MMIS
Demistifying MIS Analytics

SUSWA
INFOWAY

Map Management Information Systems concepts and Technologies orient designs under the project which aims at catalyzing and giving direct support to the adoption of standardized, stable and reliable spatial/ remote sensing services and techniques as a management and monitoring tool to support FSC certification program/processes at ITC PSPD – by moving close to audit automations – *first of its kind*

Forest Stewardship Certification (FSC) Program Implementation and management – MMIS concept based

ITC - PSPD
B HADRACHALAM

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Executive Summary

The project is expected to establish the ways in which the use of remote sensing and GIS technologies and their techniques fusions to main MIS frame work as a management and monitoring tool for FSC certification program defined and identified under MMIS concepts and technologies. The project aims to demonstrate the potential reduction of costs in generating the data required for certification in long run and potentially to map the ground picture for administrators and auditors to review and plan FSC program initiatives towards its objective and goals.

The project will also develop an Combo based solution from OPEN SOURCE SOFTWARE product for Forest Management a Toolkit that pictures entire ITC PSPD Bhadrachalam operations on click of mouse that are pre- identified and pre-defined, which will increase satellite data utility and transparency in forest certification as well as enable local capacity building and technology transfer in FSC program/project implementations to the intent and spirits of the program FSC.

The map based outputs under the project will serve to the need of auditors and administrators in managing and monitoring FSC initiatives on routine basis from the ongoing operations at ITC – PSPD division on a continual mode when integrated to main systems of operations such that extra effort in computing solutions can be undone in future and provide a common base of sharing and exchanging information is established that stabilizes audit needs for FSC program audits and certification requirements.

Statement of Problem

Compliance of Principles and criteria enumerated for FSC certification program is a complex phenomenon as it involves capturing huge geographical spread farming information related to the activities of wasteland development and creating economic value to under-privileged and marginal farmers as prime motto, while reforestation initiatives and moves by ITC PSPD under the program to increase forest cover is challenging task. Furnishing the information in consistent frame work related to the discussed and other allied activities in the information form remain critical and crucial for FSC certification.

MMIS Design Objectives

Objectives of the project is to develop self-operable tools to stake holders for extracting the information from the central repository identified for the project, consisting satellite imageries interpreted thematic details, field operations and inputs on plantation type and harvesting details from SAP ECC 6.0 thru in the FSC certification program on their need for assessment of FSC program status across the identified areas in the districts of Khamam/East & West Godavari /Visakhapatnam to map the age of plantation and other attributes at farm level in user friendly mode and method defined under the FSC program from 2008-09 to 2011 -12 for around 16,000 acres in around twenty five mandals in the state of Andhra Pradesh.

The requirement

For this purpose, fused technologies defined under MMIS concepts and Technologies could be useful and be deployed that converts entire MIS identified from external and internal environment in the common space and frame work which involves image processing software and other basic desktop and web based GIS software, for this

purpose a combo solution from OPEN SOURCE SOFTWARE is chosen as the product and solution would offer end to end mapping solution services required for FSC certification and management program.

The proposed solution Functional/Technical approach
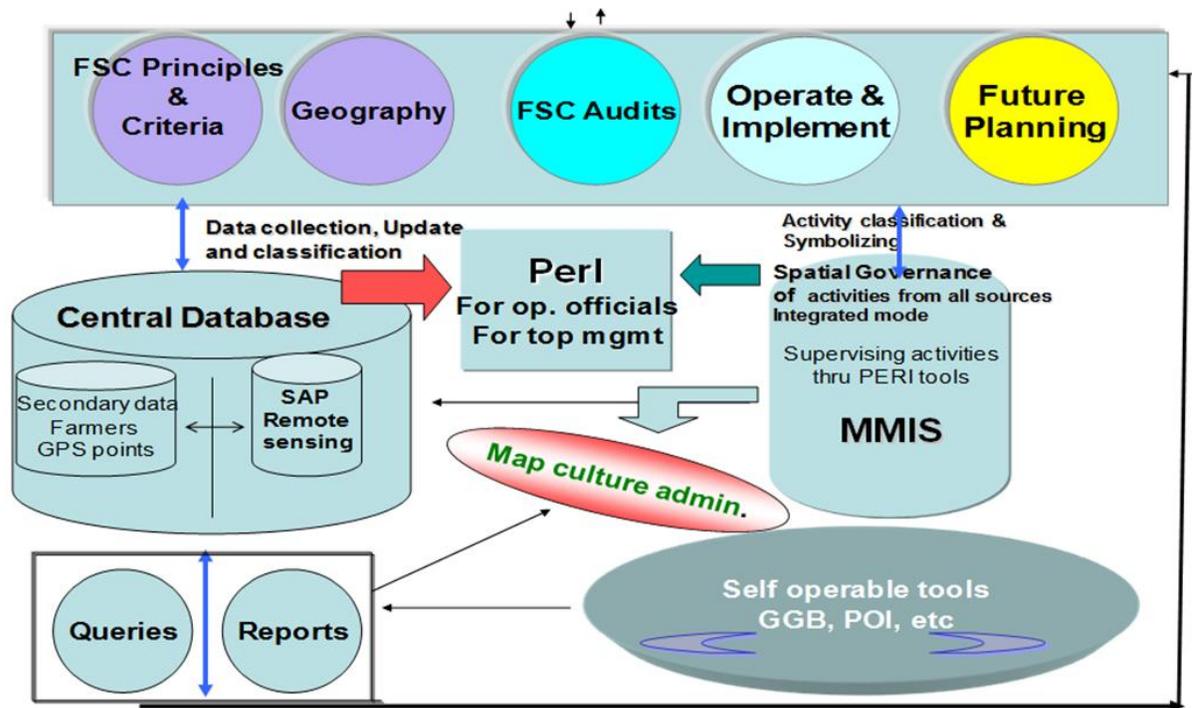
All the events towards FSC certification/implementation activities are geographic and thus communicating MIS in map format is more meaningful in assessing ground realities from the MIS reports that gets demystified from time to time under concepts MMIS.

Principles and Criteria of FSC as base, the functional roles of identified stake holders towards development of small forest and reforesting efforts in improving economic life of marginal farmers as the prime activities supported by information systems discussed above appropriate fused technologies identified under MMIS concepts would be deployed to generate information for administrators and auditors for FSC program . Functional role of relevant stake holders in whole program

Table showing FSC Principles &Criterion classification and its representation in spatial format (map based)

Principles & Criterion	Main points	Attributes	Spatial	Data Required	Remarks/special efforts reqd.
P#2 Clear evidence of long-term forest use rights to the land (2.1,2,2 & 2.3)	Clear title not contested – long term owner ship /litigant classification	To plot ID an attribute P#2 fields on legal category claissification	Color define – surface to define criterion	SAP plantation status	Date of plantation type/nos/extent Field officer/manager details
P#3 INDIGENOUS PEOPLES' RIGHTS(3.2, 3.3)	Forest Management shall not threaten/diminish rights of Indigenous people	To plot attributes to P #3 on rights of farmers	Color 3.3 to map on 1:25/10k	Field officer reports (pre-designed)	People acceptance of management plan (map format)
P#5 Benefits from forest (5.2,5.6)	FM operations to encourage multiple products	P#5 SF mixed crop details from field reports	Signatures mixed crop Market place	Field officer reports on variety/grade/ productivity	To map various attributes to farmers ID – forest
P#6 Environmental Impact (6.5,6.6,6.10)	Field observations of forest cover after harvesting, re-stocking plans	P#6 field – supporting info on environment	Time series data ITC estate mapping	Outputs field wise to be mapped with Inputs	Surrounding topology and recording on maps
P#7 Management plan	Description of forest resources to be mapped /monitoring forest growth etc.	Field officer's reporting systems on FM	Annual forest dense analysis (NDVI)	Description of management activities towards productivity enhancements	Environment and social impact assessments and suitable recording into systems
P# 8 Monitoring forest growth & Assessments	Yield rates Growth rates Cost & Productivity	Field officers and NDVI inputs	Change detection analysis NDVI for growth	Field officers intervention initiatives and	Simple guidelines designing and understanding of the same to

			rate	programs recording	interpret on maps for social audit impact assessments
P # 9 Maintenance of High Conservation value forests (HCVFs)	maintenance and/or enhancement of the applicable conservation attributes consistent as precautionary approach	Plans and attributes to be recorded that communicate P&C #9	Change detection analysis of defined HCVFs areas under FSC	Field officer report on HCVF attributes to be incorporated in the application	Special efforts and close vigil on HVCFs area and farmer/village earmarked as separate theme that can be viewed at any point of time duly updated
P # 10 Plantations	Plantations as planned in accordance to principles 1 to 9	With management consent a suitable master table need created	Such identified attributes will be incorporated Spatially	The same would be analyzed from systems studies and interactions among stake holders	A close understanding of program among stake holders for effectiveness project implementation
All Principles and criterions would be integrated to operations in mutual approved methods and methodologies – Master Data Management MDM	Consensus among stake holders/capacity building – up versioning from time to time suiting to functions of FSC program	The defined and identified task in the form pre-defined forms	As all the activities are locations specifics will be mapped village wise on various themes of Principles	Data from SAP ECC 6.0 + Satellite images + Field officers Reports + Management plans + FSC audit team advices	Whole summation of MIS integrations should finally spell out the objectives of FSC audit that are close to automations.

Technical Approach

A common Data repository with Master and transaction tables will be set where in the entire data pertaining to filed/plant operations would be pushed into in batch processing mode from the offline and online keying mechanisms and uses OPEN SOURCE SOFTWARE Function specific customized tools for FSC Audit would be provided which will ensure the information/activities transparency into the FSC Audit and certification processes. Broad thematic at low resolution would be mapped on Wasteland, Water bodies, elevation, Rainfall data, temperature, soil and ground water details will be captured from the satellite images that would be procured under the project for assessment of ground realities over a period of time of plantation to harvesting stages.

The benefits:

Implementation of MMIS concept based application would ensure close to FSC certification audit automations when the whole processes are pre-embodied into the system of the application, these processing mechanisms can be integrated into main systems of operations that go on routine basis. No need, of separate exercise to generate the information for the purpose of FSC audit requirements for future audit requirements.

The application would standardize and normalize the data requirement for FSC audits from time to time. Further, the application would be able to capture the data from planation to harvesting and will picture the growth, forest cover, productivity analysis, ecology and environment required under the Principles and criterions for FSC audit.

As the FSC audit are subset of whole operations of ITC-PSPD the integrations into main systems will lead to cost reductions and close vigil on operations of FSC initiatives of CDM and SF programs of ITC PSPD can get integrated into the project application.