The Dehang Debang Biosphere Reserve (DDBR) of Eastern Himalayan state of Arunachal Pradesh is a unique ecosystem with rich floristic diversity, high concentration of rare and endemic species and bio-cultural diversity. The different tribes of the BR such as Adis, Galos, Membas, Khambas, Boris, Bokars, Milangs, Mishmis etc. are fully dependent on natural resources of the BR for day to day necessities such as foods, shelter, medicine, fodder, fibres, dyes, etc. Due to its remoteness of the location, the populations are completely deprived from modern medical facilities. In spite of the richness of flora and cultural diversity no proper documentation has been made particularly on medicinal flora. Hence an ethno-medico-botanical investigation was carried out to study the diversity of medicinal plants and healing practices adopted by the tribes in the DDBR. The study was conducted selecting some specific villages particularly in the Siang part of the BR with extensive questionnaire methods and discussion with herbal practitioners.

The present ethnobotanical investigation has recorded 209 species of ethnomedicinally important plants belonging to 162 genera of 80 families of which the dicotyledonous plants were used more frequently representing 163 species followed by monocotyledons with 40 species and 6 species of Pteridophytes in the treatment of various ailments by herbal practitioners. Urticaceae, Euphorbiaceae and Zingiberaceae are the most dominant families with 9 to 10 species followed by Asteraceae, Solanaceae and Rubiaceae, Anacardiaceae and Poaceae. Araceae, Moraceae, Polygonaceae and Verbenaceae are represented by 5 to 8 species. Herbs were used most frequently with 85 species followed by shrubs (44 spp), trees (52 spp) and climbers (28s spp). About 80% species are found to be collected only from wild. Among the plant parts, leaves were used more frequently where 106 species were used followed by fruits from 76 species, stems from 64 species, roots from 58 species and flowers from 23 species. Tubers, rhizomes and latex were found to be least used parts where less than 10 species recorded in each. Overall these parts were used in various formulations for the treatment of 31 different ailments by herbal practitioners. Analysis based on plant species used in the treatment of various ailments revealed that maximum species (111) were used in digestive system disorders which is followed by inflammation and wound healing (56 spp), reproductive system disorders (20 spp), pain (24 spp), fever (18 spp), respiratory system disorders (18 spp), circulatory system disorders (12 spp), nervous system disorders (11 spp), snake bite and scorpion sting (10 spp), dental
problems (8 spp), general metabolism (16 spp) and bone fracture (7 spp) while least in eye
and ear ailments represented by 4 species. Among the highly used medicinal plants the
common species are *Houttuiniya cordata*, *Clerodendrum colebrookianum*, *Andrographis
paniculata*, *Centella asiatica*, *Costus speciosus*, *Paederia scandens*, *Garcinia pedunculata*,
*Drymaria diandra*, *Gynocardia odorata*, *Campylandra aurantiaca*, *Pothos scandens* etc.

The average informants’ consensus (Fic) value for all disease categories was 0.62
indicating the homogeneity of information provided by different informants is high hence
medicinal system is relatively well defined. It was also found that *Pothos scandens* has the
highest fidelity level (100%) followed by *Solanum torvum*, *Psidium guajava* (98.6%). While
*Acorus calamus* and *Adhatoda zeylenica* show the lowest fidelity level (73.33% and 66.67).
Most of the plant species used singly in the treatment of specific diseases or ailments, only
few plant species is administered in association with different plant species as compound
drugs.

Among the various constraints on sustainable harvesting the inaccessibility, lack of
awareness, lack of information on market value and market channel etc. were found as major
ones which hinder any promotional and developmental activities to be initiated in the BR.
Although the species like *Coptis teeta*, *Aconitum ferox*, *Campylandra aruntiaca*, *Paris
polyphylla*, *Rubia manjith*, *Piper longum*, etc. are commonly found having good market
potentiality but due to the inaccessibility the communities are lagging behind the market
linkage.

The present investigation yielded various useful information on medicinal plants and
the healing practices used by the communities. The present work will serve as first-hand
information on ethnomedicobotany that enumerates the medicinal plants with their taxonomic
citation, key identifying characters, distribution and utilization pattern of recorded species. As
no comprehensive accounts on the occurrence and utilization pattern of medicinal plant is
available for the DDBR, the present thesis work assume a greater significant in bridging the
gap. The present report may be helpful for selection and cultivation of potential medicinal
plants, baseline information for a pharmacological screening against their claimed activities,
ecological studies of RET species and conservation and management of biosphere reserve.