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Oil Palm Plantation

SHINDE SUJIT, BHALEKAR AKASH, CHAVHAN VYANKTESH,
CHAND SHAIKH, MR. DHONDGE G. R.

computer department, Jaihind polytechnic,kuran

Abstract — *Oil palm is recognized as the golden crop. It produces the highest oil yield among oil seed crops. Malaysia, as the world's second largest producer of palm oil, has 16 % of its lands planted with oil palms. Multisensor remote sensing plays an important role by providing relevant, timely and accurate information that can be developed into a plantation monitoring system to optimize production and sustainability. Synthetic aperture radar sensors deliver `cloud-free' images. Optical remote sensing provides important physical parameters of the plantation using multispectral data acquisition. Both types of data are complementary and need to be exploited simultaneously to obtain a holistic view on the plantation. The research described in this paper anticipates the development of a multisensor image and data fusion system for oil palm plantation management.*

Oil palm is cultivated extensively in the humid tropical land. It the most productive oil seed in the world because the economic importance of oil palm is in two distinct products; the palm oil and kernel oil. Historically, oil palm is native to West African coast and the palm oil is mainly used for cooking. Oil palm expansion and production in Ghana within the last 2 decades were due to factors such as commodity price, market availability and government intervention. Juaben oil mills located in Ejisu-Juaben district is one of the oldest mills in the country established during the post-independence era. Since its privatisation in 1992, the supply of adequate fresh fruits bunches has been a challenge due to demand. So the Ghanaian government with assistance separately from World Bank and Africa Development fund in 1997 and 2004 respectively launched oil palm plantation initiatives to boost palm oil production, improve employment opportunities while at the same time control rural-urban migration. However, the cultivation of oil palm has raised issues of environmental sustainability. To assess sustainability of palm oil production and oil palm expansion, the roundtable for sustainable palm oil has defined principles and criteria. Several of these criteria link to land use and land cover. Yet, there is insufficient guidance from roundtable for sustainable palm oilon how to map and quantify oil palm related land cover changes. So there is a need to develop a methodology to map oil palm related land cover changes at the local level. The study objective seeks to map oil palm related land cover of a section from northern portion of Ejisu-Juaben district in the Ashanti Region of Ghana using support vector machine (SVM) with Landsat ETM+. The districtlies within Longitude 6° 15" N and 7° 00" N and Latitude 1° 15" W and 1 ° 45" W and is characterised by both agricultural and socio-economic activities. The Landsat ETM+ data acquired in 2010 was used for processing and image classification. Field data were acquired in October 2011 through stratified random sampling. A total of 343 samples were collected for classification and accuracy assessment. The classification was carried out using MLC and SVM based on best three band combination from the image. The SVM and MLC performance evaluation was done using overall accuracy assessment and kappa statistics procedure. The results of separability analysis showed that ETM+ data provides spectral discrimination of land cover types found in the study area. The best three bands that provided the optimum spectral separability based on Bhattacharyya distance are 4, 5, and 3.

Key words: support vector machine, maximum likelihood classifier, spectral separability, oil palm

I. INTRODUCTION

Global edible oil consumption has increased by about18% over the last 5 years. The edible oil production mixis largelydominated by palm oil, which is now the singlelargest consumed vegetable oil in the world. India andChina have emerged as the world's leading importers ofpalm oil. Change in consumption patterns, availability,pricing, policychanges towards imports and domesticproduction of other oilseeds have all infl uenced usage ofedible oils. Given the underlying growth drivers of thesesegments, the mix of oil application is not expected tochange signifi cantly over the next fi ve years.Palm oil has dominated Indian imports since the lasttwo decades, for its logistical advantages, contractualfl exibility, and consumer acceptance. India is the lasgestimporter of palm oil which is also the lowest priced oil.Palm oil contributes to around 74% (as of 2012) of thetotal edible oils that are imported into the country. Apartfrom human consumption, as RBD palmolein it alsosupports many other industries in India like refi ning,vanaspati and other industrial sectors.While there is a strong economic rationale for theconsumption of palm oil, there is also growing awarenessregarding the need for sustainable palm oil productionthat does not lead to social and environmental impacts,such as the destruction of forests, biodiversity loss,greenhouse gas emissions, community or labour issues.

## II. EXISTING SYSTEM

• Resolve more man power of working process.
• Sole the problem of Lack of security of data.
• Time consuming for management process.
• Consumes large volume of pare work.
• Needs manual calculations.
• No direct role for the higher officials.

III. PROPOSED SYSTEM

The aim of proposed system is to develop a system of improved facilities. The proposed system can overcome all the limitations of the existing system. The system provides proper security and reduces the manual work.

IV. SYSTEM ARCHITECTURE
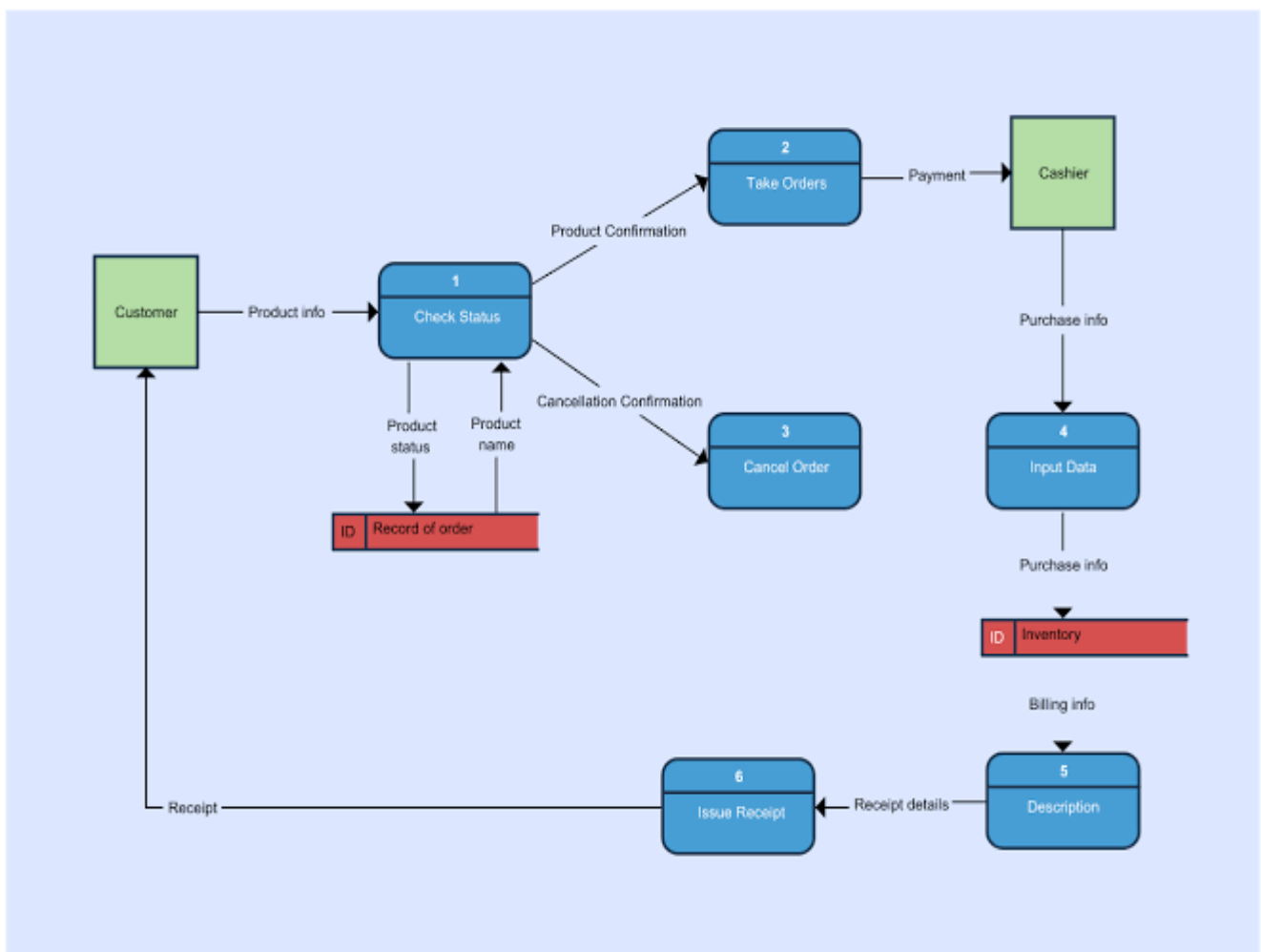
V. CONCLUSION

• Smallholders are the most sensitive to price in their adoption decisions, and thus they are increasingly constrained by the decline in CSPO premiums.
• Other major factors cross-cut the analysis and can influence costs and benefits.

VI. REFERENCES

[1] Benefoh, T. D. (2008). *Assessing the effects of land-use/cover change on ecosystem services in Ejisu-Jauben Districts, Ghana.* Unpublished MSc, University of Twente, Enschede.

[2] GOPDC. (2011, 2011). Ghana Oil Palm Developement company limited. Retrieved 16 August 2011, 2011, from http://www.gopdc-ltd.com/index.cfm/page:home

[3] Laurance, W. F., Koh, L. P., Butler, R. A., Sodhi, N. S., bradshaw, C. J. A., Neidel, J. D., et al. (2010). Improving the performance of the roundtable on sustainable palm oil for nature conservation. *Conservation Biology, 24*(2), 377-381.

[4] RSPO. (2011). Ghana national interpretation of RSPO principles and criteria for sustainable palm oil.