Learning and examples on the importance of information linkages from more than a decade of Myanmar climate work.

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Spectrum
Sustainable Development Knowledge Network

Inter-Agency Information Management Network
Wednesday April 5th, 2023

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Overview

- Brief Spectrum snapshot
- Starting climate work - CEDRA
- Environmental education
- “People Centred Energy” work
- Power Sector Vision
- Hydrokinetic energy / river systems
- One hydropower case - Paunglaung
- Chin and Kachin land use / registration
- EITI Reporting
- Summary

Overview ex World Environment Day Poster

MONREC

Spectrum
Sustainable Development Knowledge Network

Spectrum (SDKN)

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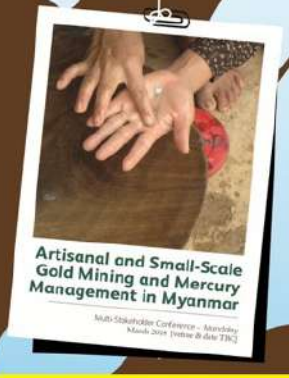
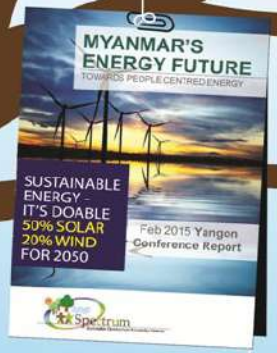
Helping community members identify links to natural resources:
Community monitoring and management as a means of improving biodiversity conservation

Identifying impacts from mercury
People are polluting the environment and themselves, harming future generations



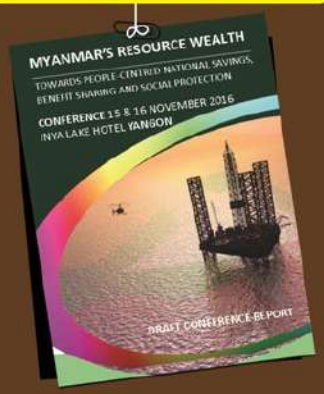
Researching women and electrification
Small scale decentralized renewals offer what is really needed by people

Advocating for renewable energy:
Renewable is do-able. Renewables can provide Myanmar's energy future

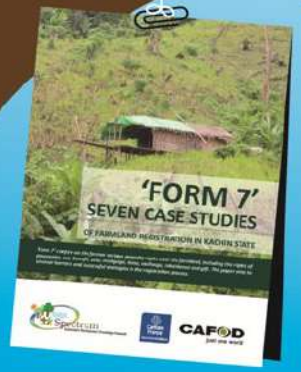


Advocating for impro environmental and soc
"Our life will become beautiful resource is used for fostering h

Promoting a Natural Resource Fund
Ahs a possible funding source for the future via benefits sharing and social protection models

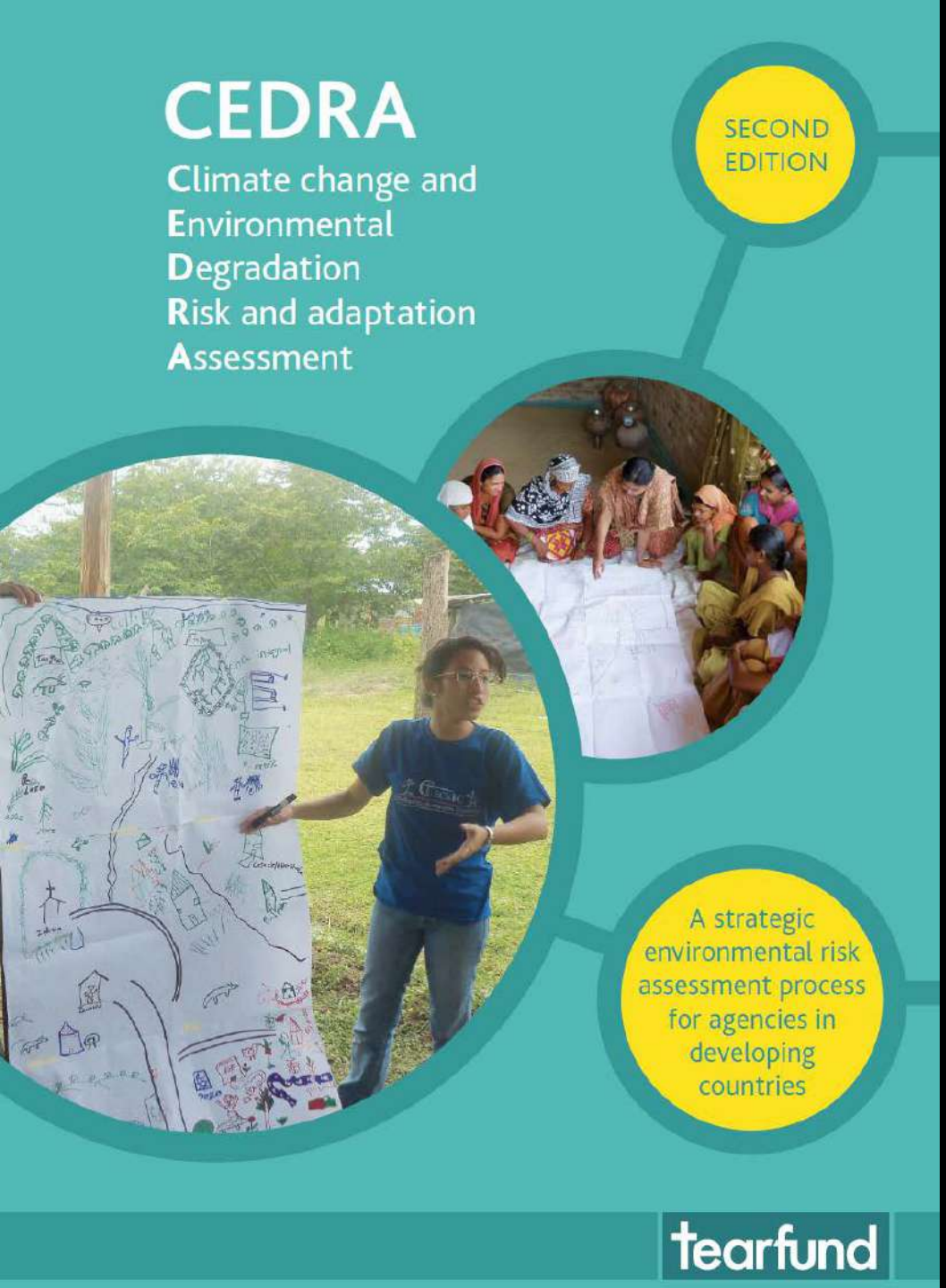


Linking people to land and livelihoods
Assisting people complete Form (7) to officially register their land



Educating teachers and children
Designing and distributing children's books and teacher guides about environmental awareness

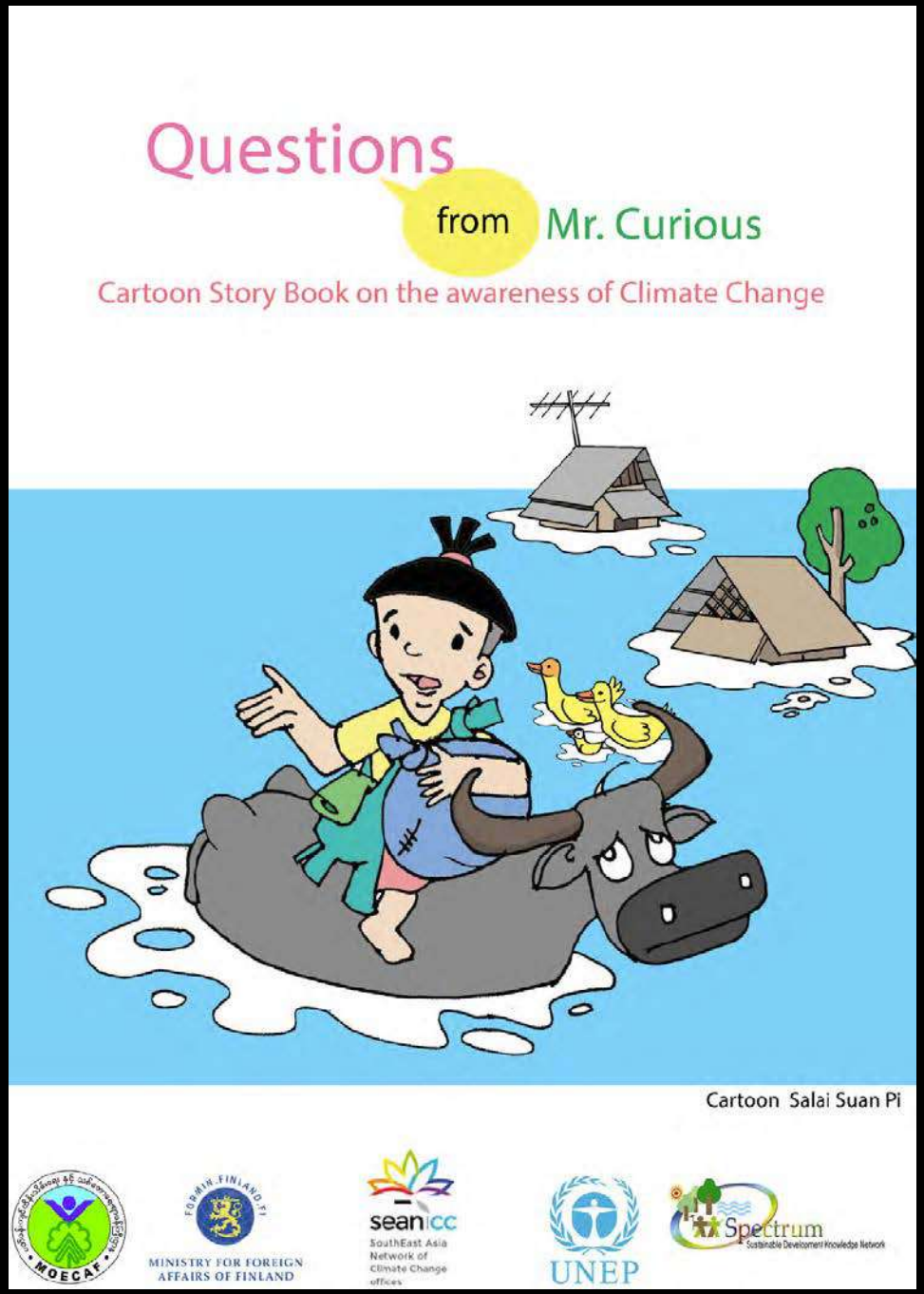
Promoting edible insect consumption
Improving livelihoods through income generation and providing nutrition supplements



Myanmar translation of 2010 edition 1, 2012, edition 2.

Clear and useful tools, yet little support for local assessments or adaptation.

All still needed!!!



2016 Myanmar language cartoon book on CC, hazards & DRR.

Part of a series of 12 cartoon books on environmental themes + other.

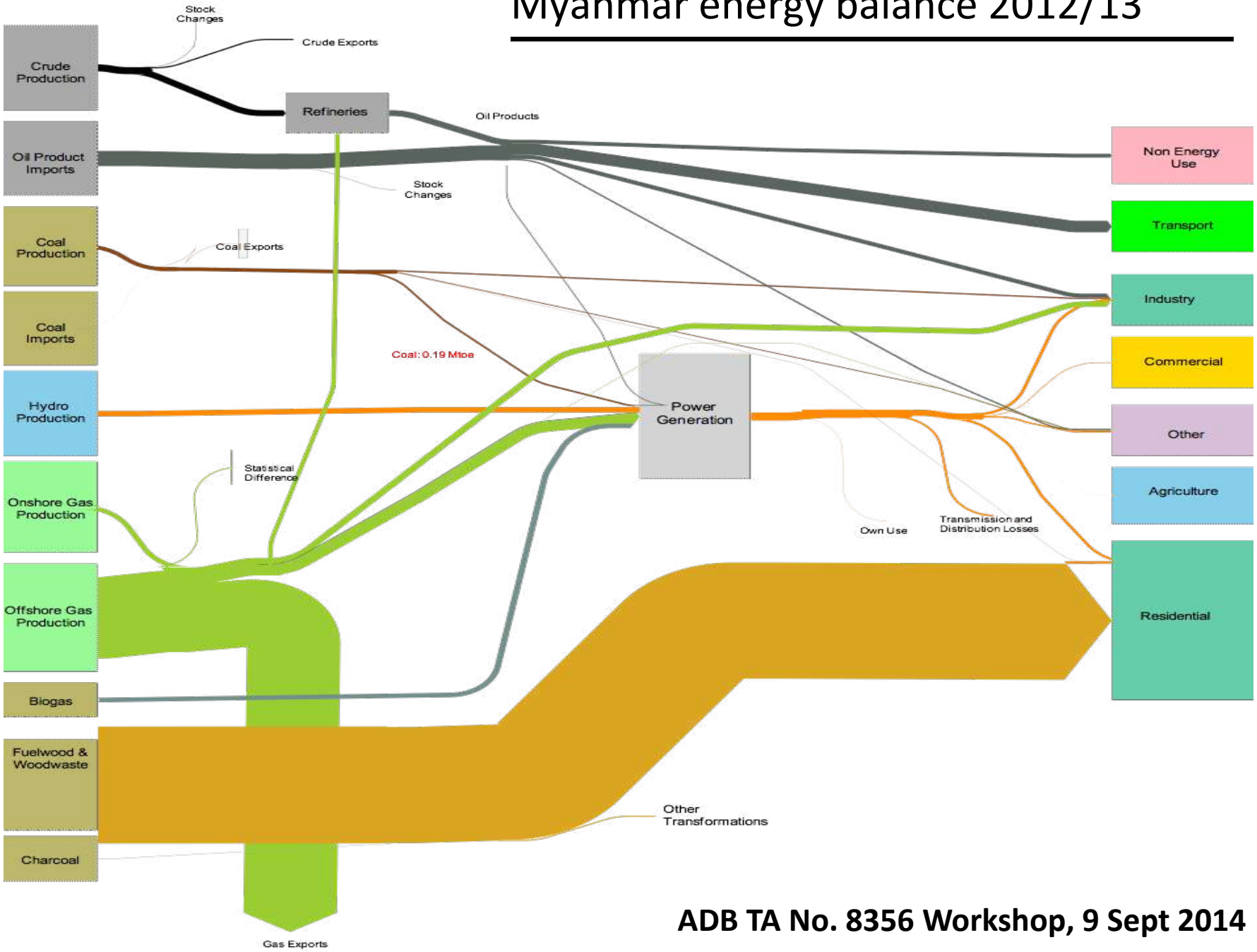
Amazing MM Energy Facts:

- 26% - Rural use of candles for lighting
- 36% / 30% candles in Urban Chin / Rakhine
– but 36% lighting is already solar in Shan,
- Rural total 11.5% solar, & 21% use batteries.

- approx 80% national energy use for cooking
- Rural cooking – 86% firewood, 6% charcoal and LPG use is 0.1%.
- Urban cooking – 26% firewood, 27% charcoa and LPG use is only 1.4%!

(Note – not current, 2017 analysis)

Myanmar energy balance 2012/13



ADB TA No. 8356 Workshop, 9 Sept 2014

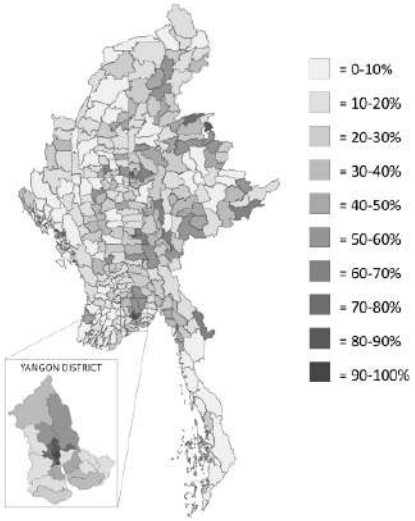
Energy Needs Research – Kachin & Kayin States

- What do people want energy for?
- *Lighting* – for children's education, care for children, elderly, sick and for providing safety for women.
- *Communications (phone charging)*
- *Extending working hours*
- These actually need low order electricity.

- Women's needs defined differently to men's. Men – business? Most actually regarded as entertainment (TVs etc).

Figure 2. Township-level maps of energy sources used for lighting

(a) On-grid electricity

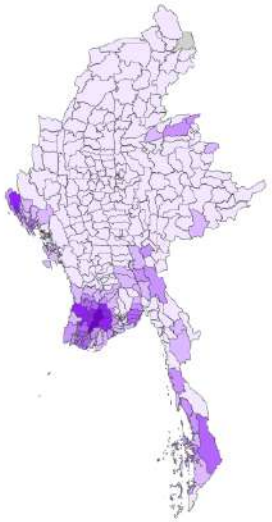


= 0-10%
= 10-20%
= 20-30%
= 30-40%
= 40-50%
= 50-60%
= 60-70%
= 70-80%
= 80-90%
= 90-100%

(b) Generator

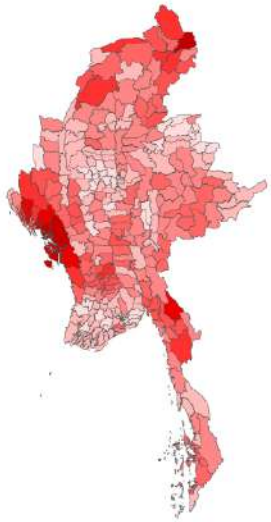
= 0-10%
= 10-20%
= 20-30%
= 30-40%
= 40-50%
= 50-60%
= 60-70%
= 70-80%

(c) Kerosene



= 0-10%
= 10-20%
= 20-30%
= 30-40%
= 40-50%
= 50-60%

(d) Candles

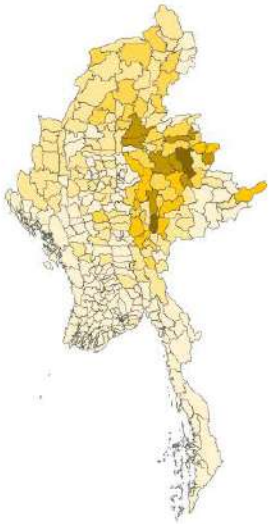


= 0-10%
= 10-20%
= 20-30%
= 30-40%
= 40-50%
= 50-60%
= 60-70%
= 70-80%

Source: Created using the 2014 census results and the MIMU heat mapping tool

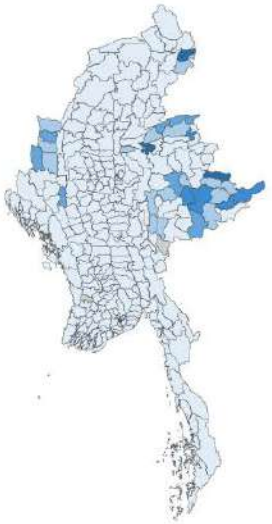
Figure 2. Township-level maps of energy sources used for lighting (continued)

(e) Solar PV



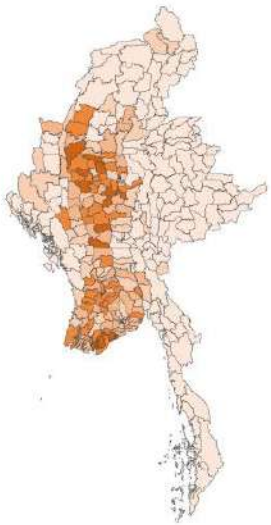
= 0-10%
= 10-20%
= 20-30%
= 30-40%
= 40-50%
= 50-60%

(f) Small hydro



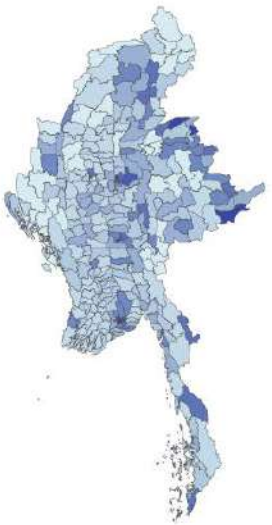
= 0-10%
= 10-20%
= 20-30%
= 30-40%
= 40-50%

(g) Battery



= 0-10%
= 10-20%
= 20-30%
= 30-40%
= 40-50%

(h) Mobile phone ownership



= 0-10%
= 10-20%
= 20-30%
= 30-40%
= 40-50%
= 50-60%
= 60-70%
= 70-80%
= 80-90%
= 90-100%

Source: Created using the 2014 census results and the MIMU heat mapping tool

Gendered thinking on energy

- Men and women have different views on energy needs and different priorities
- Men have much bigger involvement in project prioritisation factors, which leads much more to interest being expressed for centralised grid options, rather than decentralised options
- “Energy” is perceived a male area, and women are considered not to know or be safe to work with electricity
- Energy literacy can be considered a key national gap area. That will hinder any project options and informed choices.

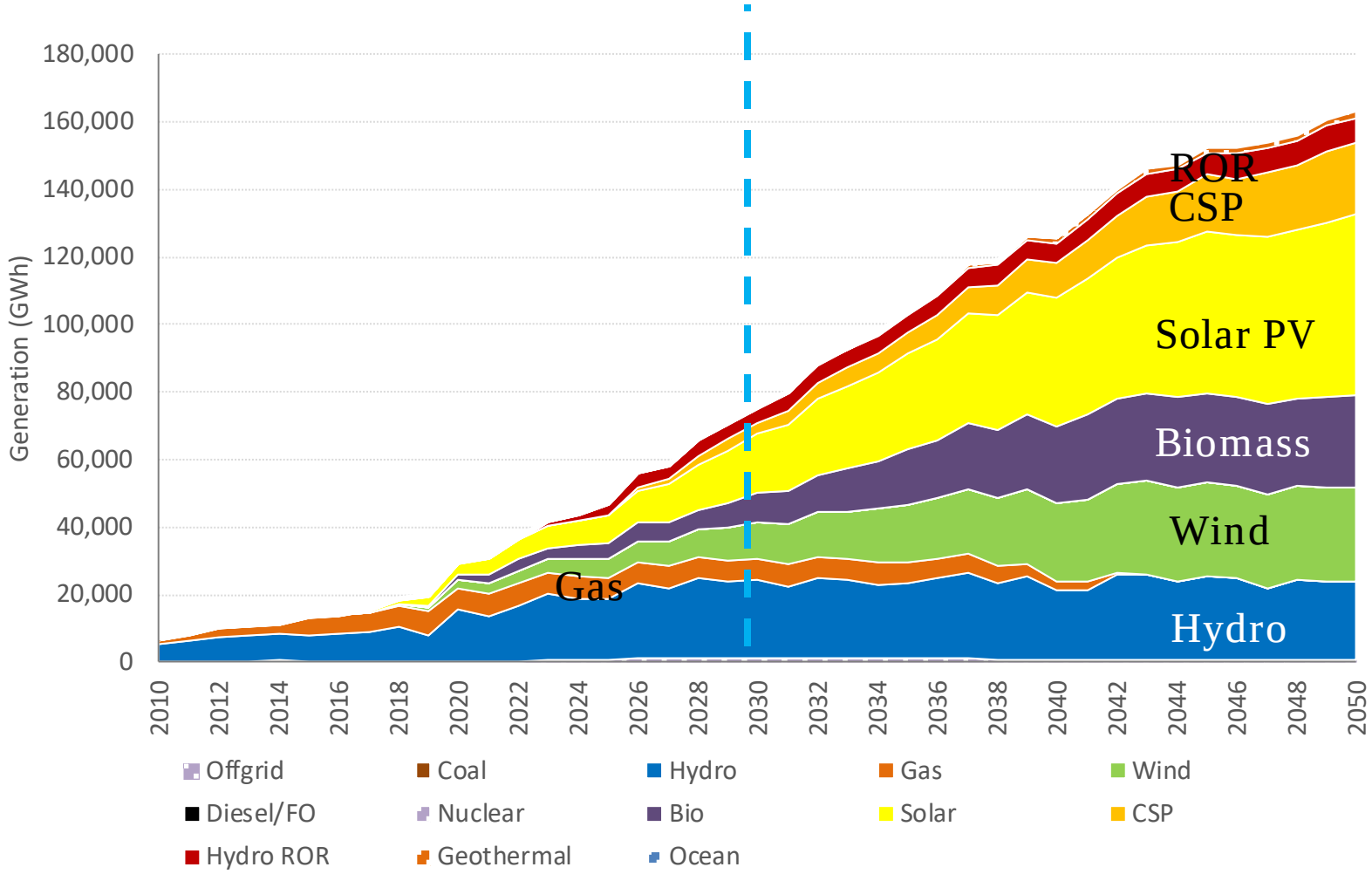
Myanmar's Electricity Vision (Version 1: 2015-16, 2: 2020-22)

Planning for Renewable Electricity by 2050

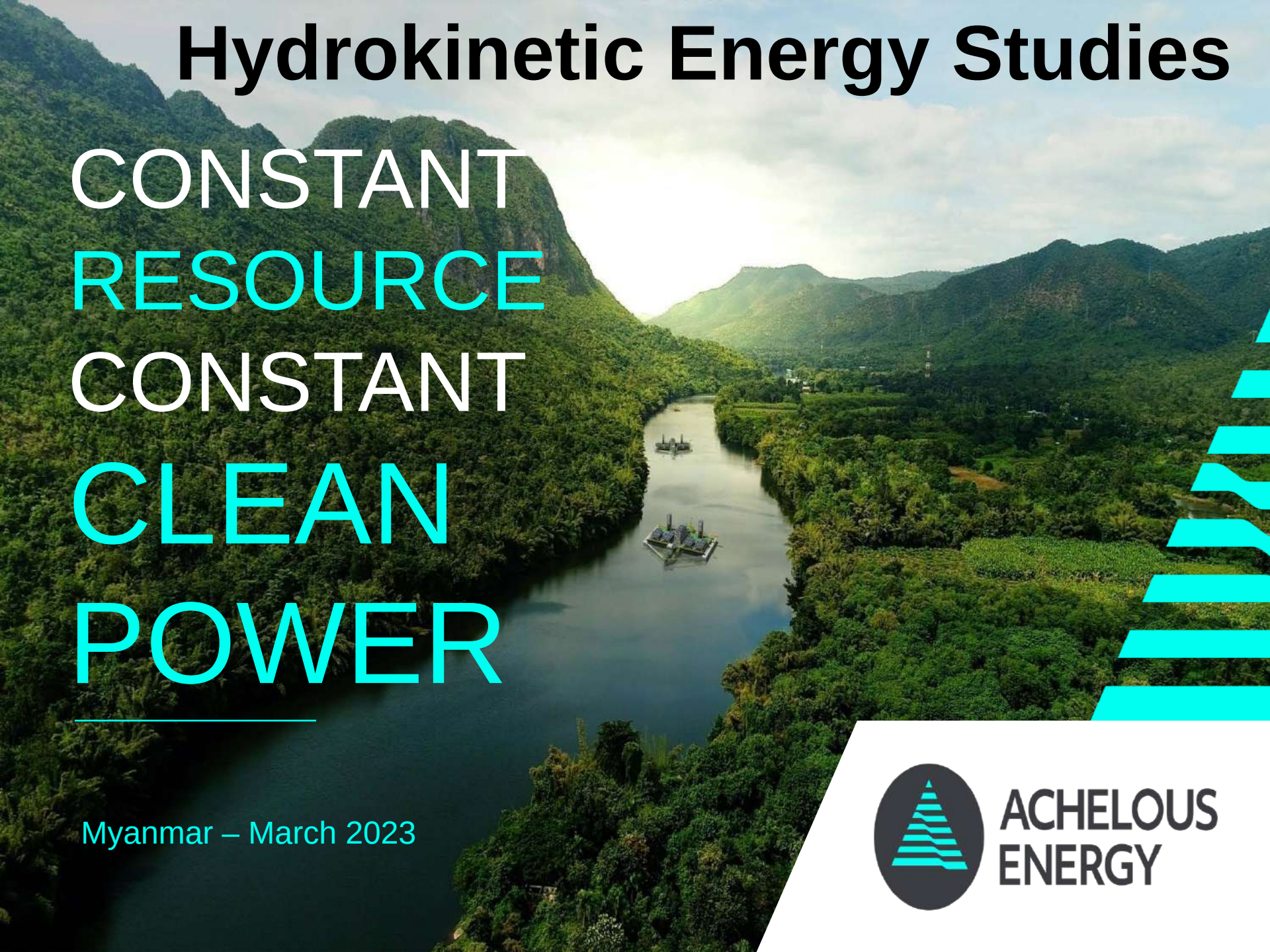
Update reflecting rapid improvements in technology and costs (espec. solar & lights)

WWF-Myanmar
Intelligent Energy Systems
Renewable Energy Association Myanmar
Spectrum – Sustainable Development Knowledge Network

Myanmar's Electricity Vision



Hydrokinetic Energy Studies

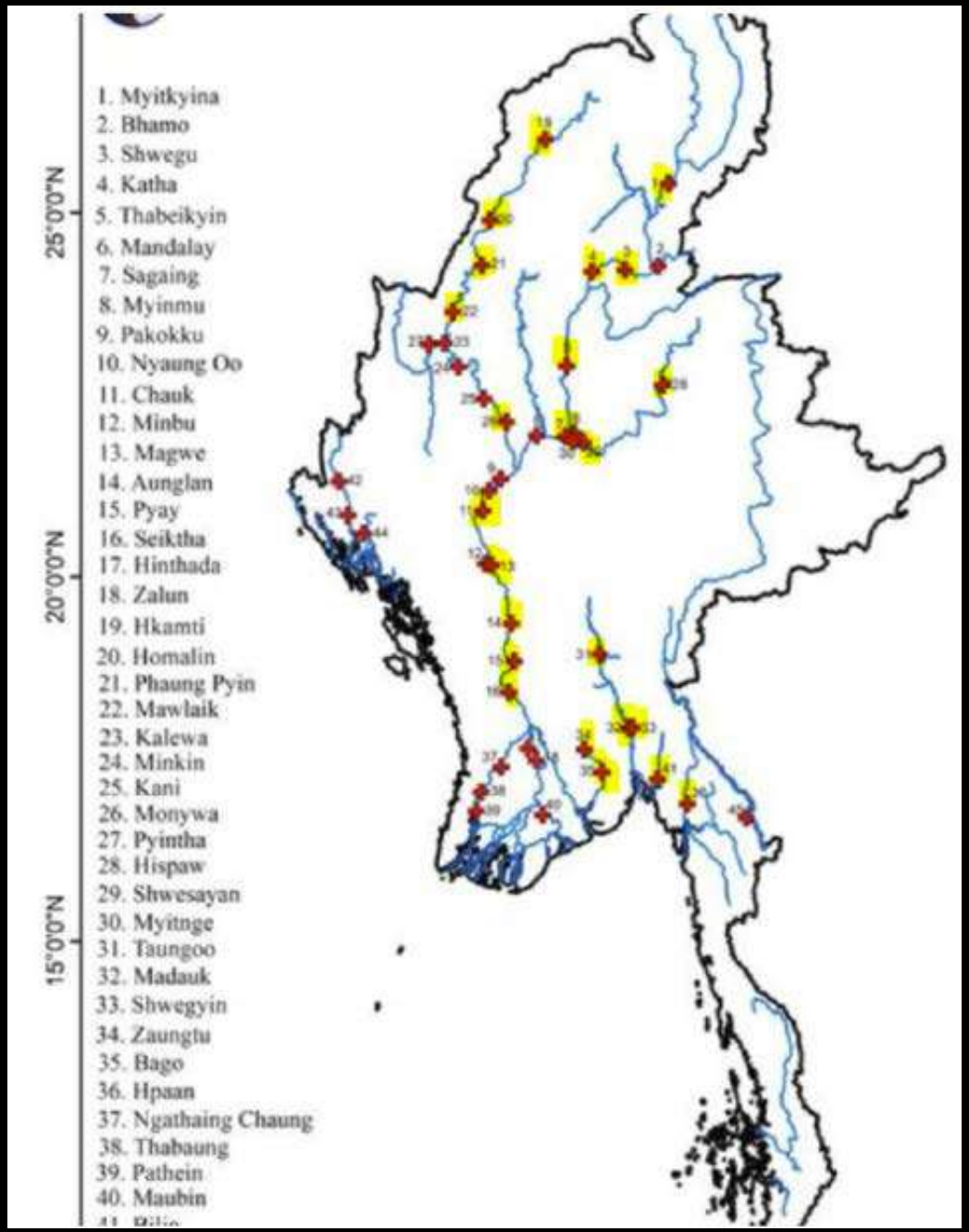


CONSTANT
RESOURCE
CONSTANT
CLEAN
POWER

Myanmar – March 2023

ACHELOUS ENERGY

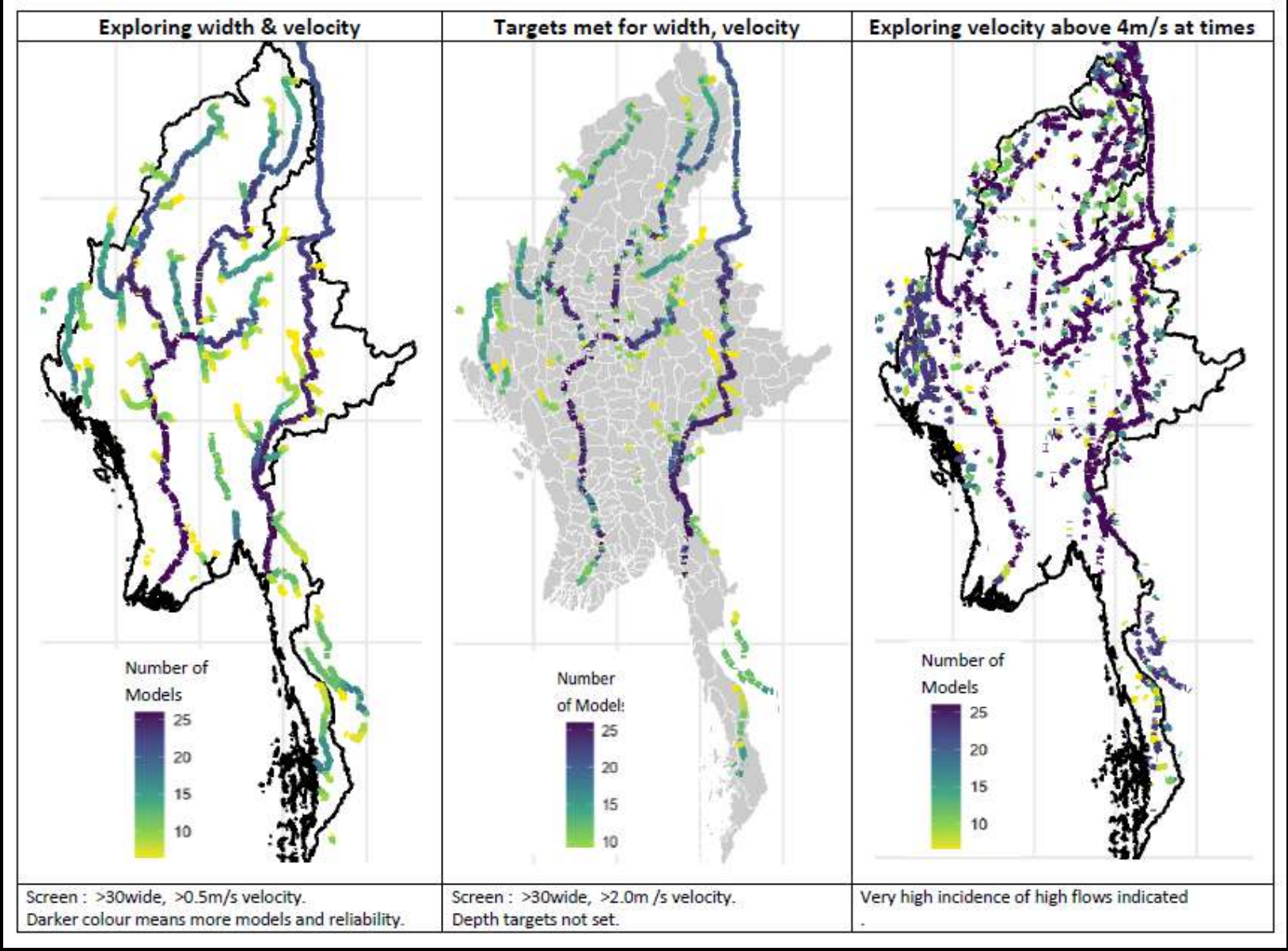
Myanmar Monitoring Stations:



With floods a key risk, you would imagine that national river flow data would be freely available?

It is not! – it's very expensive and a lot of work to process.

It is possible! Better models made now using 20+ years data for validation!!!

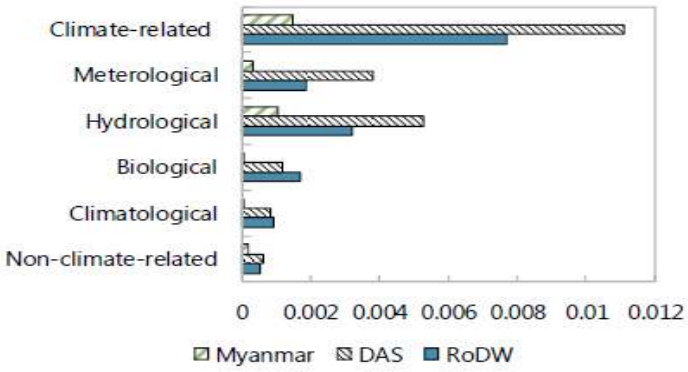


With this kind of modeling capability, integrated with climate models, can it give much better flood risk warning? YES!

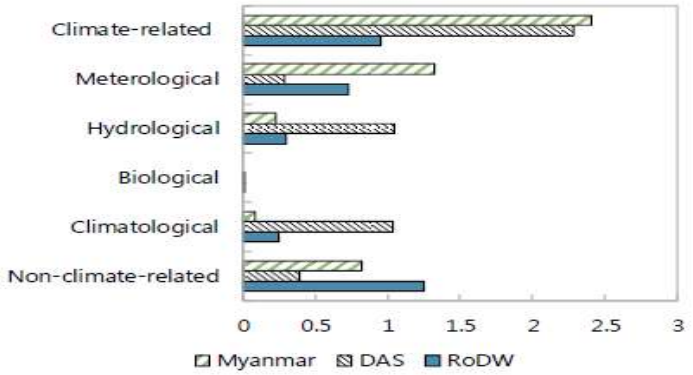
From: IMF Report, MYANMAR SELECTED ISSUES
IMF Country Report No. 17/31, 2017.

Figure 1. Disaster Impact Across Hazard Types, 1970–2015 1/

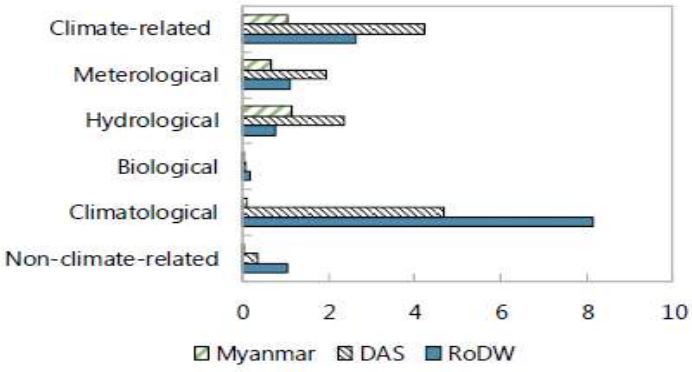
a. Mean Frequency
(Number of occurrences per tsd. sq. km)



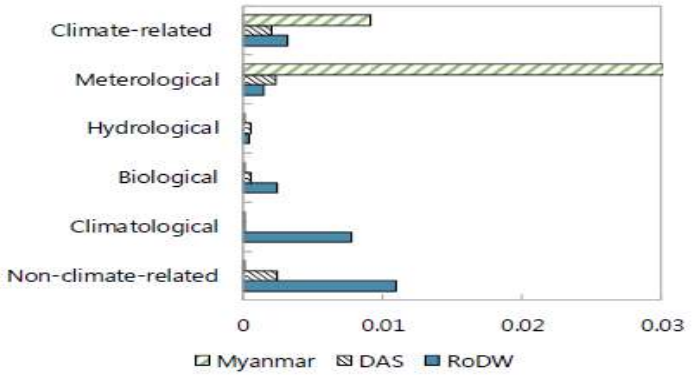
b. Mean Material Damage
(In percent of GDP, conditional on an event)



c. Mean People Affected
(In percent of population, conditional on an event)

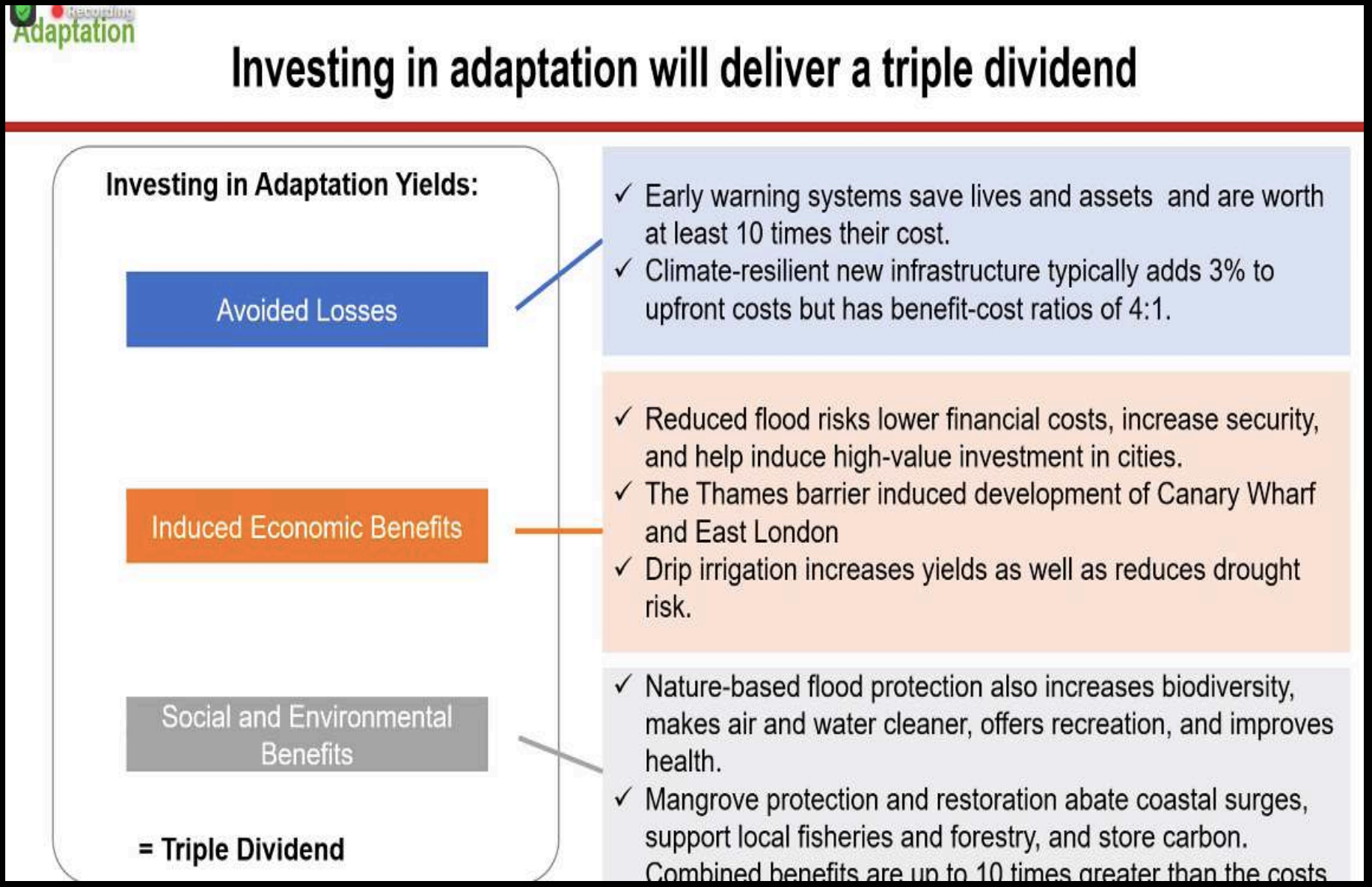


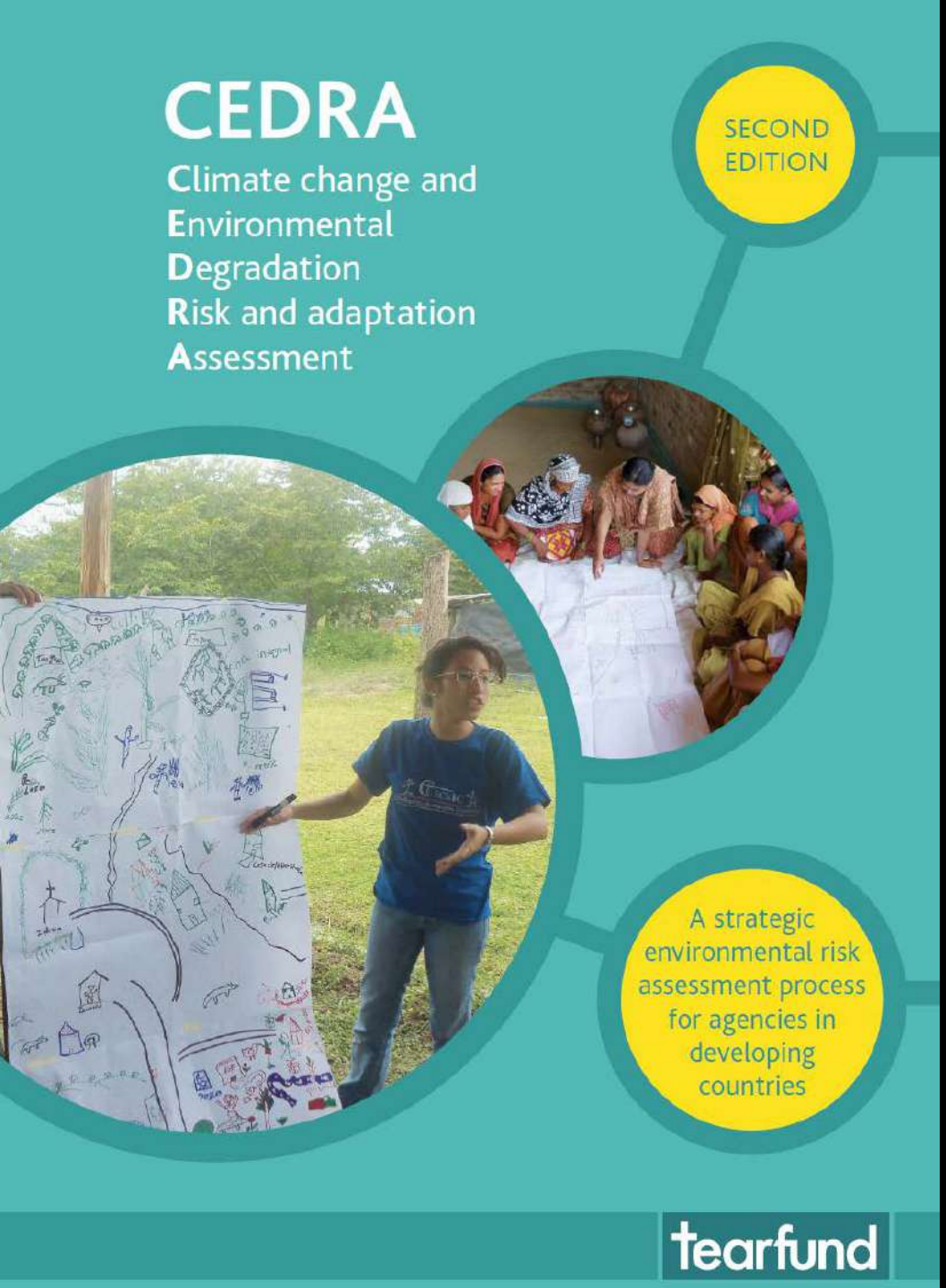
d. Mean Fatalities
(In percent of population, conditional on an event)



Sources: IMF Staff calculations using CRED EM-DAT; Myanmar PDNA (2015); WB WDI; and IMF WEO.
Note: 1/ Among non-weather-related disaster events, there were only geophysical events.

From: “Reviving Growth - East Asia and Pacific Economic Update”, 4 April 2023, World Bank.



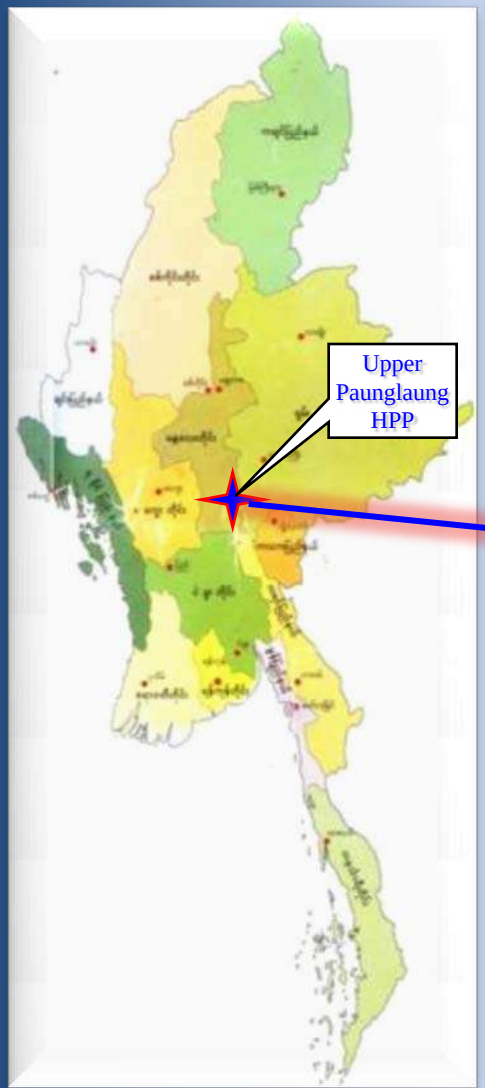


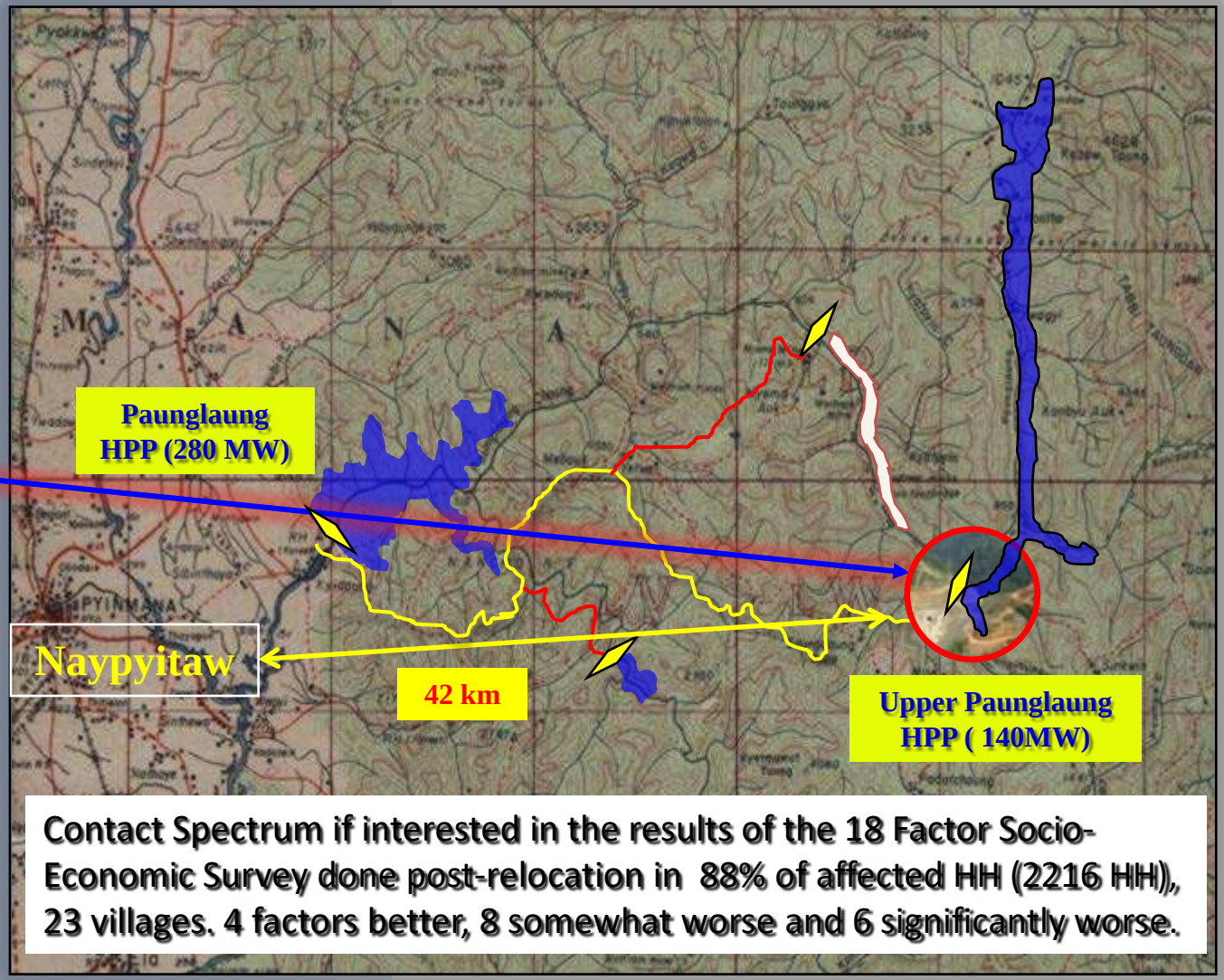
Clear and useful tools, yet little support for local assessments or adaptation plans.

All still needed!!!

As poor & highly vulnerable communities, anticipate >10 fold return on investment

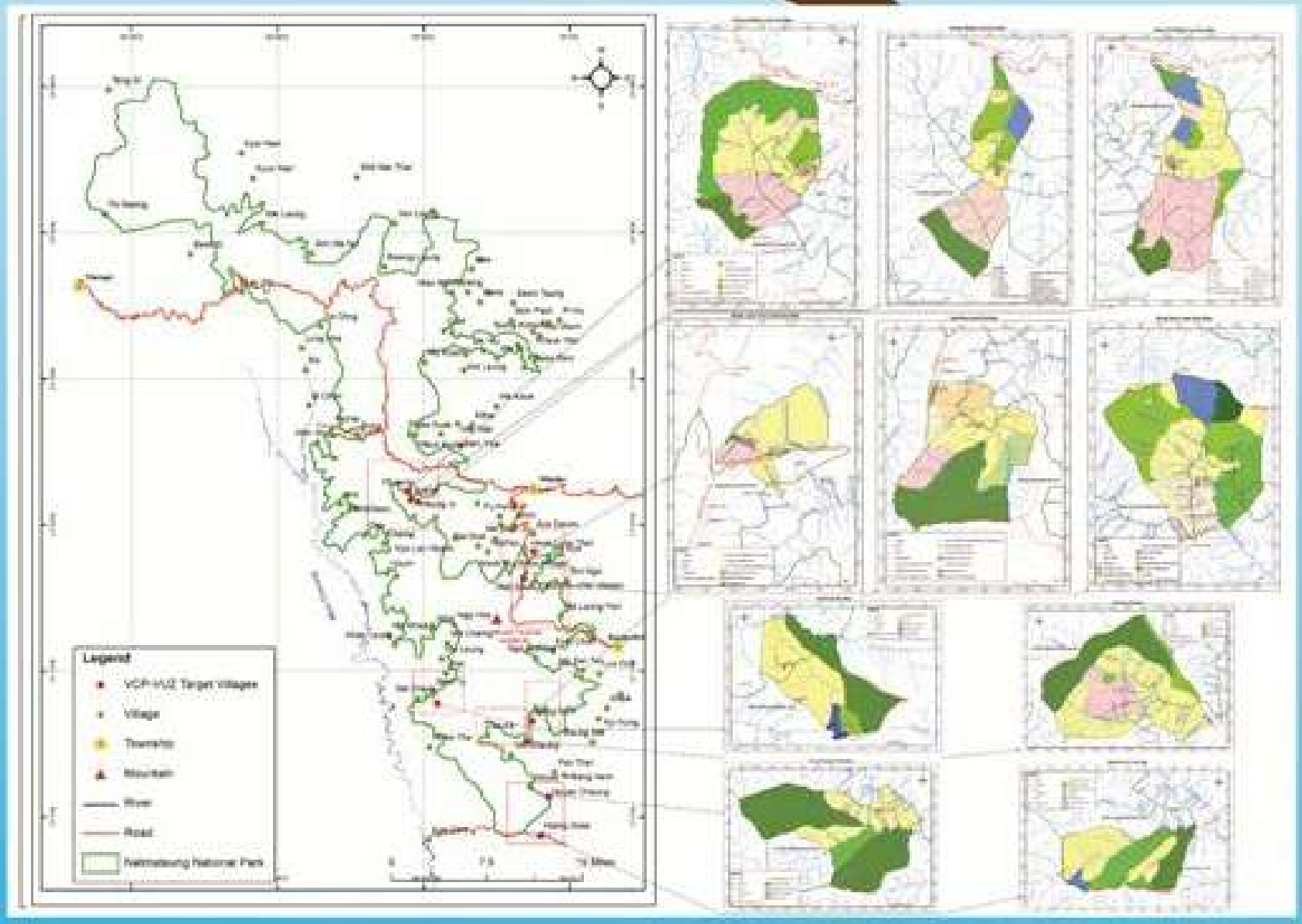
Upper Paunglaung Hydropower Project, 140MW Project, completed 2014, Resettlement of 2524 Households, 9755 People.



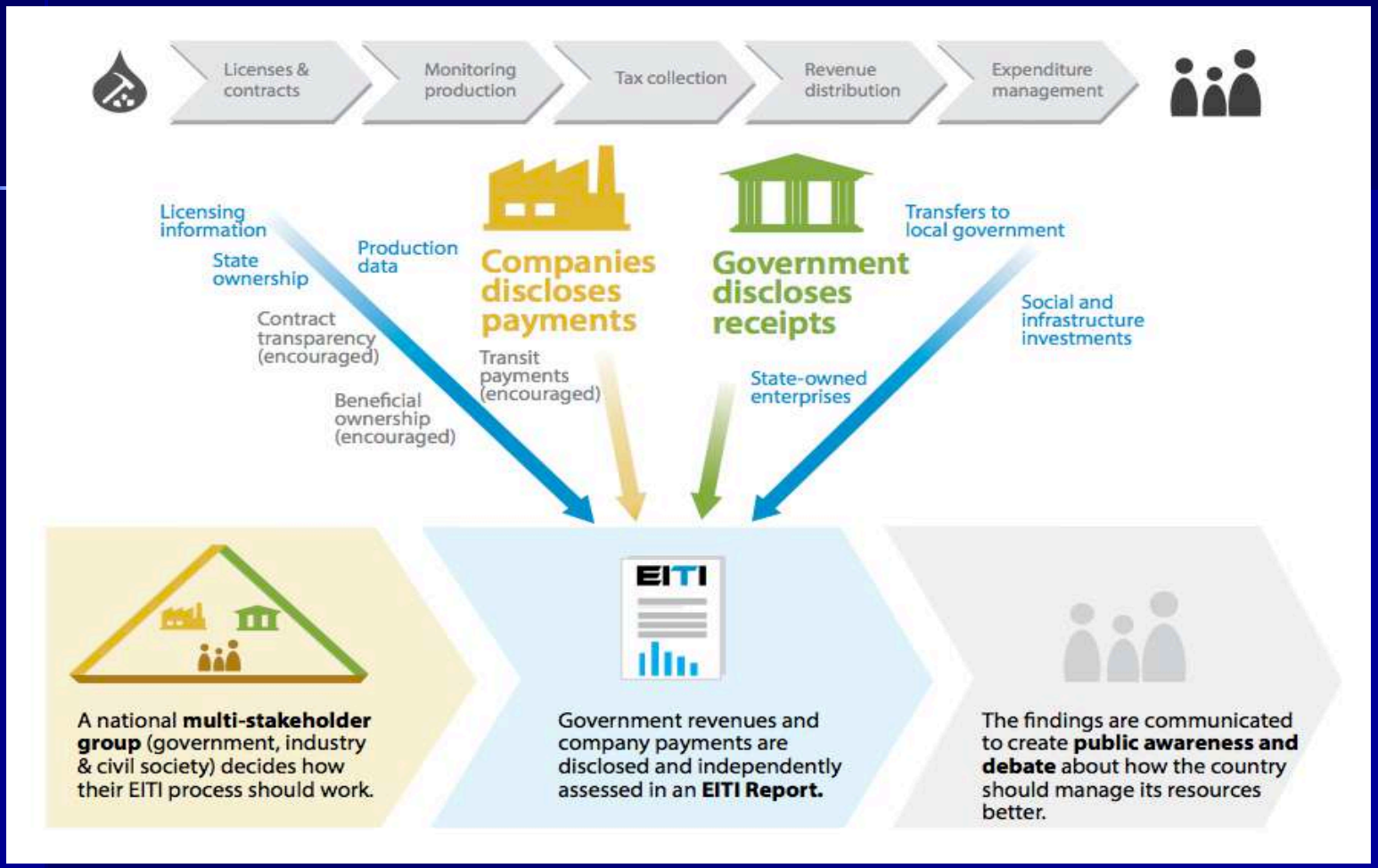


Contact Spectrum if interested in the results of the 18 Factor Socio-Economic Survey done post-relocation in 88% of affected HH (2216 HH), 23 villages. 4 factors better, 8 somewhat worse and 6 significantly worse.

Boundary disputes/land use in Southern Chin



EITI: WHAT DID MYANMAR REPORT?



Myanmar Sectors – Oil & Gas, Mining (including jade & gems emporium info) + forestry information + study of feasibility of hydropower inclusion (- it was excluded).

Summary

- All these examples show need for quality and linked data
- Climate change, energy, land use, advance prediction of climate impacts, resource flow prediction, management of natural resources and revenues, ++ all need better and better linked data
- All link quantitative, qualitative, social, environmental and economic data
- Myanmar needs to support better data studies, needs analysis & adaptation.