



Short Communication

Participatory Mapping in Kapus Hulu District, West Kalimantan Province, Indonesia

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ABSTRACT

Participatory mapping is a critical process for land management, particularly in the development of a participatory planning process. This project utilized a global digital device in order to accelerate data gathering and time-based monitoring for the process of participatory mapping in the district of Kapuas Hulu, West Kalimantan province, Indonesia. Data collection utilized simple technology, using a combination of functions of cellular phones, GPS, digital imaging, and internet technology. This data was then analyzed and verified using remote sensing and geographic information system technology.

Keywords: Mapping, Digital device, GPS, Cellular phones, Internet technology

INTRODUCTION

For the purposes of development planning, it is necessary to take into account the activities of local communities, such as where people live, the location of sacred sites, and areas for cultivation, hunting and gathering, water resources and other natural features as well as information on concessions, patterns of land use change, and boundaries of land administration. In order to determine the resources and services needed by local communities, it is important to undergo a systematic process with the local people. Participatory appraisal is a form of consultation that allows local people to contribute to the development and implementation of a land use plan and can help to encourage more sustainable population growth. Participatory mapping, a method of participatory appraisal, is an effective way to identify local assets, networks and opportunities in the local community, especially for land tribes.

This paper exclusively refer to BRIEF DESCRIPTION OF KAMPUNG TEKNO JAKARTA, the event which organized by US Embassy, Statements on the documents: "The event is part of a US Department of State initiative called "Civil Society 2.0," an effort to create dialogue with civil society organizations, connecting these social organizations with technology

based tools and volunteers to help raise digital literacy and increase the impact of civil society organizations in the 21st century" and prerequisites of the participant activity for the event.

APPLIED TECHNOLOGY

The primary device used for this project was the Samsung@Galaxy Spica or Samsung@GT-I5700, cellular phone with camera 3.2MP Auto Focus, internal GPS, capability for geo-tagging, and using operating system Android 2.1 OS (upgraded to éclair version). Additional specifications on this model of cellular phone are available at:

http://www.samsung.com/id/consumer/mobile-phone/mobile-phone/archived-mobile-phone/GT-I5700UWAXSE/index.idx?pagetype=prd_detail&tab=specification

The main capability of this device is geo-tagging. Local people were trained as field surveyors to gather field data using the 3.2MP Auto Focus camera to collect photographs, the internal GPS to determine position coordinates (X, Y, Z), added the comment as notes, and GoogleMailTM to upload field data to the email server.

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Inbox (239)	<input type="checkbox"/>	Eko Ridarso	» infop -	11/30/11
Starred	<input type="checkbox"/>	Eko Ridarso	» infop -	9/22/11
Sent Mail	<input type="checkbox"/>	Eko Ridarso	» infop -	9/22/11
Drafts	<input type="checkbox"/>	Eko Ridarso	» infop -	4/15/11
All Mail	<input type="checkbox"/>	Eko Ridarso	» infop -	
Spam (1)	<input type="checkbox"/>	Eko Ridarso	» infop -	12/16/10
Trash	<input type="checkbox"/>	Eko Ridarso	» infop -	11/21/10

Labels
[Forest Fire ... \(240\)](#)
[Private](#)
[USGS](#)
[Edit labels](#)

Figure1. Email received based on device

EXIF

GPS (GPS location)	22.6
GPS (GPS position)	47.8
Orientation	App. VPH
Make	SAMSUNG
Camera	WT-8000
Software	Ver. 1.0.2

Info

Date and time (adjusted)	2010:07:10 09:13:53
Date and time (original)	2010:07:10 09:13:53
Color space	sRGB
Color process	Auto
Flash	On
Flash mode	Auto
Exposure mode	Auto
Scene capture type	Standard
GPS version	2.00
Exposure program	Aperture priority
ISO speed/range	Auto
Shutter speed	1/1000
Aperture	F2.8
Brightness	0
Exposure time	0.001
Max aperture value	F2.8
Metering mode	Center-weighted average
Flash	On (Flash)
Flash range	3.4 mm
White balance	Manual
Contrast	Normal
Saturation	Normal
Sharpness	Normal

Thumbnail

Compression	JPEG (old-style)
File name change format	Auto
File name change format length	100

GPS Data

GPS version ID	2.0.0.0
GPS latitude	47° 21' 00"
GPS latitude reference	North
GPS longitude	150° 11' 00"
GPS longitude reference	East
GPS altitude reference	Above sea level
GPS altitude	100 m

2010 07 10 10:07:45.jpg

Date: 10 Jul 2010
 Time: 9:07:45
 Shutter: 1/1000 s
 Aperture: F2.8
 Description: (none)
 Modified: 04 October 2010
 Time: 12:02:08
 Size: 101 KB

Figure2. Meta-data editor

You have logged in ... [Logout](#)

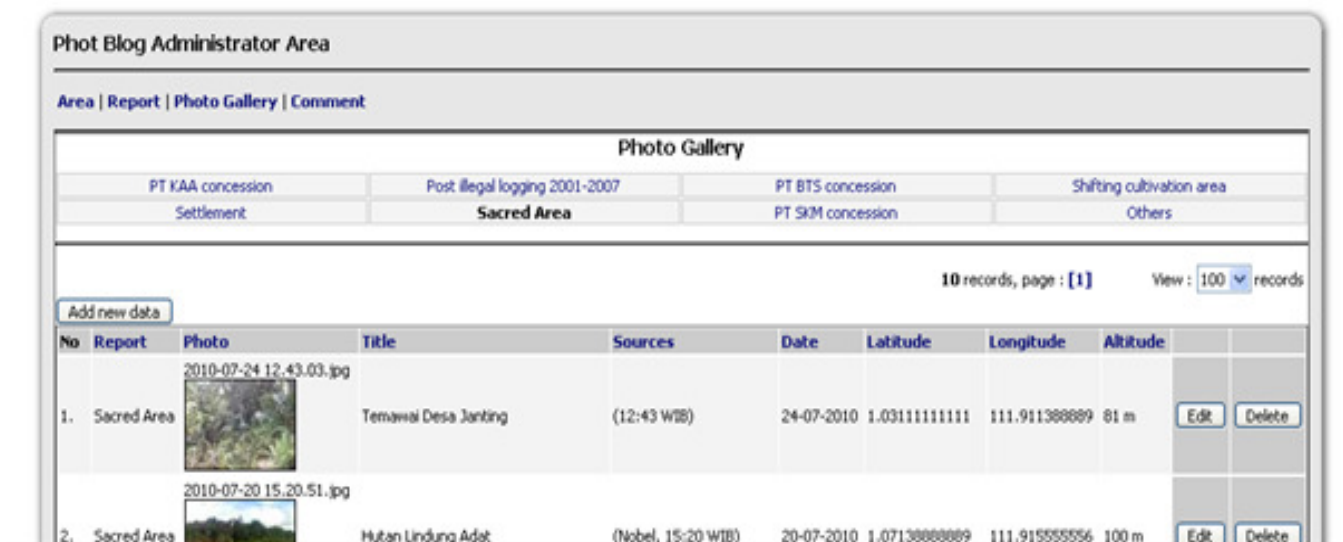


Figure3. Photo blog in web site on administrator mode

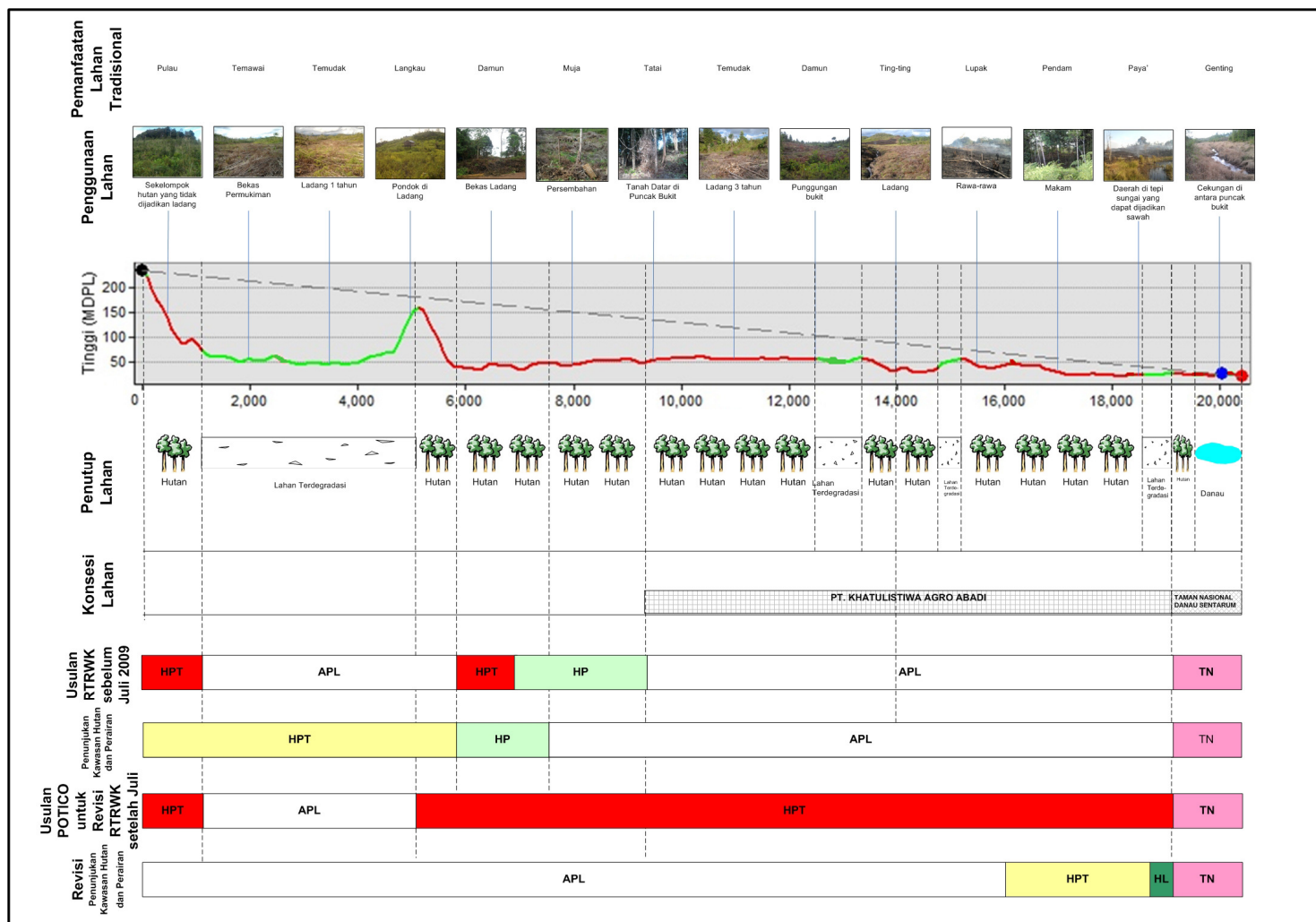


Figure4. Sample analysis of the collected data

Using the meta-data editor, the picture files were then extracted for geomatics processing.

During the field verification process, the field surveyor can be checking their position using GoogleMaps™. To minimize costs, applications such as YouTube™, GoogleTalk™, GoogleSearch™ were disabled.

RESULT SAMPLES

An example of field data gathered and sent as email are shown in figure 1 and the meta-data editor is shown in figure 2. Results are displayed in figure 3, and can be viewed in entirety at www.forestclimatecenter.org/photo-blog/. Figure 4 shows a sample analysis of the collected data.

FURTHER DEVELOPMENT

The next step for development is to re-train the field surveyor to make smoother the GPS positions, improve the consistency of pictures, and to standardize the report format.

An additional step will be to re-program the web site for data auto-processing and auto-updating to the web site. The server administrator will then conduct data verification and advanced meta-data editing.

CONCLUSION

Project activities met all of the prerequisites of TechCamp, such that they:

- Could be informative, helping participants become more connected to the global digital literacy ecosystem of other civil society organizations; to technology corporate; to the digital volunteer community; and to the aid and donor community.
- Develop the capacity of local people to collect digital information in the field, and to map important assets and areas of land use.
- Could lead to your organization to finding new ways to use personal and accessible technology to achieve your objectives
- Utilized simplified technologies to facilitate fair and accurate land use planning
- Should be fun, too
- Decreased stress of field data collection

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