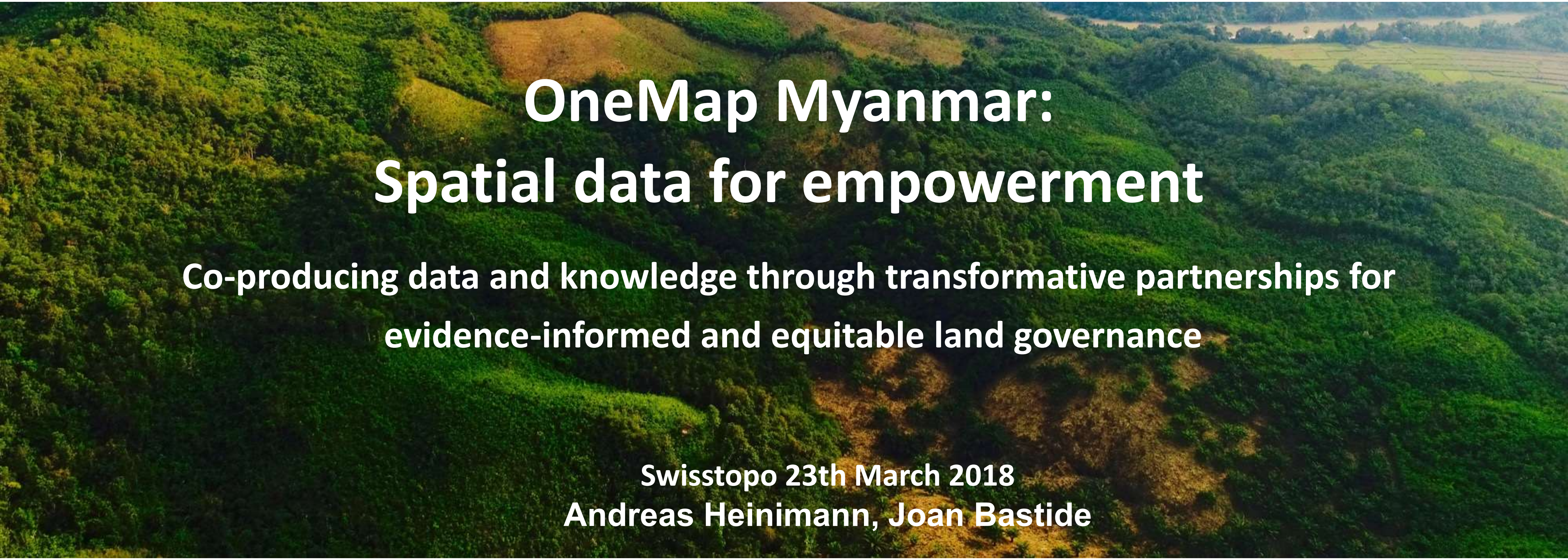
OneMap
MYANMAR



OneMap Myanmar:
Spatial data for empowerment

Co-producing data and knowledge through transformative partnerships for evidence-informed and equitable land governance

Swisstopo 23th March 2018

Andreas Heinimann, Joan Bastide

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development
and Cooperation SDC

UNIVERSITÄT
BERN

CDE
CENTRE FOR DEVELOPMENT
AND ENVIRONMENT

Land
Core
Group

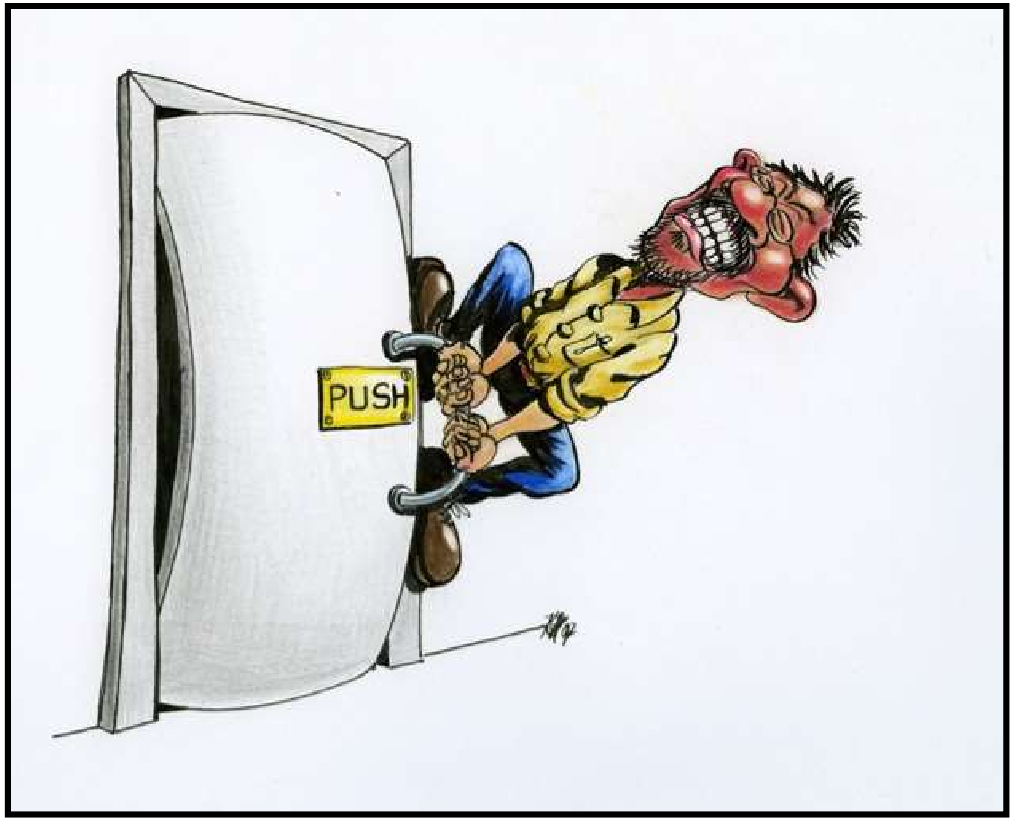
In agricultural and natural resources based economies, land puts many, and often competing, interests at stake

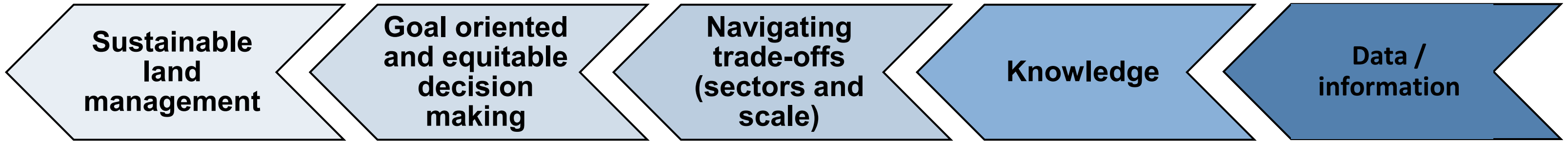
In Myanmar, the situation remains highly conflictual, and the level of trust between key stakeholders is very low

WE NEED JUSTICE

One source of data is not enough

But data and information alone is not enough





Sustainable land management

Goal oriented and equitable decision making

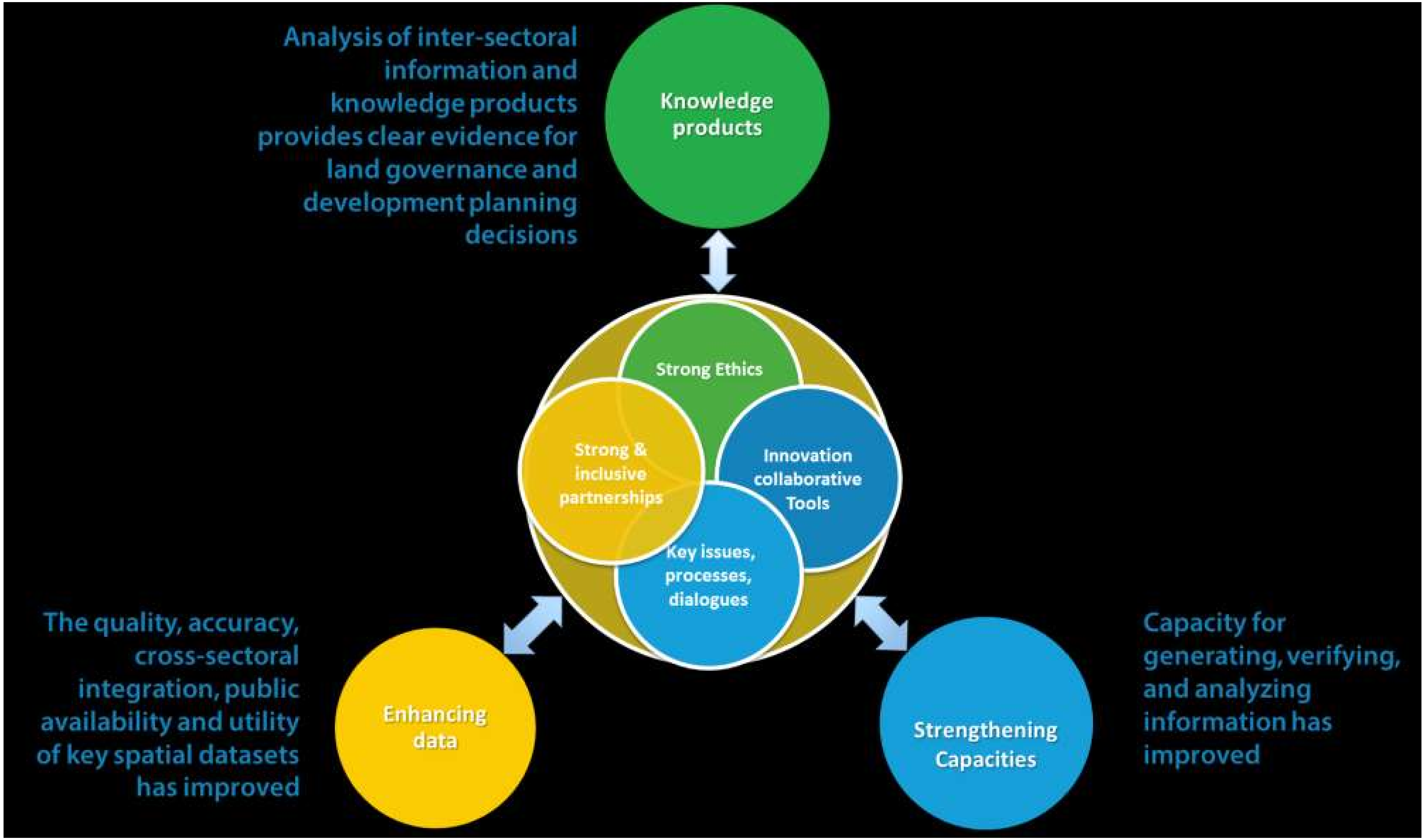
Navigating trade-offs (sectors and scale)

Knowledge

Data / information

Co-production

The OneMap Myanmar Initiative


Knowledge products
Strong Ethics
Strong & inclusive partnerships
Innovation collaborative Tools
Key issues, processes, dialogues
Enhancing data
Strengthening Capacities

Analysis of inter-sectoral information and knowledge products provides clear evidence for land governance and development planning decisions

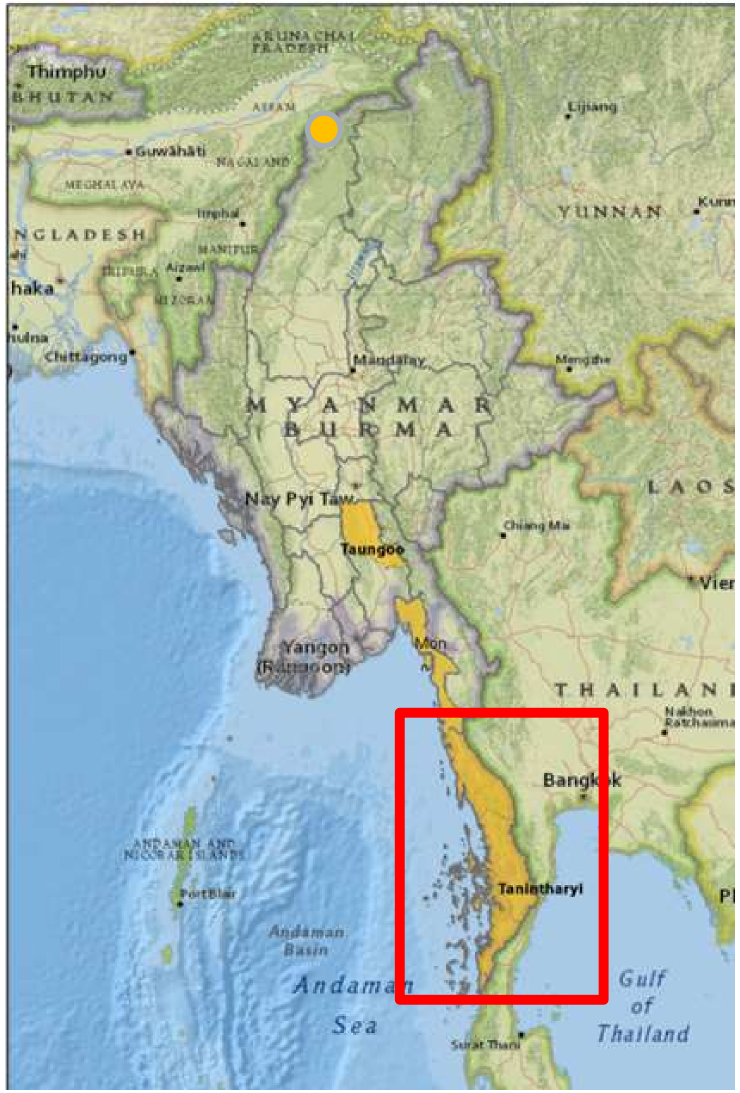
The quality, accuracy, cross-sectoral integration, public availability and utility of key spatial datasets has improved

Capacity for generating, verifying, and analyzing information has improved

Example of activities: The case of palm oil in the southern region of Tanintharyi

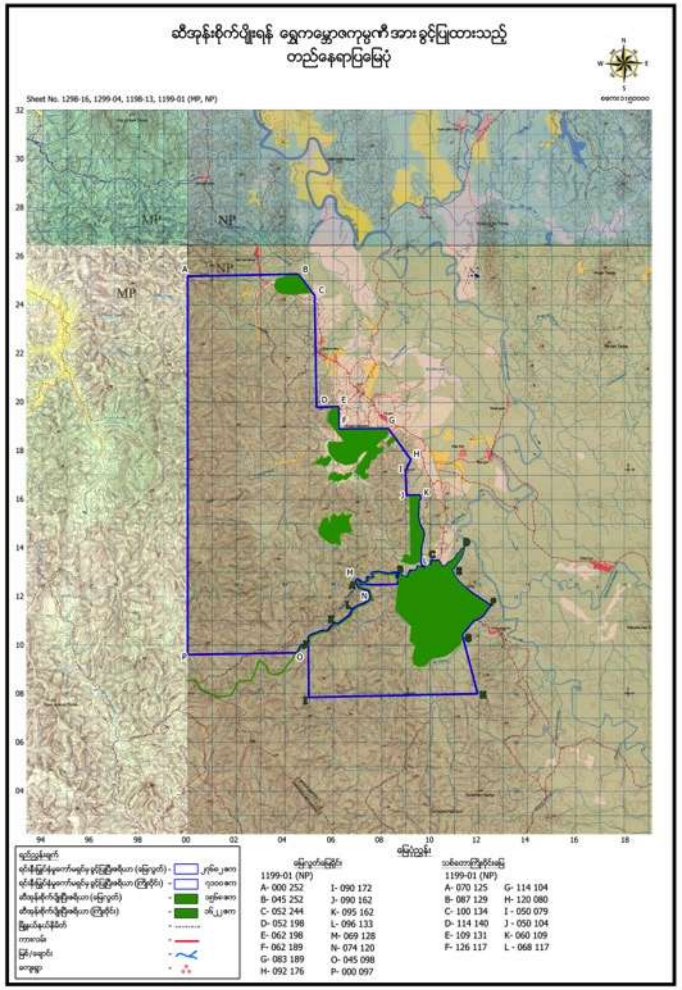
Enabling an evidence-informed multi-stakeholder environment to address complex land issues

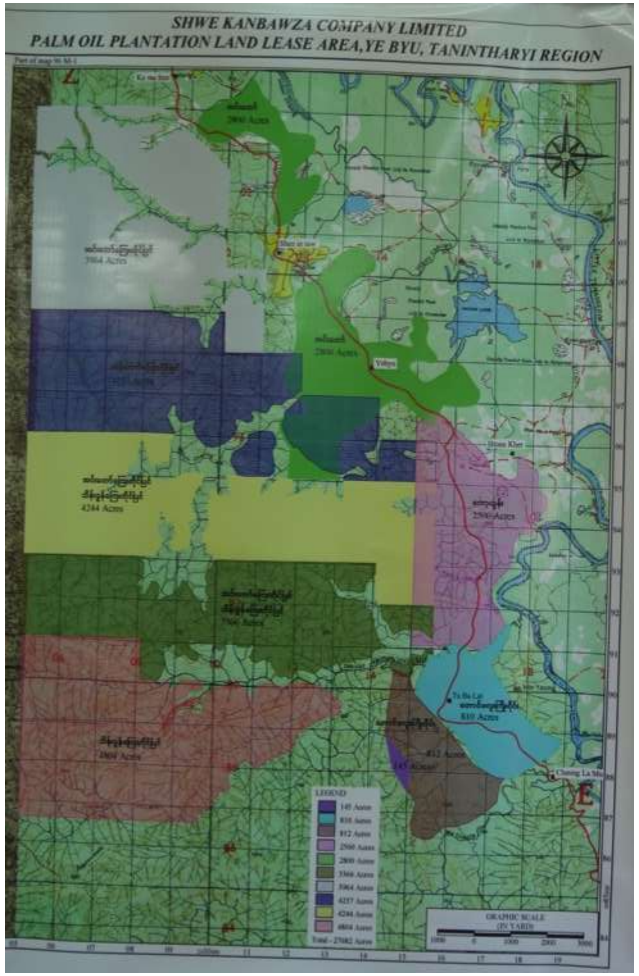
The case of Palm Oil in Tanintharyi

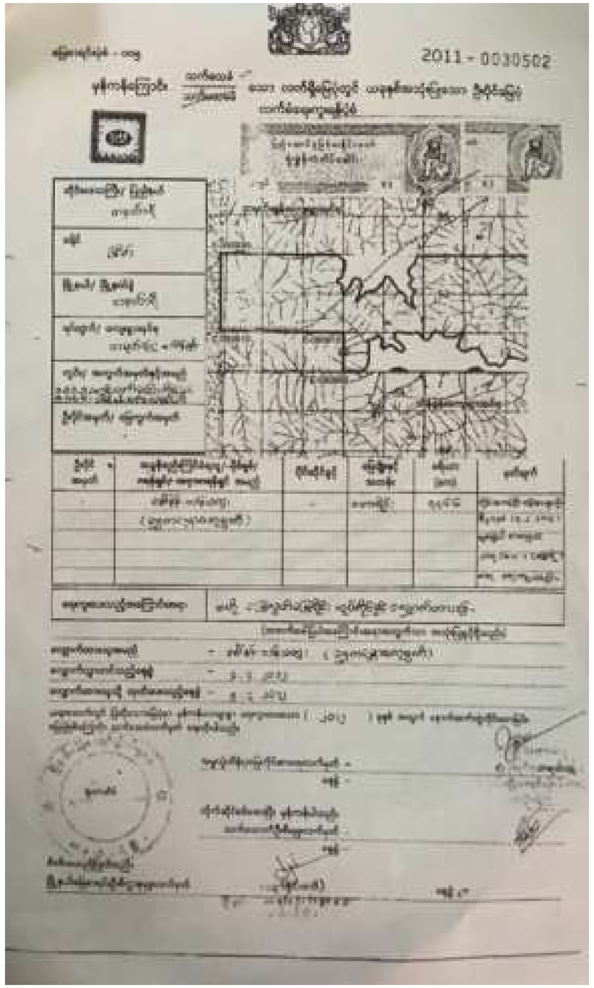

Thimphu
BHUTAN
ARUNACHAL PRADESH
ASSAM
Guwāhāti
NAGALAND
MEGHALAYA
Lijiang
YUNNAN
Imphal
MANIPUR
NGLADESH
TRIPURA
Aizawl
MIZORAM
haka
ulna
Chittagong
Mandalay
Mengzhe
MYANMAR
BURMA
LAOS
Nay Pyi Taw
Taungoo
Chiang Mai
Vien
Yangon
(Rangoon)
Mon
THAILAND
Nakhon Ratchasima
Bangkok
ANDAMAN AND NICOBAR ISLANDS
Port Blair
Tanintharyi
Andaman Basin
Andaman Sea
Gulf of Thailand
Surat Thani

'Tanintharyi Regional Oil Palm Assessment Action Planning Workshop'
၂၀၁၇ ခုနှစ် ဩဂုတ်လ (၁၅-၁၆) ရက်
15-16th Aug, 2017
မြို့တော်ခန်းမ ထားဝယ်မြို့
City Hall,Dawei

Compiling contract information from different sources/agencies

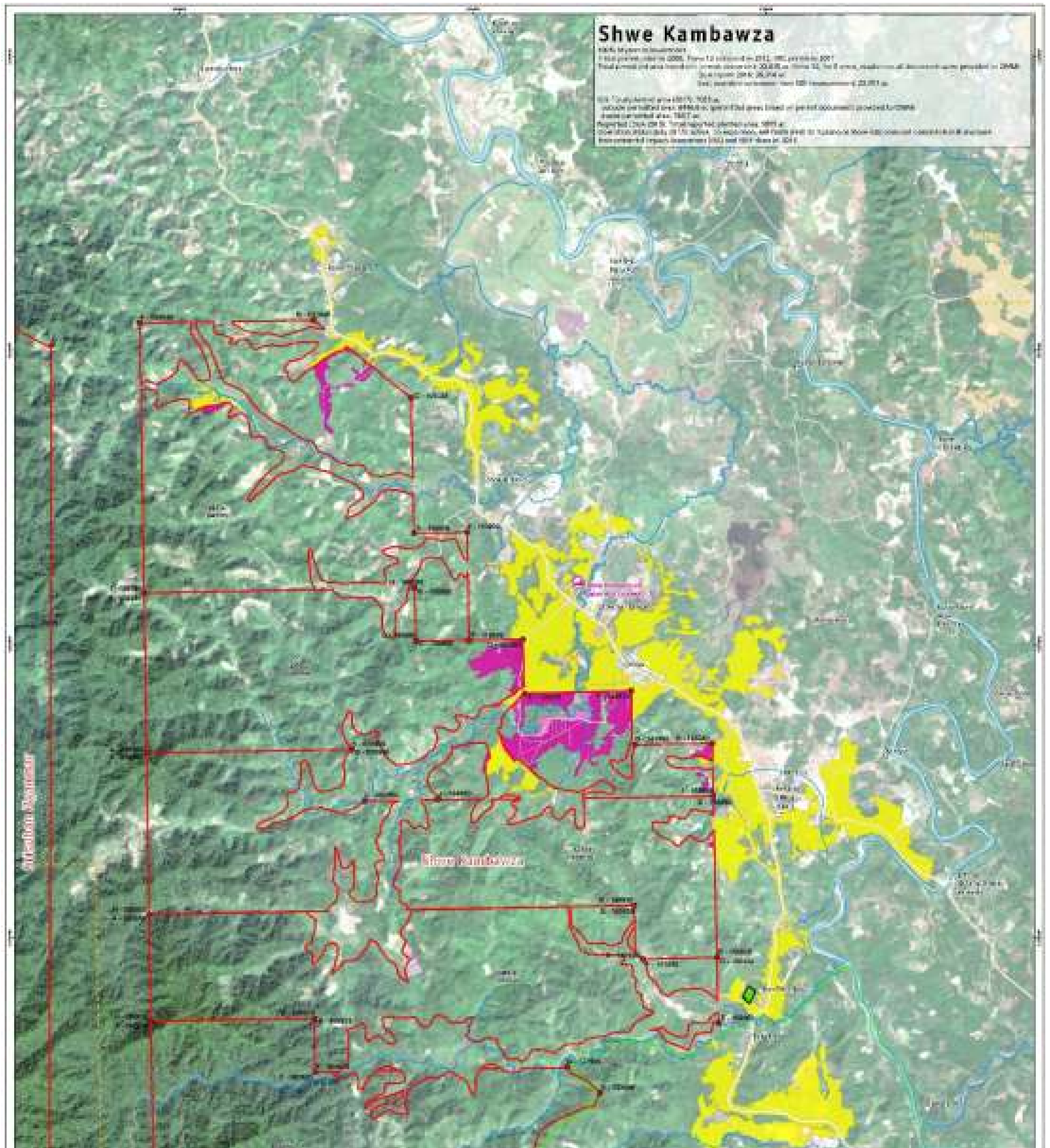


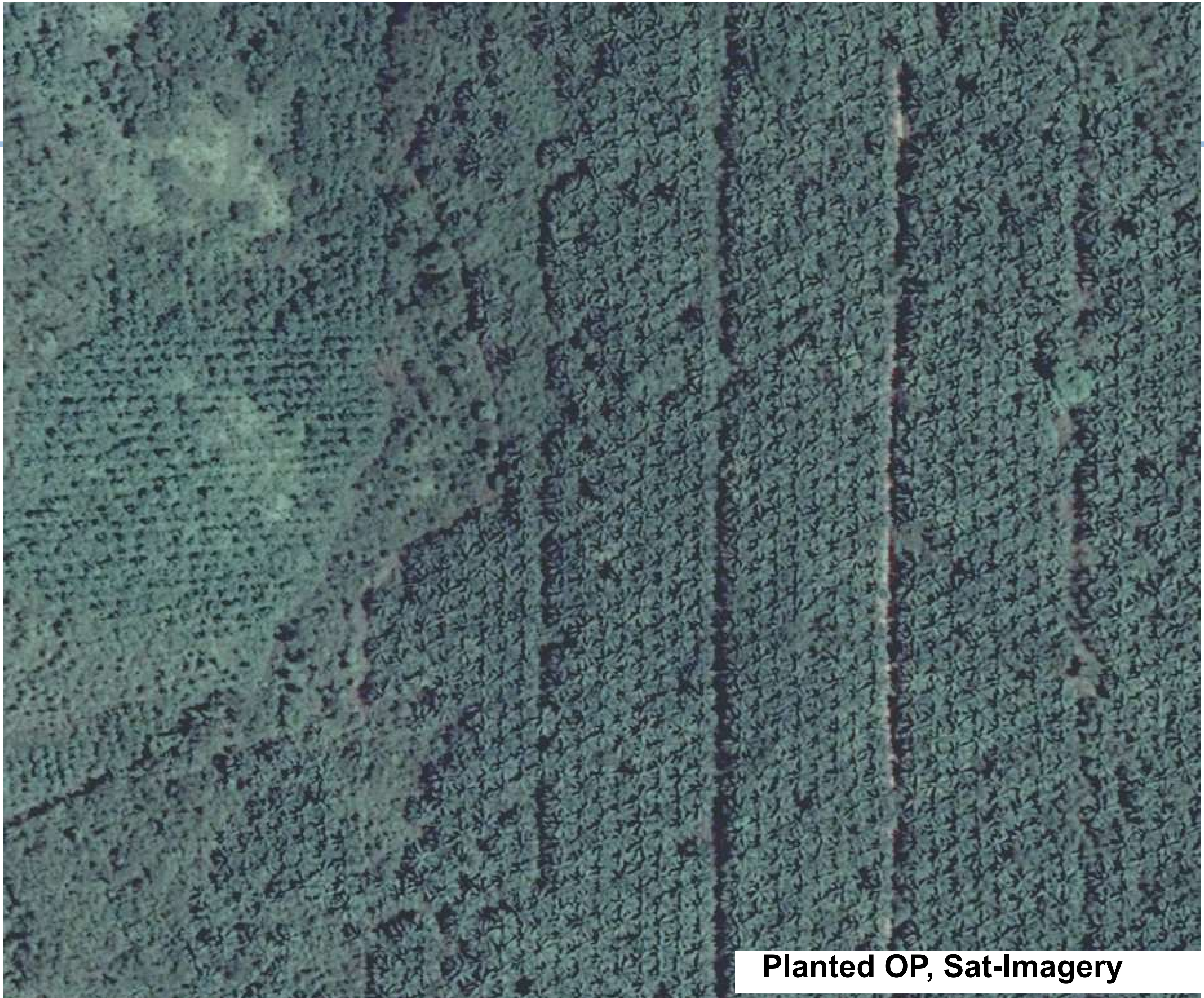

SHWE KANBAWZA COMPANY LIMITED
PALM OIL PLANTATION LAND LEASE AREA, YE BYU, TANINTHARYI REGION
LEGEND
GRAPHIC SCALE



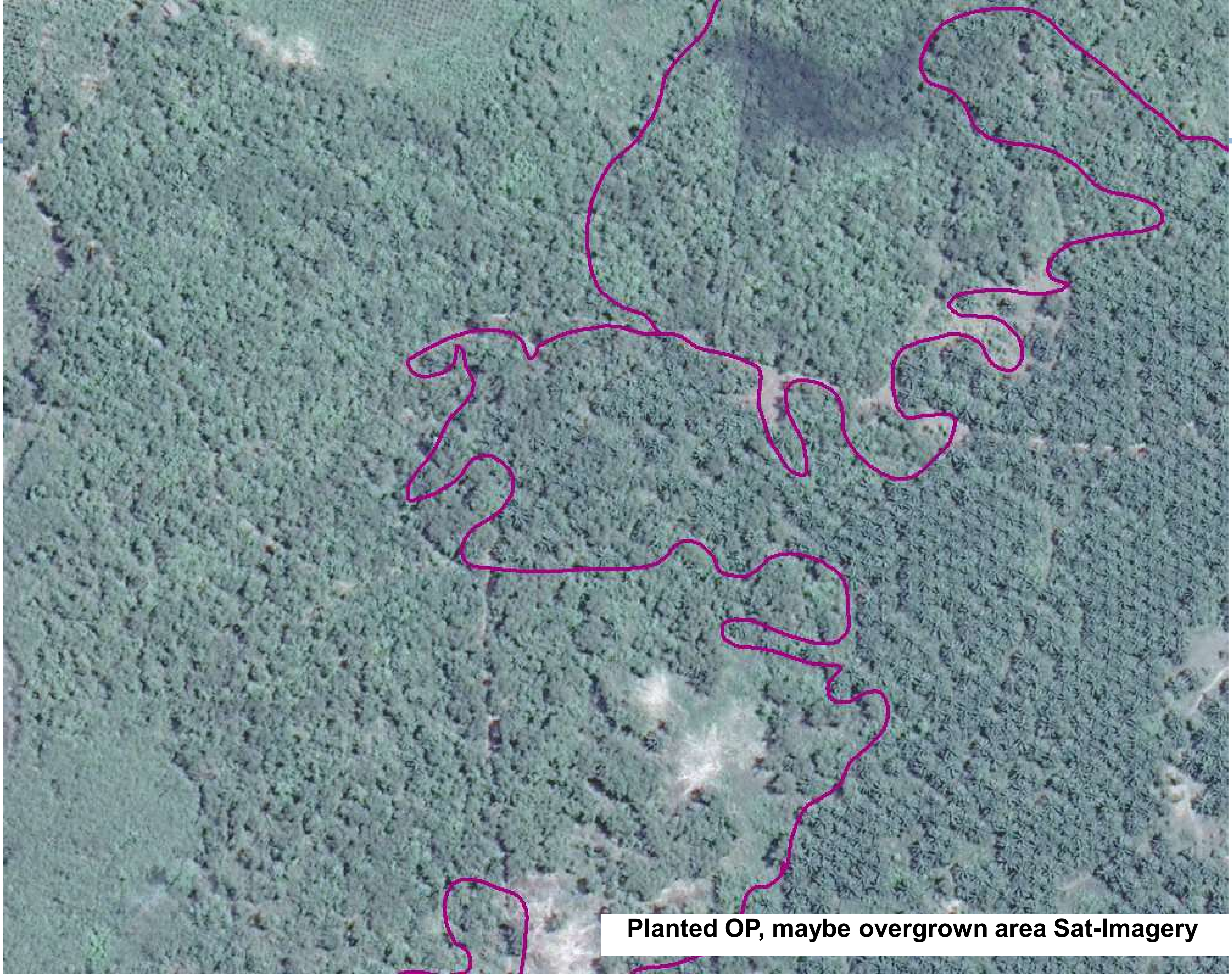
2011 - 0030502

Mapping of planted areas using satelite images (Visual based on PL)


Shwe Kambawza
Shwe Kambawza

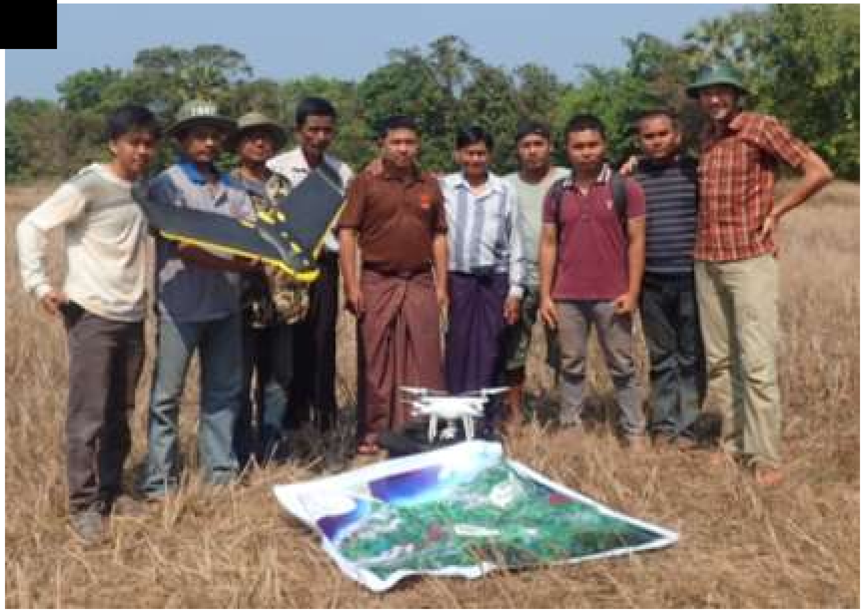


Planted OP, Sat-Imagery



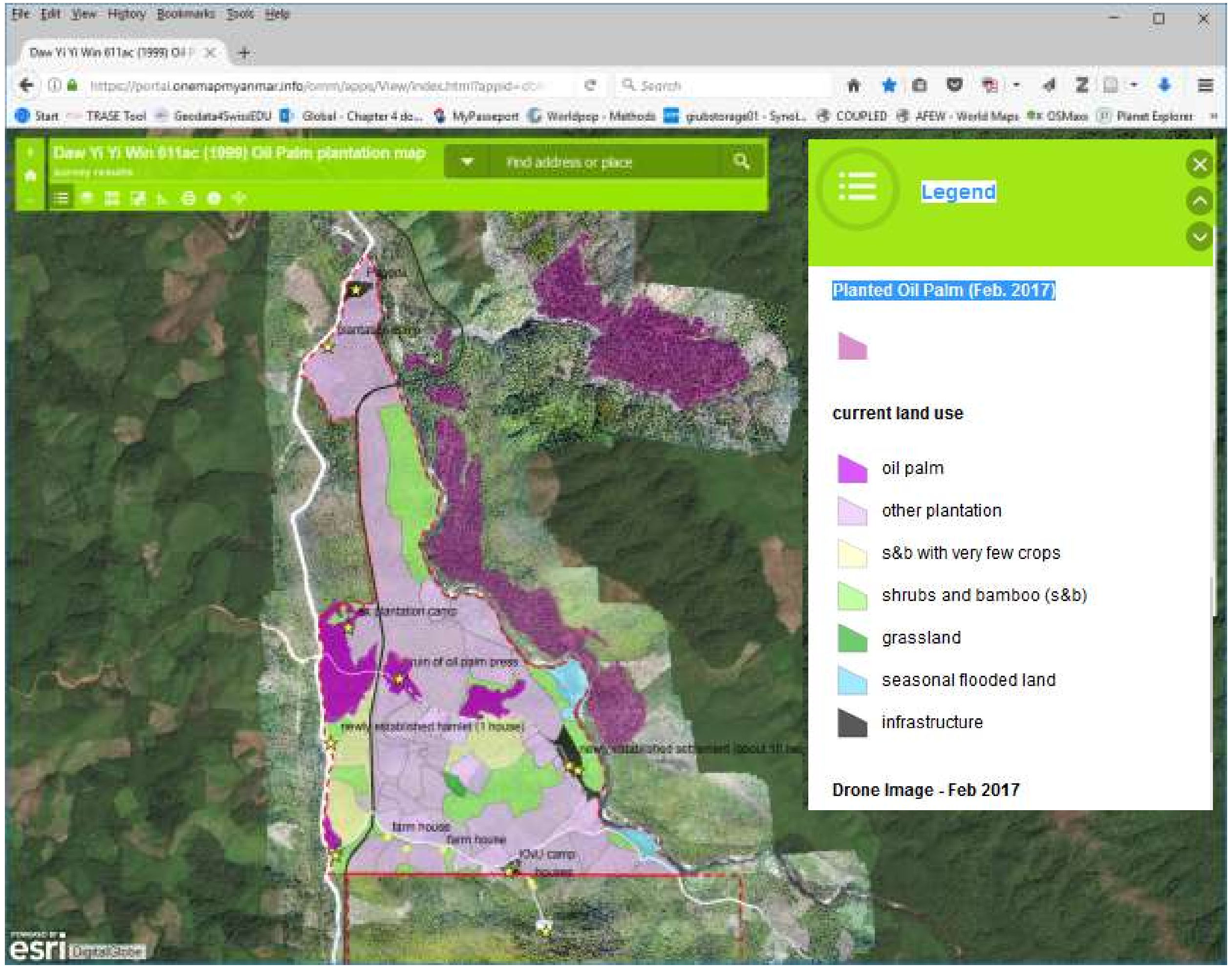
Planted OP, maybe overgrown area Sat-Imagery

Co-production using technical means



Co-production of land use and claims towards navigating conflicts and finding solutions

Current land use


File Edit View History Bookmarks Tools Help
Daw Yi Yi Win 611ac (1999) Oil P
https://portal.onemapmyanmar.info/omm/apps/View/index.html?appid=
Search
Daw Yi Yi Win 611ac (1099) Oil Palm plantation map
survey results
Find address or place
plantation camp
ruin of oil palm press
newly established hamlet (1 house)
farm house
farm house
KNU camp
esri DigitalGlobe

Legend

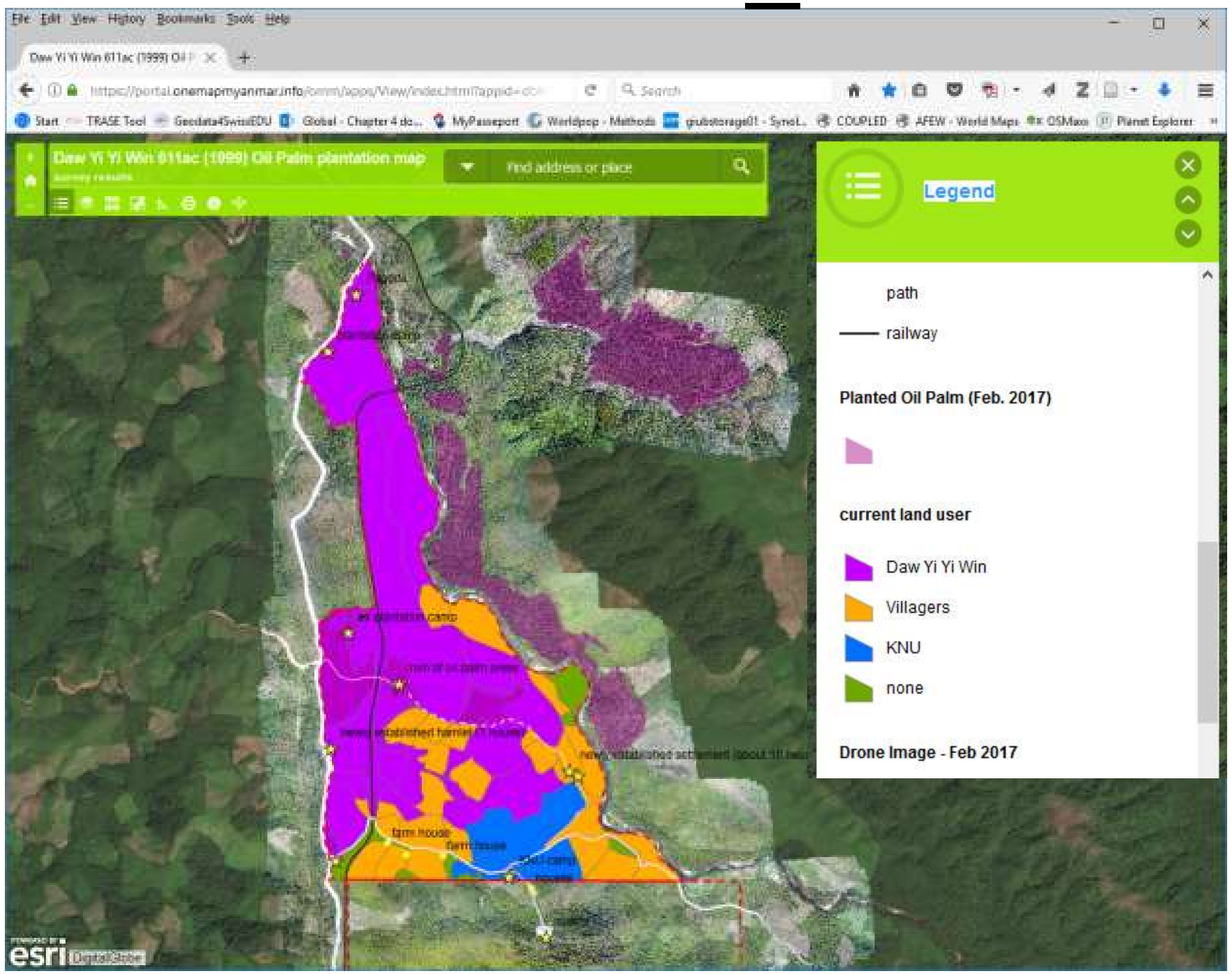
Planted Oil Palm (Feb. 2017)

current land use

- 🟪 oil palm
- ▨ other plantation
- ▨ s&b with very few crops
- ▨ shrubs and bamboo (s&b)
- 🟩 grassland
- 🟦 seasonal flooded land
- ⬛ infrastructure

Drone Image - Feb 2017

Current land users


File Edit View History Bookmarks Tools Help
Daw Yi Yi Win 611ac (1999) Oil P
https://portal.onemapmyanmar.info/omm/apps/View/index.html?appid=
Search
Daw Yi Yi Win 611ac (1099) Oil Palm plantation map
survey results
Find address or place
plantation camp
ruin of oil palm press
newly established hamlet (1 house)
farm house
farm house
KNU camp
esri DigitalGlobe

Legend

path

railway

Planted Oil Palm (Feb. 2017)

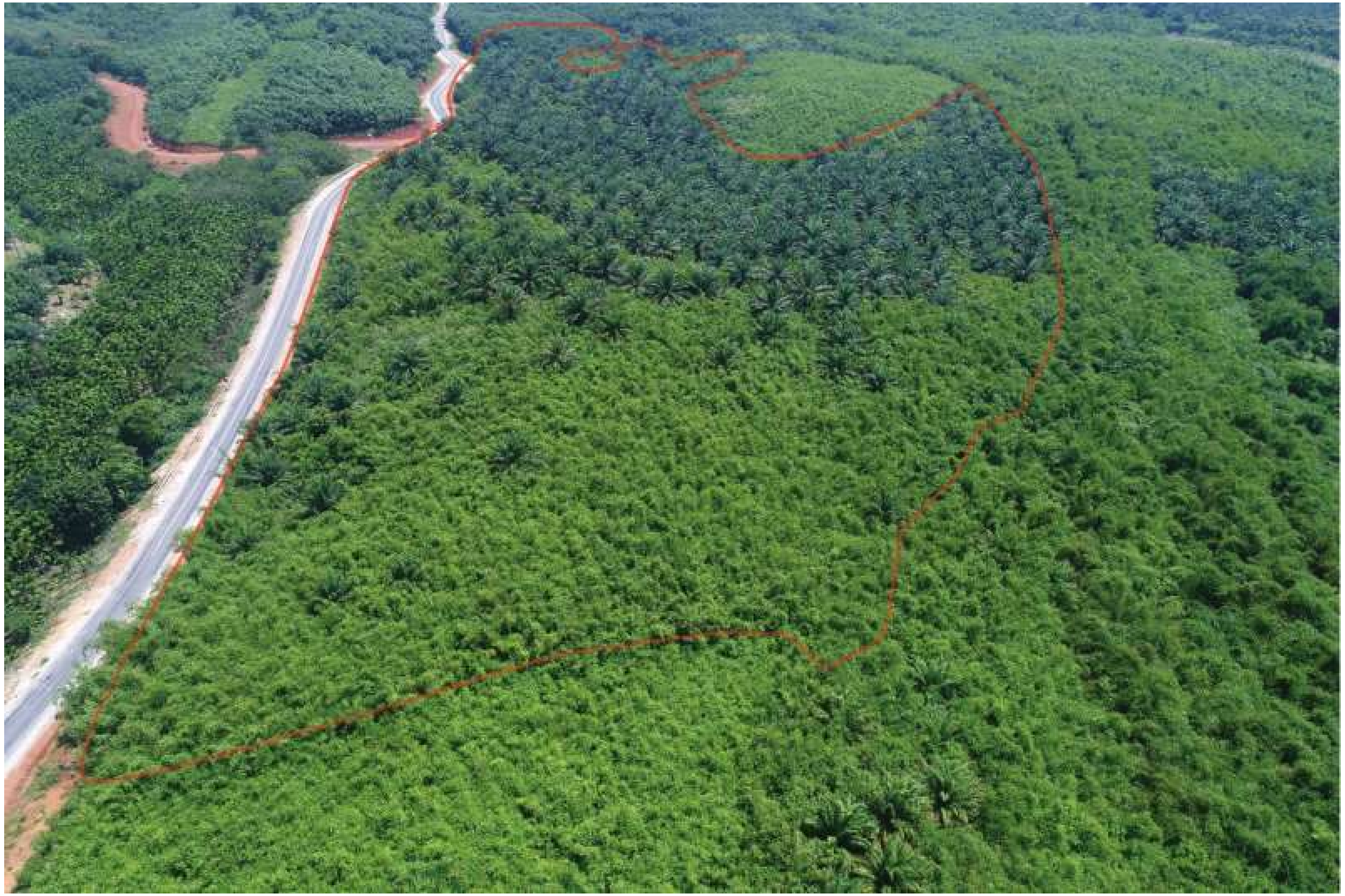
current land user

- 🟪 Daw Yi Yi Win
- 🟧 Villagers
- 🟦 KNU
- 🟩 none

Drone Image - Feb 2017

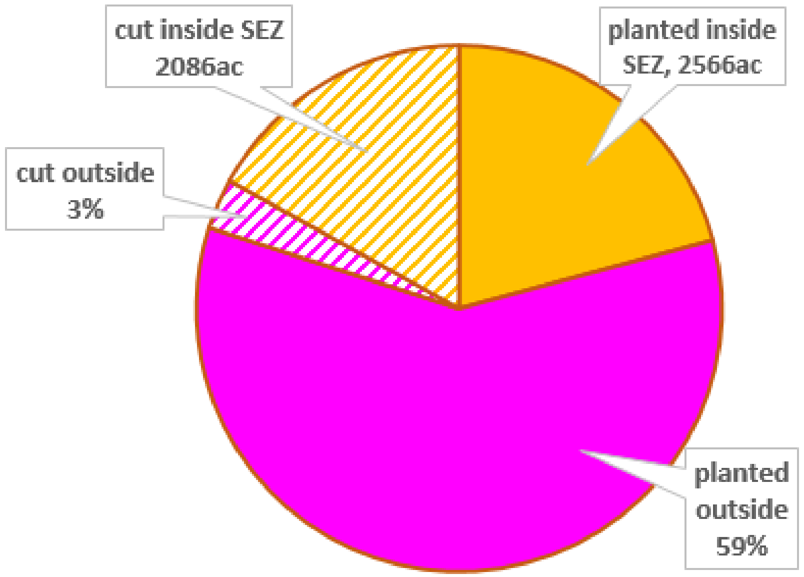
Link to interactive WebApp

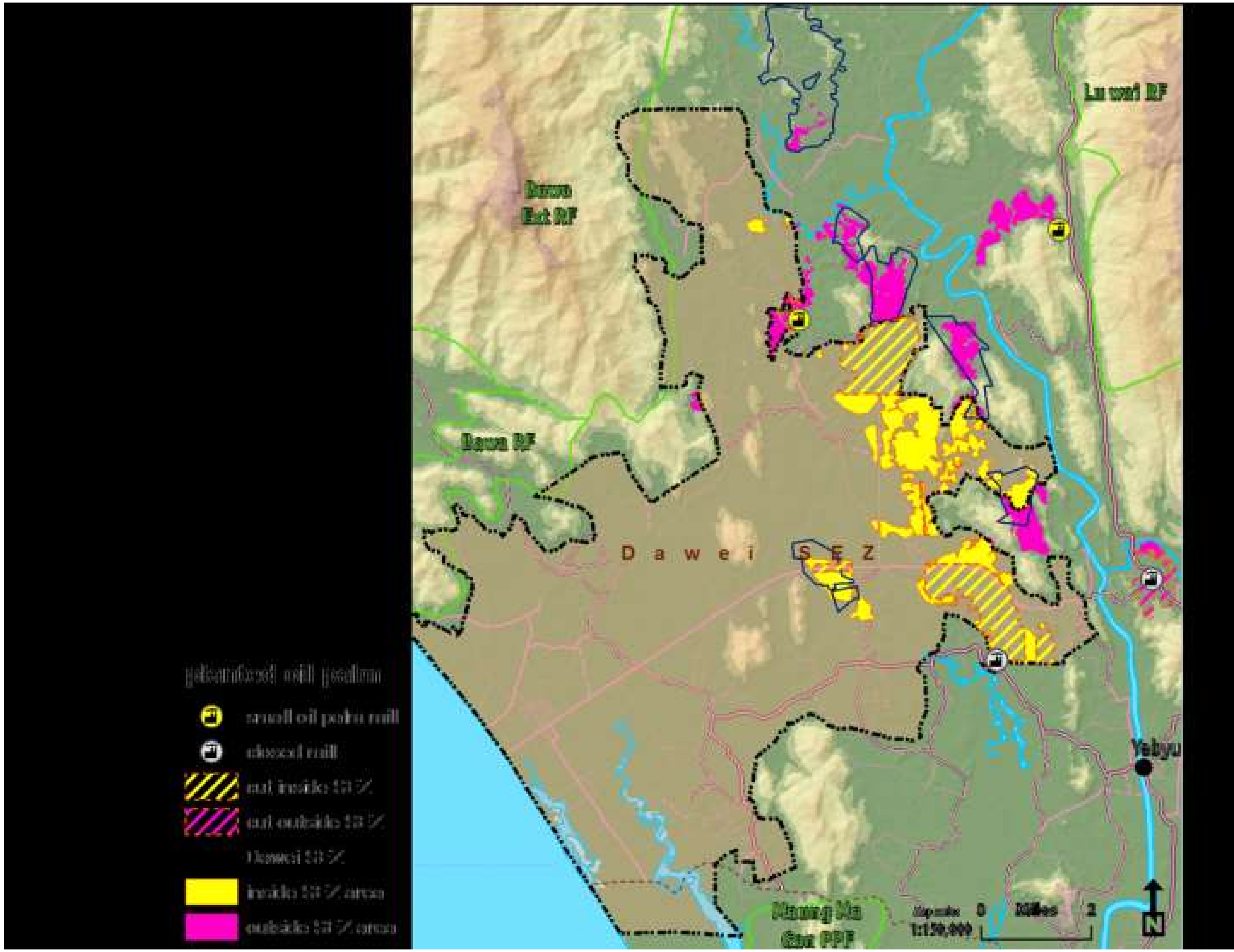
Planted or not?



Dawei Special Economic Zone

and planted/cut Oil Palm

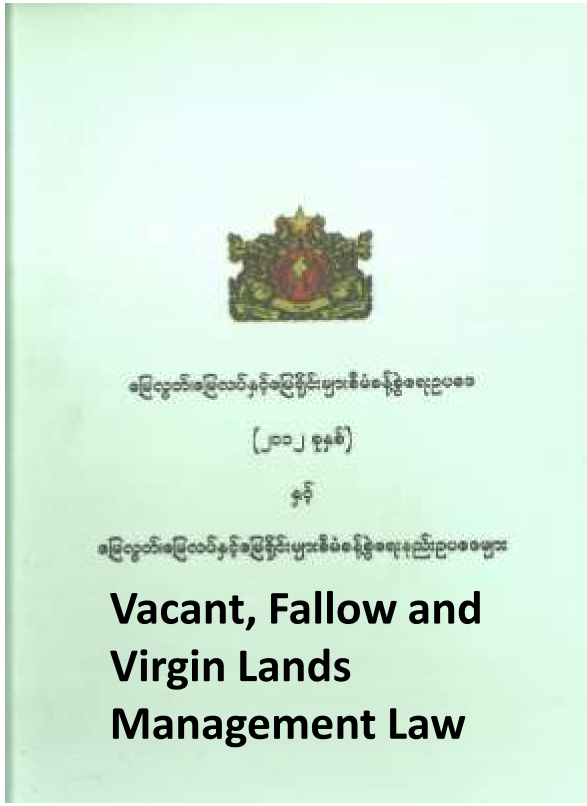



Lu wai RF
Dawa Eat RF
Dawa RF
D a w e i S E Z
Yebyu
Maung Ma Gan PPF
Map scale 1:150,000
0 Miles 2
N
planted oil palm
small oil palm mill
closed mill
cut inside SEZ
cut outside SEZ
Dawei SEZ
inside SEZ area
outside SEZ area

From mapping to policy processes and land redistribution to villages

Example of activities: Putting shifting cultivation and customary land claims “on the map”

Putting shifting cultivation and customary land claims “on the map”



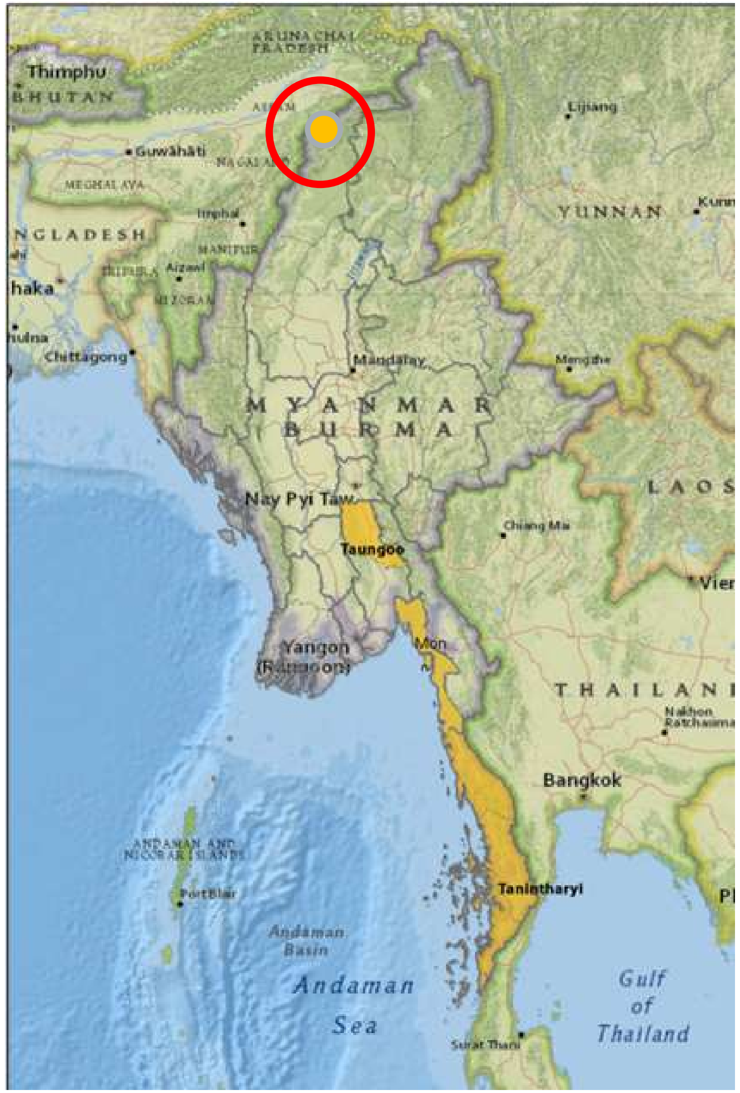
မြေလွတ်မြေလပ်နှင့်မြေရိုင်းများစီမံခန့်ခွဲရေးဥပဒေ

(၂၀၁၂ ခုနှစ်)

နှင့်

မြေလွတ်မြေလပ်နှင့်မြေရိုင်းများစီမံခန့်ခွဲရေးနည်းဥပဒေများ

Vacant, Fallow and Virgin Lands Management Law

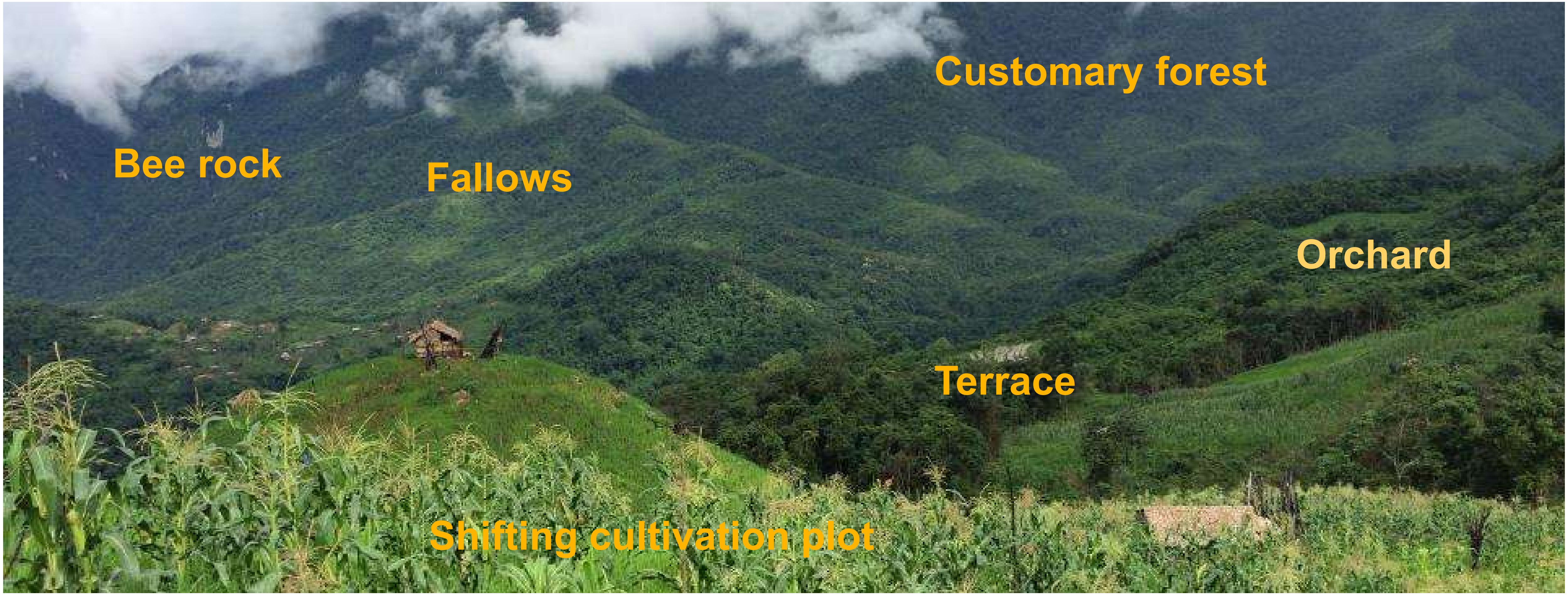

ARUNACHAL PRADESH
Thimphu
BHUTAN
ASSAM
Guwāhāti
NAGALAND
MEGHALAYA
Lijiang
YUNNAN
Kunn
NGLADESH
Imphal
MANIPUR
TRIPURA
Aizawl
haka
MIZORAM
hulna
Chittagong
Mandalay
Mengzhe
MYANMAR
BURMA
LAOS
Nay Pyi Taw
Chiang Mai
Taungoo
Vien
Yangon
(Rangoon)
Mon
THAILAN
Nakhon Ratchasima
Bangkok
ANDAMAN AND NICOBAR ISLANDS
Port Blair
Tanintharyi
Andaman Basin
Andaman Sea
Gulf of Thailand
Surat Thani

Participatory mapping and documentation of customary lands in Nagaland

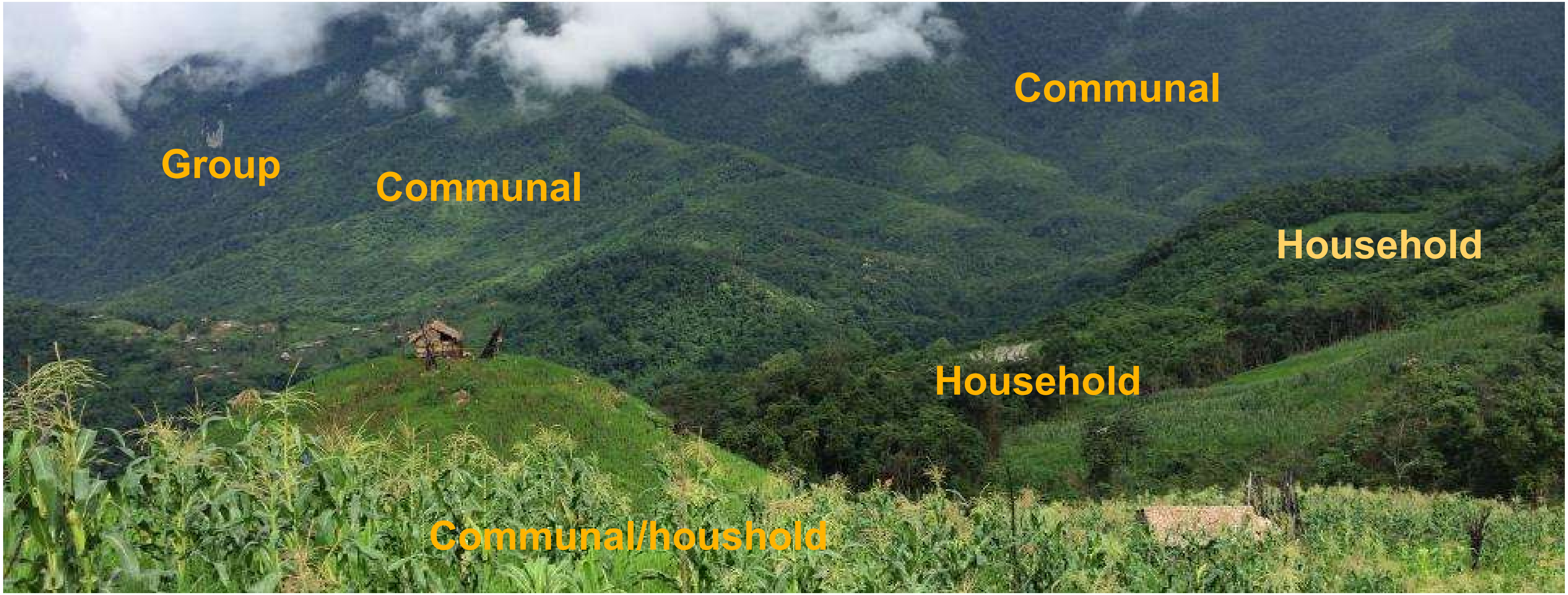
Nagaland

Land Use Types

Land Use Types


Customary forest
Bee rock
Fallows
Orchard
Terrace
Shifting cultivation plot

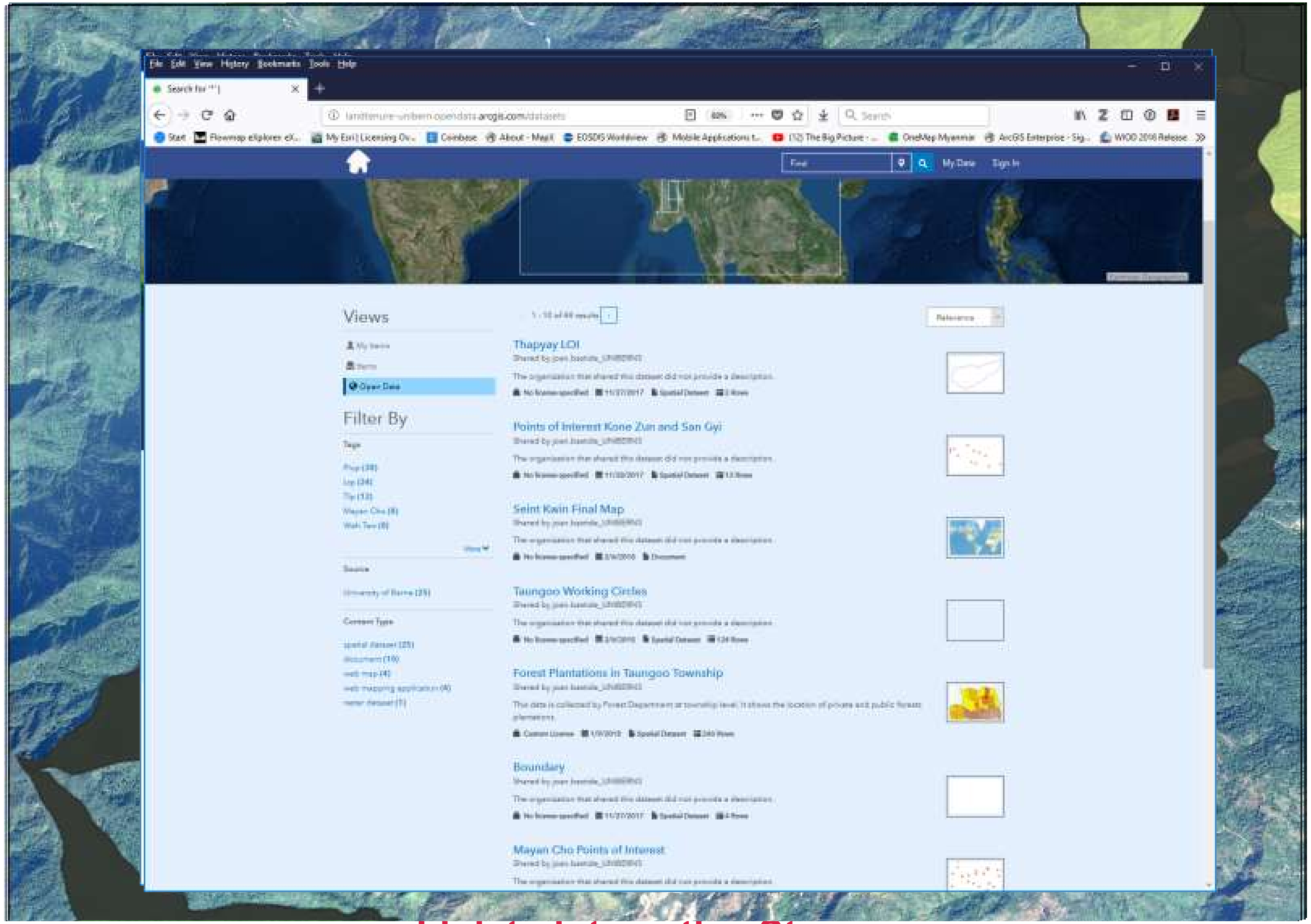
Land Use Types


Communal
Group
Communal
Household
Household
Communal/houshold

Participatory mapping of: Current land use and land tenure

Participatory mapping of: Current land use and land tenure

Participatory mapping of: Current land use and land tenure



Thapyay LOI

The organization that shared this dataset did not provide a description.

Points of Interest Kone Zun and San Gyi

The organization that shared this dataset did not provide a description.

Seint Kwin Final Map

The organization that shared this dataset did not provide a description.

Taungoo Working Circles

The organization that shared this dataset did not provide a description.

Forest Plantations in Taungoo Township

The data is collected by Forest Department at township level. It shows the location of private and public forest plantations.

Boundary

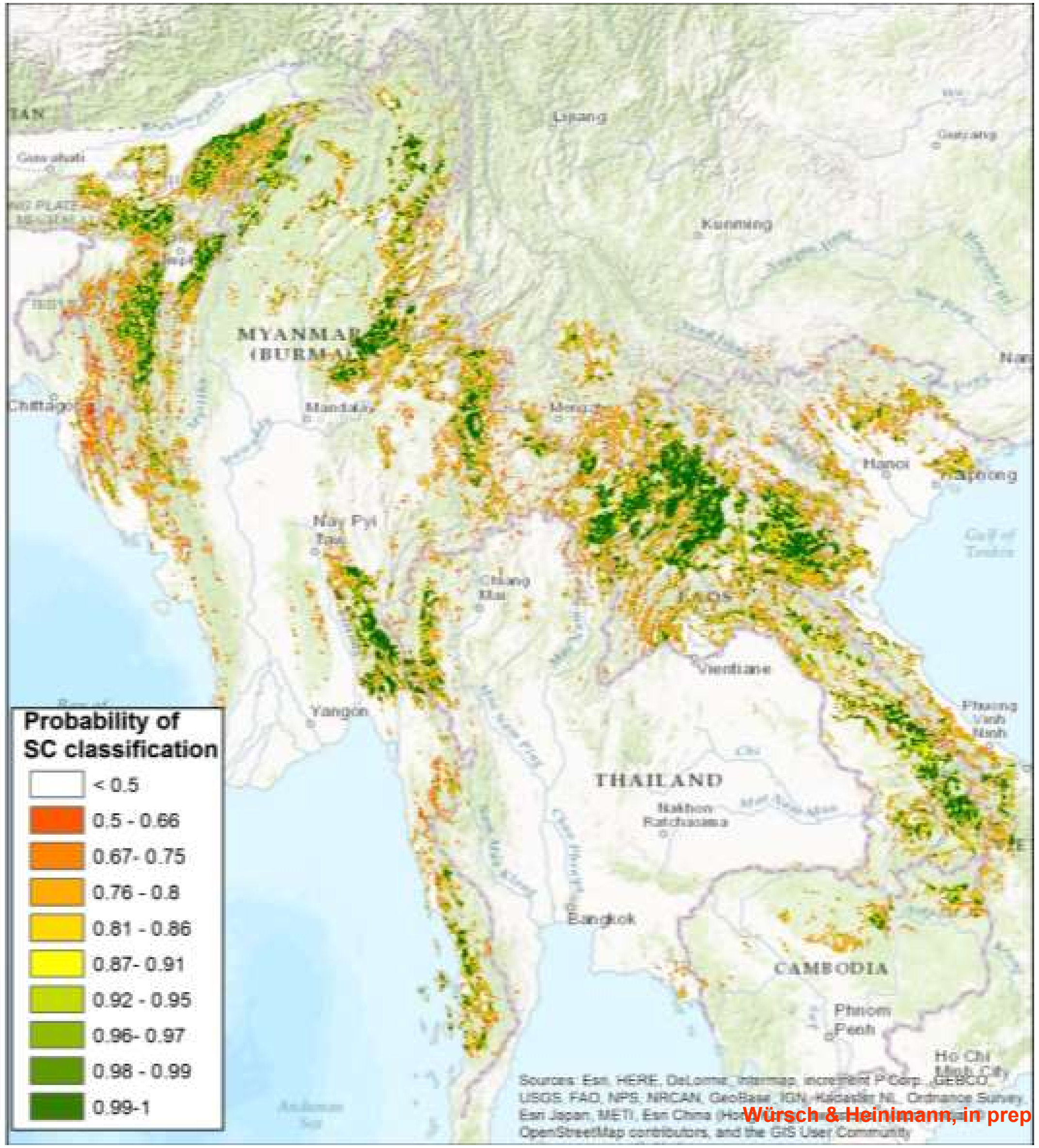
The organization that shared this dataset did not provide a description.

Mayan Cho Points of Interest

The organization that shared this dataset did not provide a description.

Link to interactive Storymap

Regional shifting cultivation probability map (using Google Earth Engine)


Probability of SC classification
< 0.5
0.5 - 0.66
0.67- 0.75
0.76 - 0.8
0.81 - 0.86
0.87- 0.91
0.92 - 0.95
0.96- 0.97
0.98 - 0.99
0.99-1
MYANMAR (BURMA)
THAILAND
LAOS
CAMBODIA
Lijiang
Kunming
Chittagong
Mandalay
Nay Pyi Taw
Chiang Mai
Hanoi
Haiphong
Vientiane
Yangon
Nakhon Ratchasima
Bangkok
Phnom Penh
Ho Chi Minh City
Phuong Vinh Ninh

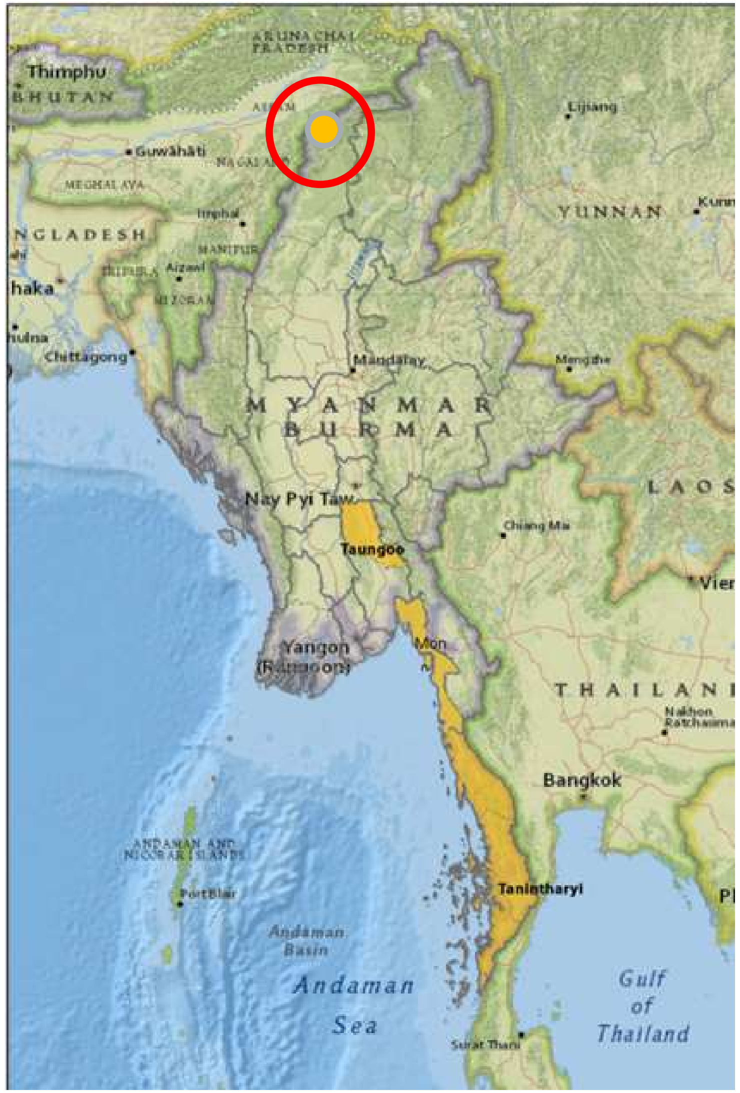
Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Ho OpenStreetMap contributors, and the GIS User Community

Würsch & Heinimann, in prep

Example of activities: Putting shifting cultivation and customary land claims “on the map”

Putting shifting cultivation and customary land claims “on the map”

Vacant, Fallow and Virgin Lands Management Law


ARUNACHAL PRADESH
Thimphu
BHUTAN
Guwāhāti
MEGHALAYA
NAGALAND
Imphal
MANIPUR
NGLADESH
TRIPURA
Aizawl
MIZORAM
haka
hulna
Chittagong
Lijiang
YUNNAN
Kunm
Mandalay
Mengzhe
MYANMAR
BURMA
LAOS
Nay Pyi Taw
Taungoo
Chiang Mai
Vien
Yangon (Rangoon)
Mon
THAILAN
Nakhon Ratchasima
Bangkok
ANDAMAN AND NICOBAR ISLANDS
Port Blair
Tanintharyi
Pl
Andaman Basin
Andaman Sea
Gulf of Thailand
Surat Thani

Thank you

OneMap
MYANMAR

www.facebook.com/OneMapMyanmar/
www.onemapmyanmar.info (soon public)

Schweizerische Eidgenossenschaft
Confédération suisse
Confederazione Svizzera
Confederaziun svizra

Swiss Agency for Development and Cooperation SDC

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CENTRE FOR DEVELOPMENT AND ENVIRONMENT

Land
Core
Group

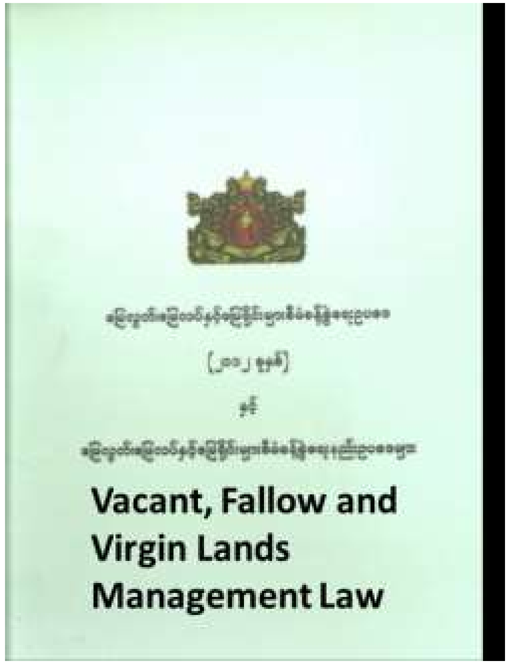
Co-production of knowledge: Putting shifting cultivation on the map

Support communities documenting their land resources (aim n> 70)

FOREST AND LAND USE PLANNING PLATFORM
ABOUT THE LUP PLATFORM

Understand local contexts through case studies and engagement with
Local communities

Strategically work with policy makers at all levels to alter policies and zonings



မြေလွတ်မြေလပ်နှင့်မြေရိုင်းများစီမံခန့်ခွဲရေးဥပဒေ

(၂၀၁၂ ခုနှစ်)

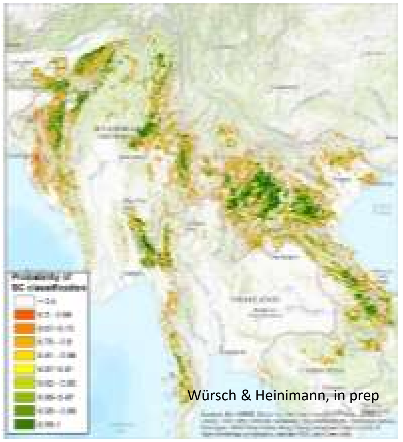
နှင့်

မြေလွတ်မြေလပ်နှင့်မြေရိုင်းများစီမံခန့်ခွဲရေးနည်းဥပဒေများ

Vacant, Fallow and Virgin Lands Management Law

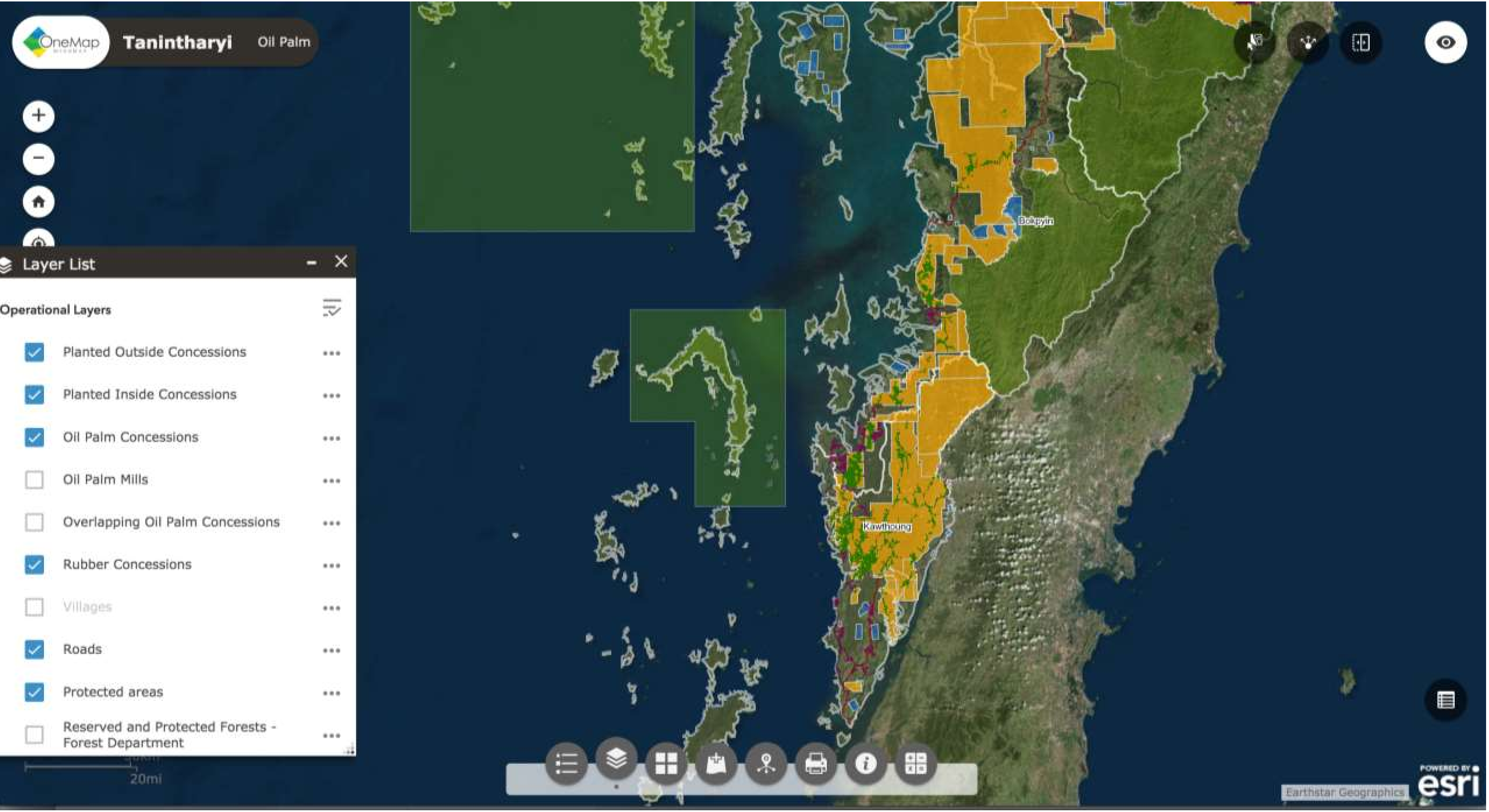
Work with technical staff in gvt

NLCD 1992 Land Cover Classification Legend
11 Open Water
12 Perennial Ice/Snow
21 Low Intensity Residential
22 High Intensity Residential
23 Commercial/Industrial/Transportation
31 Bare Rock/Sand/Clay
32 Quarries/Strip Mines/Gravel Pits
33 Transitional Barren
41 Deciduous Forest
42 Evergreen Forest
43 Mixed Forest
51 Shrubland
61 Orchards/Vineyards/Other
71 Grasslands/Herbaceous
81 Pasture/Hay
82 Row Crops
83 Small Grains
84 Fallow
85 Urban/Recreational Grasses
91 Woody Wetlands
92 Emergent Herbaceous Wetlands



Würsch & Heinimann, in prep

Use new technologies to put SC on the map


OneMap
Tanintharyi
Oil Palm
Bokpyin
Kawthoung
20mi
Earthstar Geographics
POWERED BY esri

Layer List

Operational Layers

- ☑ Planted Outside Concessions
- ☑ Planted Inside Concessions
- ☑ Oil Palm Concessions
- ☐ Oil Palm Mills
- ☐ Overlapping Oil Palm Concessions
- ☑ Rubber Concessions
- ☐ Villages
- ☑ Roads
- ☑ Protected areas
- ☐ Reserved and Protected Forests - Forest Department

Link to interactive WebApp

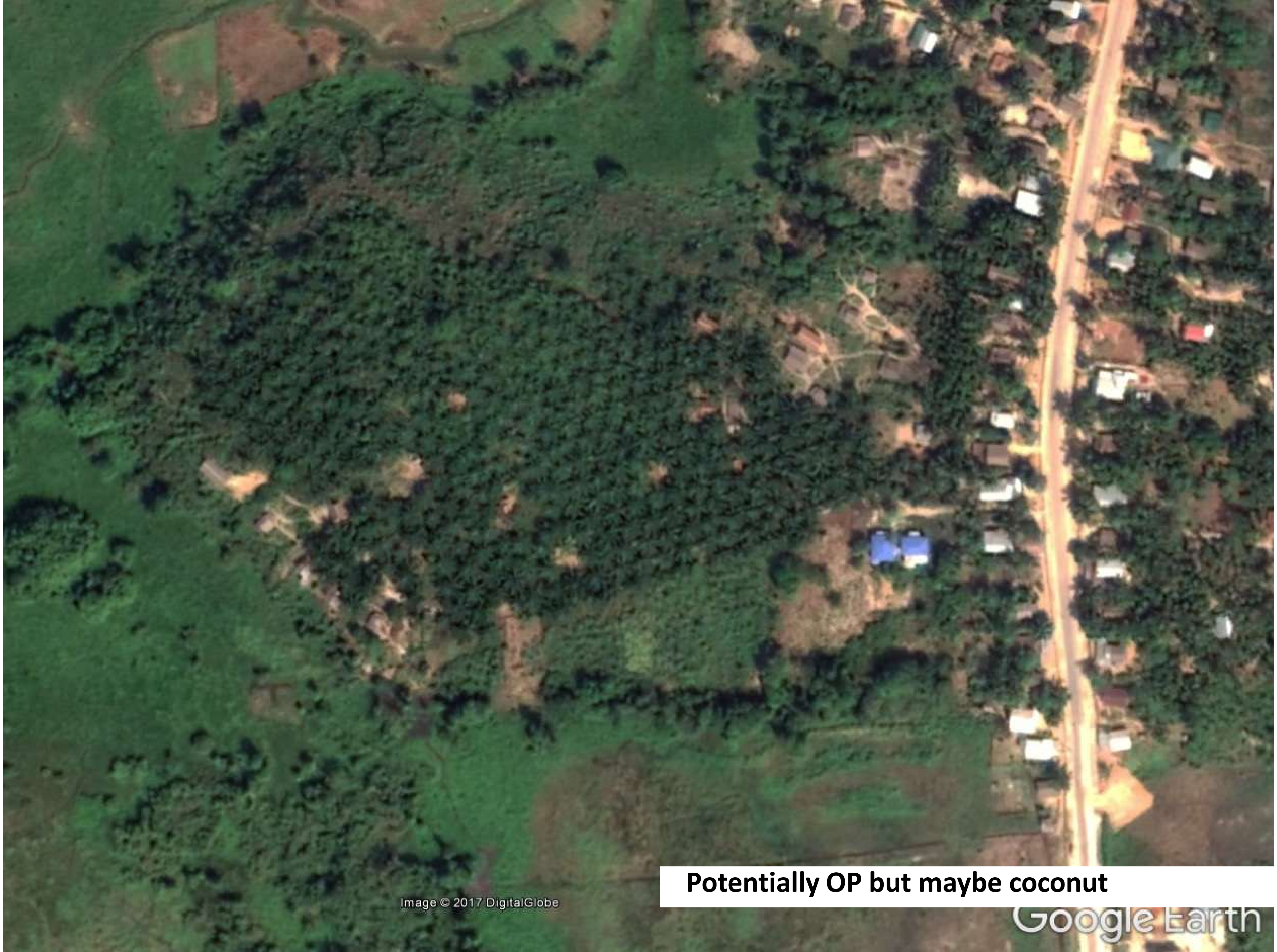
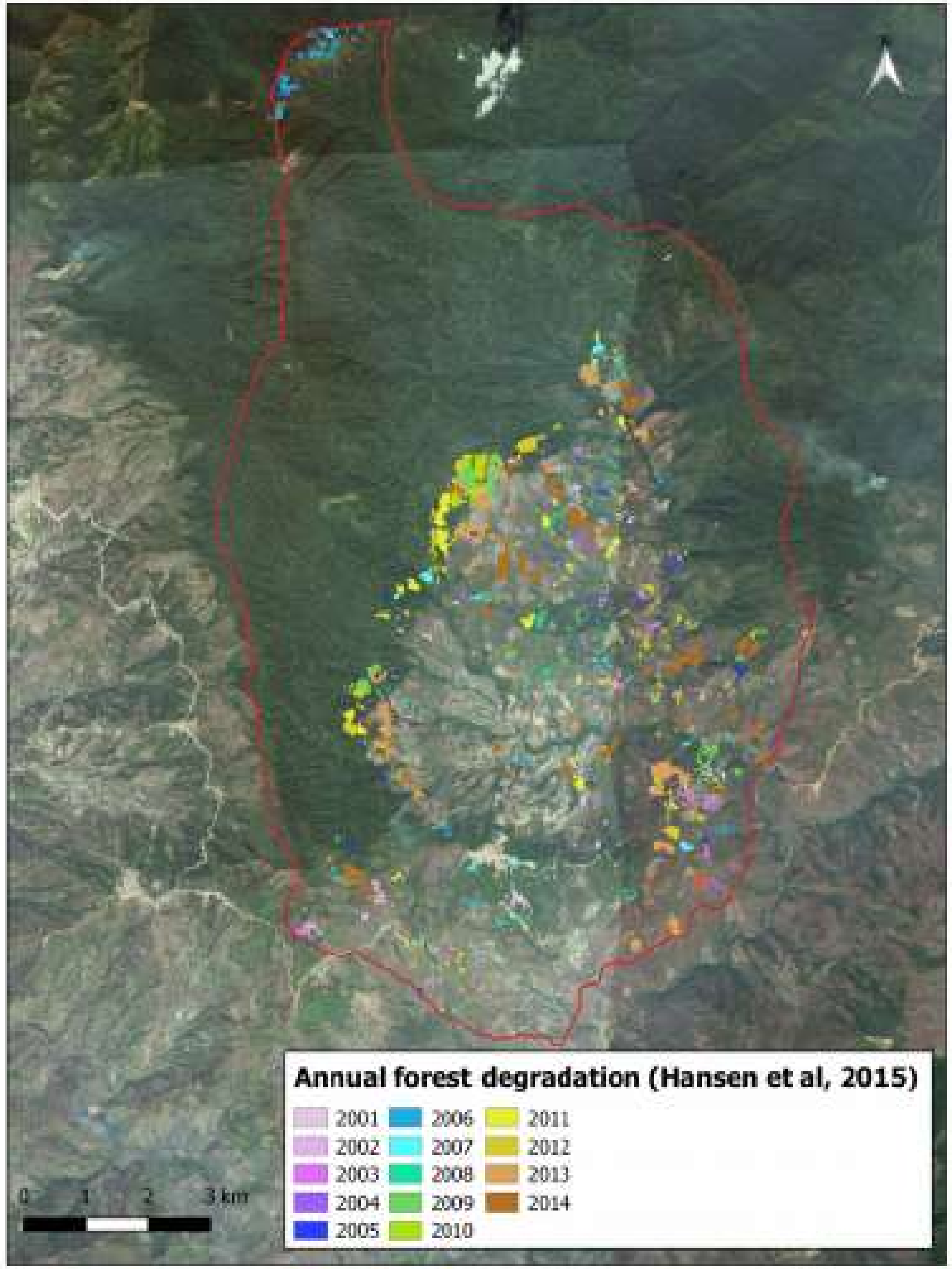


Image © 2017 DigitalGlobe
Google Earth

Potentially OP but maybe coconut

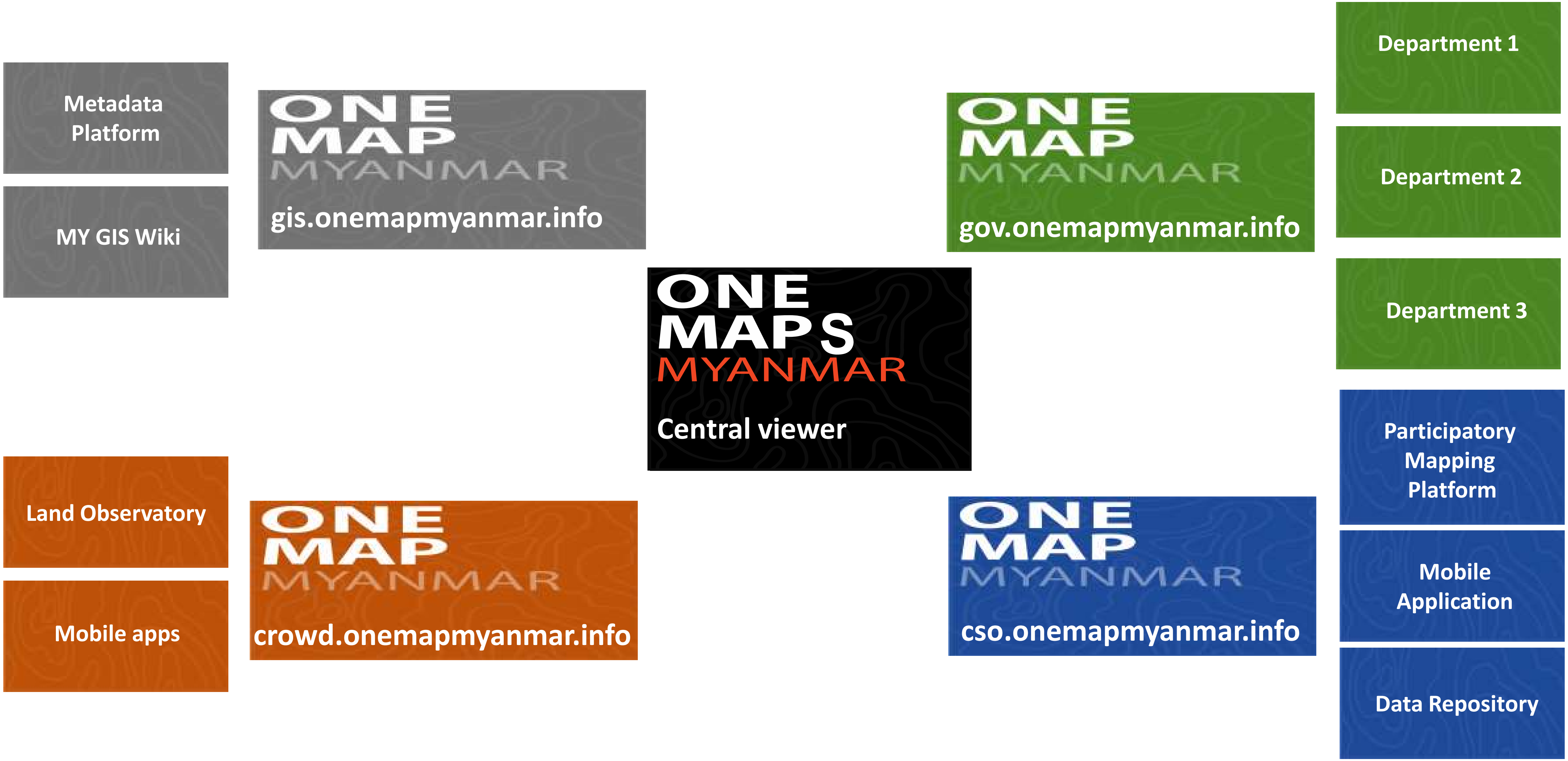
Kuki Village Map, Lashi Township


Annual forest degradation (Hansen et al, 2015)
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
0
1
2
3 km

Basel data outside government structures: Crowed sourcing through OpenStreetMap

#OpenStreetMapMM
OneMap
MYANMAR
Phandeeyar
MYANMAR INNOVATION LAB

OneMap(s)? An constellation of interlinked tools, modules, platforms and processes



Metadata Platform

MY GIS Wiki

ONE MAP MYANMAR
gis.onemapmyanmar.info

ONE MAP MYANMAR
gov.onemapmyanmar.info

Department 1

Department 2

Department 3

ONE MAPS MYANMAR
Central viewer

Land Observatory

Mobile apps

ONE MAP MYANMAR
crowd.onemapmyanmar.info

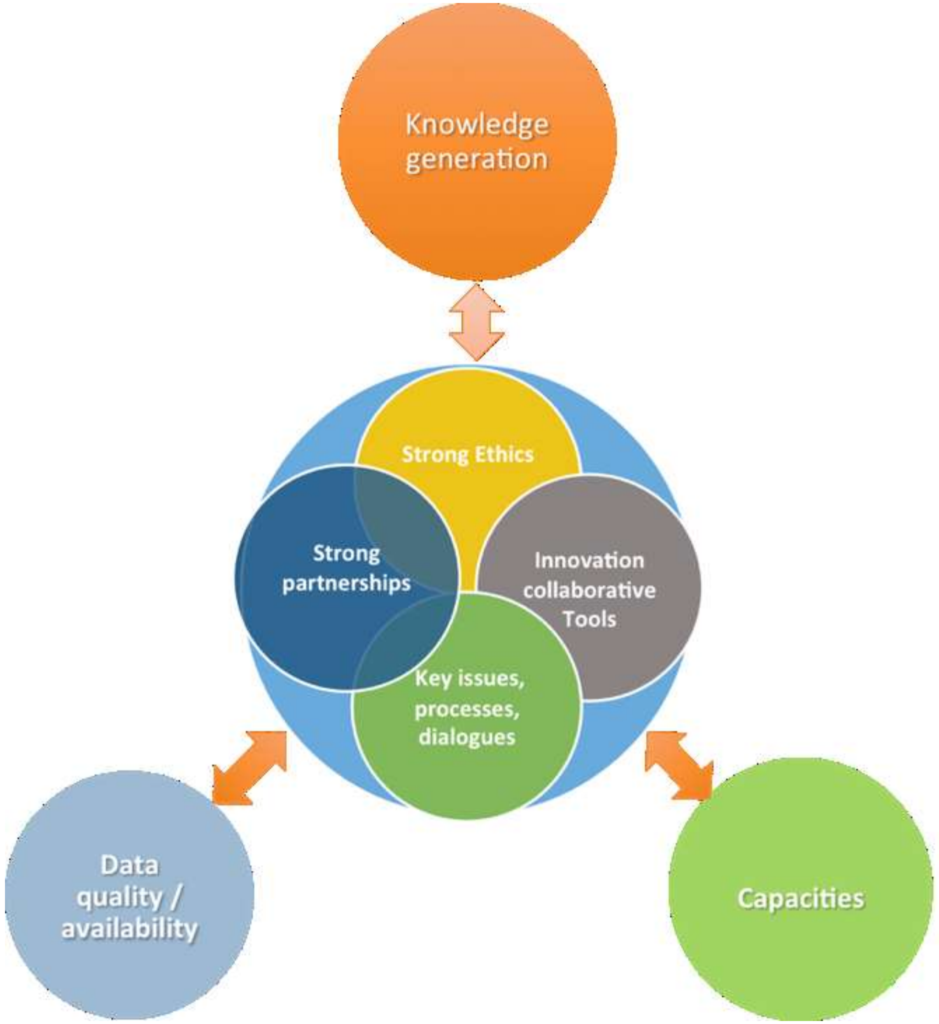
ONE MAP MYANMAR
cso.onemapmyanmar.info

Participatory Mapping Platform

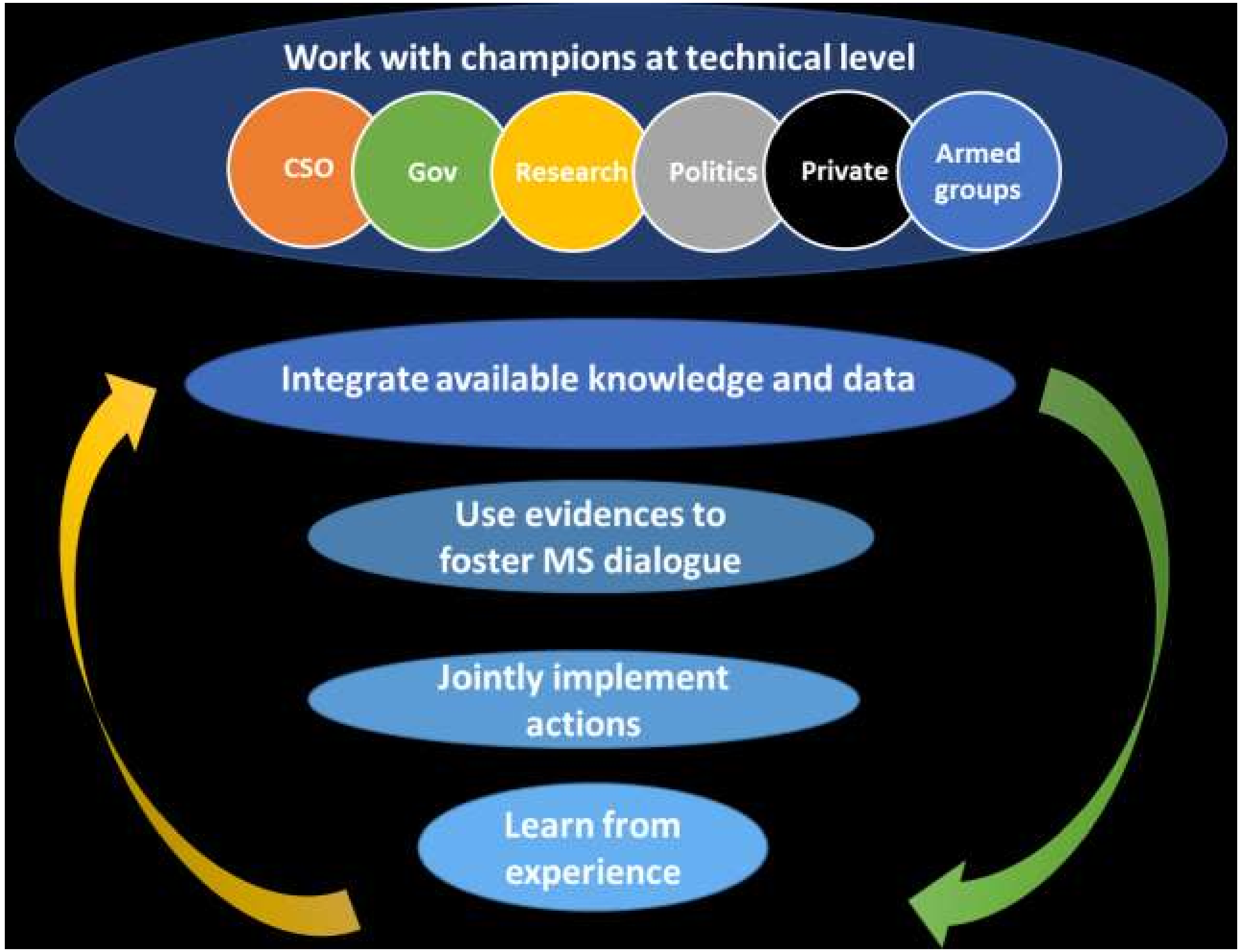
Mobile Application

Data Repository

OneMap(s)? An constellation of interlinked tools, modules, platforms and processes

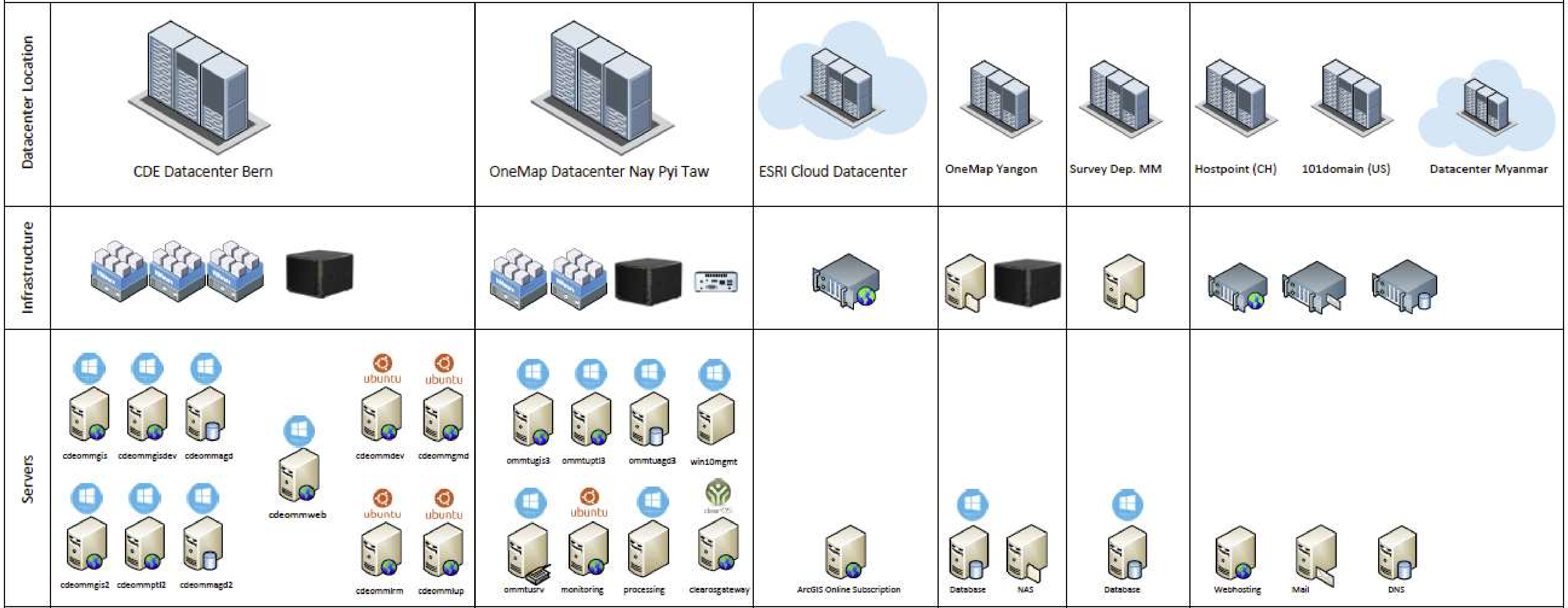


Knowledge generation
Strong Ethics
Strong partnerships
Innovation collaborative Tools
Key issues, processes, dialogues
Data quality / availability
Capacities



Work with champions at technical level
CSO
Gov
Research
Politics
Private
Armed groups
Integrate available knowledge and data
Use evidences to foster MS dialogue
Jointly implement actions
Learn from experience

Infrastructure to Application Mapping (OneMap Myanmar)


Datacenter Location
CDE Datacenter Bern
OneMap Datacenter Nay Pyi Taw
ESRI Cloud Datacenter
OneMap Yangon
Survey Dep. MM
Hostpoint (CH)
101domain (US)
Datacenter Myanmar
Infrastructure
Servers
ubuntu
cdeommgis
cdeommgisdev
cdeommagd
cdeommweb
cdeommdev
cdeommgmd
cdeommgis2
cdeommptl2
cdeommagd2
cdeommlrm
cdeommlup
ommtugis3
ommtuptl3
ommtuagd3
win10mgmt
ommtusrv
monitoring
processing
clearosgateway
ArcGIS Online Subscription
Database
NAS
Database
Webhosting
Mail
DNS

Applications and Services

CDE Datacenter Bern

ESRI Web Applications
Web proxy: cdeommweb
https://portal.onemapmyanmar.info/omm/home/*
https://ommportal.cde.unibe.ch/onemap/home/
https://tanintharyi.onemapmyanmar.info/oilpalm/
https://tanintharyi.onemapmyanmar.info/viewer/ *
https://myitsonedam.onemapmyanmar.info/viewer/*
https://gis.onemapmyanmar.info/gis/
https://gis2.onemapmyanmar.info/gis2/
https://ommgis.cde.unibe.ch/gis/

Additional Applications
https://mediawiki.myanmargis.info/wiki/Main_Page (mediawiki)
https://wiki.myanmargis.info/ (dokuwiki)
https://metadata.myanmargis.info/ (geonetwork metadata)
http://ckan.myanmargis.info/ (ckan metadata)
https://dev.mmlandreporting.info/ (lo dev site)
https://www.mmlandreporting.info/ (lo prod site)
https://lup.myanmargis.info/ (land use planning platform)

Filesharing
NAS, CDE network drives
*password protected sites

OneMap Datacenter Nay Pyi Taw

ESRI Web Applications
https://portal.tu.onemapmyanmar.info/*
https://gis3.tu.onemapmyanmar.info/*

Additional Applications
Clear OS 7 network gateway
Active directory services
Monitoring appliance**
Data processing server
Management appliance (win10mgmt)

Filesharing
NAS

STATUS:
No productive applications possible at the moment due to regular power failures
Internal services possible when power issue fixed.
External services currently not possible due to network limitations (bandwith, public IP's).

* internal service, currently stopped due to power failures
** hardware failure

ESRI Cloud Datacenter

ESRI Web Applications
https://unibern.maps.arcgis.com/

OneMap Yangon

Filesharing
NAS

Centralized Geodatabase
Server setup in progres

Survey Department Myanmar

Centralized Geodatabase
Server was setup for training purpose

External Service Providers

Hostpoint
Web:
http://www.onemapmyanmar.info
http://media.onemapmyanmar.info
DNS server:
mygis.info, myonedata.info, myonemap.info, onemapmyanmar.info
Mail:
@onemapmyanmar.info
imap.mail.hostpoint.ch
asmtp.mail.hostpoint.ch

101domain
DNS nameserver entries:
mygis.info, myonedata.info, myonemap.info, onemapmyanmar.info

Datacenter Services Myanmar:
In evaluation