The purpose is to develop a GIS-driven national Feeder Road Database for Planning, Development, and Maintenance of Feeder Roads.

The scope of the inventory and mapping covers all engineered and unengineered Feeder Roads in each district.

The process starts with District Assembly Consultations.

The consultations involve the use of existing District Feeder Roads Maps as reference for sketching in, all the missing roads that are not on the map with the participation of all stakeholders in a “mass-mapping” exercise.

The output from the consultation is an up-to-date sketch map of all the engineered and unengineered roads in the district.

**Survey Process**

1. Desk Study/Consultation
2. District Consultation
3. Survey
4. Deliverables
   - Structures List
   - Road Centerline List
   - Node Definition List
   - Shapefile

**District Consultation**
ASSAMBLEY PERSONS FROM THE DARfur EAST DISTRICT EXPLORING THE DISTRICT MAPS

ASSAMBLEY PERSONS FROM ADAFOAH AND BIG ADA AREA COUNCILS VALIDATING SETTLEMENT NAMES AND LOCATION

ASSAMBLEY PERSONS FROM SEGE AND ANYAMAM AREA COUNCILS VALIDATING SETTLEMENT NAMES AND LOCATION

Captured Features:
Road segments, Culvert/Bridges Infrastructure Facilities settlement locations

Data Capture Equipment:
Trimble Pro XR GPS receiver with sub-metre accuracy.

Mode of Data Capture:
Road segments - line mode Drainage structures - point mode Infrastructure facilities - point mode Settlement locations - point mode

GPS SURVEY & ROAD INVENTORY
The feeder road network is mapped with a "mobile" GPS receiver, recording coordinates of:

- Roads
- Settlements
- Bridges
- Culverts
- Schools
- Health Facilities
- Water Points
- Public buildings

**GPS SURVEY**

**SPACE IMAGES FOR ROAD IDENTIFICATION**

**ATTRIBUTES OF ROAD INVENTORY**

1. Date
2. District No.
3. Road No.
4. Start Node Name
5. End Node Name
6. Start Chainage
7. End Chainage
8. Functional Class I/C/A
9. Engineering Class E/P/N
10. Road Width
11. Pavement P/U
12. Surfacing R/G/S/C
13. Side Drains L/U
14. Topography
15. Roughness G/F/P
16. Camber G/F/P
17. Drainage G/F/P
18. Traffic H/M/L

**ATTRIBUTES OF DRAINAGE STRUCTURE INVENTORY**

1. Date
2. District Code
3. Road No.
4. Start Node Name
5. End Node Name
6. STRUCTURE No.
7. River Name
8. GPS Northings
9. GPS Eastings/Westings
10. Chainage (km+m)
11. STRUCTURE TYPE (eg BC, SB, CP)
12. SIZE (mm) n / dia, n / W x H
13. LENGTH (M)
14. Headwall (0/1/2)
15. Structure Condition Rating (1-5)
16. Notes

**DATABASE DEVELOPMENT**
### SUMMARY – Zone 1

At the end of the survey:

<table>
<thead>
<tr>
<th>Type</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>Engineered Roads</td>
<td>8,814 km</td>
</tr>
<tr>
<td>Partially Engineered</td>
<td>1011 km</td>
</tr>
<tr>
<td>Non-Engineered Roads</td>
<td>1,879 km</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td>11,703 km</td>
</tr>
</tbody>
</table>

### CONCLUSIONS

- GPS/GIS/RS are essential tools for capturing, updating and visualizing road network data for efficient road maintenance planning and management.
- GIS provides the platform for the creation and manipulation of a spatial database for visualizing road attributes such as, surface type, surface condition, traffic volume and any other road related attributes.
- The participation of local people in the capture of road related data is essential for ensuring data integrity.

Thank You.