

Assessment of Regional Bioenergy Potential in India

A Proposal submitted to:

Indo German Energy Forum (IGEF), GIZ India

Ministry of New and Renewable Energy, Government of India

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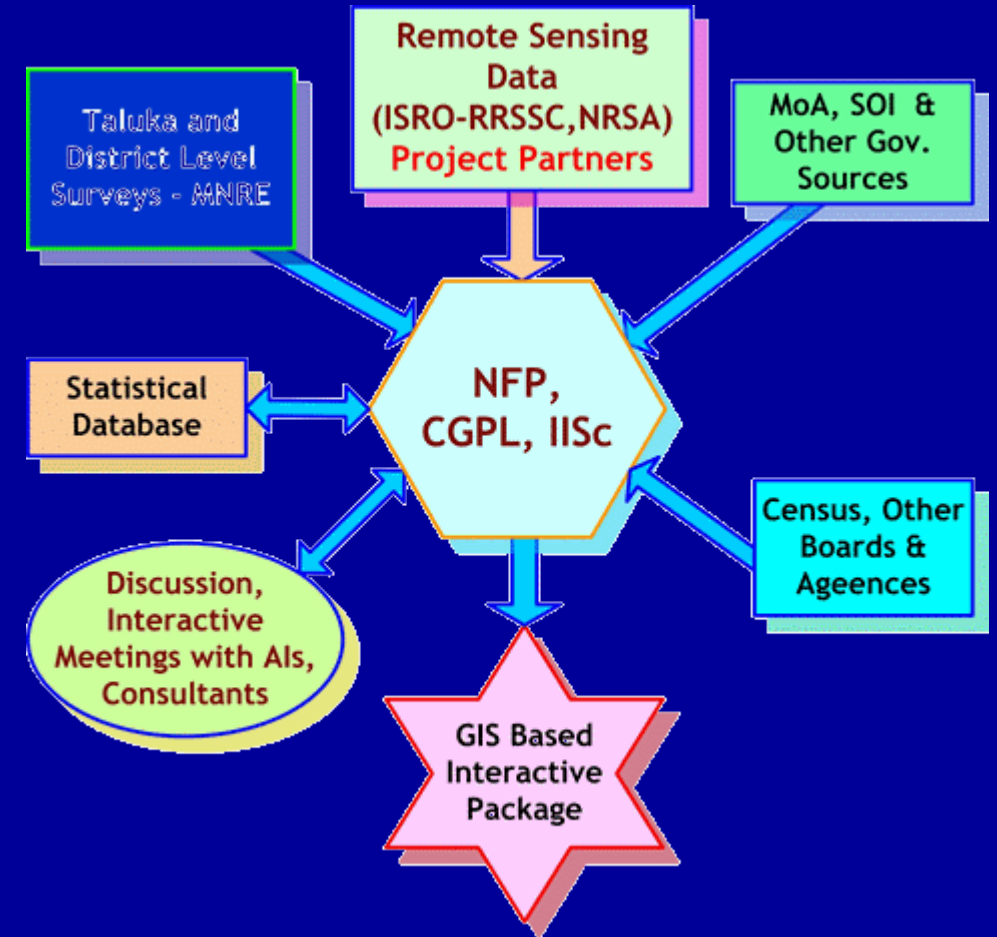
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A Collaborative Research:

- Academically and technically well established teams of both BU and IISc are extending to join hands and jointly develop a new more dependable model for Biomass Assessment.
- The technique developed at IISc for a web-enabled Biomass atlas with updated for selective zones of interest would be used as initial data layer.
- Data validation would be made with new ground-truth data obtained afresh.
- BU team to complete the modelling and optimizations.
- IISc to integrate them to the atlas for reaching better reliability and quality of the data.

Approach of Work at IISc

- The work involved multi-organizational input and IISc used them for analysis, filtering and integration into a single window source as atlas.
- RSD, obtained from NSRC (ISRO) has provided the base line for analysis of the land usage as regards to agro, forest and waste lands.
- Ground truth information in statistical form from MoA (Min. of Agriculture) and other agencies have provided path for identifying and mapping the agricultural crop patterns.
- Surveys got made by MNRE at district level on the biomass consumption pattern have provided the utilization pattern for the biomass grown.



Approach of Work at IISc (...)

- The data have been rationalized, analyzed and tools are developed to interpret the RSD appropriately using the ground truth data and generate the data for the estimates of biomass production.
- The data from the district surveys are analyzed, verified for consistency and biomass utilization factors are evolved using this data and the prevailing socio-economic considerations.
- The integration of all the data is made into a GIS based electronic database and web-enabled user interface developed to host the atlas for public view. The atlas covering nationwide data can be seen at <http://lab.cgpl.iisc.ernet.in>.

Enhancements Envisaged in this Proposal

- The accuracy of the predicted crop pattern now has an assumption that NDVI for each crop has a fairly distinct signature and at places of narrow band zones it can lead to error in the identification.
- BU proposes to use a different approach, taking other parameters (non-RSD derived) that could reduce the chances of such errors.
- A more specific ground truth data from a set of new surveys would be made and validations and the reliability factors be evaluated at a better accuracy.
- The two approaches are expected to work as complementary since they look for two scientific paths for the assessment of the biomass, expected to be a significant contribution in this area.

The Approach in the Proposed Work

- In the first phase of the Project, IISc would use a fresh (updated) RSD for the selected zones of study and apply all the tools and generate the data using the tools they already have.
- A set of server would be made in the study zone with specific references from BU and IISc team to make the ground data is captured to meet the required validations sought.
- These data would be taken up by the BU and the new modelling and optimizations would be evolved including the validations.
- The modelling would be included by IISc to the atlas with the enhanced quality of the data.