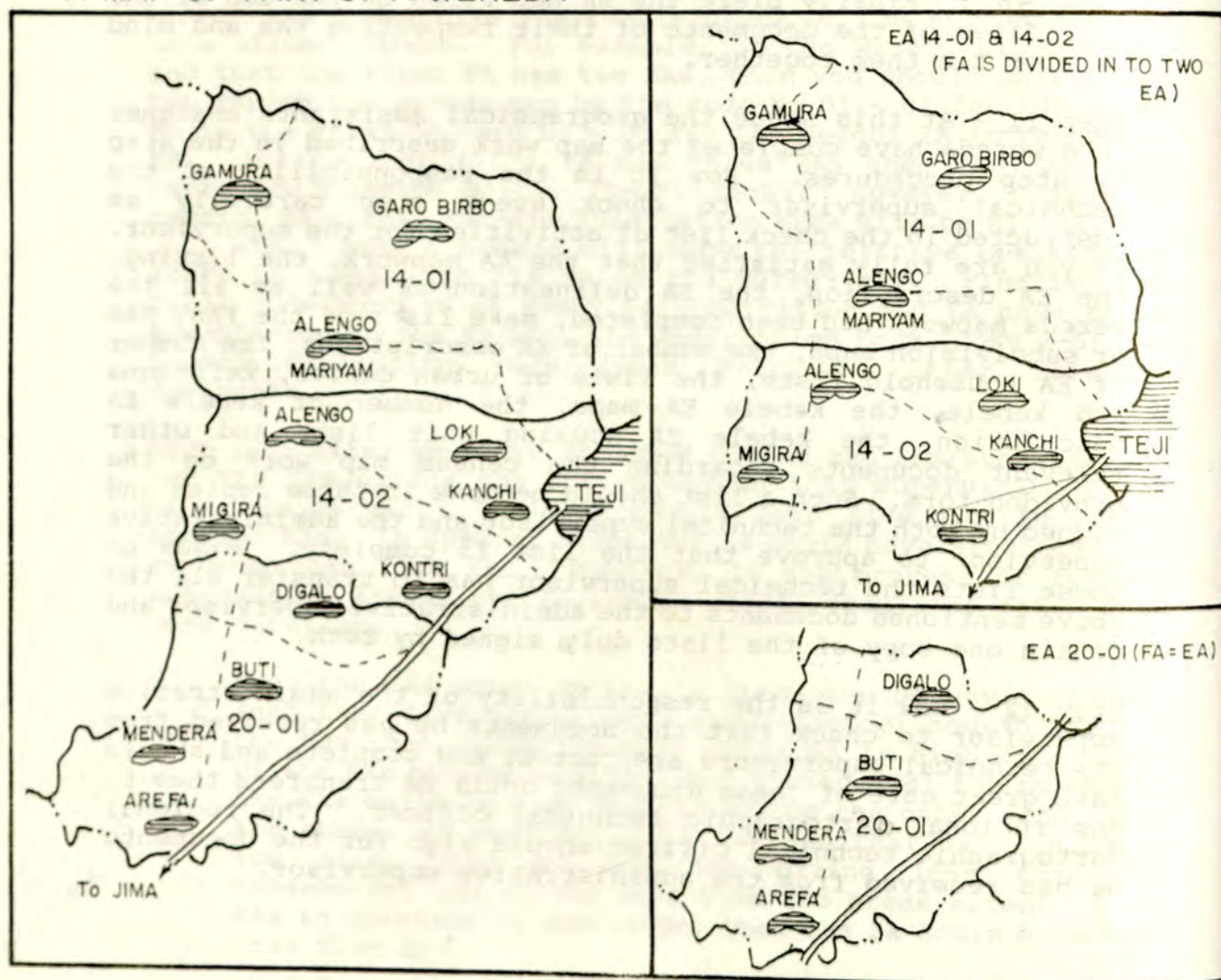


Fig - 25

Some of the Problems are as follows:

a. You may come across a disputed land during the field work. This should be settled in consultation with the officials of the adjacent administrative units at least for the purpose of the census mapwork.

b. You may also come across a pocket of land, which administratively belongs to the adjacent wereda. Such cases should be settled in favor of the wereda to which the land pieces are physically located. *it may be a part of FA or full FA or sub FA*

c. Sometimes you may find physically disjointed parts of an FA or a subdivision. In such cases treat each separate part (s) of the FA as independent EA. *for the purpose of enumeration the pocket of land would be enumerated in the wereda from which it is separated. But for the purpose of cartography, it must be delineated in the adjacent wereda. (individuals) in the identification particulars*

d. It is also possible to find some households of an FA or subdivision living in another FA or subdivision. Such households will have to be considered where they stay and not according to their administrative and social affiliations. But do not forget to put remarks against such households in the remarks column of Form R - 2.

e. All collective quarters should be enquired from wereda office, listed in Form R - 3 and verified in the field. Whenever you come across collective quarters while delineating EAs complete Form R - 3. But, you should indicate the location and the total number of persons in the collective quarters along with the names in your EA map. However, if there is any household within collective quarters with members less than 100 persons, list it on Form R - 2, write the names of the collective quarters (institutions) corresponding to each household in the "Remark" column of the same form, and consider it with the households outside the collective quarters in EA delineation according to the criteria laid down.

f. Collective quarters with a population of 100 or more persons should be considered as special EAs and should be denoted by the code S1, S2, ..., etc. within an FA/subdivision. If the areal extent of the collective quarter is large enough and has a population of 100 or more persons, the area in which the collective quarter is located should be drawn as independent EA, showing all the boundaries. In case there are private households in the collective quarters for which special EA map is drawn, the households should be listed on Form R - 4.

g. There may be a compact settlement lying in two or more weredas. For instance, Hawatsu, a village in Enderta Awraja lies in two weredas namely Didiba and Hintalo. The parts of such settlements should be considered according to their administrative affiliation and only that part of the settlement which belongs to your wereda should be divided into

Remark:

Collective Quarter
Local 100 persons - Form R-3

01-02 = R-2

110 persons (inmates) - by R-3

S.1-6 persons (p.h.h) - by R-4

In a collective Quarter
50 - persons - Form R-3

6 - private h.h - R-2

and will be joined with
R-3

and other 140 h.h - R-2

140
140
140

EAs accordingly. The map work of the other parts will have to be taken up by the GAs working in the adjacent wereda (s) (See fig. 26).

h. Similarly you may come across a settlement lying in two adjacent FAs, or subdivisions. The parts of such settlements should be considered according to their administrative affiliation.

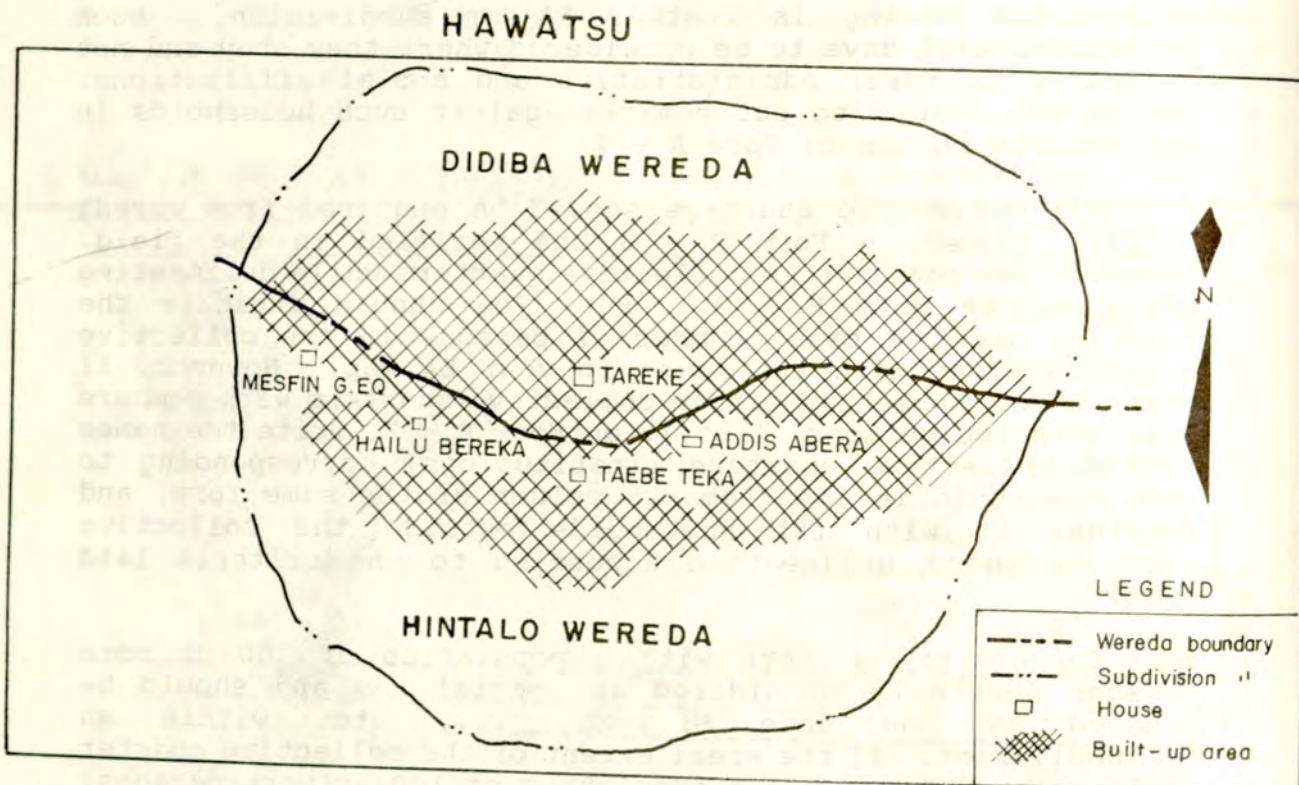


Fig :- 26

3.4 THE DESIGN AND CONTENTS OF RURAL AREA MAPS

*

There are three types of maps that should be prepared for the rural areas. These are enumeration area maps, supervision area maps and wereda maps.

- 3.4.1 Enumeration Area Maps:- The size of the EA map is determined by the areal extent of the EA on the ground. However, you should bear in mind that the EA map should not be too small to create space problems. Remember that the purpose of enlarging EA maps from the base map is to create enough space on which all relevant reference points should be located and marked neatly.

The EA map should contain and show the following in their proper places. (see fig. 27).

- a. The names of the administrative region, awraja, wereda and FA/subdivision in which the EA is located.
- b. FA/subdivision code number.
- c. The code number of the EA.
- d. The total number of households in the EA.
- e. The total number of persons in the collective quarters.
- f. The area of the EA as estimated by you in the field.
- g. The boundaries of the EA with proper definitions, such as rivers, roads, bridges, valleys, etc. as found on the ground.
- h. The location of localities.
- i. Some houses, farms or plantations which you think are important reference points.
- j. The meeting points of adjacent weredas or EAs with the EA you are handling.
- k. The orientation of the map, i.e., north direction.
- l. A note of some special features which should be written on the left hand corner of the map.
- m. A legend where you explain the symbols you have used on the map.
- n. The scale of the map.
- o. The date on which the EA map is completed.
- p. The name of the GA and supervisor.

MAP OF E.A IN WEREDA

1. REGION SHEWA 2. AWRAJA CHEBO 3. WEREDA ILU

4. NAME OF FA/SUBDIVISION ALLENKO

5. FA / SUBDIVISION CODE NUMBER _____

6. NAME OF FA/SUBDIVISION OFFICIAL ABEBAW SEFA

7. EA CODE N° 14 - 01 8. ESTIMATED AREA 8 KM Sq

9. TOTAL N° OF HOUSEHOLDS 210

A/ N° OF HOUSEHOLD IN HOUSING UNITS 210
(OUTSIDE COLLECTIVE QUARTERS)

B/ N° OF HOUSEHOLDS IN THE COLLECTIVE QUARTERS 0

10. TOTAL N° OF PERSONS IN COLLECTIVE QUARTERS _____

11. N° OF PERSONS IN PRIVATE HOUSEHOLD WITHIN COLLECTIVE QUARTERS (CQ) _____

TULU BURKA F.A



ENUMERATION AREA CODE

14 - 02

Scale 1=50,000

LEGEND

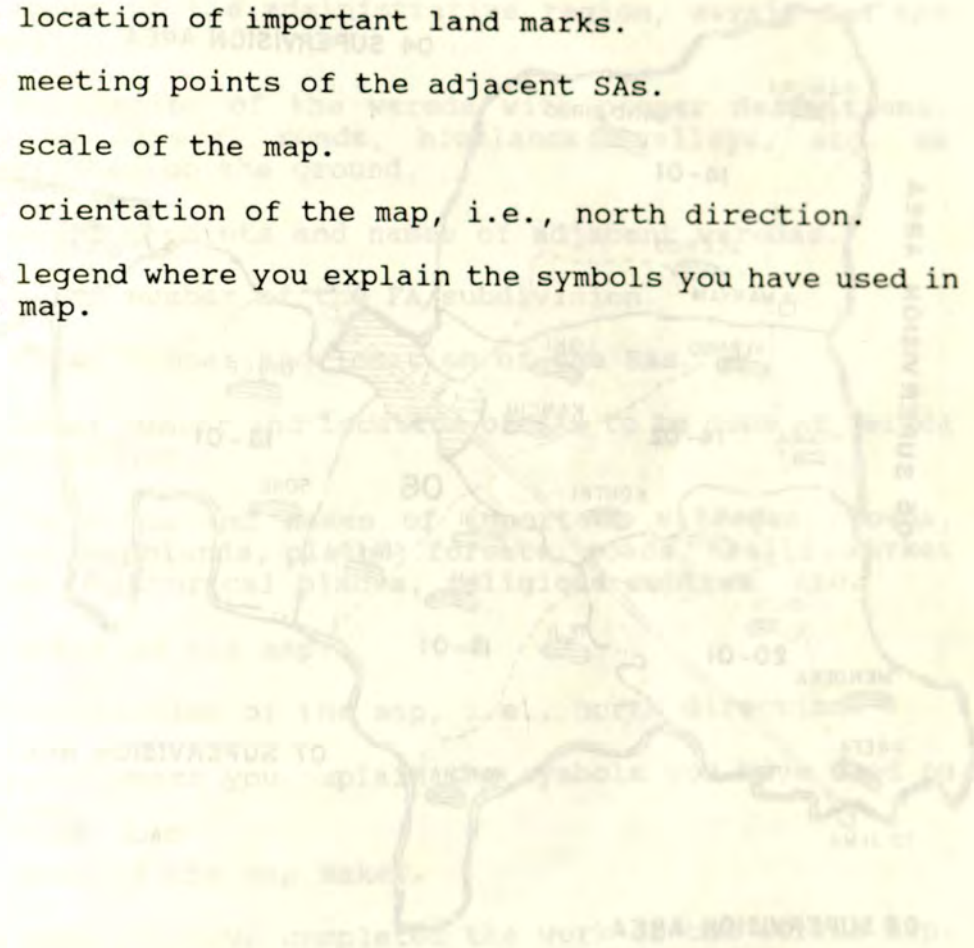
— — — — —	FARMERS ASSOCIATION BOUNDARY
— — — — —	ENUMERATION AREA BOUNDARY
- - - - -	TRAIL
~~~~~	PERENNIAL RIVER
~~~~~	INTERMITTENT RIVER
•	LOCALITY
+	CHURCH
•	TUKUL

NAME OF G.A. _____ SIG. _____ DATE _____

NAME OF SUPERVISOR _____ SIG. _____ DATE _____

3.4.2 Supervision Area Maps:- A supervision area map is a part of the wereda map showing relative location of the EAs falling in one supervision area. (see fig 28). It should contain and show:

- a. The names of the administrative region, awraja and the wereda in which the SA is located.
- b. The lowest administrative unit/s from which it is formed.
- c. SA code number.
- d. The code numbers of the EAs contained.
- e. The location of important land marks.
- f. The meeting points of the adjacent SAs.
- g. The scale of the map.
- h. The orientation of the map, i.e., north direction.
- i. The legend where you explain the symbols you have used in the map.



SUPERVISION AREA MAP

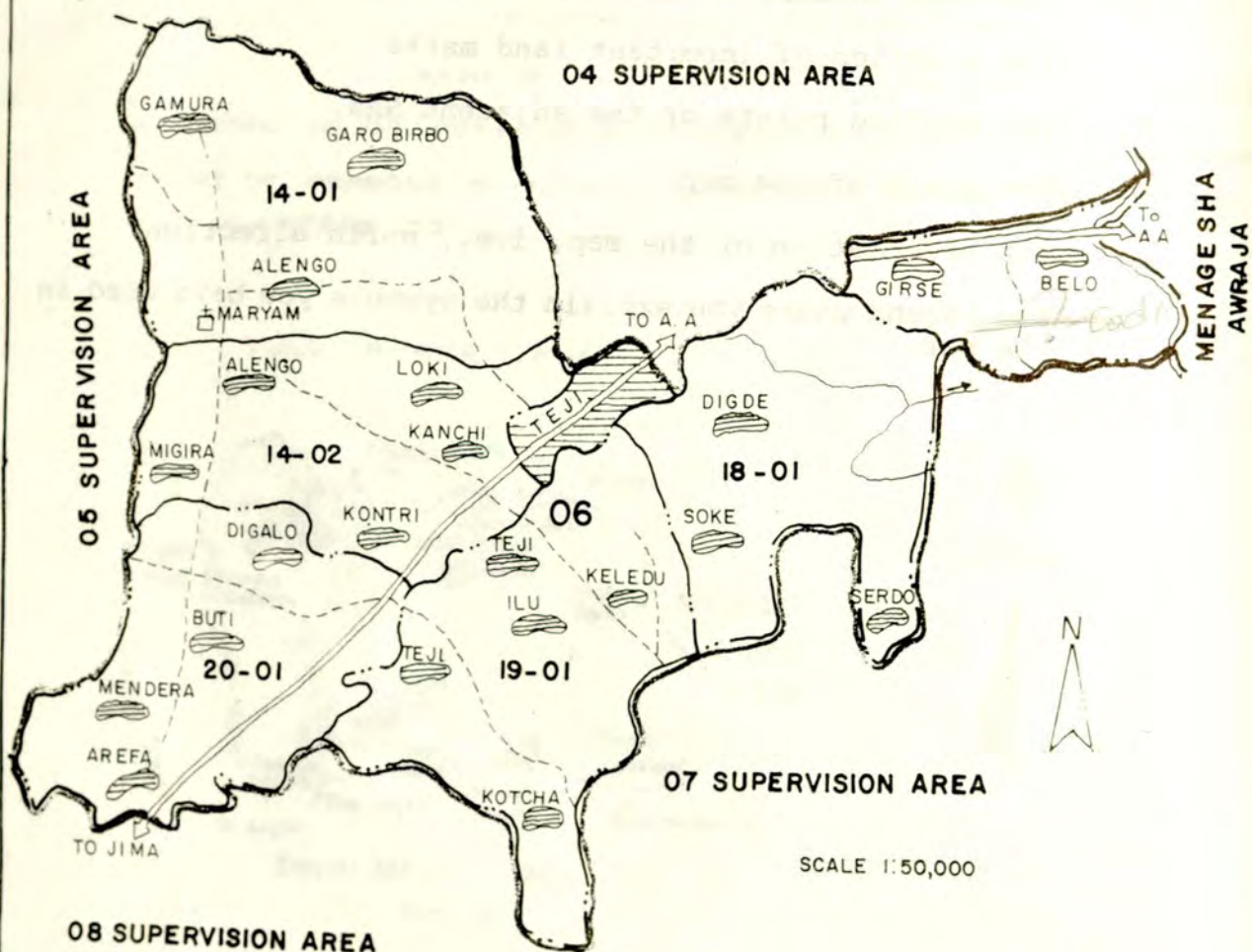
1. REGION SHEWA

2. AWRAJA CHEBO AND GURAGE

3. WEREDA ILU

4. SUPERVISION AREA CODE 06

5. NO. OF ENUMERATION AREAS 6



LEGEND

---	AWRAJA BOUNDARY
- - -	SA BOUNDARY
---	FA BOUNDARY
---	EA BOUNDARY
=====	ASPHALT ROAD
- - -	TRAIL
~~~~~	PERENNIAL RIVER
- . - . -	INTERMITTENT RIVER
⊕	LOCALITY CHURCH

Name of G. A. _____ Sig. _____ Date _____

Name of Supervisor _____ Sig. _____ Date _____

Fig-28

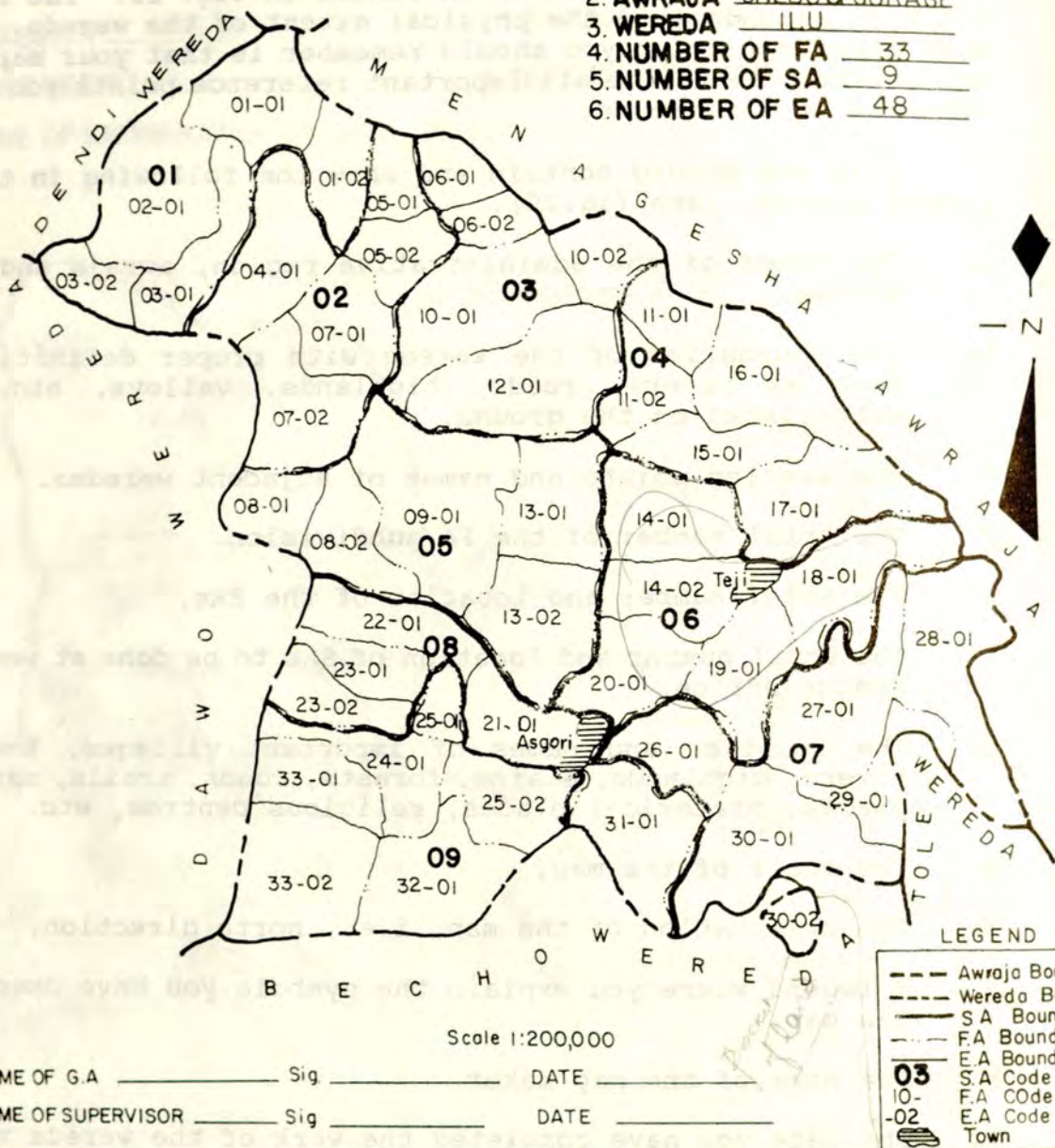
3.4.3 Wereda Maps:- The wereda map, which you have prepared, shows the relative location of the EAs in the wereda. It will be used for the delineation of SAs at the wereda office. In areas where you use 1:50,000 scale maps or enlargements of 1:250,000 to 1:50,000 scale maps the size of the wereda map could be larger than what is indicated in fig. 29. The lower limit is dependent on the physical extent of the wereda. The most important thing you should remember is that your map has enough space to locate all important reference points you have observed on the ground.

This map should contain and show the following in their proper places. (see fig.29).

- a. The names of the administrative region, awraja and the wereda.
- b. The boundaries of the wereda with proper definitions, such as rivers, roads, highlands, valleys, etc. as established on the ground.
- c. The meeting points and names of adjacent weredas.
- d. The total number of the FA/subdivision.
- e. The total number and location of the EAs.
- f. The total number and location of SAs to be done at wereda Census Office.
- g. The location and names of important villages, towns, rivers, highlands, plains, forests, roads, trails, market places, historical places, religious centres, etc.
- h. The scale of the map.
- i. The orientation of the map, i.e., north direction.
- j. A legend where you explain the symbols you have used on the map.
- k. The name of the map maker.
- l. The date you have completed the work of the wereda map.
- m. A special note or remark regarding the map.

# MAP OF ILU WEREDA

1. REGION	SHEWA
2. AWRAJA	CHEBO & GURAGE
3. WEREDA	ILU
4. NUMBER OF FA	33
5. NUMBER OF SA	9
6. NUMBER OF EA	48



Scale 1:200,000

NAME OF G.A. _____ Sig. _____ DATE _____  
 NAME OF SUPERVISOR _____ Sig. _____ DATE _____

LEGEND  
 --- Awraja Boundary  
 --- Wereda Boundary  
 --- SA Boundary  
 --- FA Boundary  
 --- EA Boundary  
 03 SA Code  
 10- FA Code  
 -02 EA Code  
 Town

Fig:- 29

localities  
 Riverse don't introduced in this Map.  
 Since the Scale is Small.

Wereda Boundary  
 is used: i.e to show that this  
 pocket of land comes from another  
 another Wereda.

### 3.5 FORMS FOR MAPWORK IN RURAL AREAS

3.5.1 Form R - 1:- Listing Form for FA/Subdivision in a Wereda for EA Formation:- This form will be used for listing Farmers Association areas (FAs) or subdivisions at wereda capital and the same list should be verified in the field and necessary correction should be made.

#### Part 1 : AREA IDENTIFICATION

Columns 1-3: Region, Awraja and Wereda:- In these columns, write the names of the Region, the Awraja and the Wereda in which the FAs or sub-divisions are found. Card columns 4-9 are for office use only.

#### Part 2 : LIST OF FAs/SUBDIVISIONS

Column 4: Name of Geographical Area:- In this column, write down the name of the geographical area in which the FAs/subdivisions or a single FA/subdivision are/is found. If the FAs/subdivisions are identified by only one geographical area, repeat writing the same geographical area name for each FA/subdivision. If the same geographical area has more than one name, first write the name of the geographical area commonly known by the Wereda Administrative Office and the surrounding FAs/subdivision and then write the second name in bracket in the same column after writing the first important name. If a geographical area constitutes only one FA/subdivision, and if its name coincides with the name of the FA/subdivision, repeat writing the same name in column 6.

Column 5: Serial Number:- In this column, write the serial number in of the card columns 10 - 12, that is, record 001 for the first FA/subdivision to be listed in column 6 and 002 for the second FA/subdivision, etc. until you list all the FAs/subdivisions which are found in the wereda.

Column 6: Name of FA/subdivisions:- In this column, write clearly the name of every FA/subdivision which are found in the wereda. If an FA/subdivision has more than one name write the common name and then write the other name in bracket. If a number of FAs/subdivisions have the same name, repeat writing that name for every FA/subdivision.

Column 7: Code:- Enter code of FA/subdivision in card columns 13-15.

Column 8: Status:- In this column, write the status of every FA/subdivision using the following codes.

- 1 = FA Formed
- 2 = FA not Formed

Column 9: Designation of FA/subdivision Officials:- In this column, write the designation of FA/subdivision official. That is, the designation or rank of the person who acts as a bridge between the inhabitants of the FA/subdivision and the wereda Administrative Office or Wereda FA Office. Example of these designations are: Chairman, Vice Chairman, Secretary, member of FA committee, subdivision head, etc.

Column 10: Name of FA/subdivision Official:- In this column, write the name of FA/subdivision official who is currently in a position to act as a bridge between the inhabitants of the FA or subdivision and the wereda administrative office or wereda FA office.

Column 11: Remarks :- This column is to be used for writing remarks, explanations or additional information for columns 4-10. If the space is not sufficient, the reverse side of the same form may be used. However, indicate in writing, referring the FA/subdivision serial number that additional clarifications are given on the reverse side of the form.

Total Number of FAs and Subdivisions:- After completing listing all FAs/ subdivisions in the wereda, enter the total number of FAs and subdivisions in the columns provided at the right hand end corner of the Form.

Finally the name and the initial of the GA and the supervisor should be written and the date on which the form is filled should be entered.

*See the difference b/w Geographical Area and Locality.*

*Geographical area is larger than Locality and localities (t₂) code -  
It, if Geog. Area and Locality could be equal.*

## PAGE ____ OF ____ PAGES

FORM R-1

JOB	1	2	3
ID			

Card Column 4-9  
not to be filled  
for office use

[illegible][illegible]

make  
a line

A This will be  
 taken from codes given  
 by Steps 1 from page 58 later  
 Date _____

Total no of	
FAs	Subdivision

51

20. If  $\alpha$  is a root of  $f(x)$  then it will be verified when we go to the FA

3.5.2 Form R-2 Household Listing Form:- This is a household listing form which helps you in forming enumeration areas on the basis of the total number of households. The listing of the households in the FA/subdivision should be done by systematically canvassing every household without omission or duplication. You have to cover listing of households in every locality in the FA/subdivision before starting the delineation of EAs. Please note that any private households in the collective quarters with less than 100 persons should be listed in this form, Form R-2.

#### Part 1 : AREA IDENTIFICATION

Columns 1-5: Region, Awraja, Wereda, FA/Subdivision and Name of FA/Subdivision Official:- In columns 1-4 write the name of the Administrative Region, Awraja, Wereda and the FA/subdivision in the space provided. Also write in column 5 the name of FA/subdivision official, i.e., the name of the chairman, subdivision head, etc. Card columns 4-9 are for office use only. *Write the final Code of the subdivision number FA in card*

Column 6: Enumeration Area Code:- Write the code number of enumeration area in card columns 13 and 14. *Column 10-12*

#### Part 2 : LIST OF HOUSEHOLDS

Column 7: Name of the locality:- In this column, write the name of every locality within the FA/subdivision in which the households are located.

Column 8: Household Serial Number- This is a column in which you write the serial number of households found in every locality which you have already written in column 7. In writing the serial numbers (card columns 15-17) start with 001, 002,... with an EA until you cover listing all households in all the localities of the FA/subdivision.

Column 9: Name of the Head of the Household:- In this column, write the full name of the head of the household. You should identify the head of the household who is considered head by the other member of the household.

column 10: Members of the Household:- In this column, write only the number of the usual members of the household including the head by sex, i.e., the number of males, in card columns 19-20, the number of females in card columns 21-22 and the total number of both sexes in card columns 23-24. It is important to know who is the usual member of a household in filling this column. A usual member of a household is one who has continuously lived in the household for at least six months. Members who were temporarily absent from the household for less than six months are considered usual members of the household. However, members of a household who were continuously absent from the household for six months or

more are not considered usual members of the household. Consider the following points for identifying the usual members of a household:

- a. All usual members of the household present at the time of listing the household.
- b. All usual members of the household who have been temporarily absent from the household at the time of listing the households, that is, absent from the household for less than six months.
- c. Persons staying in the household at the time of listing the households and who have no abode (residence elsewhere) regardless of the length of time since their arrival to the household. Here, exclude visitors, women who joined the household for delivery, etc., if they do not have the intention to stay in the household for six months or more. Similarly members who left the household with the intention of not coming back, regardless of the duration of time since they left, should not be considered as usual members.
- d. If the head or the member of the household is away for six or more months do not include him/her as usual member of the household.

e. SPECIAL CASES

- i. Students:- Students who live in towns away from their homes should be considered as the residents of the town where they go to school. However, students who commute or travel every day from their home to school should be considered as usual member of the household of their parents.
- ii. Seasonal Labourers:- Seasonal labourers who have their usual residence (homes) elsewhere should be counted as usual members in their respective households (regardless of length of absence from their household). However, seasonal labourers who have no place of usual residence should be counted in the place where they are found at the time of the cartographic operation.
- iii. Inmates of Institutions:- Inmates of prisons, home for the retired, orphanages, hospitals for the insane, ..etc. should be considered as members (inmates) of the institution and not as usual members of any household. On the other hand, persons who are getting treatment in general hospitals or other institutions for medical care should be considered as usual member of their respective households and not as an inmate (member) of the institution.

Column 11: Remarks:- In this column, you are expected to write additional information or explanation other than what you have filled in columns 1-10, for example, if there is any household which does not belong to the FA/subdivision in column 4, write the name of the FA/subdivision in which the household is physically located. If there are collective quarters with less than 100 persons in the EA record the private household in the collective quarter in this form and indicate by writing collective quarter against them in the remark column.

Note:- Note that you should sum up column wise the number of persons by sex at the bottom of each form of column 10. Finally you should also enter the grand total on the last page of the listing form, that is, Form R-2 in the space provided. Write your name, put your signature and date of completion of the form at the bottom of the form.

## PAGE ____ OF ____ PAGES

FORM R-2

FORM R-2

JOB ID	1	2	3	PART 1: AREA IDENTIFICATION																
1			2			3			4			5			6					
REGION			4	5	AWRAJA	6	7	WEREDA	8	9	FARMER ASSO/ SUBDIVISION			10	11	12	NAME OF FA/BO OFFICIAL		13	14

PART 2: LIST OF HOUSES

PART 2: LIST OF HOUSEHOLD

[illegible]

PAGE TOTAL

**Signature**

Date:

**Signature**

Date _____

Total Members											
M			F			Total					

### 3.5.3 Form R-3: Listing Form for Collective Quarters:-

This is a listing form for collective quarters regardless of the total number of persons in the collective quarters. This form will be filled for the rural areas at the wereda level and should be verified in the field. Whenever you find a collective quarter in the FA/subdivision or a collective quarter which falls out side the jurisdiction of an FA/subdivision list it in this Form.

#### Part 1: AREA IDENTIFICATION

Columns 1-3: Region, Awraja, and Wereda:- In these columns, write the names of the Administrative Region, Awraja and Wereda in which the collective quarter is found. Card columns 4-9 are for office use only.

#### Part 2: COLLECTIVE QUARTERS PARTICULARS

Column 4: Serial Number:- In this column, write the serial number of the collective quarters in card columns 10-11, i.e. record 01 for the first collective quarter to be listed in column 5 and 02 for the second collective quarter, etc. until you list all the collective quarters which are found in the wereda.

Columns 5-6: Name and Address of Collective Quarters:- In these columns, write the names of the collective quarters; and its address (P.O. Box, Telephone, etc.) by which the collective quarters facilitate its correspondence and business.

Column 7: Function of the Collective Quarter:- In this column, write the function of the collective quarters clearly, that is, boys/girls boarding school, health training/service centre, relief/religious service, prison, monastery, etc. Card column 12 is for office use only.

Column 8: Number of Persons:- In this column, record the number of persons who are the usual members of the households and inmates of the collective quarters by indicating the number of males in card columns 13-15, females in card columns 16-18 and the total number of both sexes in card columns 19-22.

Column 9: Name and code Number of the FA/Subdivision:- in this column, write the name of the FA/subdivision in which the collective quarter is located. If the collective quarter is outside the jurisdiction of FA/subdivision write the name of one of the adjacent FAs/subdivisions. Furthermore, write the code number of FA/subdivision in card columns 23-25.

Column 10: EA(Enumeration Area) Code:- This column is to be filled when the delineation of EA has been completed. Write the EA code of the collective quarters in card columns 26-27, that is, if special Enumeration Area or Areas delineated in the Collective Quarters. However, if the collective quarters do not meet the criteria for forming special EAs, then write

! { down the normal EA code in which the collective quarter is located. Do not forget to list the private household, in the premises of the collective quarters on form R-2.

Column 11: Remarks:- In this column put any additional relevant information. Finally the name and the initial of the GA and the supervisor should be written and the date on which the form is filled should be entered.

Finally the name and the initial of the GA and the Supervisor should be written and the date on which the form is filled should be entered.

PAGE ____ OF ____ PAGES

## PART I: AREA IDENTIFICATION

FORM R-3

JOB	1	2	3	PART 1: AREA IDENTIFICATION											
ID															
1				2				3							
REGION				4	5	AWRAJA				6	7	WEREDA		8	9

## PART 2: COLLECTIVE QUARTERS (CQ) PARTICULARS

[illegible]

Name of G. A. _____ Signature _____ Date _____

Name of Supervisor _____ Signature _____ Date _____

3.5.4. FORM R-4:- FORM FOR SPECIAL ENUMERATION AREA -  
(Collective Quarters With 100 and More Persons)

This form is meant to register the particulars of the Collective quarter with 100 and more members and to list private households within the premises of the collective quarter.

Item 1-3: Region, Awraja and Wereda:- Write the name of the region, awraja and wereda in spaces provided.

Item 4: Farmer's Association/Subdivision:- Record the name of Farmer's Association/Subdivision.

Item 5: Enumeration Area:- Write the code number of the special enumeration area.

Item 6: Name of Collective Quarter:- Write the name of the collective quarter in the space provided.

Item 7: Function of the Collective Quarter:- Write the function of the collective quarter in the space provided.

Item 8: Post Office Box Number:- Write the post office box number of the collective quarter in the space provided.

Item 9: Total Number of members (Inmates):- Write the total number of usual members (inmates) of the collective quarter by sex.

Item 10: Total Number of Members in Private Households:- Write the total number of persons in the private households in the premises of the collective quarter by sex. This information will be obtained after listing all the private households in the collective quarter by summing up the total household members by sex.

Item 11: Remarks:- Record any additional information about the collective quarter and the private household members by sex.

Item 12-14: For Private Households Within the Collective Quarter:- This section will be completed only if there are private households within the collective quarter.

Item 12: Serial Number:- Write the serial number of the private households within the collective quarters.

Item 13: Name of Head of the Household:- Record the name of the head of the household in the space provided.

Item 14: Number of Persons in the Household:- Record the number of usual members in each private household according to their sexes in the space provided.

## FORM FOR SPECIAL ENUMERATION AREA

FORM R-6

(COLLECTIVE QUARTERS WITH 100 AND MORE PERSONS)

1- REGION _____ 2- AWRAJA _____ 3- WEREDA _____  
4- FA / SUBDIVISION _____ 5- EA. _____ 6- NAME OF THE CQ. _____  
7- FUNCTION OF THE CQ _____ 8. P.O. BOX _____ Tel. _____  
9- TOTAL NUMBER OF MEMBERS (INMATES):- MALE _____ FEMALE _____ BOTH SEXES _____  
10- TOTAL NUMBER OF MEMBERS IN PRIVATE HOUSEHOLDS  
MALES _____ FEMALES _____ BOTH SEXES _____  
11- REMARKS _____

[illegible]

NAME OF GA. _____ SIGNATURE _____ DATE _____

NAME OF SUPERVISOR _____ SIGNATURE _____ DATE ____/____/____

3.5.5 Form R-5:- Description Form for Rural Enumeration Area:-  
This form will be used to write the description of the boundaries of every EA delineated by you. In describing the boundaries of EA, you should use cultural and physical feature that are permanent. Use of features subject to continuous change (example, temporary shelters) in this circumstances is to be avoided as much as possible. The description should be written clearly and legibly. It should be completed clockwise starting from the northern part of the EA.

**Part 1 : AREA IDENTIFICATION**

**Column 1-3: Region, Awraja and Wereda:-** Write the names of the Region, Awraja and Wereda in their respective columns.

**Column 4: FA/subdivision:-** Write the name of the FA/subdivision and its respective code in the spaces provided.

**Column 5: EA Code:-** Write the code number of the EA in the space provided.

**Part 2 : EA DESCRIPTION**

**Note:-** Describe the boundaries starting from north and complete in clockwise direction. This form should be attached to EA map. Use additional form (s) if needed for the description and write the number of pages consecutively. Write your name and the date on which the description is completed at the bottom of the forms.

Very important it is helpful to use the EA map in excusion of the census of popm and housing.



**CENTRAL STATISTICAL AUTHORITY**  
**DESCRIPTION FORM FOR RURAL ENUMERATION AREA**  
**PART 1: AREA IDENTIFICATION**

**FORM R-5**

<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>
<b>REGION</b>	<b>AWRAJA</b>	<b>WEREDA</b>	<b>FA/SD NAME</b>	<b>E.A CODE</b>
			<b>CODE</b>	

**PART 2: E.A DESCRIPTION**

DESCRIBE THE IDENTIFIABLE BOUNDARIES FROM NORTH AND COMPLETE IN CLOCKWISE DIRECTION

NB:-USE ADDITIONAL FORM IF NEEDED  
 ATTACH THIS FORM TO E.A MAP

NAME OF G.A. _____	SIGNATURE _____	DATE _____
NAME OF SUPERVISOR _____	SIGNATURE _____	DATE _____

CHAPTER FOUR  
CENSUS MAP WORK IN URBAN AREAS

4.1 CRITERIA FOR ENUMERATION AREA FORMATION IN URBAN CENTRES

The delineation of EAs in urban centres will be based on Urban Dwellers Association area (kebeles). However, if Urban Dwellers Association areas have not been formed in the urban centre, the EAs could be formed by directly delineating the urban centre.

The following three main criteria should be considered when delineating EAs in urban centres.

- a. An urban enumeration area should comprise 150 - 200 housing units. However, where the areal extent of an EA is larger, the number of housing units should be kept closer to the lower limit, i.e., 150 housing units. In densely populated areas the areal extent of an EA, could be smaller and the number of housing units can possibly be kept closer to the upper limit, i.e., 200 housing units.
- b. Since the delineation of EAs are based on kebeles, the geographical limit of an EA should be within one particular kebele. In other words an EA should not lie in two or more kebeles. However, the size of an EA could be a kebele or part of a kebele.
- c. In urban centres where kebeles have not been formed the urban center should be carved out into EAs according to the criteria given in (a) above. When carving out EAs in urban centres using the above criteria you should consider the following points:-
  - i. Whenever it is possible, use well identified features such as roads, trails, rivers, churches, schools, ... etc. for boundaries.
  - ii. Where there are no well defined features you have to use imaginary line. In such cases identify as many housing units as possible on both sides of the imaginary line. Then identify the housing units using housing unit number given by kebele or others and the name of the head of the household. In your boundary description indicate clearly the housing units that are located within the EA and those that are located outside the EA. (house number)
  - iii. As much as possible form your EA in such a way that it is convenient to walk around and can be easily crisscrossed.
  - iv. All housing units in urban centres usually have numbers given by the kebele. Although these housing unit numbers are not consecutive in most cases, the number could help in roughly estimating and grouping of housing units that are required in the formation of EAs.

*Don't ask lists just only rough estimation of no. of housing units.*

2 STEP BY STEP PROCEDURES FOR ENUMERATION AREA FORMATION IN URBAN CENTRES:- In the urban map work, it is essential to strictly follow the step by step procedures for EA formation as listed below.

*Collect the base maps*  
*Check the base map*  
*Select letters*  
Step 1 : All available maps for the delineation of EAs of your place of assignment will be supplied to you. You have to check whether the maps you have received cover your urban centre. This should be done before you leave for your areas of assignment. Also you have to collect your letter of assignment before your departure.

*Contact the wereda official*  
*Get the list of urban centres and collective quarters*  
*that satisfies definition of urban center*  
Step 2 : When you arrive at the wereda capital contact the wereda Administrator or his designate. Tell him purpose of your mission and ask him to give you the lists of urban centres and collective quarters in the wereda. Then complete forms U-1 and U-3 for urban centres and collective quarters, respectively.

*Select letters to kebeles*  
*to any other lowest admin. units in the urban.*  
Step 3 : When you arrive at the urban centre where you are assigned to do the map work, contact the municipality officials, the chairman of the Atekalay Urban Dwellers Association, chairman of the keftegna and chairman of kebele and hand over your letter of assignment and explain to him the purpose of your mission. Then ask the municipality official or chairman of the Atakaly to give you the lists of the keftegnas, kebeles and collective quarters in the urban centre and verify the list with information already entered in Forms U-1 and U-3. Get a letter of acquaintance to keftegnas and the kebeles in the urban centre.

*Get map*  
*main entrance*  
*to the urban center*  
*Sketch map*  
*of base map*  
*to show all*  
*kebeles*  
*if you have*  
*the map you*  
*have to make*  
*verification*  
Step 4 : After the completion of listing the keftegnas, kebeles and collective quarters, you should be familiar with your urban centre. Now try to establish the boundaries of the urban centre on the map with the relevant officials by going around the urban centre. In establishing the boundaries of the urban centre you should show the official the cardinal directions using the compass. Then ask him to show you the boundaries of the urban centre in the north, south, west and east. Study your map, mention to him some place names, other reference points given on the map and ask him whether or not they are located in the urban centre. Before starting the EA delineation you should verify clearly the boundaries of the urban centre by marking the map lightly with pencil. However, if you find an urban centre with no map, you have to make a sketch map of the urban center using the sketching techniques already given.

Step 5 : Familiarize yourself with kebele to have some ideas regarding into how many EAs the kebele can be conveniently divided. Then start delineating the boundaries of the kebele. List on Form U-2 the housing units and households including collective quarters with less than 100 persons and on Form U-4 special collective quarters within the kebele by going from

house to house. In the process of listing the housing units, you should limit the listing within the imagined EA taking into consideration the criteria give for EA formation in urban centers. In order to avoid omission or duplication, mark UCC (Urban Cartographic Census) on the front door of each housing unit with chalk. After finishing the listing of housing unit, household and collective quarters within the kebele delineate the EAs according to the given criteria. Attach the housing unit and household listing form, i.e form U-2 and U-4 with the finalized EA map.

Step 6: Go back to your camp and prepare the urban centre map with its EA by putting together all the information you have collected from different keftegnas and kebeles. If there are more than one team working in the urban centre in the delineation of EAs, all the teams must return to the camp and put together their information to form a complete urban centre map with its keftegnas, kebeles, and EAs. You have to correct any gaps or overlapping on the map.

Step 7 : The next job is to go back to the field to do verification. Now evaluate how correct and reliable your EA map is interms of exhuaastively including the important land marks. Then write the description of the boundaries of the EA on form U-5. The description should be completed in clockwise direction starting from the north. These EAs have to be given provisional serial numbers till the final code numbers are given as indicated in step 8.

Step 8: Usually the kebeles and keftegnas in the urban centered have numbers identifying them. In this case you don't assign code numbers to keftegnas and kebeles but take their numbers as they are. Your job will be to assign code numbers to EAs within the kebele. To code the EAs within the kebele two digit running numbers should be used starting from northern part and proceeding in a serpentine manner. If the kebele has three EAs, then the coding within the kebele will be 01, 02, and 03. ~~If the kebele has five EAs the coding of EAs will be 01, 02, and 03.~~ If the kebele has five EAs the coding of EAs will be 01, 02, 03 04 and 05. However, coding of special EA within a kebele will be S1, S2, S3, ..., etc. If the special EA is outside the jurisdiction of any UDA, give it the code number of the adjacent UDA. In urban centers where kebeles have not been formed, EAs should be given a two digit running code number starting from northern part and proceeding in a serpentine manner.

Step 9: The map that you have already prepared is a map of the urban centre with all the necessary details, i.e., the boundaries of the keftegna, kebele, EAs and some other relevant information (church, mosque, school, road, market place, etc.) Now in the camp prepare three more identical copies of the urban centre map by transferring all the information on the extra copies provided to you. Then prepare

the final copy of the EA map by cutting out one of the identical copies of the urban center map on which the EAs are delineated. Glue each EA map on a folder. Write the region, the awraja, the wereda, the name of the urban centre with its keftegna, kebele, etc., on Form U-6 and glue it on the front cover of the EA folder. Don't forget to enter all the legend, north direction, adjacent EAs and other marginal information of the EA. Put all the relevant components of the EA such as the description form, the housing unit listing form, and listing form for collective quarters in the folder.

Step 10 : Using the two more copies of the urban center that you have already prepared divide the maps into supervision areas with red marker by taking into account the following points.

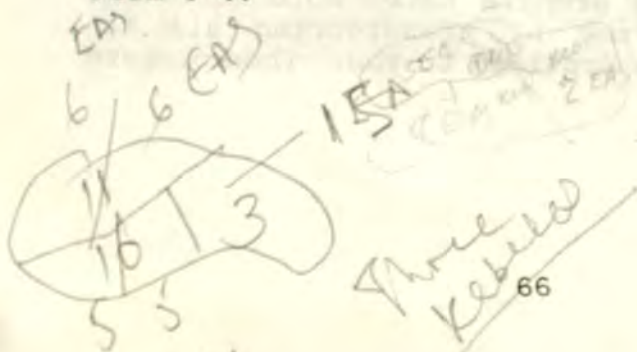
a. Each supervision area (SA) could have about five EAs, including special EAs. In special cases a supervision area could be less or more than five EAs.

b. As far as possible a kebele should not fall in more than one supervision area. In special cases if a kebele has eight or more EAs the kebele may be divide into two or more SAs. In general a supervision area may contain one or more kebeles within the same keftegna. In urban centers where kebeles have not been formed an SA should contain five EAs.

c. Based on the identical copies of the urban center maps that you have prepared on step 9, prepare two copies of the SA maps for the urban center. Then starting from the northern part of the urban center and proceeding in serpentine manner give two digit running code numbers 01, 02, 03 ... for each SA. After completing this task consult your supervisor for approval. Now take one of the copies and cut it to separate SAs. Glue the SA maps separately on folders and add the details as indicated under the title "supervision area map". Finally place the SA map files on the top of the documents of their respective EAs and bind or tie them together.

#### 4.3 SPECIAL EAS IN URBAN CENTRES

If there are collective quarters in urban centre with 100 or more persons, it should be considered as special EAs and should be coded by S1 S2,..., etc within the kebele. If the areal extent of the collective quarter is large enough and has 100 or more persons, the area in which the collective quarter is located should be drawn as independent EA, using sketching technique and showing all the boundaries. In case there are private households in the collective quarters for which special EA map is drawn, the household should be listed on Form U-4.



Not that collective quarters in the urban centres with persons less than 100 should be treated with a normal EA in a kebele.

#### 4.4 THE DESIGN AND CONTENTS OF URBAN CENTRE MAPS

There are three types of maps that could be prepared for the urban centre. These are Enumeration Area maps, Supervision Area maps, urban center maps (for those that do not have master plans).

4.4.1 Enumeration Area Maps:- The EA map should contain and show the following in their proper places (see fig.30).

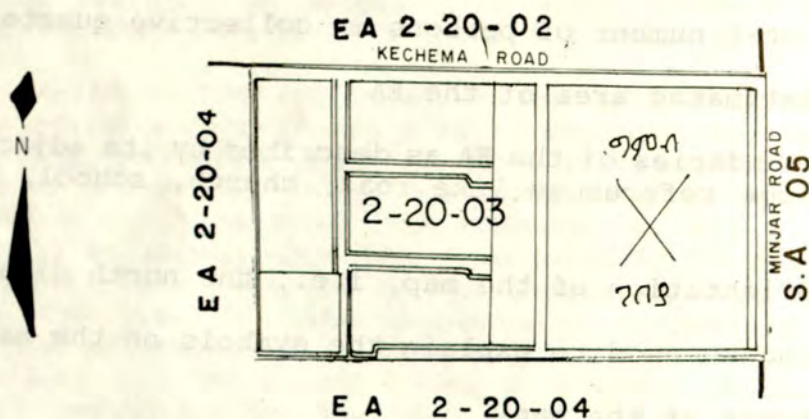
- a. The name of the region, awraja and wereda
- b. The name of urban center
- c. The name and/or the number of keftegna and kebele
- d. The code number of the EA
- e. The total number of housing units and households in the EA
- f. The total number of persons in collective quarters
- g. The estimated area of the EA
- h. The boundaries of the EA as described by its adjacent EAs and some references like road, church, school, mosque, etc.
- i. The orientation of the map, i.e., the north direction
- j. The legend used to explain the symbols on the map
- k. The scale of the map
- l. The name of the GA and supervisor who prepared and approved the map, respectively
- m. The date on which the mapwork is completed

no-m- 327 470  
7 no-m- EA map 10/11  
00 474 327 470

no of inmates

CENTRAL STATISTICAL AUTHORITY  
MAP OF E.A. IN NAZRET TOWN

1. Region Shewa
2. Awraja Yerer and Kereyu
3. Wereda Adama
4. Name of Urban Center Nazret
5. Kefitegna 2
6. Kebele 20
7. Name of Kebele Official Abebe Mekonne
8. EA Code Number _____
9. Estimated area 0.96 Km²
10. Total number of housing unit 230
11. Total number of households 088
  - a. Number of households in regular housing unit 088
  - b. Number of private households in collective quarters _____
12. Total number of persons (Inmates and house hold members) in collective quarters _____
13. No of persons in private household within collective quarters (C.Q) _____



Scale 1:2,000

LEGEND	
	S.A. Boundary
	E.A. Boundary
	Road
	House
	Market Place
<b>2-20-03</b>	E.A. Code
<b>05</b>	S.A. Code

Name of GA Tola Mera Initial TM Date 16/3/84  
Name of Supervisor Mekebbe Negatu Initial MN Date 16/3/84

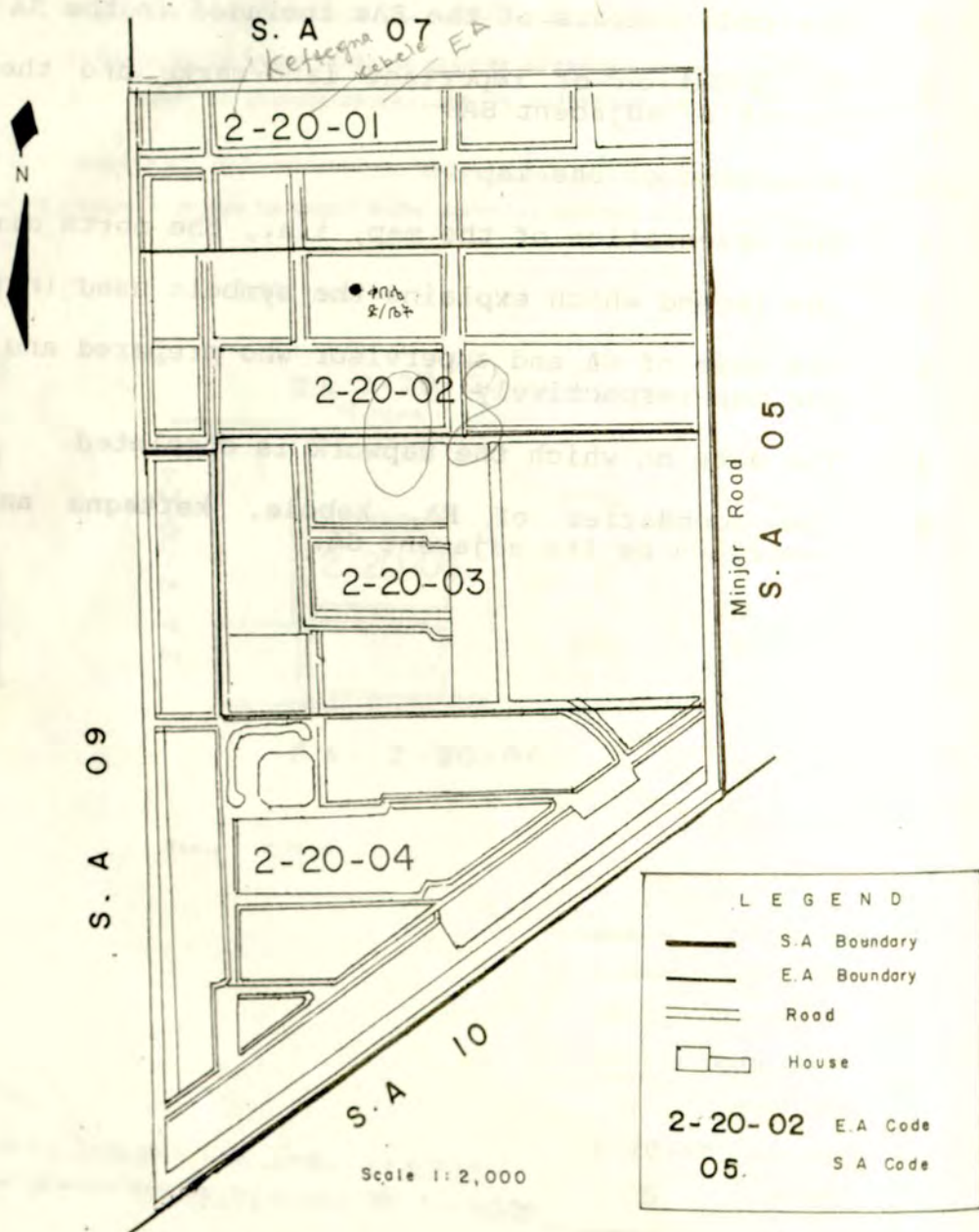
Fig. 30

4.4.2 Supervision Area Maps:- The SA map should contain and show the following in their proper places (see fig. 31).

- a. The name of the region, awraja and wereda
- b. The name of the urban center
- c. The number of the kebeles in the SA map
- d. Total number of EAs
- e. The code number of the SA
- f. The code numbers of the EAs included in the SA map
- g. The location of important land-marks and the meeting points of adjacent SAs
- h. The scale of the map
- i. The orientation of the map, i.e., the north direction
- j. The legend which explains the symbols used in the map
- k. The name of GA and supervisor who prepared and approved the map respectively
- l. The date on which the mapwork is completed
- m. The boundaries of EA, kebele, keftegna and SA as described by its adjacent SA.

CENTRAL STATISTICAL AUTHORITY  
MAP OF S.A. IN NAZRET TOWN

1. Region Shewa  
2. Awraja Yerer and Kereyu  
3. Wereda Adama  
4. Name of Urban Center Nazret  
5. S.A Code number 08  
6. Number of kebele 1  
7. Number of E.A 4



Name of G.A. Abebe Mamo Initial AM Date 16/3/84  
Name of Supervisor Kebede Girma Initial KG Date 16/3/84

Fig. 31

4.4.3 Urban Center Maps:- (For those that do not have master plan). The urban center map that was done by sketching should contain and show the following in their proper places (see fig.32).

- a. The name of the region, awraja and wereda
- b. The name of the urban center
- c. The boundaries of the urban center with proper definitions such as rivers, roads, market places, historical places, religious centers, etc.
- d. The orientation of the map, i.e., the north direction
- e. The legend used to explain the symbols on the map
- f. The scale of the map
- g. The total number and location of EAs, SAs, kebeles and keftegnas
- h. The name of the GA and the supervisor who prepared and approved the urban center maps, respectively
- i. The date on which the urban center map is completed.

Note:- For urban centers that have master plans check and insert all the above information that is not included in the master plans.

# CENTRAL STATISTICAL AUTHORITY

## MAP OF TEJI TOWN

1. REGION Shewa 2. AWRAJA Chebo and Gurage 3. WEREDA Illu

4. NAME OF URBAN CENTER Teji 5. NUMBER OF KEFTEGNA 0

6. NUMBER OF KEBELE 1 7. NUMBER OF S.A 1

8. NUMBER OF E. A 2

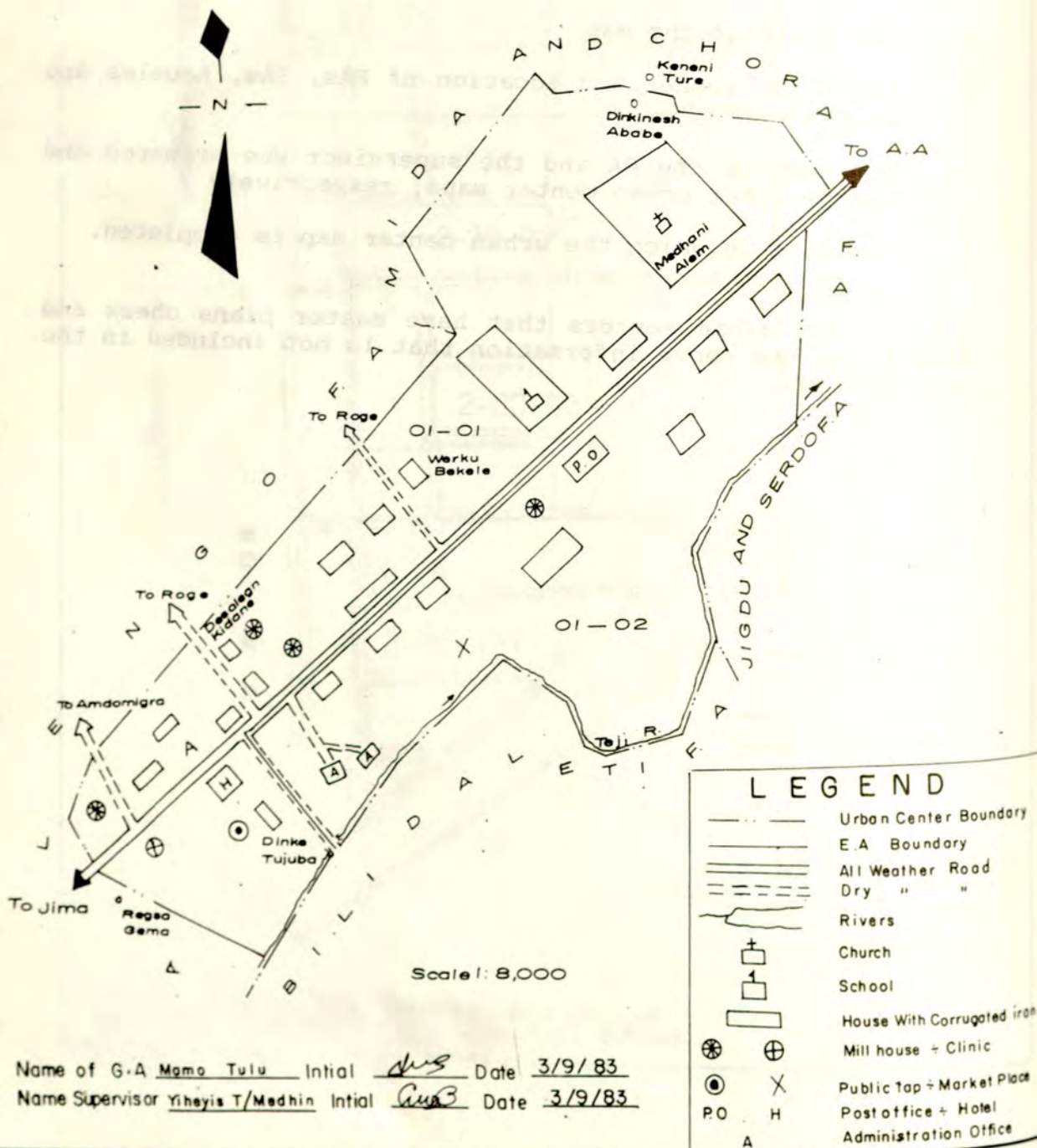


Fig. 32

#### 4.5 Forms for Map Work in Urban Centers

##### 4.5.1 Form U-1: Form for Listing Urban Centers, Keftegnas, and Kebeles in a Wereda

###### Part 1: Area Identification

###### Column 1-3 Region, Awraja, and Wereda

In these columns, write the names of the region, awraja and wereda in which the Urban Centers, Keftegnas and Kebele are located. Card columns 4-9 are for office use only.

###### Part 2: List of Urban Centers, Keftegnas and Kebeles

###### Column 4 Serial Number

In this column, write the serial number of the urban centers in the wereda using two digit numbers in card columns, 10 and 11.

Columns 5-6 Urban Centers:- Before you complete these columns it is important to know the definition of the urban center as given on page 5.

###### Column 5 Name

In this column, write down the name of each urban center. If the urban center has two names, write the commonly known name and next to it record the other name within brackets. Card columns 12-13 are for office use only.

###### Column 6 Status

Write the status of the urban centers using the following codes in card columns 14 and 15.

- 01= Only wereda capital with municipality
- 02= Only awraja " " "
- 03= Only regional " " "
- 04= Only Wereda " without "
- 05= Only awraja " " "
- 06= Both wereda and awraja capital with municipality
- 07= Both awraja and regional capital with municipality
- 08= Wereda, awraja and regional capital with municipality
- 09= Both wereda and awraja capital without municipality
- 10= Any other urban center with municipality
- 11= Any other urban center without municipality but with kebele
- 12= Any other urban center without municipality and without kebele.

*Be serious in taking the codes*

**Column 7 Serial Number**

In this column, write the serial number of each kefetegna in the wereda using a two digit number in card columns, 16 and 17.

**Column 8 Kefteгна Name or Number**

In this column, write the name of the kefteгна or the kefteгна number, if any, and write its code in card columns 18 and 19.

**Column 9 Serial Number**

In this column, write the serial number of each kebele in the wereda using a three digit number in card columns 20, 21 and 22.

**Column 10 Kebele Name or Number**

Write the name of the kebele, if any, or the kebele number in this column. Use the kebele number as code and write this code in card columns 23 and 24.

**Column 11 Name of Kebele Official**

In this column, write the name of the kebele official who is currently holding the office.

**Column 12 Remark**

In this column, write any other additional information regarding columns 5-11, if any.

**Note:-**

Finally the GA and supervisor should write their names and sign. In addition the date on which they filled the form should be written.

## PAGE ____ OF ____ PAGES

JOB	1	2	3
10	307	308	309

1		2		3	
REGION	4 5	AWRAJA	6 7	WEREDA	8 9

[illegible]

_____  
Signature _____ Date _____

4.5.2 Form U-2: Form for Listing Housing Units and Households  
Part 1: Area Identification

Columns 1-4 Region, Awraja, Wereda and Urban Center

In these columns, write the name of the region, awraja, wereda and urban centre. Card columns 4-11 are for office use only.

Columns 5-6 Kefetegna and Kebele

In these columns, write the name of the keftegna and kebele in the urban centre. If the keftegnas and the kebeles which have been formed in the urban centre do not have particular names write the keftegna and kebele numbers in these columns. If a keftegna and or a kebele has both a name and a number then write the name and next to it record the number within a bracket. Using these numbers as a code write the kefetegna code in card columns 12-13 and kebele code in card columns 14-15.

Column 7 EA Code

In this column, write the EA code in card columns 16-17. Note that the code should be written after delineating and finalizing the EA.

Part 2: Housing Unit and Household Particular

Column 8 Serial Number

Write systematically the serial number of the housing units in the kebele. The serial numbers should have three-digit numbers. That is, for the first housing unit, the serial number should be 001, for the 2nd, 002, etc., in card columns 18-20 until you cover all the housing units in the imagined EA.

Column 9 Housing Unit Number

In this column, write the housing unit number as given by the kebele office. There may be numbers assigned on the main gates or entrances of a compound or a building in which there are a group of housing units. In such cases sub-numbers are also assigned to each housing units. In this case first write the number given on the main gate or entrance, make a stroke after this number and write the sub-numbers. For example, if the number on the main gate or entrance of building is 0087 and the sub-number are 1, 2, 3, etc., the number of the first housing unit will be 0087/1, the 2nd 0087/2 and the third 0087/3, etc. If the housing unit does not have a housing unit number given by the kebele leave the column blank and indicate on the remark column.

## Column 10 Purpose

In this column, write the purpose of the housing unit in card column 21 using the following codes.

- 1= Residential
- 2= Partially Residential
- 3= Non-Residential

## Columns 11-12 For Residential or Partially Residential Housing Units

Columns 11 and 12 are meant generally for listing private households including those in collective quarters with less than 100 persons.

## Column 11 Serial Number

Write the serial numbers of the households in card columns 22-24. However, when ^{you} come across collective quarters you should also continue giving serial numbers in column 11 card columns 22-24.

## Column 12 Name of the Head of Household or Collective Quarter

In this column write the name of the head of the household or the name of the collective quarter in which less than 100 inmates or members reside. If there are private household in such collective quarters write the name of the head of the household.

## Column 13 Members of the Household or Collective Quarter

In this column, write the total number of the household members including the head by sex. In the case of collective quarters also write the total number by sex if the total number of inmates is less than 100 persons. For male use card columns 25 ~~and~~ 26, for female use columns 27 ~~and~~ 28 and for total of both sexes use card columns 29 ~~and~~ 30. Note that you should not include among the inmates the owner of the institution if he /she has his/her private household.

## Column 14 Remark

In this column, write some additional information regarding columns 8-13. For every collective quarter with more than 100 persons use form U-4 and write "CQ" for collective quarters with less than 100 persons.

Note that you should sum up column wise the number of persons by sex at the bottom of each form of column 13. Finally you should also enter the grand total on the last page of the listing form, that is, Form U-2 in the space provided.

Do not forget to write your name, put your signature and date of completion of the form at the bottom of the form. The supervisor and the kebele official should also do the same thing.

PAGE ____ OF ____ PAGES

FORM U-2

JOB ID	1	2	3

[illegible][illegible]

PAGE TOTAL

Name of G.A. _____ Signature _____ Date _____

Name of Supervisor _____ Signature _____ Date _____

Grand total of members of h  
and CQ.

M	F	Total
1	1	2
2	2	4
3	3	6
4	4	8
5	5	10
6	6	12
7	7	14
8	8	16
9	9	18
10	10	20
11	11	22
12	12	24
13	13	26
14	14	28
15	15	30
16	16	32
17	17	34
18	18	36
19	19	38
20	20	40
21	21	42
22	22	44
23	23	46
24	24	48
25	25	50
26	26	52
27	27	54
28	28	56
29	29	58
30	30	60
31	31	62
32	32	64
33	33	66
34	34	68
35	35	70
36	36	72
37	37	74
38	38	76
39	39	78
40	40	80
41	41	82
42	42	84
43	43	86
44	44	88
45	45	90
46	46	92
47	47	94
48	48	96
49	49	98
50	50	100

4.5.3 Form U-3: Form for Listing Collective Quarters in Urban Centers

This form will be used for listing all collective quarters in every urban center regardless of the total number of persons in the collective quarters.

Part 1: Area Identification

Columns 1-4 Region, Awraja, Wereda and Urban Center

In these columns, write the name of the region, awraja, wereda and urban center in which the collective quarter is located. Card columns 4-11 are for office use only.

Part 2: Collective Quarter Particulars

Column 5: Serial Number:- Write the serial number for each collective quarter in card columns 12-14.

Column 6: Housing Unit Number:- In this column, write the housing unit number as given by the kebele office. The description of the housing unit is given in form U-2. Note that the housing unit number of the collective quarter with less than 100 persons could be transcribed from form U-2.

Column 7 Name of the Collective Quarter

In this column, write the names of the collective quarters. If the collective quarter is identified by the name of the owner write the name of the person.

Columns 8-10 Address

In this columns, write the address of the collective quarters specifying its keftegna, kebele and P.O. Box, if any. If the keftegna and kebele in the urban center are identified by numbers, then write down the keftegna and kebele numbers in these columns. Otherwise write the name of the keftegna and kebele.

Column 11 Function of the Collective Quarter

In this column write the function of each collective quarter, example-hospital, boarding school, military camp, orphanage, rehabilitation centers specifying its major function (mental asylum, leprosarium, etc.).

Column 12 Number of Persons

In this column, enter only the number of persons (inmates and household members) by sex residing in the collective

quarter. That is, enter the males in card columns 15 and 17, the females in card columns 18-20 and the total of both sexes in card columns 21-24.

Column 13 Enumeration Area Code: In this column, write the

EA code of each collective quarter, that is, if the collective quarters do not form special enumeration area, write the EA code within which the collective quarters are located. If the collective quarters forms special enumeration area, write the appropriate special enumeration area code in card columns 25-26. Note that the EA code should be entered after EA formation is completed.

Column 14 Remark

In this column, write only other additional information about the collective quarters. Finally, do not forget to write your name and put your signature and date of completion at the bottom of the form. The supervisor also should do the same thing.

CENTRAL STATISTICAL AUTHORITY  
FORM FOR LISTING COLLECTIVE QUARTERS  
IN URBAN CENTER

PAGE ____ OF ____ PAGES

JOB ID	1	2	3

PART 1: AREA IDENTIFICATION

FORM U - 3

[illegible]

## PART 2 : COLLECTIVE QUARTERS PARTICULARS

[illegible]

Name of G.A. _____ Signature _____ Date _____

Name of Supervisor _____

4.5.4 FORM U-4:- FORM FOR SPECIAL ENUMERATION AREA  
(Collective Quarters With 100 and More Persons)

This form is meant to register the particulars of the collective quarter with 100 and more members and to list private households with the premises of the collective quarter.

Item 1-3 : Region, Awraja and Wereda:- Write the name of the region, awraja and wereda in the space provided.

Item 4-6 : Urban Center, Kefetegna and Kebele:- Write the name/number of the urban center, kefetegna and kebele in the space provided.

Item 7 : Enumeration Area:- Write the code number of the special enumeration area.

Item 8: Name of the Collective Quarter:- Write the name of the collective quarter in the space provided.

Item 9: Function of the Collective Quarter:- Write the function of the collective quarter in the space provided.

Item 10: Post Office Box Number:- Write the post office box number of the collective quarter in the space provided.

Item 11: Total number of members (Inmates):- Write the total number of usual members (inmates) of the collective quarter by sex.

Item 12: Total number of Members in Private Households:- Write the total number of persons in private households, in the premises of the collective quarter by sex. This function will be obtained after listing all the private households in the collective quarter by summing up the total household members by sex.

Item 13: Remark- Record any additional information about the collective quarter and private households in the space provided.

Item 14: Serial Number:- Write the serial numbers of the private households within the collective quarters.

Item 15: Name of Head of the Household:- Record the name of the head of the household in the space provided.

Item 16: Number of Persons in the Household:- Record the number of usual members in each private household according to their sexes in the spaces provided.

## (COLLECTIVE QUARTERS WITH 100 AND MORE PERSONS)

FORM U-4

- [illegible]

NAME OF SUPERVISOR _____ SIGNATURE _____ DATE   1   /   1   /   1

4.5.5 Form U-5 Form for Describing Urban Enumeration Area  
Part 1: Area Identification

Columns 1-4 Region, Awraja, Wereda and Urban Center

In these columns, write the name of the region, awraja, wereda and urban center.

Columns 5-7 Keftegna, Kebele and Enumeration Area Code

In these columns write the keftegna and kebele numbers or the names of the keftegna and kebele, if any. Finally write the enumeration area code in column 7.

Part 2: EA Description

In describing the boundaries of the EA, you should use the cultural and physical features and the names of the heads of the households including housing unit numbers, etc. If possible you should not use trees as reference points when describing the boundaries of your EA. Write neatly and legibly when describing the boundaries of the EA, and complete the description of the boundaries in clockwise direction, starting from north direction of the EA including all adjacent EAs. When you complete the description do not forget to attach Form U-5 to the EA map. Finally, note that the space provided at the bottom of this form must be filled by you and your supervisor.

(G.A.)

**CENTRAL STATISTICAL AUTHORITY**  
**FORM FOR DESCRIBING URBAN ENUMERATION AREA**

PAGE ____ OF ____ PAGES

JOB ID	1	2	3

**PART 1: AREA IDENTIFICATION**

**FORM U-5**

1	2	3	4	5	6	7
REGION	AWRAJA	WEREDA	URBAN CENTER	KEPTEGNA	KEBELE	E.A. CODE

**PART 2: E.A. DESCRIPTION**

DESCRIBE THE IDENTIFIABLE BOUNDARIES FROM NORTH AND COMPLETE IN CLOCKWISE DIRECTION

01003 - -  
 01004 - -  
 01005 - -

Handwritten description of the Urban Enumeration Area boundaries follows, starting from the north and proceeding clockwise. The text is faint and partially illegible, but appears to describe a rectangular area with specific landmarks and measurements.

NOTE: -USE ADDITIONAL FORM IF NEEDED

ATTACH THIS FORM TO E.A. MAP

NAME OF G.A. _____ SIGNATURE _____ DATE _____

NAME OF SUPERVISOR _____ SIGNATURE _____ DATE _____

#### 4.5.6 Form U-6 Record Form for Sketching

##### Part 1: Area Identification

###### Columns 1-4 Region, Awraja, Wereda and Urban Center

In these columns, write the name of the region, awraja, wereda and urban center.

###### Column 5 Status of Urban Center

In this column, write the status of the urban center as given in Form U-1 column 6.

##### Part 2: Sketching Particulars

###### Column 6 Serial Number

In this column, write the serial number of the points you have taken as references. *first two (AB)*

###### Column 7 Points

In this column, write points of references alphabetically starting from the first point 'A' where you have taken angle reading.

###### Column 8 Azimuth or Angle

In this column, enter the angle of the reference points. That is, if the angle between A and B is  $239^{\circ}$  enter this number in column 8.

###### Column 9 Distance in Paces

In this column, enter the number of paces that you have counted between the two points. Example, if the distance between A and B is 100 paces, then write 100 in this column. If you have measured the distances in meters, leave this column blank and enter the distance in meters in column 10.

###### Column 10 Converted Distance in Meters

In this column, enter the length of the distance that you have taken between the two points, that is AB in meters only. Example, as given in Column 9, if the distance between A and B is 100 paces, then convert it into meters by multiplying 100 by the average length of a pace. If the average length of a pace is 0.8 meters then the converted distance will be 80 meters.

###### Column 11 Remark

In this column, write any additional comments, regarding columns 6-10. The GA and the supervisor should write their names and put their signatures and date in the space provided.

## PAGE ____ OF ____ PAGES

## FORM U-6

JOB ID	1	2	3

## PART I: AREA IDENTIFICATION

1	2	3	4	5
REGION	AWRAJA	WEREDA	URBAN CENTER	STATUS OF URBAN CENTER

## PART 2 : SKETCHING PARTICULARS

[illegible]

NB IF YOU HAVE USED PACE OR STRIDING FOR DISTANCE MEASUREMENT CONVERT IT INTO METERS BY USING THE AVERAGE LENGTH.

Name of G.A. _____ Signature _____ Date _____

Name of Supervisor _____ Signature _____ Date _____

4.5.7 Form U-7 Form for Filling Urban Enumeration Area Particulars

This form should be glued on the front cover of the EA folder.

Items 1-4 Region, Awraja, Wereda and Urban Center

In these spaces, write the name of the region, awraja, wereda and urban center.

Items 5-6 Kefteгна and Kebele

Write the kefteгна and kebele numbers or names, if any, in these spaces.

Item 7 Name of Kebele Official

Write the name of the kebele official in this space.

Item 8 Enumeration Area Code Number

In this space, write the EA number which you have already finalized within the kebele. Do not forget to distinguish the normal EA number from that of the special EA number of the collective quarters with 100 or more inmates/members.

Item 9 Estimated Area

Write the estimated area of the EA in kilometer square in the space provided.

Item 10 Total Number of the Housing Units

In the space provided enter the total number of the housing units in the EA.

Item 11 Total Number of Households

Record the total number of the households in the EA in this space and also write separately:-

- a) the total number of households in regular housing units
- b) the total number of private households in the collective quarters.

Item 12 Total Number of Persons in the Collective Quarters

In this space, write the total number of persons in the collective quarters, if any.

*From U-2 U-4*

Item 13 The Total Number of Persons in Private Households  
Within the Premises of the Collective Quarters

In the space provided enter the total number of persons  
in private households within the premises of the  
collective quarter.

Note:- In the space provided write additional comments  
regarding your EA, if any. The GA and the  
supervisor should write their names and put their  
signature and date in the space provided.

Jan 11-28-44

**CENTRAL STATISTICAL AUTHORITY  
FORM FOR FILLING URBAN ENUMERATION  
AREA PARTICULARS**

**FORM U-7**

1-REGION _____ 2-AWRAJA _____ 3-WEREDA _____  
4-NAME OF URBAN CENTER _____ 5-KEFITEGNA _____ 6-KEBELE _____  
7-NAME OF KEBELE OFFICIAL _____ 8-E.A. CODE No _____  
9-ESTIMATED AREA _____ Kms² 10-TOTAL No OF HOUSING UNIT _____  
11-TOTAL NUMBER OF HOUSEHOLDS _____

A. NUMBER OF HOUSEHOLDS IN REGULAR HOUSING UNIT _____  
B. NUMBER OF PRIVATE HOUSEHOLDS IN COLLECTIVE QUARTERS _____

12-TOTAL No OF PERSONS IN COLLECTIVE QUARTERS _____  
13-TOTAL No OF PERSONS IN PRIVATE HOUSEHOLDS WITHIN THE PREMISES OF THE  
COLLECTIVE QUARTERS _____

**NOTE** _____

NAME OF G.A. _____ Signature _____ Date _____  
NAME OF SUPERVISOR _____ Signature _____ Date _____

1. GLUE THIS FORM ON THE FRONT COVER OF THE E.A FOLDER
2. TO COMPLETE ITEM 9, USE THE METHOD GIVEN ON PAGE _____

**CENTRAL STATISTICAL AUTHORITY  
FORM FOR FILLING URBAN ENUMERATION  
AREA PARTICULARS**

**FORM U-7**

1-REGION _____ 2-AWRAJA _____ 3-WEREDA _____  
4-NAME OF URBAN CENTER _____ 5-KEFITEGNA _____ 6-KEBELE _____  
7-NAME OF KEBELE OFFICIAL _____ 8-E.A. CODE No _____  
9-ESTIMATED AREA _____ Kms² 10-TOTAL No OF HOUSING UNIT _____  
11-TOTAL NUMBER OF HOUSEHOLDS _____

A. NUMBER OF HOUSEHOLDS IN REGULAR HOUSING UNIT _____  
B. NUMBER OF PRIVATE HOUSEHOLDS IN COLLECTIVE QUARTERS _____

12-TOTAL No OF PERSONS IN COLLECTIVE QUARTERS _____  
13-TOTAL No OF PERSONS IN PRIVATE HOUSEHOLDS WITHIN THE PREMISES OF THE  
COLLECTIVE QUARTERS _____

**NOTE** _____

NAME OF G.A. _____ Signature _____ Date _____  
NAME OF SUPERVISOR _____ Signature _____ Date _____

1. GLUE THIS FORM ON THE FRONT COVER OF THE E.A FOLDER
2. TO COMPLETE ITEM 9, USE THE METHOD GIVEN ON PAGE 22

## CHAPTER FIVE

### 5. UP-DATING MAP WORK OF 1984 CENSUS

It has been over nine years since the first census map was prepared. Since then the country has undergone various changes in cultural and physical features. It has experienced changes in population size, number of households, spatial distribution, ... etc. Moreover, these changes include formation/disappearance of land marks and physical features partially or completely, merging or splitting of Farmers Associations. Thus, these changes make the existing census maps out of date. Therefore, up-dating the census maps is necessary for conducting second census.

#### 5.1 Procedures for Up-dating Census Map Work

The census map work in rural and urban areas involves mainly the listing of households and housing units and delineation of enumeration areas (EA). It is desirable to use the same EAs from census to census. But this is not usually practical except in some areas where there are no changes in population size, physical or cultural features, or administrative boundaries.

*# of the, (these are changes that could happen in the past nine years.*  
Farmers Association areas and kebeles and enumeration areas which show significant changes in household size, aerial extent or geographical limit and main reference points on boundaries will be up-dated during this census map work. It is therefore important to consider the following steps to achieve this goal.

##### Step 1

The cartographic department of the census office will supply you with the 1984 census EA maps and its description, supervision area maps and wereda census maps. Moreover, you will be given the topographic map of the wereda, master plan or sketch map of urban centers at the end of the training period.

Each wereda census map supplied to you has been divided into enumeration areas and supervision areas during the first census map work. Be sure that you have collected lists of FAs, urban centers, keftagnas, kebeles, and collective quarters which had been compiled on Forms R-1, R-2, U-1 and U-3 during the first census map work. Check that the number of enumeration areas on the wereda census map and the number of EA maps supplied to you are the same before you leave for your wereda of assignment.

*Changes - physical and cultural features*  
*- no of households*  
*- spatial distribution*  
*- no of housing units*  
*- merging or splitting FA/subdivision/kebele*

## Step 2

Go to the wereda administrative office and contact the wereda administrator or his designate. Tell him the purpose of your mission and hand over your letter of assignment and ask him to give you the list of the FAs, kebeles, urban centers and collective quarters and copy them on R-1, U-1, R-3, and U-3. Identify differences between the Forms R-1, U-1, R-2 and U-3 of the first round census with the Forms R-1, U-1, R-3 and U-3 of the second round.

Then go through the list of names of FAs/kebeles of the first round census one by one and check carefully the current status of changes of each FA/kebele by consulting the concerned officials and knowledgeable individuals in the wereda. Note that status of change of the FA/kebele for example, could be changes in boundaries and names after the 1984 population and housing census. Then assign the appropriate code of the status of change listed below for each of FA/kebele in the remark column of Form R-1 and U-1 of second round census map work.

<u>Status of Changes</u>	<u>Code</u>
- No change	1
- Name change	2
- Two or more FAs/kebeles merged	3
- Part of the FA/kebele detached and given to adjacent FA/kebele	4
- Part of an adjacent FA/kebele attached to the FA/kebele	5
- Split of an FA/kebele into two or more FAs/kebeles	6
- A combination of any of the above changes	7
- Other changes (specify)	8

After identifying the changes of FAs and kebeles up-date the boundaries of the wereda map with the relevant officials. In up-dating the boundaries of the wereda map, you should show the officials cardinal directions using the compass. Then verify the boundaries of the wereda map in north, south, west and east by asking the officials. When you verify and up-date the boundaries, mention to the officials some place names, other reference points given on the map and ask them whether

or not they are located at present in the wereda. If there is any change in the wereda, you should identify the change by marking on the map lightly with pencil.

Now you have all the information concerning the changes that occur on the wereda map. Discuss with the wereda officials and decide where the actual field work of the census map work should start.

### Step 3

When you have reached the FA/kebele to start your field work, hand over your letter of assignment to the FA/kebele official and tell him the purpose of your mission, show him the wereda census map and identify particularly his FA/kebele by mentioning the boundaries in all directions as well as some place names and reference points. Also mention to him about the information you have collected at the wereda office and confirm the changes that occurred. Then verify and up-date the boundaries of the FA/kebele on the topo map, master plan map and sketch map by going around the FA/kebele.

### Status 1- No Change

In some FAs/kebeles no change may have occurred interms of names and boundaries. In such cases no up-dating is required as far as the FA/ the kebele map is concerned.

### Status 2- Name Change

In this case the only change found could be a change in name of FA/kebele only. Then cancel the old name and replace it with the new name of FA/kebele on the relevant documents.

### Status 3- Two or More FAs/Kebeles Merged

When an FA or a kebele is found comprising of two or more former FAs/kebeles, go around the new FA/kebele and establish its current boundaries with all reference points and localities. Be sure that you have erased the common boundaries of the merged FA/kebele on the wereda map.

### Status 4 and 5 Part of FA/Kebele is Detached or Attached to Adjacent One

In this case, you may find part of FA/kebele detached from it or attached to the adjacent one. In both situations, go around and establish its current boundaries with all reference points and localities as you think appropriate to the different changes.

- * Step 2 - Contact the Wereda Administrator.
- list the FAs, kebeles & CD
  - identify the difference between the old the new forms
  - mark the changes on the new form, the changes are 1-5 (coded)
  - update the Wereda map
  - discuss where to start.

#### Status 6- Split of FA/Kebele into Two or More FAs/Kebeles

You may find that an FA^{or} a kebele had been split^{ed} to form two or more FAs/kebeles. In such a case, delineate the new FAs/kebeles on the base map supplied to you and put all the important reference points and localities on the map.

#### Status 7- A combination of any of the above changes

When you compare the former FA/kebele with the present situation you may find a combination of any of the above changes (1-6). In such a case, treat the changes during updating by following one or more of the procedures explained above.

#### Status 8- Other Changes

When you compare the former FA/kebele with the present situation you may find changes different from the above cases (status 1-7). In this case specify the changes and treat the case by following the updating procedures which you think would be appropriate to your present case by consulting your supervisor. For example, if part of an FA/ a kebele is detached and given to adjacent FA/kebele but in other wereda, then erase it from the former wereda map and delineate it in the other wereda and adjust the new boundaries of the wereda.

#### Step 4

After establishing the FA/kebele boundary, your job will be to familiarize yourself with the EA map and undertake listing of households/housing units within the boundary of an EA. The household/housing unit listing should be done on the Forms R-2 and U-2. Now you are sure about the boundary of the FA/ the kebele, the EA and the current number of households/housing units in the EA. Up-dating of EA should be performed by taking into account the criteria of EA formation fund the different cases as explained below.

- a) In some EAs no change may have occurred, that is, no change has occurred in the boundaries of EAs and the listing exercise on Forms R-2 or U-2 indicated that the number of households/housing units in the EA is within the limit of the criteria (150-200) households/ housing units. In this case you do not need up-dating the EA map. However, you have to check that all the reference points are indicated properly and the documents concerning the EA are complete and you should put them in the folder.
- b) Changes in population size or boundaries of FAs/kebeles could contribute to changes in households/housing units of the

EAs. This requires up-dating of EA maps either by splitting or combining them. Therefore, in such cases you should prepare a new EA map with its description and other relevant documents.

c) Villagization/Resettlement pattern

i) If villagization/resettlement programme has taken place in an FA and if the household listing exercise indicates that the number of the household in the FA is less than 200, then the FA will usually be considered as an EA. The only exercise involved in up-dating this EA map is showing the relative position of the villages/resettlements on the FA/EA map.

ii) If the household listing exercise indicates that the number of households in the FA/Resettlement area exceeds 200 it may be necessary to divide the FA/ the resettlement area into two or more EAs according to the criteria of EA formation. Note that there should not be any 'no-mans land' during the EA formation. Your map should cover every inch of the FA. Divide the open areas in the FA/resettlement into the EAs formed within the FA in a convenient manner. Some of the possible cases are as shown below.

DIFFERENT CASES OF E.A FORMATION IN RESETTLEMENT /VILLAGIZATION AREAS

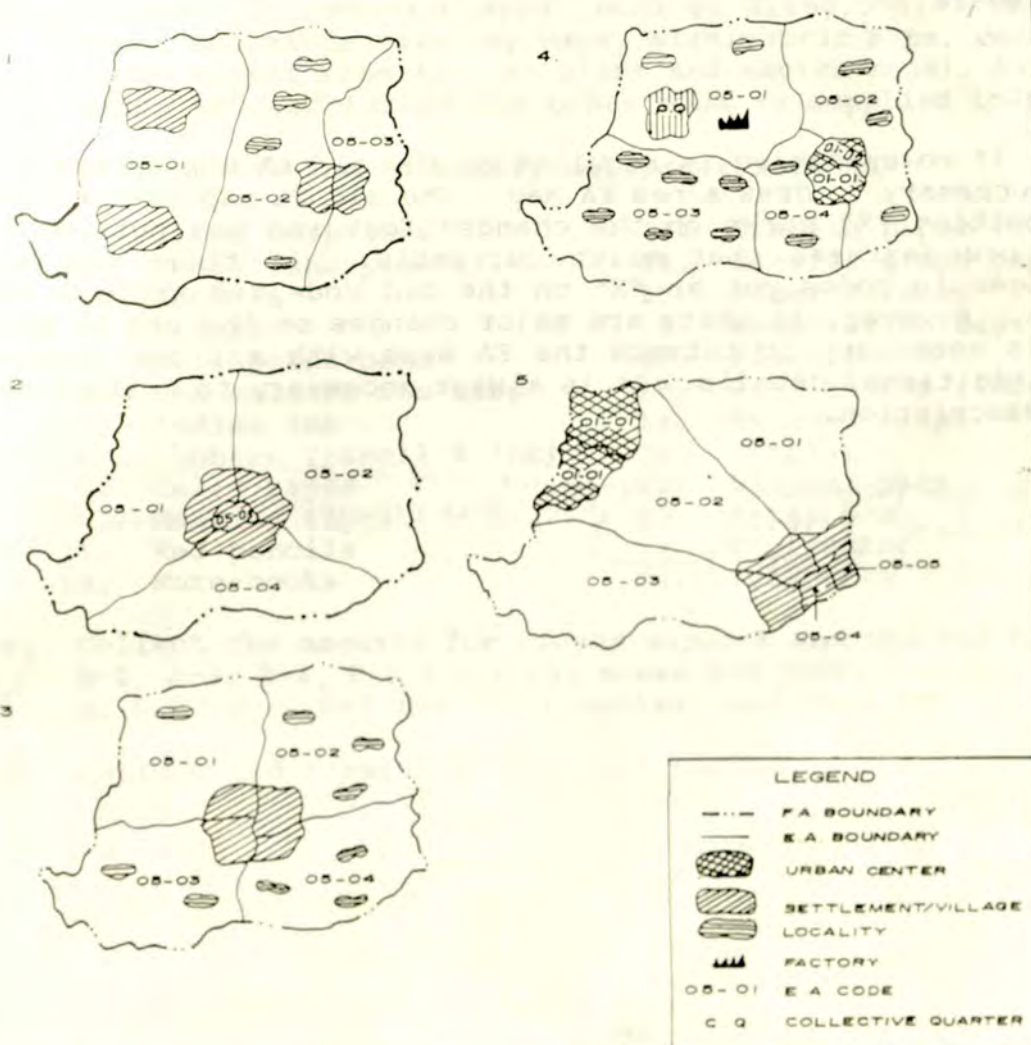


Fig. 33

- iii) In some FAs the households are located in one or more localities due to villagization or resettlement pattern. If the village or the resettlement has a regular or geometrical pattern and if you think there is no danger of making omission or duplication, listing could be done without making any sketch. But, if the village or the resettlement has no regular or geometrical pattern and if you think there is any danger of making omission or duplication during listing, you must do sketching by following the step by step procedures for making sketch map as explained on page 31. However, these decisions have to be made in consultation with your supervisor.

### Step 5

Although you should follow the steps as explained above in up-dating census maps, some of the step by step procedures of EA formation like giving code number to FA/kebele, EAs, supervision area map and wereda map, writing of EA description and the grouping of EAs into supervision area, are the same as explained in some of the steps of EA formation in rural and urban areas in chapter 3 and 4 and should be strictly followed during up-dating census maps. If there is any change in the number of FAs in a wereda, it is necessary to give new FA codes starting from the north in a serpentine manner. Similar procedures are used if there are changes in the number of kebeles in an urban center or number of EAs in an FA/kebele.

### Note:-

If no up-dating is required on the old EA map it may not be necessary to draw a new EA map. The old EA map is modified by putting "X" marks on the changed features and putting in the new features that exist currently. If there are any changes in codes put an "X" on the old code and write a new code. However, if there are major changes on the old EA maps it is necessary to retrace the EA maps with all the changes and additional details. It is always necessary to write a new EA description.

*Summary*  
Step 1: Collect all types of census maps, topographic map, master plan map and other urban maps included sketches.  
Collect documents R-1, R-2, R-3, R-5 of the first census (U-1, U-3, U-5) districts.  
(Wereda map, SA maps, FA maps)

Step 2:

## APPENDIX I

### CHECK LIST OF ACTIVITIES

#### 1. CHECK LISTS OF ACTIVITIES FOR THE REGIONAL OFFICER

##### 1.1 AT THE HEAD OFFICE

The regional officer should collect all the relevant maps, all the necessary equipment, manuals, all the new and old forms, official letters to the regional administrative office and other material required for the census mapwork as described in the check lists of activities for the supervisor below.

##### 1.2 AT THE REGIONAL OFFICE

- a. Hand over the official letter to the regional administrative office and make all the necessary administrative arrangements to facilitate the works of the supervisors.
- b. Issue the materials you brought from the head office for the census mapwork to the supervisors according to the check list of activities.

#### 2. CHECK LIST OF ACTIVITIES FOR THE SUPERVISOR

##### 2.1 AT THE REGIONAL OFFICE

- a. Collect all relevant maps, such as 1:250,000, 1:50,000 Topo maps, administrative key maps, planimetric maps, wereda maps, urban center maps (master plans and sketch maps), SA maps, EA maps, EA description and other maps as supplied to you.
- b. Collect all the necessary equipment such as:-
  1. Field Compasses
  2. Pencil sharpeners
  3. Pencils
  4. Rulers
  5. Ball point pens
  6. Pen holders and nibs
  7. Indian Ink
  8. Rubbers (pencil & ink)
  9. Cello tapes
  10. Masking tapes
  11. Red pencils
  12. Note-books
  13. Tracing paper rolls
  14. A4-size graph paper
  15. Paper folders
  16. Enumeration Bags
  17. File pins
  18. Hard boards (40x40cm)
  19. Bulldog clips
  20. Stapler
  21. Stapler pins
  22. Metal box
  23. Protractor
  24. Triangles
- c. Collect the manuals for census mapwork and the new Forms R-1, R-2, R-3, R-4, R-5 for rural areas and Forms U-1, U-2, U-3, U-4, U-5, U-6, U-7 for urban centers and Form TMF.
- d. Collect old Forms R-1, R-2, U-1 and U-3.

- e. In consultation with the Regional Administrator and knowledgeable persons identify the boundaries of the Region.
- f. Get the list of zones, weredas and urban centers.
- g. Get a letter of introduction to the zones Administration Office.

## 2.2 AT ZONE OFFICE

1. Hand over letter of introduction to the zone Administrator.
2. Verify the list of weredas, urban centers and collect the list of their respective officials.
3. Identify zone boundary.
4. Check with the supervisors of adjacent zone that you have the boundaries in the same position.
5. Collect letters of introduction to Weredas Administrators. Give of these letters to the GAs as per their assignments.
6. Supply your GAs with all necessary working materials including base maps.
7. Plan how to keep in contact with the GAs and arrange their itinerary.
8. Deploy your GAs to their respective weredas.

## 2.3 AT WEREDA OFFICE

1. Hand over letter of introduction to the Wereda Administrator.
2. Plot the wereda boundary on your working sheet.
3. Produce and check the lists of FAs, urban centers and collective quarters have been done properly.
4. Get information about the location of FAs and urban centers.
5. Plan your route to FA and urban centers.

### a. In the Field:- (Rural)

1. Counter check the wereda boundary you have plotted with the work of the GAs.
2. Check that all the forms are completed according to the instruction given in the manual.
3. Check that the step by step procedures described in the manual are maintained in the formation of EAs.
4. Check that the work is progressing as scheduled.
5. Check that the GAs have adequate supplies of materials.
6. Check that the EA boundaries are clear.

7. Check that all localities and other important features have been located and named.
8. Check that the EAs are numbered accordingly.
9. Check that the EA descriptions are understandable.
10. Check that the legends and symbols are properly followed.
11. Check that there is no "noman's land" in the wereda.
12. Make sure that there is no overlapping between the EA and that there is no gap between the EAs.
13. Check and settle boundary disputes in consultation with the officials of the areas concerned.
14. Check that the wereda map is ^{Carved}~~covered~~ out into SA maps.
15. When the GAs have completed making EA maps in the wereda collect the maps and the forms that go along with the maps and keep them with you till you hand them over to the administrative supervisor.

b. At Wereda Capital:- (Urban)

1. Check that the listings of urban centers, households, housing units have been done properly.
2. Check that every wereda and urban centers have been divided into EAs according to the instructions.
3. Check that every wereda and urban centers maps are carved out into SAs.
4. Check that all original copies of the EA maps are prepared correctly and neatly as per the instruction.
5. When you assure that all the work of the wereda is done properly and completely, move your GAs to the next wereda of your assignment.
6. Make sure that the GAs assigned to finalize the map work of the wereda have adjoined the EAs systematically so as to make a wereda map showing the relative locations of the EAs and other relevant details.
7. Check that the team has prepared the wereda map and that the wereda map is carved out into SAs.
8. Collect all files and other relevant documents and hand them over to the administrative supervisor.

2.4 At Zone Capital After Completing EA Formation in the

Wereda:-

1. Make sure that there is no overlapping between weredas and there is no gap between the weredas in consultation with other supervisor.
2. Redeploy the GAs who have completed their weredas to other weredas as appropriate.
3. Write a monthly progress report and send it to the regional office. The report should be prepared on the basis of the following progress report format.

CENTRAL STATISTICAL AUTHORITY  
PROGRESS REPORT FOR CENSUS MAPWORK

FORM-PR

Administrative region _____ Awraja _____ wereda _____

1. RURAL

1.1 Total number of FA / Subdivision _____

a) On progress _____

b) completed _____

d) Not started _____

1.2 Total number of EAs completed _____

2. URBAN

a) On progress _____

b) Completed _____

c) Not started _____

2.1 Total number of EAs completed _____

3. Number of teams deployed _____

4. Additional days needed to complete the wereda _____

5. Indicate the major problems and steps taken to resolve them _____

Name of supervisor _____ Sign _____ Date _____

### 3. CHECK LIST OF ACTIVITIES FOR THE GEOGRAPHICAL ASSISTANTS

#### 3.1 BEFORE LEAVING FOR THE AREA OF ASSIGNMENT

- a. Collect all relevant maps such as:  
1:250,000, 1:50,000 Topo maps, administrative key maps, planimetric maps, wereda maps, Urban center maps (master plan and sketch maps), SA maps, EA maps, EA description and other maps as supplied to you.
- b. Collect all the necessary equipment such as:

1. Field compass	13. Tracing paper rolls
2. Pencils	14. Paper folder
3. Pencil sharpener	15. Enumeration bag
4. Rulers	16. File pins
5. Ball point pens	17. Hard board (40x40cm)
6. Pen holders and nibs	18. Bulldog clips
7. Indian ink	19. Protractor
8. Rubber (pencil & ink)	20. Stapler
9. Cello tape	21. Stapler pins
10. Masking tape	22. Triangles
11. Red pencils	23. A4-size graph paper
12. Note-book	
- c. Collect the manuals for census map work and the new Forms R-1 to R-5 for rural areas and Forms U-1 to U-7 for urban centers.
- d. Collect old Forms R-1, R-2, U-1 and U-3.
- e. Collect the official letter of introduction to the Wereda Administrator.

#### 3.2 AT WEREDA OFFICE

1. Hand over the letter of introduction to the wereda administrator.
2. Collect the list of the lowest administrative units FAs or subdivisions, and the name of the officials in the wereda.
3. Collect list of urban centers, UDAS, and collective quarters and list of names of the respective officials.
4. In collaboration with your supervisor plot the wereda boundary on your working sheet.
5. Collect letters of introduction to the FA/subdivision and UDA officials.
6. Plan your route to the various parts of the wereda.

### 3.2.1 In the field:-

1. Hand over the letter to the FA/subdivision and UDA officials.
2. Discuss your work plan and accommodation.
3. Check the list of urban centers and collective quarters.
4. Check the wereda boundary if that particular area is on the border.
5. Plot the relative position of the FA/subdivision and UDA on the working sheets.
6. List the households in the FA/subdivision by localities and the housing units as well as households in UDAS.
7. Delineate the EAs according to the criteria given in the manual.
8. Locate and mark details of the EA.
9. Make enlargement of the EA on square paper if necessary.
10. Go back to the field with the enlargement and check and verify the boundaries of the EA, Add more details to your EA map as explained in the manual.
11. Write full description of EA boundary as explained in the manual.
12. Make a fair drawing of the EA map on the tracing paper in ink using appropriate legend and symbols.
13. Proceed in the same manner till you cover the whole wereda.
14. Make sure that there is no omission or duplication in forming EAs. When you work in adjacent EAs start from the common boundary and proceed outwards. Never work towards the already formed EA. You should maintain uniform scale for all adjacent EAs.

### 3.3 AT THE WEREDA CAPITAL AFTER COMPLETING EA FORMATION IN THE WEREDA.

1. Adjoin your EA maps systematically in order to show their relative locations. Put the wereda boundary correctly. Super impose a tracing paper and copy the details in ink. This will result in a wereda map containing all the EAs

and other details.

2. Mark the limits of the adjacent weredas and write their names.
3. Code the FAs in a serpentine form starting from the northern part of the wereda and proceed in clockwise manner until you give running code numbers to all the FAs. Then you should give EA code numbers within FA.
4. Divide the wereda map into SAs and give running code numbers according to given criteria.
5. Arrange the maps, forms and other documents according to the coding.
6. Hand over completed maps, documents and working materials to your supervisor.

Note:-

1. To maintain uniformity, it is important that you use the standard legend adopted for the purpose (see appendix II).
2. Do not hesitate to put on the maps as many details as possible.

## FORM FOR TRANSFERRING MAPS AND FORMS FOR RURAL AND URBAN

ADMINISTRATIVE REGION _____ AWRAJA _____ WEREDA _____

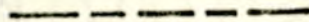
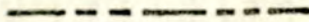
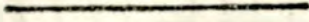
[illegible]

NAME OF THE TECHNICAL SUPERVISOR _____ SIGNATURE _____ DATE _____ NAME OF ADMINISTRATIVE SUPERVISOR _____  
NAME OF THE REGIONAL TECHNICAL OFFICER _____ SIGNATURE _____ DATE _____ SIGNATURE _____  
DATE _____

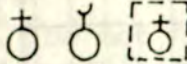
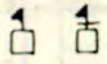
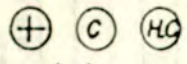
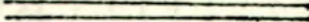
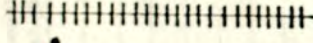
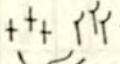
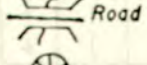
# APPENDIX III

## LEGEND

### A. BOUNDARIES

- |                                                                                   |                                                           |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------|
|  | 1. INTERNATIONAL BOUNDARY                                 |
|  | 2. ADMINISTRATIVE REGION BOUNDARY                         |
|  | 3. AWRAJA BOUNDARY                                        |
|  | 4. WEREDA BOUNDARY                                        |
|  | 5. SUPERVISION AREA BOUNDARY<br>(Thick solid line in red) |
|  | 6. FA / SUBDIVISION BOUNDARY                              |
|  | 7. E.A. BOUNDARY                                          |

### B. CULTURAL FEATURES

- |                                                                                     |                                          |
|-------------------------------------------------------------------------------------|------------------------------------------|
|    | 1. LARGE SETTLEMENT                      |
|    | 2. CIRCULAR HOUSE, RECTANGULAR HOUSE     |
|    | 3. CHURCH, MOSQUE, CHURCH WITH CEMETRY   |
|   | 4. SCHOOL, CHURCH AND SCHOOL (Joint use) |
|  | 5. HOSPITAL, CLINIC, HEALTH CENTRE       |
|  | 6. MARKET PLACE                          |
|  | 7. ALL WEATHER ROAD                      |
|  | 8. DRY WEATHER ROAD                      |
|  | 9. TRAIL / FOOT PATH                     |
|  | 10. RAILWAY LINE                         |
|  | 11. ANTIQUITY, RUIN                      |
|  | 12. HISTORICAL SITE (Battle field)       |
|  | 13. MINERAL WORKING-QUARRY               |
|  | 14. CEMETRY: CHRISTIAN, MUSLEM           |
|  | 15. BRIDGE                               |
|  | 16. FLOUR MILL (WATER OR OTHERS)         |
|  | 17. SAW MILL                             |

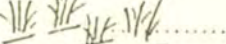
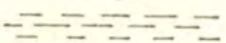
NB Where two or more boundaries coincide only the symbol representing the higher ranking boundary is shown

- |                                                                                       |                               |                                                                                       |                     |
|---------------------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------|---------------------|
| 18. A                                                                                 | ADMINISTRATIVE OFFICE         | 27. PP                                                                                | POLICE POST         |
| 19. H                                                                                 | HOTEL                         | 28. Tele                                                                              | TELE OFFICE         |
| 20. HA                                                                                | PERMANENT HIGHWAY CAMP        | 29. F-S                                                                               | FILLING STATION     |
| 21. PO                                                                                | POST OFFICE                   | 30.  | AIRFIELD (airstrip) |
| 22. PS                                                                                | POLICE STATION                | 31.  | FACORY              |
| 23.  | ADMINISTRATIVE REGION CAPITAL |                                                                                       |                     |
| 24.  | AWRAJA CAPITAL                |                                                                                       |                     |
| 25.  | WEREDA CAPITAL                |                                                                                       |                     |
| 26.  | OTHER TOWN                    |                                                                                       |                     |

### C. VEGETATION (ABBREVIATION USED)

- |       |               |               |                       |
|-------|---------------|---------------|-----------------------|
| 1. DF | DENSE FOREST  | 6. PLANTATION |                       |
| 2. OW | OPEN WOODLAND | a. C          | COFFEE                |
| 3. E  | EUCALYPTUS    | b. CN         | COTTON                |
| 4. G  | GRASS LAND    | c. O          | ORANGE (citrus fruit) |
| 5. SC | SCRUB         | d. S          | SISAL                 |
|       |               | e. SU         | SUGAR-CANE            |
|       |               | f. T          | TEA                   |
|       |               | g. VY         | VINE YARD (grapes)    |
|       |               | h. CH         | CHAT                  |
|       |               | i. ET         | ENSET                 |
|       |               | j. OS         | OIL SEEDS             |

### D. NATURAL FEATURES

- |                                                                                     |                                         |
|-------------------------------------------------------------------------------------|-----------------------------------------|
|  | 1. PERENNIAL STREAM                     |
|  | 2. INTERMITTENT STREAM                  |
|  | 3. DISAPPEARING STREAM                  |
|  | 4. WELL, SPRING, WATER HOLE, WATER TANK |
|  | 5. RESERVOIR, DAM                       |
|  | 6. SWAMP OR MARSH                       |
|  | 7. AREA SUBJECT TO INUNDATION           |
|  | 8. WATER FALL                           |
|  | 9. LAKE                                 |
|  | 10. MOUNTAIN                            |
|  | 11. SINK OR DEPRESSION                  |
|  | 12. LAVA                                |
|  | 13. VALLEY                              |

## Appendix IV

LIST OF AREAS NOT COVERED BY THE FIRST ROUND CENSUS MAP WORK

Region	Awraja	Wereda	Urban area
Tigray	Adwa	Adi-Arbaite	Bizet
		Bizet	
		Inticho	
		Adi Abeyito	
		Adwa	
		Hahayile	Nebelet
		Amba Seneyte	
		Ahisai	
		Endba Tsahima	
		Enda Selassie	
	Agame	Golomekeda	Hawzein
		Dalol	
		Sebuhna Seisei	
		Hulet Belesa	
		Ganta Afeshum	
	Hulet Awialo	Tsaida Amba	Ahule
		Atsibi	
		Berhale	
		Tsirai	
		Gere Alta	
	Inderta	Inderta	
		Didibana Dergajen	
		Shehet	
		Wajirat	
		Afderat	
		Hintalo	
		Seharti	
		Selewa	
		Weireb	

Hararge	Diredawa Gursum  Degahabur      Welwel and Warder+    Kelafo*   Kebri Dehar    Gode+   Elkere+   Wabe	Ayisha Fik Hamro* Dihun* Segeg* Degahamedo* Degahabur Aware* Misrak Gashamo* Danot* Boh Geladin Warder Bili Gudi Kelafo Mustahil Ferfer Shekosh Kubri Dehar Debeweyn Shilabo Imi Adadile Gode Serer Wabishebele Afakere Bare Dolobay Weyib Ginir	Ayisha Fik* Hamro* Dihun* Segeg* Degahamedo* Degahabur Aware* Gashamo* Danot* Boh Geladin Warder Bili Gudi Kelafo Mustahil Ferfer Shekosh Kebri Dehar Jeradi Shilabo Imi Adadile Gode Kere Eme Argelie Bare Dolo Tiret Ginir
---------	----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------

+ Rural parts of these Awrajas are Nomadic.

* Weredas Covered Partly.

Region	Awraja	Wereda	Urban Area
Gondar	Chilga	Matebia	
		Alefa Tekusa	
		Qwara	
		Chilga	
		Dib bahir	
	Simien	Debark	
		Beyeda	
		Telemt	
		Janamora	
		Tach Armachiho	
Wollo	Gondar Zuria	Lay Armachiho	
	Rayanna Kobo	Alamata	
		Kobo	
	Awsa	Mile	
	Wag	Wefla	
		Sekota	
		Dehna	Sekota
Shewa			Amdewerk
	Yifatna Timuga	Bure Mudaytu	Debel
	Teguletna Bulga	Dulecha	Dulecha
	Yererna Kereyu	Berehet	Cetiteh Bila



