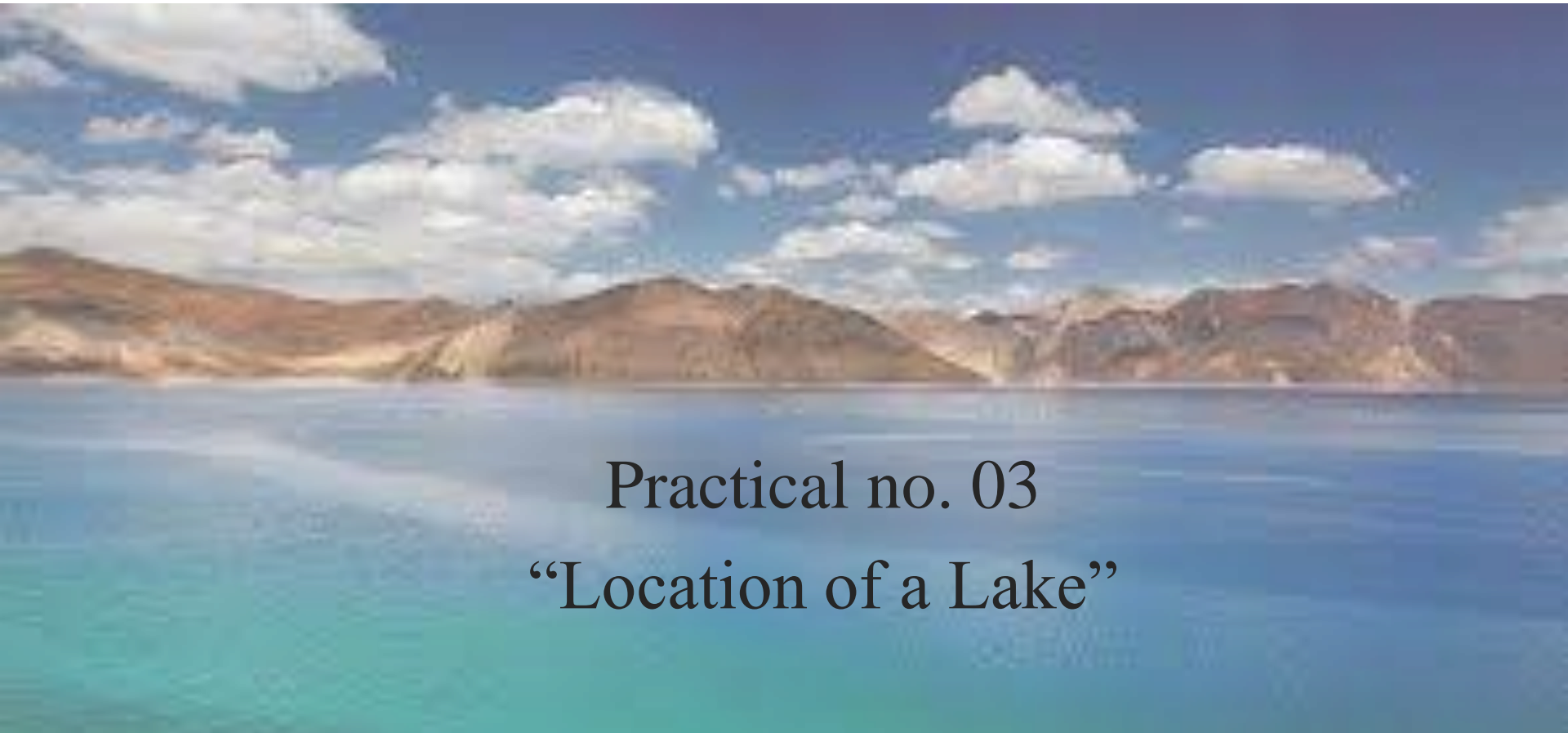


Aquatic Resources Management

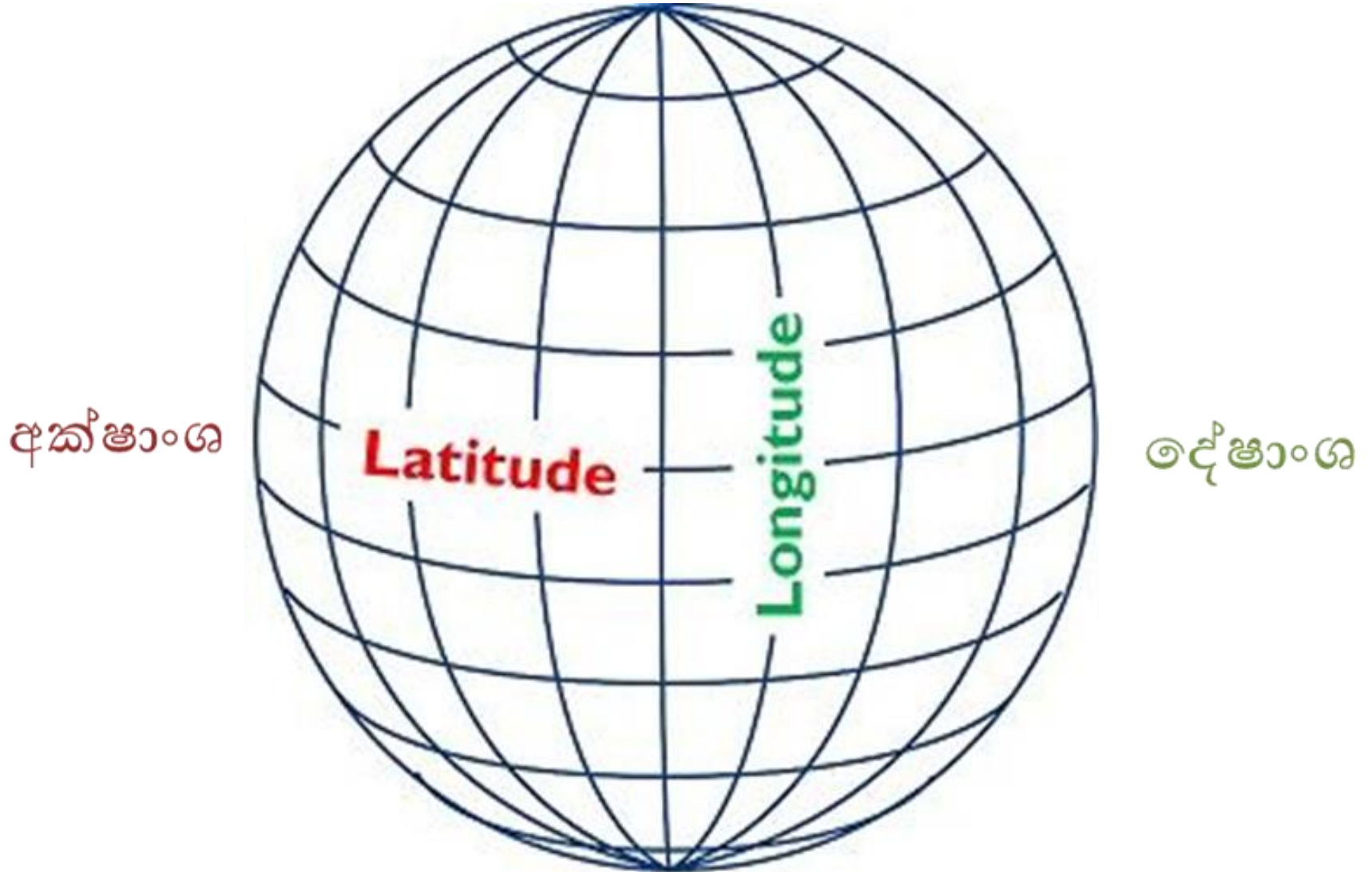
ARM 101 1.0

Basic Limnology

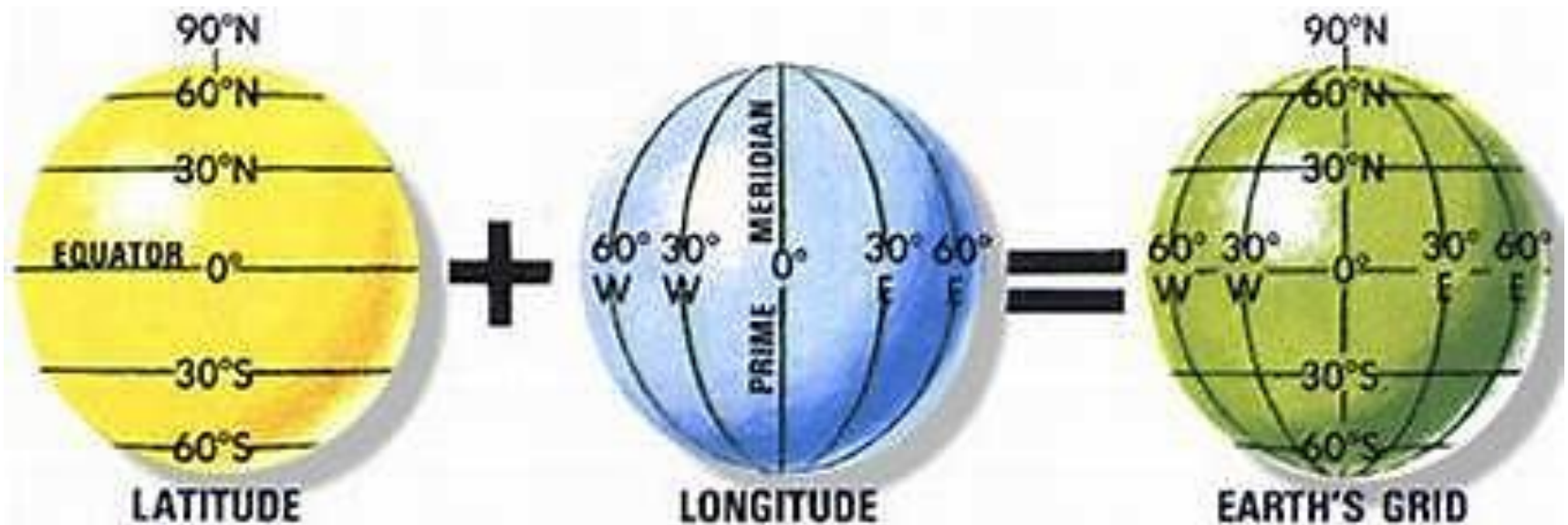


Practical no. 03
“Location of a Lake”

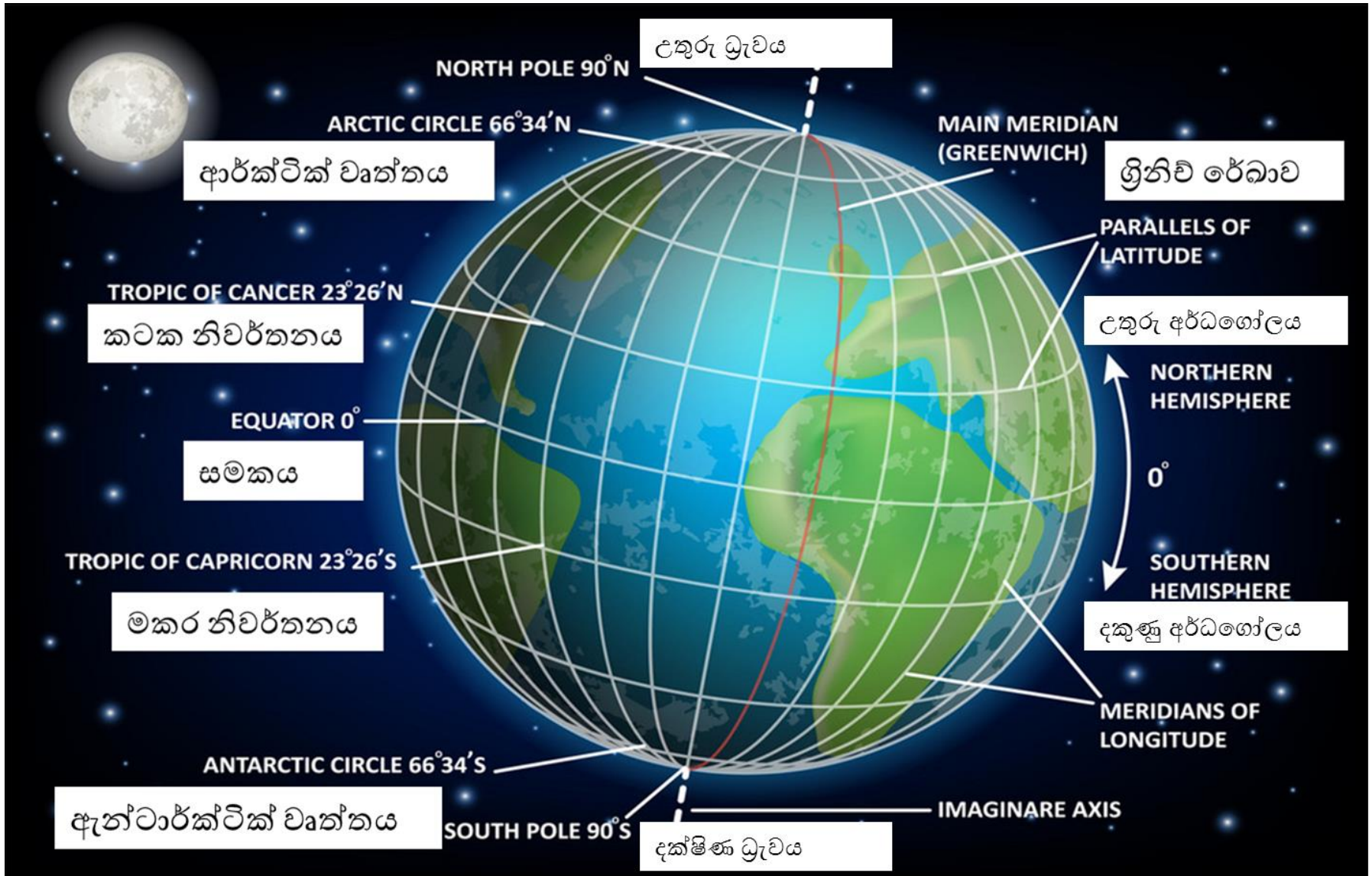
Latitude Vs. Longitude



- Lines of latitude are horizontal lines that stretch from east to west across the globe. The longest and main line of latitude is called the Equator. The Equator is represented as 0° latitude.
- Lines of longitude are vertical lines that stretch from the North Pole to the South Pole. The main line of longitude is called the Prime Meridian. The Prime Meridian is represented as 0° longitude.



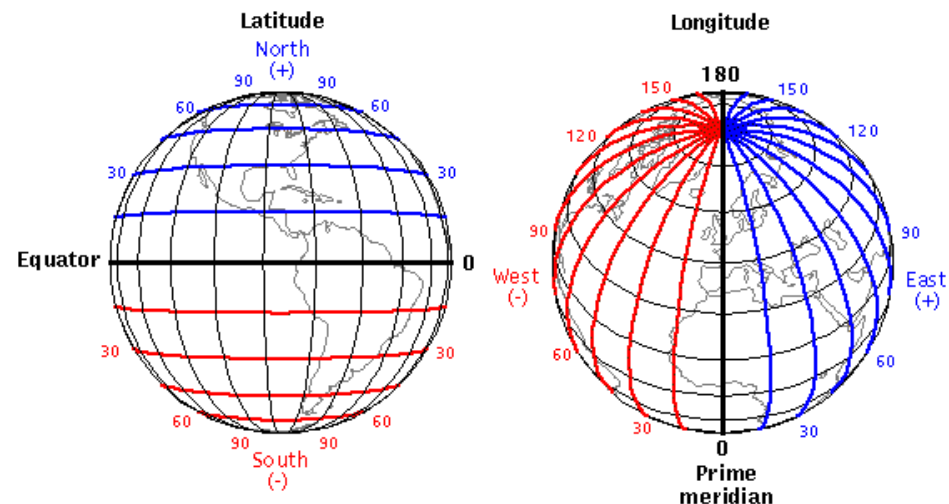
Major Longitudes and Latitudes



Geographical Location

- GPS – Global Positioning System

A system used for worldwide navigation and surveying. It is commonly used for pinpointing one's exact location anywhere on the Earth's surface and obtaining the current time at a specific location.





GPS is made possible by the network of 24 man-made satellites, called GPS satellites, which orbit above the Earth at great speeds and precision. Using low-powered radio waves, devices can communicate with the satellites to accurately determine one's location on the globe.

Coordinate formats

– **Decimal degrees (DD)**

- The space between each line of latitude or longitude representing 1° is divided and expressed as decimals.

– **41.40338° E / 2.17403° N**

– **Degrees and decimal minutes (DMM)**

- The space between each line of latitude or longitude representing 1° is divided into 60 minutes, and each minute is further divided and expressed as decimals.

– **$41^\circ 24.2028'$ E / $2^\circ 10.4418'$ N**

– **Degrees, minutes, and seconds (DMS)**

- The space between each line of latitude or longitude representing 1° is divided into 60 minutes, and each minute is divided into 60 seconds.

– **$41^\circ 24' 12.2''$ E / $2^\circ 10' 26.5''$ N**

Distribution



9° 50' 8"

5° 55' 7"

79° 31' 0"

81° 52' 45"

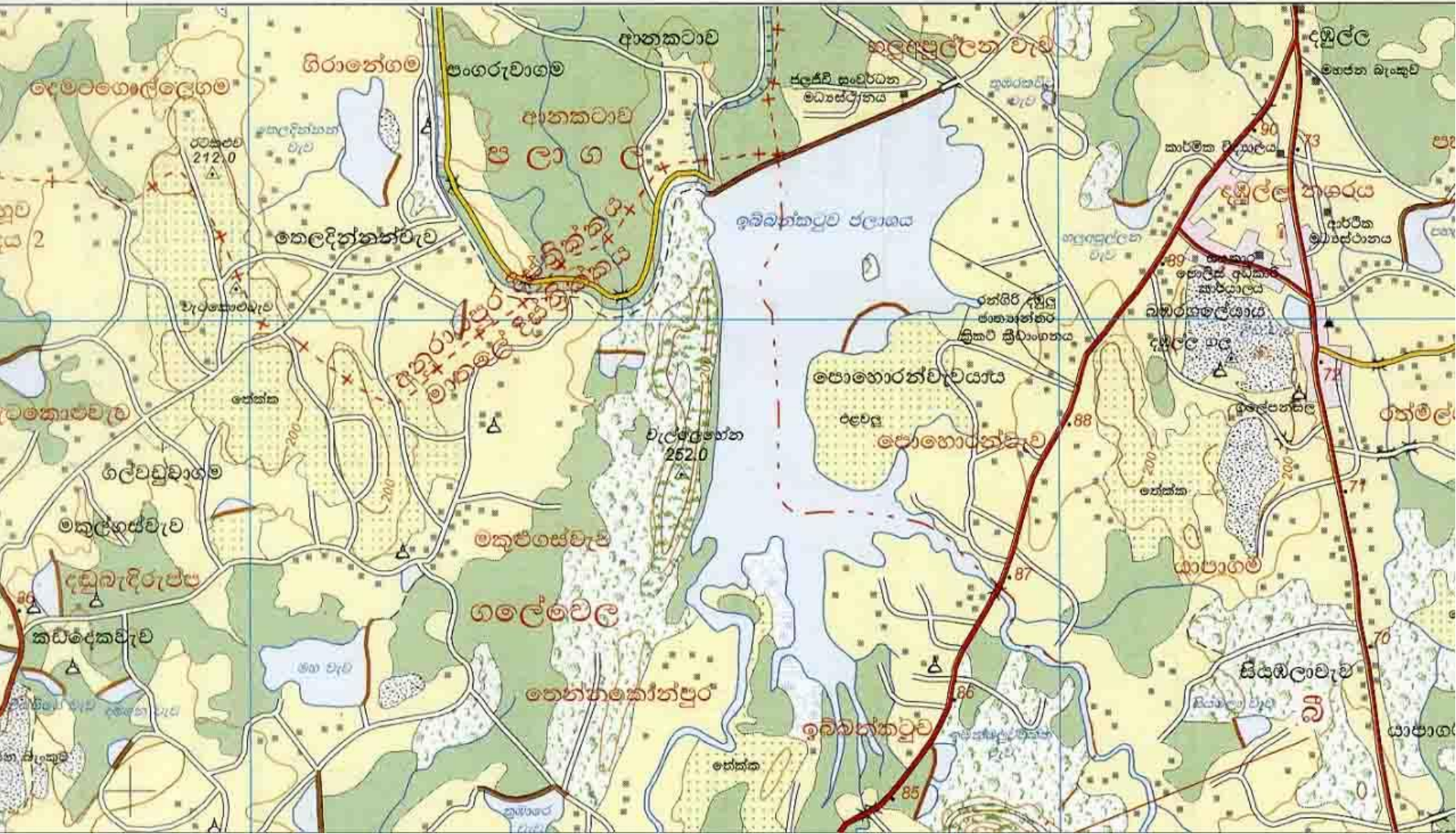
Location of a Lake

ශ්‍රී ලංකා 1:50,000
අංක 42 දඹුල්ල සිතියමෙන් කොටසක්

80°35'

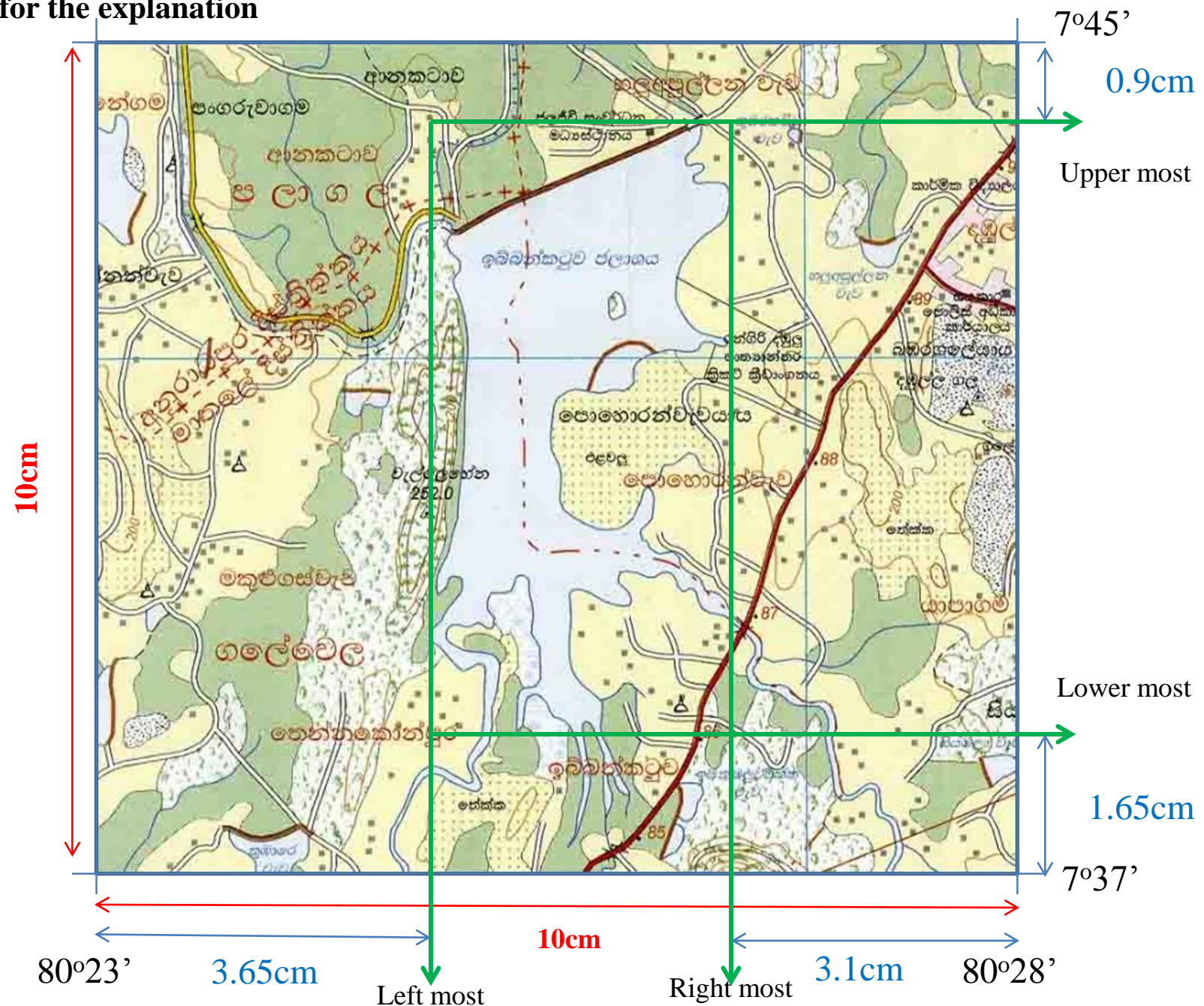
180

185



***Given coordinate values are NOT the actual values.**

Used only for the explanation



- Considering latitudes

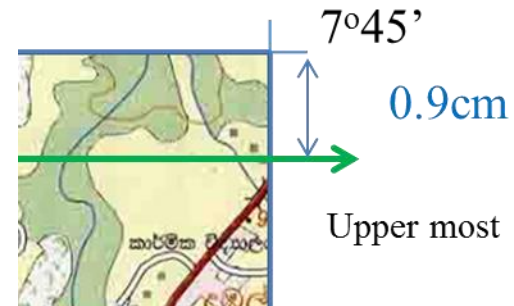
- $0^{\circ} 8'$ represented by 10 cm

- 1 cm represents $0^{\circ} 0.8'$ ($= 0^{\circ} 0' 48''$)

- **For upper most level**

- 0.9 cm represents $0^{\circ} 0.72'$ ($0^{\circ} 0' 43.2''$). Therefore 43.2 seconds should be reduced from the given upper coordinate value $7^{\circ} 45'$

$$\begin{array}{r}
 7^{\circ} 45' 00'' \\
 - 0^{\circ} 00' 43.2'' \\
 \hline
 \mathbf{7^{\circ} 44' 16.8''}
 \end{array}$$



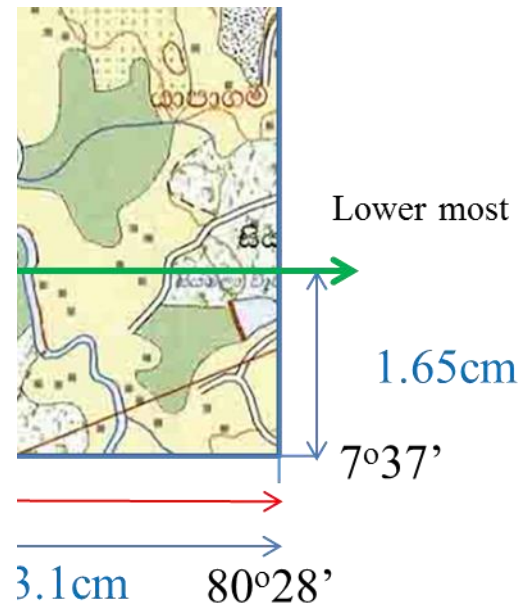
***Given coordinate values are NOT the actual values.**

Used only for the explanation

– For lower most level

- 1.65 cm represents $0^{\circ} 1.32'$ ($0^{\circ} 1' 19.2''$). Therefore 1 minute and 19.2 seconds should be added from the given lower coordinate value $7^{\circ} 37'$

$$\begin{array}{r} 7^{\circ} 37' 00'' \\ +0^{\circ} 01' 19.2'' \\ \hline 7^{\circ} 38' 19.2'' \end{array}$$



***Given coordinate values are NOT the actual values.**

Used only for the explanation

- Considering longitudes

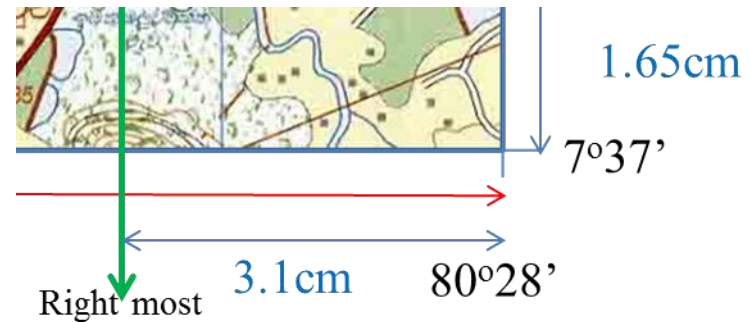
- $0^{\circ} 5'$ represented by 10 cm

- 1 cm represents $0^{\circ} 0.5'$ ($= 0^{\circ} 0' 30''$)

- **For right most level**

- 3.1 cm represents $0^{\circ} 1.55'$ ($0^{\circ} 1' 33''$). Therefore 1 minute 33 seconds should be reduced from the given upper coordinate value $80^{\circ} 28'$

$$\begin{array}{r}
 80^{\circ} 28' 00'' \\
 - 0^{\circ} 01' 33'' \\
 \hline
 \mathbf{80^{\circ} 26' 27''}
 \end{array}$$



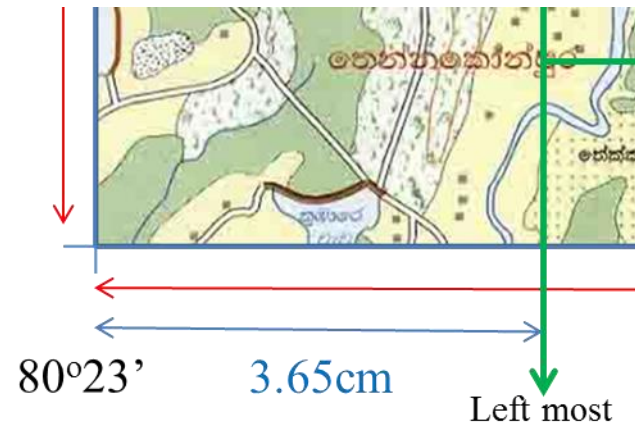
***Given coordinate values are NOT the actual values.**

Used only for the explanation

– For left most level

- 3.65 cm represents $0^{\circ} 1.825'$ ($0^{\circ} 1' 49.5''$). Therefore 1 minute 49.5 seconds should be added from the given lower coordinate value $80^{\circ} 23'$

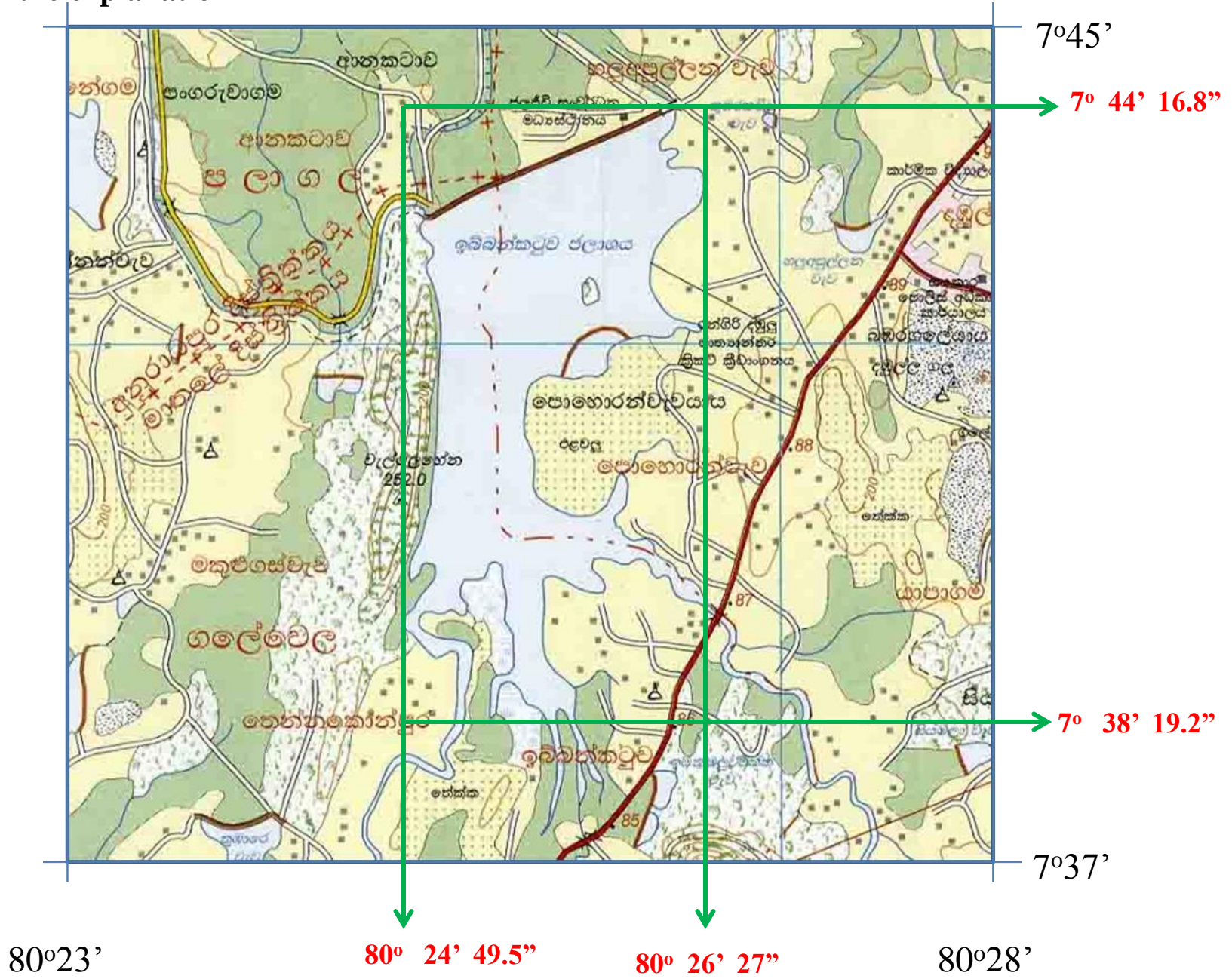
$$\begin{array}{r} 80^{\circ} 23' 00'' \\ + 0^{\circ} 01' 49.5'' \\ \hline 80^{\circ} 24' 49.5'' \end{array}$$



***Given coordinate values are NOT the actual values.**

Used only for the explanation

***Given coordinate values are NOT the actual values.
Used only for the explanation**





Thank you