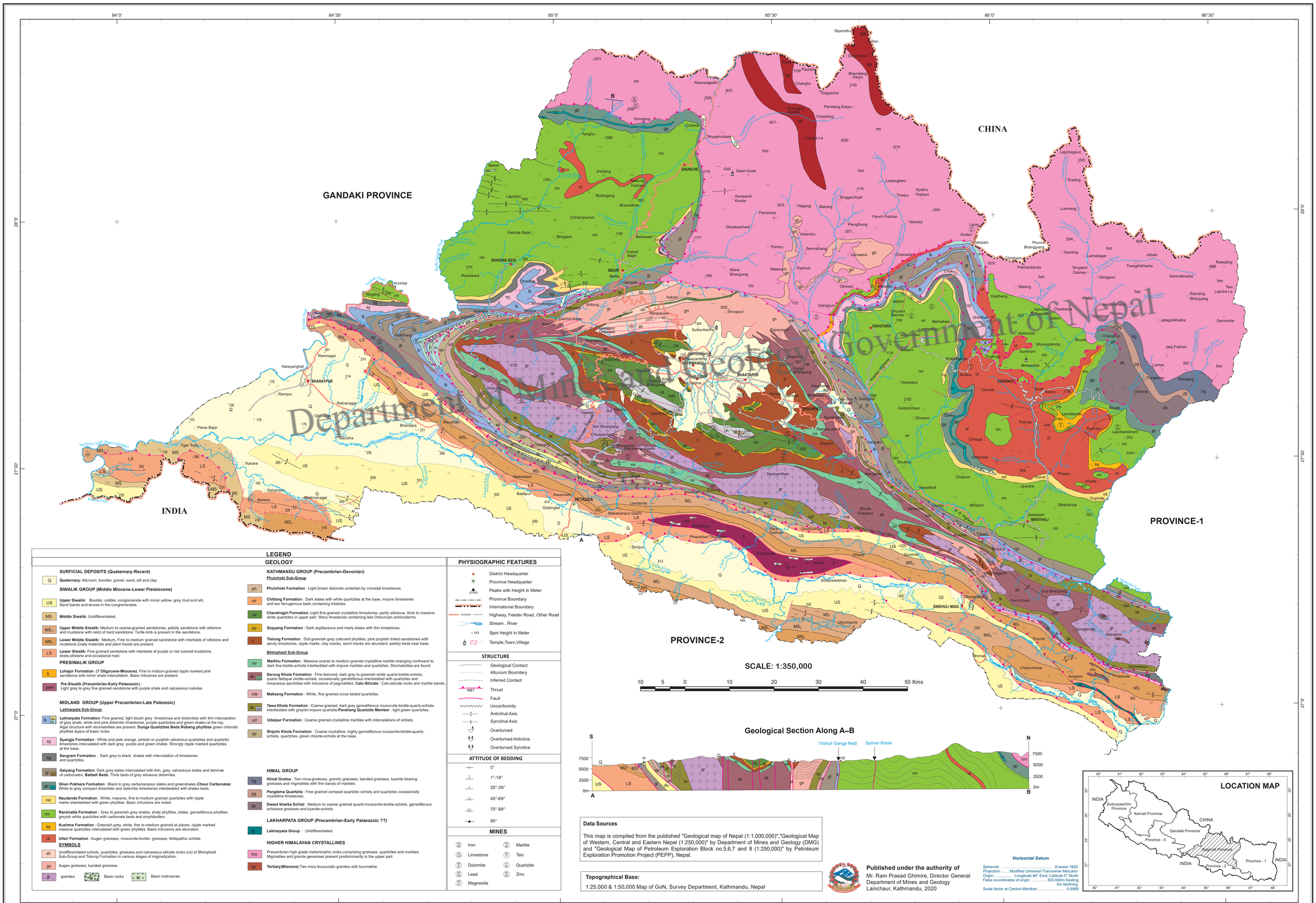
GEOLOGICAL MAP OF BAGMATI PROVINCE, NEPAL



SCALE: 1:350,000

10 5 0 10 20 30 40 50 Kms

LEGEND

GEOLOGY

SURFICIAL DEPOSITS (Quaternary-Recent)

Q — **Quaternary:** Alluvium, boulder, gravel, sand, silt and clay.

SIWALIK GROUP (Middle Miocene-Lower Pleistocene)

US — **Upper Siwalik:** Boulder, cobble, conglomerate with minor yellow, grey mud and silt, Sand bands and lenses in the conglomerates.

MS — **Middle Siwalik:** Undifferentiated.

MS_2 — **Upper Middle Siwalik:** Medium to coarse-grained sandstones, pebbly sandstone with siltstone and mudstone with relict of hard sandstone. Turtle limb is present in the sandstone.

MS_1 — **Lower Middle Siwalik:** Medium, Fine to medium grained sandstone with interbeds of siltstone and mudstone.Coaly materials and plant fossils are present.

LS — **Lower Siwalik:** Fine grained sandstone with interbeds of purple or red colored mudstone, shale,siltstone and occasional marl.

PRESIWALIK GROUP

lj — **Lohajor Formation (? Oligocene-Miocene):** Fine to midium grained ripple marked pink sandstone with minor shale intercalation. Basic intrusives are present.

psw — **Pre-Siwalik (Precambrian-Early Palaeozoic) :** Light grey to grey fine grained sandstone with purple shale and calcareous nodules.

MIDLAND GROUP (Upper Precambrian-Late Paleozoic)

Lakharpata Sub-Group

lk (au, lb) — **Lakharpata Formation**: Fine grained, light bluish grey limestones and dolomities with thin intercalation of grey shale, white and pink dolomitic limestones, purple quartzites and green shales at the top. Algal structure with stromatolites are present. **Dunga Quartzites Beds**.**Robang phyllites** green chlorotic phyllites layers of basic rocks.

sy — **Syangja Formation** : White and pale orange, pinkish or purplish calcarious quartzites and quartzitic limestones intercalated with dark grey purple and green shales. Strongly ripple marked quartzites at the base.

sg — **Sangram Formation** : Dark grey to black shales with intercalation of limestones and quartzites.

gy (ta) — **Galyang Formation**: Dark grey slates intercalated with thin, grey, calcareous slates and laminae of cartonates. **Baitadi Beds**: Thick beds of grey siliceous dolomites.

gp (nd) — **Ghan Pokhara Formation** : Black to grey carbonaceous slates and greenshales.**Chour Carbonates**: White to grey compact dolomites and dolomitic limestones interbedded with shales beds.

nd — **Naudanda Formation** : White, massive, fine to medium grained quartzites with ripple marks interbedded with green phyllites. Basic intrusions are noted.

rm — **Ranimatta Formation :** Grey to greenish grey shales, shaly phyllites, slates, garnetiferous phyllites greyish white quartzites with carbonate beds and amphibolites.

ks — **Kushma Formation** : Greenish grey, white, fine to medium grained at places, ripple marked massive quartzites intercalated with green phyllites. Basic intrusions are abundant.

ul — **Ulleri Formation** : Augen gneisses, muscovite-biotite- gneisses, feldspathic schists.

SYMBOLS

sh — Undifferentiated schists, quartzites, gneisses and calcareous silicate rocks (cs) of Bhimphedi Sub-Group and Tistung Formation in various stages of migmatization.

gn — Augen gneisses, banded gneisses.

gr (gr) — granites. Basic rocks (v, bi, v) Basic Instrusives

KATHMANDU GROUP (Precambrian-Devonian)

Phulchoki Sub-Group

ph — **Phulchoki Formation** : Light brown dolomite underlain by crinoidal limestones.

ch — **Chitlang Formation** : Dark slates with white quartzites at the base, impure limestones and two ferrugenous beds containing trilobites.

ca — **Chandragiri Formation**: Light fine grained crystalline limestones, partly siliceous, thick to massive, white quartzites in upper part. Wavy limestones containing late Ordovician echinoderms.

so — **Sopyang Formation** : Dark argillaceous and marly slates with thin limestones.

ti — **Tistung Formation** : Dull greenish grey coloured phyllites, pink purplish tinted sandstones with sandy limestones, ripple marks, clay cracks, worm tracks are abundant, pebbly beds near base.

Bhimphedi Sub-Group

mr — **Markhu Formation** : Massive coarse to medium grained crystalline marble changing northward to dark fine biotite-schists interbedded with impure marbles and quartzites. Stromatolites are found.

sk (cs) — **Sarung Khola Formation** : Fine textured, dark grey to greenish white quartz-biotite-schists, quartz feldspar biotite-schists, occasionally garnetiferous interbedded with quartzites and micaceous quartzites with intrusions of pegmatites. **Calc-Silicate** : Calc-silicate rocks and marble bands.

mk — **Maksang Formation** : White, fine grained cross beded quartzites.

ta (pz) — **Tawa Khola Formation** : Coarse grained, dark grey gametiferous muscovite-biotite-quartz-schists interbedded with greyish impure quartzite.**Pandrang Quartzite Member** : light green quartzites.

ud — **Udaipur Formation** : Coarse grained crystalline marbles with intercalations of schists.

sp — **Shiprin Khola Formation** : Coarse crystalline, highly gametiferous muscovite-biotite-quartz-schists, quartzites, green chlorite-schists at the base.

HIMAL GROUP

hg — **Himal Gneiss** : Two mica-gneisses, granitic gneisses, banded gneisses, kyanite bearing gneisses and migmatites with thin bands of marbles.

pg — **Panglema Quartzite** : Fine grained compact quartzitic schists and quartzites occasionally crystalline limestones.

dk — **Dware kharka Schist** : Medium to coarse grained quartz-muscovite-biotite-schists, garnetiferous schistose gneisses and kyanite-schists.

LAKHARPATA GROUP (Precambrian-Early Palaeozoic ??)

pz — **Lakharpata Group** : Undifferentiated.

HIGHER HIMALAYAN CRYSTALLINES

hm — Precambrian high grade metamorphic rocks comprising gneisses, quartzites and marbles. Migmatites and granite geneisses present predominantly in the upper part.

tgr — **Tertiary(Miocene)**:Two mica leucocratic granites with tourmaline.

PHYSIOGRAPHIC FEATURES

- District Headquarter
- Province Headquarter
- Peaks with Height in Meter (8,848)
- Province Boundary
- International Boundary
- Highway, Feeder Road, Other Road
- Stream , River
- Spot Height in Meter (143)
- Temple,Town,Village

STRUCTURE

- Geological Contact
- Alluvium Boundary
- Inferred Contact
- Thrust (MBT)
- Fault
- Unconformity
- Anticlinal Axis
- Synclinal Axis
- Overturned
- Overturned Anticline
- Overturned Syncline

ATTITUDE OF BEDDING

- 0°
- 1°-19°
- 20°-39°
- 40°-69°
- 70°-89°
- 90°

MINES

Iron	Marble
Limestone	Talc
Dolomite	Quartzite
Lead	Zinc
Magnesite	

Geological Section Along A–B

Data Sources

This map is compiled from the published "Geological map of Nepal (1:1,000,000)","Geological Map of Western, Central and Eastern Nepal (1:250,000)" by Department of Mines and Geology (DMG) and "Geological Map of Petroleum Exploration Block no.5,6,7 and 8 (1:250,000)" by Petroleum Exploration Promotion Project (PEPP), Nepal.

Topographical Base:

1:25,000 & 1:50,000 Map of GoN, Survey Department, Kathmandu, Nepal

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Horizontal Datum

Spheroid: ..... Everest 1830
Projection : .... Modified Universal Transverse Mercator
Origin: ..... Longitude 84° East, Latitude 0° North
False co-ordinates of origin: ..... 500 000m Easting
0m Northing
Scale factor at Central Meridian: 0.9999

LOCATION MAP