31. Model for deriving biomass carbon from Normalized Difference Vegetation Index (NDVI)

Type: New Technology
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Name of Inventor

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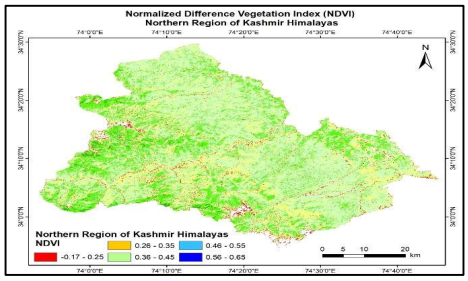
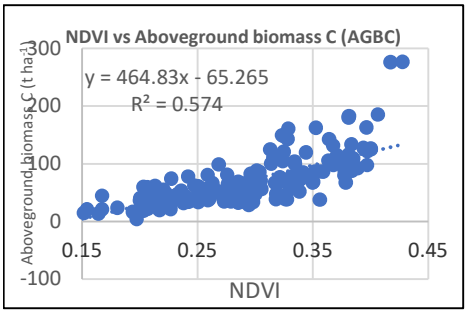
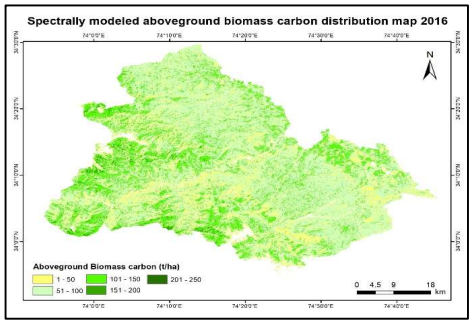
Description of Technology

- Biomass carbon (Mgha^{-1}) has been worked out for different forest types and crown density classes (open with 10-40 % crown density and closed with > 40 % crown density) from different sites across northern region of Kashmir Himalayas using field data (188 field sample plots of 0.1 ha each).
- ecommended equations, ratios and factors were used to generate field based results on biomass carbon.
- Normalized difference vegetation index (NDVI) was generated and spectral values were extracted to establish relation (R^2 = 0.574, p< 0.01) with the field inventory data.
- Spectral model developed was developed y = 464.83x - 65.265.
- This model has wide applicability over Kashmir coniferous forest region.







Impact

- Biomass carbon assessment and monitoring made easy in similar forests.
- Reduced or no ground work required. May be required only to validate the results.
- Significant cost reduction with the requirement of satellite image of the relevant area and date.
- Robust and accurate and applicable to wider areas for biomass carbon estimation.

Commercial applicability

Although there is no direct financial applicability, the model developed remains a property of SKUAST-K and cannot be used by any other organization without giving credits to the actual developer. The technology has stakeholders:-

- State Forest Department J&K for estimation of biomass carbon maps in different Kashmir regions.
- Ministry of Environment Forests and Climate Change for regional data assessment.
- Research organizations/Institutes/Universities like (ICFRE, IISc, IIRS, FSI and GBPNIHESD) working on forest carbon and climate change.
- International organizations acting as governing bodies on climate change UNFCCC, IPCC.