

PROCEDURE OF QUALITATIVE SATELLITE IMAGES PRODUCTION IN SUPPORTING ALTERNATIVE DEVELOPMENT PROJECT

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ABSTRACT: Office of the Narcotics control Board (ONCB) by Narcotic Crops Survey and monitoring Institute (NCSMI) launched the narcotic crops survey since 1972, Procedure of monitoring opium poppy fields covered 1.92 million hectare of 76 potential highland targets in northern region of Thailand. The alternative development is one from several policies to reduce opium poppy field by Expanding the Royal Project Model to Sustainably Solve Opium Cultivation program is performed to monitor target population in repetitive opium cultivation areas in 3 provinces cover 155 villages by developing quality of tribal life which co-operated with Highland Research and Development Institute (Public Organization). The main objective is process to collect several factor data such as landscape of target villages, various crops, agriculture, environment and opium areas which are necessary data to support planning suitable development approach. By using high resolution satellite images to produce Ortho satellite image base on very accurate reference data in scale 1: 4000 data that difference period of years each of crop cultivation and interpret to be layer of GIS data and thematic map support for alternative development team. Furthermore, this article also showed technique how to acquire free Google satellite images via free geoinformatic software if data not cover to operate for some year or some areas that safe budget to find from commercial market. With technique valuated exiting database and benefit is to enhance of validation of landuse data to get more several years. Remote Sensing technology using satellite images can get up-to-date data so rapidly and accurately for this program that survey in highland area and very hard to access areas.

Introduction

The Opium poppy cultivation in Thailand surveyed by Office of the Narcotic Control Board (ONCB) who is the main organization to process the policy of narcotic crop control and Alternative Development (AD). AD is important policy to community has been developed by the appropriate knowledge base in order to have a better life and process of self-reliance in the long run which not complementing narcotic plant and prevent of drug also conservation and inviolate forest for next time that sustainably solve opium poppy field areas . Technique of procedure using element data of high resolution satellite image and essential instrument such as topographic maps, GPS, digital camera and thematic map which create using ortho rectification satellite image that generated by very accurate DEM to collect information such as Landuse data, localization 10 alternative development centers, extended areas of 115 target villages in areas where were very hard to access of highland areas. After acquiring important Landuse information to analyse enough of infrastructure each of villages and household such as road , water resources, agricultural areas ,opium poppy fields , type of cultivating plant to estimate

sufficiency of food and fundamental requirement each of villages that supported data to 10 the highland Research and Development staffs for managing of 5 strategies were marketing and occupation development, empowerment of community self-reliance and people participation, community base drugs treatment, Natural resource and environment rehabilitation and program administration using Geoinformation data by interpreting and distinguishing landuse and fundamental infrastructure each village from qualitative satellite images map.

Operation areas

Areas of explanting of the Royal Project Model To Sustainbly Solve Opium Poppy Cultivation Program

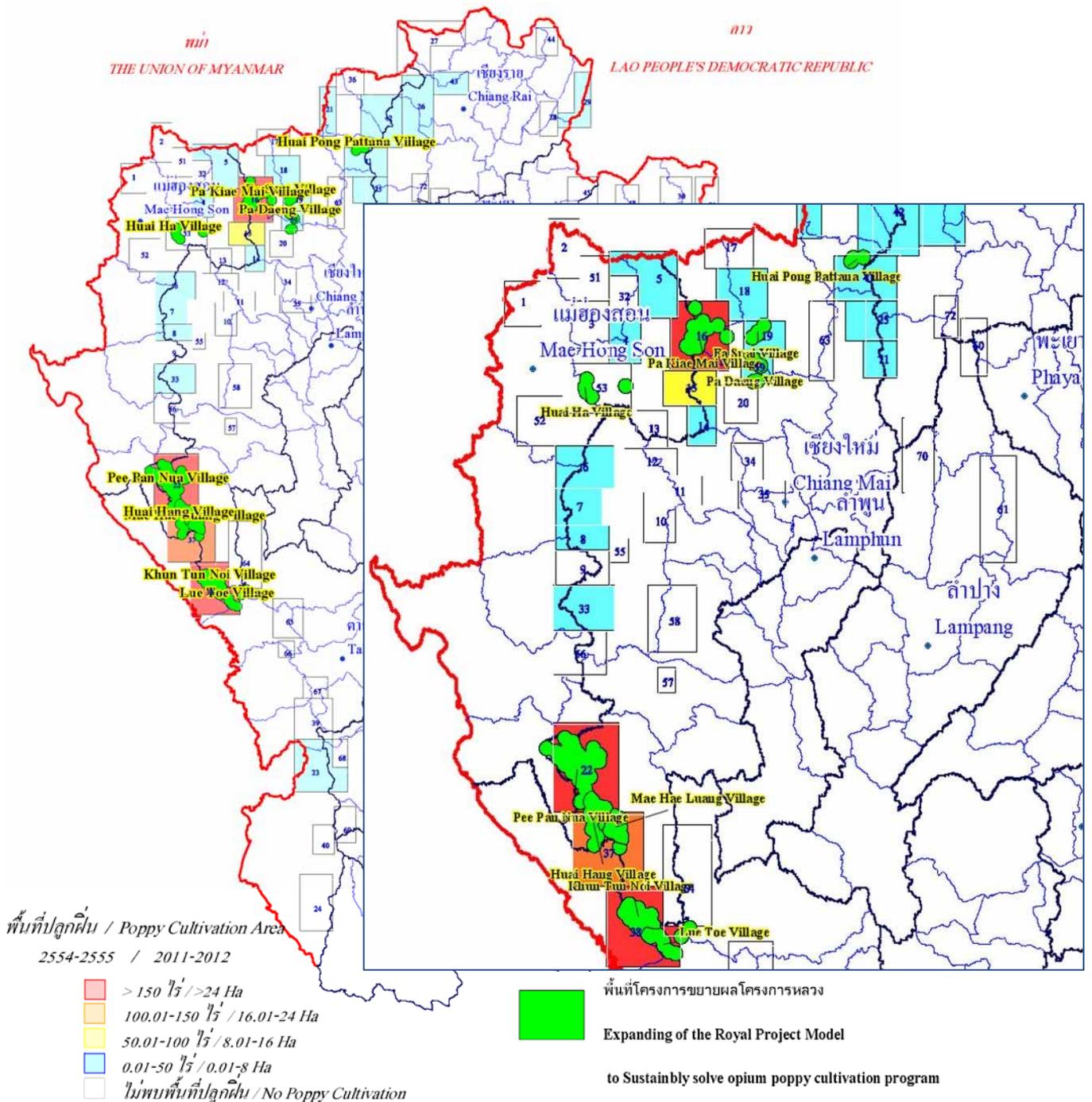




Figure 1 Explaining of the Royal Project center of Ban KHUN TUN NOI village.

The target areas launched in 3 provinces where the opium poppy cultivation still highly remaining ; Chiang Mai, Mae Hong Son and Tak province which included 10 the highland Research and Development Institute (Public Organization), the Office of the Narcotics Control Board, provincial and district organization concerned. Example data at Khun Tun Noi village, Omkoi district , Chiang Mai province.

Summary: Qualitative satellite images technique

Raw data of High Resolution Satellite Image in procedure of Alternative Development Project using IKONOS image satellite was applied ortho rectification image to image technique by referenced from Ortho photo images at scale 1 : 4000 of Land Development Department to improve accuracy at horizontal coordinate (Latitude and Longitude) also in vertical (Altitude) improve accuracy by using DEM was interpolated from contour line interval 2 meters that concerned step of putting Ground Control Point (GCP) least 20 points over raw satellite image data which each points got Root Mean Square (RMS) less than 1 pixel. After verify accuracy image data that took high resolution images to interpret and digitize geoinformation data produce to process thematic map.

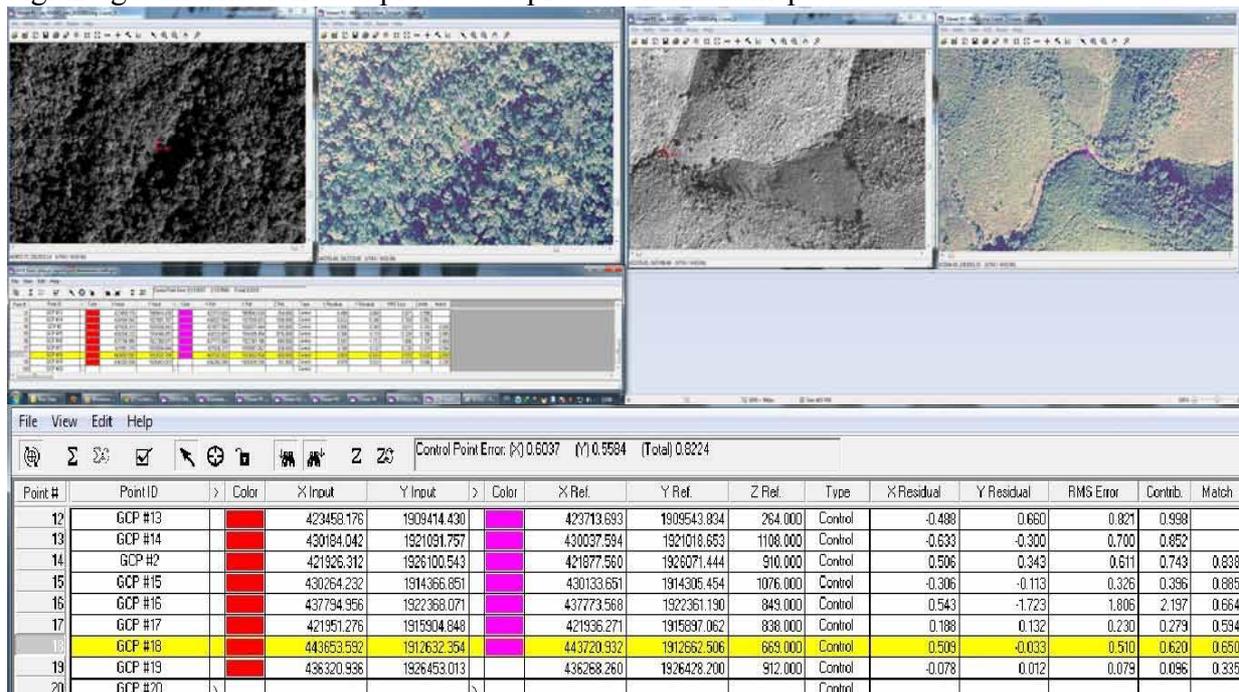
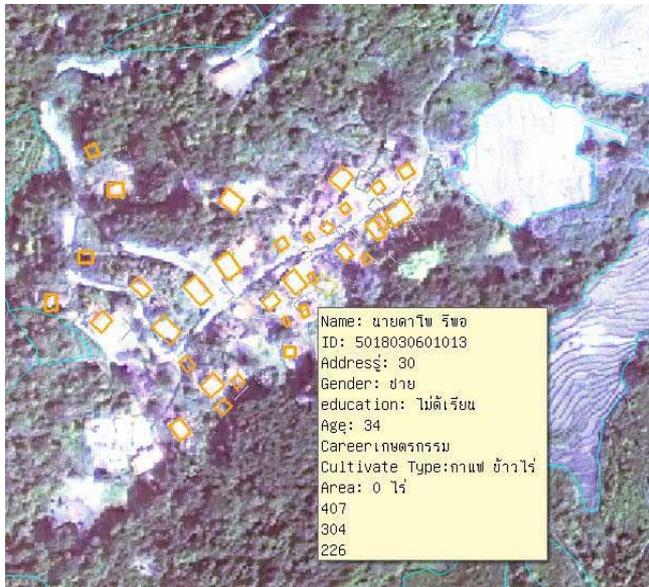


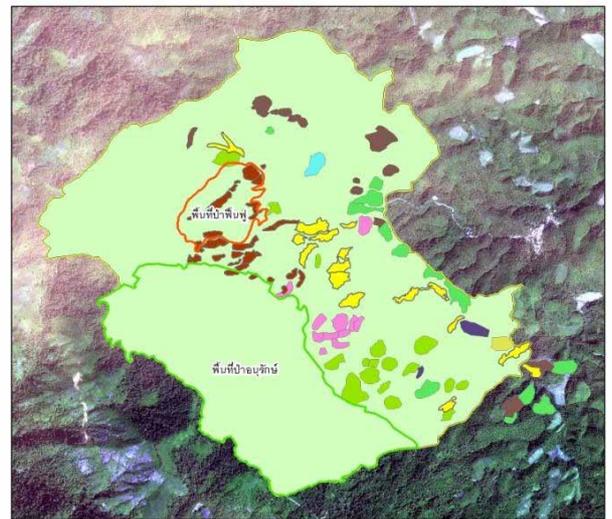
Figure 2 Image to image Step of Ortho rectification high resolution image satellite



Figure 3 Ground survey using high resolution image satellite to verify localization of landuse and household.



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 Area: 0 ไร่
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 304
 226



สัญลักษณ์
 พื้นที่นาปลูกข้าว ซอนเขตหมู่บ้าน บ้านนา พืชไร่ 1 ปี พืชไร่ 3 ปี พืชไร่ 5 ปี
 พื้นที่นาพืชไร่ ถนน ข้าวไร่ 2555 พืชไร่ 2 ปี พืชไร่ 4 ปี พืชไร่ 6 ปี

Figure 4 Household data and Landuse map of BAN KHUN TUN NOI village.



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ศูนย์ข้อมูลพืชสวนกาแฟ: 07 : ศูนย์ข้อมูลพืชสวนกาแฟ
 หมู่บ้าน: 5018030601 : หมู่บ้าน

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ลำดับพื้นที่	พื้นที่ปลูกข้าวไร่ไร่ (ไร่)	จำนวนผลผลิตข้าวไร่ครัวเรือน (กก.)	พื้นที่ปลูกข้าวไร่ไร่ (ไร่)	จำนวนผลผลิตข้าวไร่ครัวเรือน (กก.)	พื้นที่ปลูกข้าวไร่ไร่ (ไร่)	จำนวนผลผลิตข้าวไร่ครัวเรือน (กก.)	พื้นที่ปลูกข้าวไร่ไร่ (ไร่)	จำนวนผลผลิตข้าวไร่ครัวเรือน (กก.)	พื้นที่ปลูกข้าวไร่ไร่ (ไร่)	จำนวนผลผลิตข้าวไร่ครัวเรือน (กก.)
1	4.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	0.00	0.00	0.00	0.00	4.00	1,600.00	0.00	0.00	0.00	0.00
3	4.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	0.00	0.00	0.00	0.00	6.00	1,400.00	0.00	0.00	0.00	0.00
5	3.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	0.00	0.00	0.00	0.00	3.00	1,200.00	0.00	0.00	0.00	0.00
7	7.00	1,200.00	0.00	0.00	5.00	2,400.00	0.00	0.00	0.00	0.00
8	0.00	0.00	0.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00

Figure 5: Database village of Explanting of the Royal Project system for management project.