

GOVT. OF ASSAM
OFFICE OF THE DIRECTOR OF LAND RECORDS & SURVEYS ETC.,
ASSAM, RUPNAGAR::GUWAHATI-32.

No. DLR/ALMIS-13/Survey-Resurvey/2021/25

Dtd. 17/01/2022

From : Gyanendra Dev. Tripathi, IAS
Director of Land Records & Surveys etc., Assam

✓ To : 1. The Deputy Commissioner
Dibrugarh and Tinsukia

2. The SDO (Civil) Sadiya and Margherita



Sub : Guidelines for community led Survey/Re-Survey in the
cadastral villages where maps are missing/ damaged
under 'Mission Basundhara'.

Sir/Madam,

With reference to the subject cited above, I am to inform that guidelines have been evolved for community led Survey/Re-Survey in the cadastral villages where maps are missing/ damaged under 'Mission Basundhara'.

You are requested to kindly ensure that the guidelines are followed for time bound implementation of Survey/Re-Survey in the cadastral villages where maps are missing/ damaged under 'Mission Basundhara'.

Yours faithfully,


Director of Land Records & Surveys etc., Assam
 Rupnagar, Guwahati-12

Memo No. DLR/ALMIS-13/Survey-Resurvey/2021/25 Dtd. 13/01/2022.

Copy to :

1. The Principal Secretary to the Govt. of Assam, Rev. &
D.M. Deptt. Guwahati-6 for favour of kind information.

2. The i/c Joint Director of Surveys, Assam, Dakhingaon,
Guwahati-40 for information.

/
Director of Land Records & Surveys etc., Assam
Rupnagar, Guwahati-12

SOP of community led Survey/resurvey in the cadastral villages where maps are missing/damaged

A. Purpose and Scope

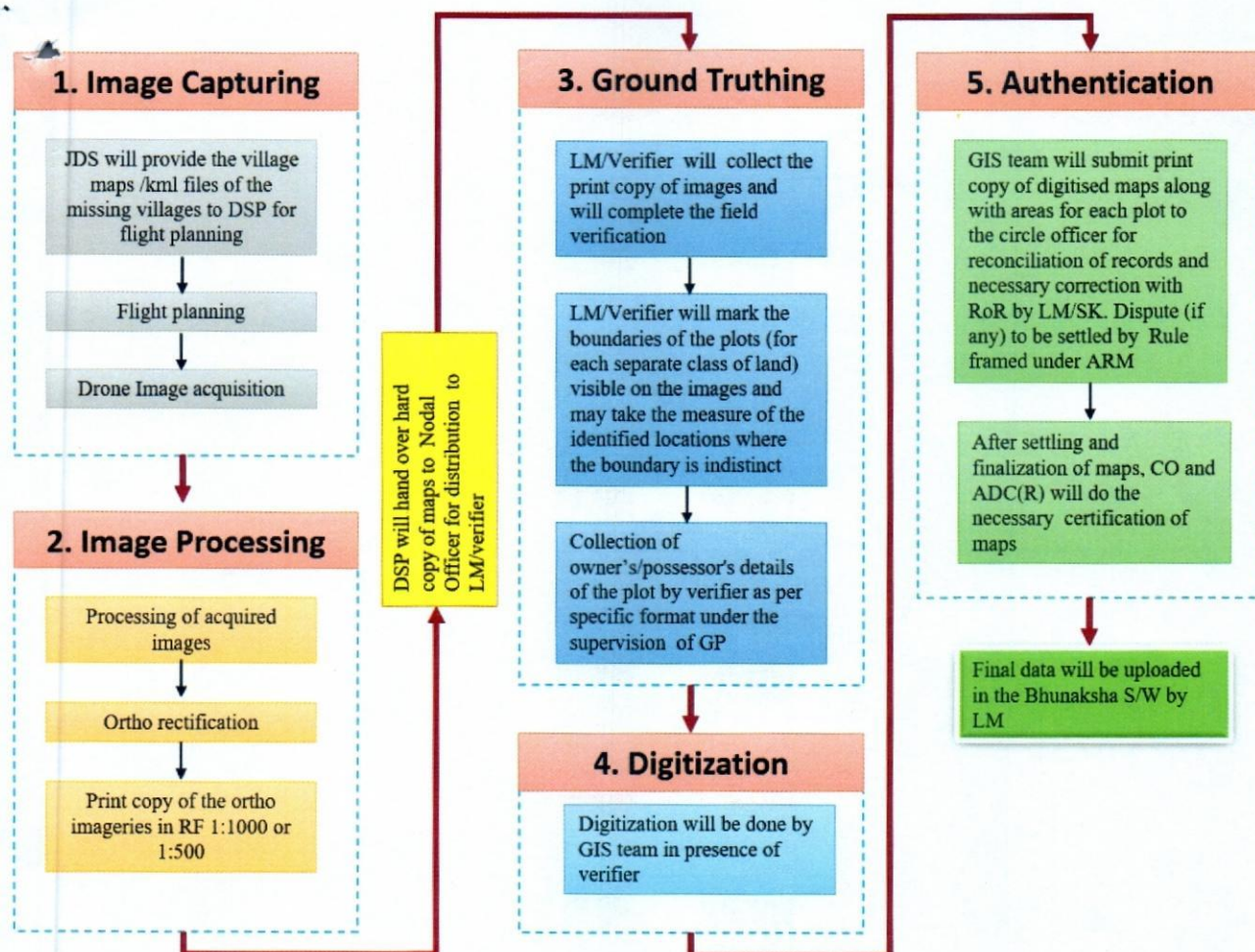
The SOP provides for the procedure to be followed for smooth conduct of resurvey followed by reconstruction of maps in respect of cadastral villages where maps are missing/damaged, in accordance with the principles laid down in statutes including Assam Resettlement Manual.

B. Survey Procedure

The survey process primarily involves **5 stages - image capturing, image processing, ground truthing, digitization and authentication**. The first two stages are outsourced to drone service provider who provides ortho-rectified images after completion of image processing stage. Here comes the role of revenue machinery for ground truthing. After ground truthing the new features are again digitized by DSP and final maps are printed. The printed maps are again verified with records and authenticated by the Deputy Commissioner who is Ex-officio the settlement officer.

Ortho-rectified drone imagery and old maps of the village will be used to for reconstruction of the cadastral maps. In this process marking of village boundary and the bounded plots visible on the image will be performed followed by collection of information (such as *owner/possessor's name, owner/possessor's father name, mobile number, Patta No, Dag no, khajana receipt* etc) for each bounded plot using the format at **Annexure 1** by a **community verifier to be selected preferably from the same village under control and close supervision of jurisdictional Gaon Pradhan and quality check by jurisdictional Lot Mandal**. Utmost care is to be taken while marking unclear boundary on the imagery. Measurements shall be noted down either on the imagery and on a data sheet while marking such unclear boundaries.

After ground truthing the printed image where marking of the boundaries has been done will be collected by *Gaon Pradhan* and the drone service provider will digitize the marked images and provide print copy of it along with areas of each bounded plots for further verification and reconciliation with RoR by Lot Mandal. A process flow is given below.



C. Capacity Building Workshop

Circle level training workshop for capacity building of Lot Mandals, LR staff, Circle Officers, Gaon Pradhan and community verifier will be conducted on field by the teams of Assam Survey. Procedure of marking images and data collection is to be emphasised for timely completion and maintenance of quality standards.

Before start of the ground truthing work of a village there shall be a thorough briefing of all the stake holders and each revenue official and community verifier will take a pledge (Annexure-A) to be administered by the Senior most functionary present.

D. Roles and Responsibilities

DLRS/JDS

1. To provide the list of villages (in consultation with the respective COs/ADC) and available map of the villages to the drone flying agencies for flight planning etc.
2. To supervise and monitor all the activities under Resurvey work.
3. To arrange workshop for CO, SK and Lot Mandal on technical know-how for image verification on site in the districts.
4. To provide logistic support and funds to the DC/SDO(C)/CO under Mission Basundhara
5. To take necessary steps for notifying SO/ASO as per existing rules and to notify Nodal Officer at state level and circle level for smooth operation.

Drone agencies

1. To facilitate GCP marking on the ground.
2. To provide the coordinates of the GCP.
3. To collect image of the villages by drone as per specified resolution.
4. To provide the indexing chart of the images of the villages.
5. To provide raw photo and geo-referenced ortho-mosaic image to the Nodal Officer in the Circle level and state level along-with print copy of ortho-mosaic images (preferably 1:500, 1:1000 scale).
6. To arrange digitisation and feature extraction from the ortho-rectified images after getting the marked images from the Gaon Pradhan.

Nodal Officer - ADC (Revenue)

1. To undertake the IEC programme (community sensitization during verification of parcel boundaries by community verifier, LM and Gaon Pradhan) and provide logistic support to the field hands during the project.
2. To sensitize the VLMCC to make all out effort to complete the updating of maps.
3. To receive the all deliverable (raw photo, ortho-mosaic images, print copy of ortho-images in the scale 1:500, 1:1000 preferably from the drone service provider.
4. To distribute the hard copy of the ortho-mosaic images to LM for further verification and data acquisition by the community verifier.
5. To hand over verified marked images to the GIS team working in the circle for digitization.
6. To take necessary steps for authentication of the final map by Circle Officer and Deputy Commissioner.
7. To arrange to preserve the photo/images in the Circle generated during the whole exercise.
8. To cause updation of the progress in the dashboard of the Mission Basundhara portal.
9. State Level Nodal Officer will collect all the final products and related raw data for preservation.

LR staff/Revenue Official

1. RKG will arrange to provide the draft chitha and Jamabandi of the villages to the SK/LM to prepare list of old dag number and its corresponding new dag number along with areas (A sample format is annexed at Annexure 2).
2. LM will renumber on the old settlement map (wherever available) by putting the new dags against its old dags for reconstructing the map of the village which will be used later for record correction purpose.
3. LM will complete error free demarcation of village boundary.
4. LM will verify ground details collected by the community verifier with the current RoR available digitally in Dharitree/Office Chitha.
5. LM will ensure that measurement for unclear boundary on the photo is taken precisely by the community verifier. Measurements shall be noted in the photo/data sheet used for data acquisition.
6. LM will verify and compare the details collected during image marking with RoR and print copy of digitised maps .

7. LM will return the marked images to the Nodal Officer for further digitization by GIS cell working in the circle office.
8. LM will inform SK/CO for any mismatch of area or possession for rectification as per rules laid down in the ALRR-1886 and **Assam Reassessment Manual (Executive Instruction)**
9. The claims and objections received upon verification to be settled as per rules laid down in the ALRR, 1886, ALRM and Assam Reassessment Manual (Executive Instruction)
10. SK and CO will certify the images that marked by LM before handing over to the Nodal Officer
11. To cause updation of the progress in the dashboard of the Mission Basundhara portal.

Role of Gaon Pradhan (GP)

He will engage and supervise the community verifier and assist LM during field data collection and also sensitize the pattadars, possessors to identify the boundary of their possession/dags etc.

Role of Community Verifier(CV)

1. Verifier will mark the possession of the possessor on the images (i.e., ground truthing) and collect the details as per prescribed format.
2. He/she will help the digitising team during the digitisation of the marked images/photos.

GIS Cell

1. A team under ALMIS/ drone service provider will digitise the verified/marked imageries.
2. The team will provide a print copy of the digitised images for compilation and correction etc.
3. The final map will be printed and handed over to the Nodal Officer for certification by the Circle Officer followed by DC
4. The finally prepared digital map is to be converted into zip files and uploaded on "Bhunaksha" Software by LM for immediate integration with RoR (with the support of NIC, Assam and DIOs,) so that all partitions effected henceforth are reflected in the uploaded map.

E. Engagement of Manpower for marking the boundary on drone images/photo and simultaneous data collection (to complete the task within 4 months)

1. One Survey Assistant (10+2/graduate) having computer knowledge @12000/- per month for a period of 11 months (lot-wise) to assist Lot Mandal or represent LM during field verification and data entry work for preparing new RoR during the resurvey process.

2. CV (minimum 10th pass) (Preferably resident of the village taken for verification and data acquisition) @ 350 per day for the verification period (not exceeding 10 days).

Above the daily wages there shall be incentives as follows:

- a) Rural agriculture land : Rs. 2 per Bigha
- b) Rural habitat land : Rs 5 per Bigha.
- c) Urban Land : Rs 20 per Bigha

F. Important Executive instructions given in the Assam Resettlement Manual is annexed as Annexure-3.

G. Timeline for conducting resurvey/reconstruction of a cadastral village of 1 sq km.

-GCP marking and drone photography	2 days
-Processing and mosaicing of photo	1 day
-Printing of drone captured imagery - along with digitised cadastral map (if any) +image reading	1 day
-Data collection and image marking	5 days
-Map digitization	1 day
-Data compilation/reconciliation and Verification of digitized map followed by record attestation	15 days
-Certificate from the authority	1 day
-Uploading the digital data into Bhunaksha s/w	1 day

xxx

Annexure 1: Format for field data collection

DATA SHEET FOR SURVEYOR/VERIFIER DURING FIELD SURVEY

Name of the Village:

Mouza:

[illegible]

Name of the Community Verifier:

Gaon Pradhan / LM:

Annexure 2: Format for comparative list of dags

[illegible]

Compared by:

Checked by:

Annexure-3: Important Executive instructions given in the Assam Resettlement Manual.

Rule 22- Scope of Map correction -Map correction includes the careful examination of the boundaries of all fields, the correction of all boundaries which are not correct according to possession, the inclusion of any settled land which has escaped unassessed, the amalgamation of adjacent fields in the same ownership, the division of partitioned fields, the recalculation of areas and the renumbering of the map.

Rule 24- Cadastral field- It will be found that whether from mistakes in the original survey or changes since the survey, cases occur in which **the printed boundaries of the last survey do not indicate correctly the limits of settlement-holder's actual possession, the mandal should begin his field work by running at least two check-lines across each village between four theodolite stations and put in a bamboo peg at every five chains** (to be employed **marking of boundary as per possession on the photo/imageries**): he will make corrections of the field boundaries separately within each block so formed by the pegs (to be deleted) and the village boundaries. If there be any serious error extending over the whole village or over a whole block of printed dags, resurvey of the same will have to be undertaken with the previous sanction of the Assistant Settlement Officer. But if the map is found on the whole to be fairly accurate, the mandal must walk along the boundary of each field, with the map, comparing with the eye the field and map boundaries and frequently verifying measurements with tape/a 20 link tar. Rice fields adjoining sarkari lands or occupied high land, must be specially tested, as it is in such cases that encroachments are most common. Errors not exceeding the length of a tar (20 links) need not be taken into account.

Rule 31- renumbering - No change should be made in the numbering of the dags on the map until the completion of map revision and chitha writing. When a cadastral dag is split up into two or more parts one part will receive the number of the parent dag and the rest numbers consecutive to the last number of the chitha; the latter will also be entered in the spare pages at the end of the chitha with cross reference against the original dag. As soon as the work of any village is completed, the map will be serially renumbered in vernacular figures in the field: the number will start from the north-west corner. The changed numbers will also be entered in red ink against the old ones in the chitha.

Rule 35- The rate of progress in map correction should not fall short of **50** numbers a day.

Rule 38 -The testing by Kanongo in each village consists of **a)** The check of 100 percent of changed field boundaries **b)** The verification of 30 pc of unchanged fields, **c)** the running of atleast one check line for each 150 bighas of pencil plotting, that is to say, new fields added since the cadastral survey.

Rule 39- Map certification by Kanongo *"certified that the mandal has finished map revision, and that after examining his work, I am satisfied that it is correct."*

Survey of the village boundary:

Rule 68- The boundaries of all contiguous villages must be compared and the margins of the different sheets, if any of the same village must also be similarly treated. The greatest possible care is necessary in doing this in case of re-traversed and newly traversed villages.

The following two cases will be taken for village boundary survey during this resurvey exercise.

a. Where Maps (old or new) are not available: Mandal/Verifier shall take the print copy of ortho-mosaic images/photos provided by the drone agency and start the village boundary survey by taking the reference from the adjacent village and by the records available.

b. Where maps are available: Available maps/polygon of the villages to be superimposed with the drone image and identify important details for measurements of dag and marking (i.e., ground truthing) and complete the village boundary survey.

Survey of Boundaries of dags:

- (1) **Baris** in the same ownership will be made into one dag.
- (2) Land growing **Sali, Lahi** or **Bao** in the same ownership will be shown as one dag.
- (3) **Faringati** land adjoining **Bari** or **Rupit** land will be shown as a separate dag only if the area **exceeds one bigha**. Otherwise it will be shown with the **Bari** or **Rupit** land it adjoins.

However in the present scenario the number of class of land shall be taken as exist in the district or may be fixed by Deputy Commissioner as deem fit.

Dag correction:

Work will be started from the north-west corner of the village. Recorders must satisfy themselves by inspection that the boundaries of all dags are correct and must check a large proportion by actual measurements. *Any bigger mistake of survey will be corrected by plotting the correct line on the map, and crossing out the wrong line thus (x).* If however the survey correction involves an area **exceeding half a bigha** out of any dag and also involves a change of ownership in that area, the recorder should treat the portion as separate dags giving the number *ka, Kha*, etc., on the map and recording them in the chitha just below* the parent dag with the letters, *ka, Kha*, etc., added to them, filling up all the entries in the chitha against each portion and adding "Dispute" in the remarks column together with the name of the person or persons found in possession. These map correction "disputes"; involving small portions of dags should be disposed of by the Assistant Settlement Officer in the same field season. Before correcting the boundary of any dag the recorder will always measure the boundaries of adjacent dags effected by such correction. He will distribute any error proportionately.

*Note. If no space is available just below the parent dag, this can be done at the end of the Chitha with necessary cross-reference in both the places.

Treatment of the map and chitha in map correction

Any correction made in the map must be at once noted in the chitha.

1. **Survey correction.**—**Errors up to 20 (4 meter) links will be neglected.** Recorders as a rule are far too prone to make corrections involving 10 or 15 links only. When the boundary of a dag is corrected, the area of the dag will be struck out in the chitha against the dag to which a part of another dag comes the following will be noted in the remarks column “অনুক অমুক দাগৰ অংশ আছে”; Against the dag from which a part is taken, the following will be noted in the remarks column “অংশ অনুক অমুক দাগত যায়”. It is sometimes found convenient to indicate the accretions to a particular dag by noting below its number, the number of the dag from which the accretion accrues, the letter “অ”; being added to this latter number only when a part of this dag comes over. When a new dag is made from one existing dag, the new dag will receive a number consecutive to the last dag number in the chitha. Against the parent dag the following will be noted in the remarks column “অংশ অনুক দাগ” dag and against the new dag “অনুক দাগৰ অংশ”.

Any correction made in the map must be at once noted in the chitha.

1. **Survey correction.**—**Errors up to 20 links will be neglected.** Recorders as a rule are far too prone to make corrections involving 10 or 15 links only. When the boundary of a dag is corrected, the area of the dag will be struck out in the chitha against the dag to which a part of another dag comes the following will be noted in the remarks column “অনুক অমুক দাগৰ অংশ আছে”. Against the dag from which a part is taken, the following will be noted in the remarks column “অংশ অনুক অমুক দাগত যায়”. It is sometimes found convenient to indicate the accretions to a particular dag by noting below its number, the number of the dag from which the accretion accrues, the letter “অ” being added to this latter number only when a part of this dag comes over.

When a new dag is made from one existing dag, the new dag will receive a number consecutive to the last dag number in the chitha. Against the parent dag the following will be noted in the remarks column “অংশ অনুক দাগ” and against the new dag “অনুক দাগৰ অংশ”.

2. **Amalgamation of dags.**—The recorder may amalgamate similar dags in the same ownership. Annual dags may be amalgamated with periodic dags only with the previous permission of the Supervisor Kanungo. The Supervisor Kanungo, will report all such cases to the Assistant Settlement Officer for his approval. To facilitate checking this recorder will maintain a list of such dags on the grant dag of the chitha as in rule 8 below. Dags of different tenure (e. g., Khiraj and nisf-khiraj) must not be amalgamated. When dags are amalgamated the recorder will keep one number only in the map, encircling the superfluous numbers. The superfluous dag boundaries will be struck out thus, against the dag number kept the following will be noted in the remarks column of the chitha “অনুক অমুক দাগ চাৰিল” and against the superfluous dag numbers “অনুক দাগত চাৰিল”.

When whole dags are amalgamated the total area will be shown against the number kept.

If mutation is needed before amalgamation can be effected, the recorder will record the mutation and, provided there is no dispute, amalgamate the dags.

3. **Partition.** Contested partitions will not be taken up at all. The parties should be referred to the Settlement Officer. Field partitions will be made by recorders according to possession provided that all the parties in the patta appear and give their consent and **each share is clearly demarcated on the ground.** The signatures of the parties will then be taken in the remarks column of the chitha. In the chitha against the number of the parent dag (the area of which will be crossed out) the letters ত will be written in brackets and the name of person in whose share it will be entered in column 5 as the **dakhalkar** and in the remarks column the word “**batwara**”. Immediately below the parent dag if there be space or otherwise at the end of the chitha the new dags created will be entered and given the letters খ, দ, T, d, etc., with the name of the person to

whom they will fall in column 5 along with the old patta number in column 4. In the map the parent dag will be shown as t and the other dags **খ, দ, ব, T, d, D**, etc. The crop columns will be filled up in all cases. There may be cases in which it will be possible to amalgamate the dags formed by a partition with adjoining dags in the same ownership. In such cases the ordinary rules regarding amalgamation of dags will apply. The above rules do not apply to partitions of lakhiraj and nisf-khiraj lands. Such partitions will be effected in regular cases.

4. Chitha writing in newly surveyed or resurveyed villages. - On completion of the survey, the recorder will begin by numbering the dags in the map beginning from the north west corner and working to the south-east corner. As he numbers, each dag on the map he will enter it also in a new chitha and fill up all the columns excepting those for areas as well as column 5. The names of the present **dakhalkars** will be entered direct in column 3 on the basis of possession. When only part of a village requires resurvey and the changes are numerous a fresh chitha will usually be compiled for the resurveyed portion only. In such cases the connected old dag numbers in the chitha and all entries against them will be struck out and the words "**Chani**" written in the remarks column against each dag. The dags in the resurveyed portion will be numbered serially beginning from the last number already used in the chitha, the existing dag numbers on the map being all encircled, and the other columns filled up as in the case of newly surveyed villages. In the case of periodic fields, however, the connected old dag numbers also will be noted in the remarks column of the chitha as "caqbk dag Amu" **"চাবেক দাগ অমুক"**. In certain cases it may be more convenient to retain the old dag numbers on the map. In such cases only the word "**Chani**" should be entered in the remarks column of the chitha against each altered dag and the area in column 2 crossed out. It will not be necessary to make any cross references about the changed boundaries unless any periodic dag number has to be altogether omitted, which should be explained by cross references. Before re-writing the chitha of resurveyed block the recorder will in every case obtain the orders of the Supervisor Kanungo on the method to be adopted.

Rule 8. List of annual dags for conversion to periodic: Annual dags the boundaries of which are clearly demarcated and which are under permanent cultivation will be listed on the first page of the chitha. The Assistant Settlement Officer after inspection of such dags will give orders as to whether they will be made periodic or not. If he orders a dag to be made periodic he will write myadi in column 4 of the chitha below entry annual land, initial and date it so that when preparing the draft jamabandi these dags will be entered into periodic pattas. this work must be finished in the first field season.

Rule 12. Newly occupied lands: If any Sarkari land (available for settlement) is found to be occupied the name of the occupant will be entered in column 3 and the word New in column 4 of the chitha. if the newly opened land adjoins the patta lands of the same individual and **does not exceed half a bigha** in area the matter will be treated as a survey correction. In other cases a separate daag must be plotted. A list of newly settled dags must also be kept at the beginning of the chitha for the purpose of compiling a Tauzi Bahir list for the current year.

Rule 72 for comparison of areas: Wherever possible, the areas should be checked by the comparison of their block totals for the areas as recorded at the last survey. In dividing the map into blocks, an endeavour should be made to select the smallest possible areas, the external limits of which have suffered no change since the last survey. Any difference not exceeding 3 percent (5 percent in the case of original

cadastral villages) should be rateably distributed among the new dags so as to make the two block total agree with each other. If the changes in the boundaries of dags of any village be so very numerous that a convenient division of the map into suitable blocks becomes very difficult, the total of the areas of all the changed dags will have to be reconciled with the old grand total of the old village area minus the total of the areas of the unchanged dag. In the case of the resurveyed or newly surveyed villages, the grand total of the passed areas of all the dags of the village will have to be reconciled with the old survey area or the U.T area of the village, as the case may be, within 1 (one) percent.

Area Calculation: One percent difference is allowed in passing the total areas of villages whether U.T area or with the Field Register area. (ARM, Map revision-Post resettlement villages)

Marking Dag no: After completion of verification of boundary, Dag numbers are to be marked. Marking of Dag numbers from North West and ends at South East of the map.

Completion of the map: After this as per rules, Chitha and Jamabandi are to be prepared.

Digitising(/Inking) of the map and submission of map : After completion of the record writing, the LR staff would further proceed to correct the digitised maps and Dag nos. Once the digitisation is completed, the print copy of the digital map shall send to Circle Officer and DC for authentication.

Process of Record Attestation

Record Attestations: Preparation of record of rights consisting of Jamabandi based on Chitha and map for an estate.

After a village has been surveyed and demarcated, a draft Chitha is prepared on the basis of actual possession. The Chitha is arranged showing the following particulars:

- 1) The dag No. of the field.
- 2) Area of the field.
- 3) Name and address of the proprietor or settlement holder.
- 4) Class of the field.
- 5) Tenure of the allotment/settlement.

From this draft Chitha, a draft Jamabandi is prepared which arranged according to alphabetical order of the names of the Pattadar. Each Pattadar is then given a Katcha Patta showing the areas which are found in his possession. The entries in the draft Jamabandi are then verified on the spot by an officer and make correction if required. Disputes are disposed off after summary enquiry by the Revenue officer not below the rank of Assistant Settlement Officer/Circle Officer. This field verification of the draft record is known as Record Attestation. After this The draft Chitha and Jamabandi are ready for publication. But they are not made final till assessment of land revenue is fixed.

Annexure-A

Pledge

I, Shri/Smti _____ solemnly affirm that I shall dedicate myself to my duties as a verifier in the resurvey exercise and strive to realize the vision of the mission without fear and favour.

I resolve to commit to the highest standards of honesty, integrity and propriety while discharging my duties towards fulfilling the spirit of the mission.

Name:

Date and Place:

নিশ্চয়োক্তি

মই, শ্রী/শ্রীমতী..... প্রতিশ্রুতিবদ্ধ হওঁ যে, পুনৰ জৰীপ প্রক্রিয়াত এগৰাকী সত্যাসত্য নিৰূপণকাৰক হিচাপে ভীতিহীনতা আৰু পক্ষপাতিত্ববিহীন ভাৱে নিজ কৰ্তব্য পালন কৰি সমগ্ৰ প্রক্রিয়াটো সফলভাৱে ৰূপায়ণ কৰাত উৎসৰ্গিত সেৱা আগবঢ়াম।

নিজ দায়িত্ব সম্পাদনৰ ক্ষেত্ৰত চূড়ান্ত সততা, নিষ্ঠা আৰু নৈতিকতা বৰ্তাই ৰাখি উক্ত প্রক্রিয়াটোৰ লক্ষ্যত উপনীত হোৱাত সহযোগিতা আগবঢ়াম।

নাম-

স্থান-

দিনাংক-