The use of global positioning system (GPS) to estimate point sources of selected biomass residues in the Philippines

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A study [1] was made to identify point sources of biomass wastes in the Philippines from selected agricultural and forestry establishments with the use of differential global positioning system (DGPS). The identification of exact geographic location of the sources of biomass wastes makes it possible to have an accurate estimate of biomass resources and develop project feasibility studies more readily.

A field survey was conducted to locate these point sources of biomass wastes from major biomass producing regions in the Philippines. Key production regions were identified using secondary data from numerous sources ([2], [3], [4], [5], and [6]). Attributes were incorporated in the geographic information system (GIS)-based map that included the magnitude of wastes produced by the processing centers in key producing regions. These processing centers are the exact point sources of biomass residues. A network analysis was developed in ARCVIEW-GIS to determine the magnitude of residues that could be collected given a certain radius of coverage and the associated transport cost through the road network. This method of biomass residue estimation makes it possible to accurately perform feasibility studies for biomass waste utilization and conversion. Several simple pre-feasibility studies were made for the conversion of rice hull residues, animal manure, sugarcane bagasse and coconut wastes into energy.

This report presents examples of the resource assessment and feasibility work particularly the location of rice mills where rice hull wastes are generated. The above procedure was aimed at modernizing biomass resource assessment work in the country thereby minimizing cost of pre-feasibility work and identification of cost-effective biomass energy conversion systems [7].

References

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