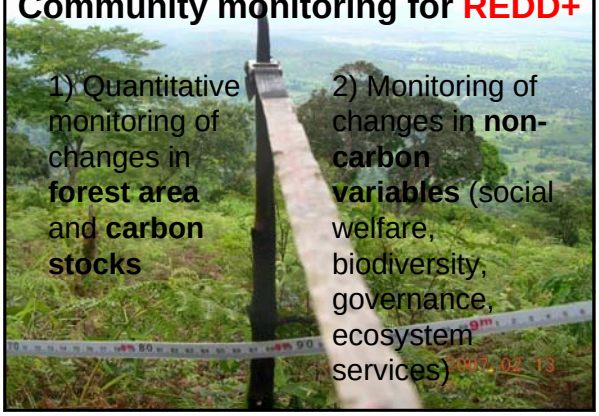
Approaches to community forest monitoring for REDD+

Alejandra Patricia Larrazábal, Margaret Skutsch and Tuyeni H Mwampamba
Centro de Investigaciones en Geografía Ambiental,UNAM

REDD+ rewards @ national level

- Will be **proportional to achievements in reducing carbon emissions** relative to reference levels
- Will be **proportional to increased sequestration rates** relative to reference levels
- Contain safeguards that ensure that *REDD+* **respects and *does* not harm** biodiversity and ecosystem services

Community monitoring for REDD+



1) Quantitative monitoring of changes in **forest area** and **carbon stocks**

2) Monitoring of changes in **non-carbon variables** (social welfare, biodiversity, governance, ecosystem services)

Overview

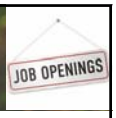
- Monitoring tasks
- Skills needed to monitor
- Rationale for community monitoring
- Can communities monitor for REDD+?
- Existing approaches

Monitoring tasks

- **Mapping and geo-referencing forest boundaries**, if this data is not already available
- **establishing permanent sample plots**
- **regular measurement** of the standing biomass stock in each of the sample plots
- **calculation of carbon stocks** from the measured forest parameters (DBH and H)
- **assessment of leakage**
- **monitoring non-carbon variables** (e.g. socio-economic changes, biodiversity, ecosystem services)

Do communities have the skills?

Skills needed



- **Mapping** skills (what to map, where to map & how to map)
- **Technical** skills (determining sample size, plot size, what to measure, how to measure)
- **Conversion** of plot level data to forest-level information about carbon stock & change
- **Knowledge** of how to estimate & monitor leakage (directly or by proxy)
- **Identify** & **measure** relevant socio-economic and biodiversity variables (**interviewing**, identification of species, **transect** walks, etc.)
- Record keeping, **data storage** & **analysis**

Additional skills needed…

Accuracy

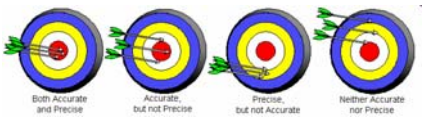
Ability to ensure that the measurements are correct

- Depends on the methodology applied

Reliability

Ability to make sure that the measurements are consistent

- Depends on equipment used



Why *communities?*

Rationale for community monitoring (1)

1. Ground-level data is needed: **communities are already on the ground**
2. They are very **knowledgeable** about the local area
3. They are **already undertaking forest management** → monitoring is an extension of their management responsibilities
4. Meaningful local participation **reinforces commitment** to forest management→ ensures local buy in → improves permanence → reduces risks → increases community participation in carbon market
5. It will generate community **empowerment over forests** → improve communities' negotiating power for REDD+ rewards → strengthen communities' position in other aspects of REDD+

Rationale for community monitoring (2)

6. **Costs less** than expert fees (*Skutsch et al 2011, Danielsen et al 2011*)
7. **Generates local jobs** that is directly associated with forest management (improves attitudes towards forest management) → reinforces CBNRM
8. A **large workforce can be recruited** to facilitate collection of large amounts of data across scales not otherwise feasible with experts
9. Allows for incorporattion of **traditional ecological knowledge** (TEK) and ehancement (or revival) of traditional knowledge transfer systems (*Elbroch et al 2011, Skutsch & Trines 2011*)
10. **Facilitates self-evaluation** and understanding by communities of the impacts of their forest management → more likely to adapt management practices to outcomes

Can *communities* monitor?

Mapping

Delineation of forest boundaries and forest strata:

- Participatory rmation Systems (P
- Handheld co ith GPS
- Smartphone ybertracker)
- CI Earth tec e cartography)

Establishing permanent plots

- Calculation of sample size is a technical exercis
- Pilot su tablish the standar
- Plots m s
- Plot siz the density of the f
- Plot location requires technical assistance

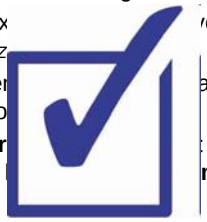
Measuring biomass

measure DBH and tree height

- field guides ex e communities (*e.g. Verplanke & Z*
- data can be e a database on a handheld co

NB: small error of diameters can result in mass estimates

- Laser technology to avoid measurement error



Estimating carbon stock

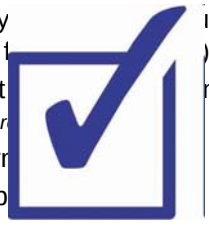
- Calculate using existing allometric equations
- Species iden cies or family specific equa
- Calculations h as plot totals, plot av verages, standard dev n be automatically calculated)

Estimating leakage

- quantified b **orestation**, forest **degra resource consumpti** s
- size and loc ge belts can be identifie
- Communitie works that extend to le
- Interpretation of GIS analysis should be conducted with communities

Measure non-carbon variables

- Participatory social impact assessment
- Participatory iding indicator ID t)
- Involvement n biodiversity tracking (*Elbr*
- Good goverr
- Other variab



Key challenges

1. Intensive training is needed to meet strict IPCC procedures
2. Supervision required in early stages (high start-up costs)
3. Reliability would have to be assured
4. Temptation to exaggerate carbon stock (3rd party independent verification is required).
5. Transfers monitoring and reporting obligations - and associated costs – to poor local people

Conclusions

- There is a strong rationale for community monitoring
- Communities ***can*** monitor accurately, cheaply and reliably (the experience exists)
- High expert involvement is needed to establish permanent plots
- Expert involvement will still be needed, but minimally
- High start up costs exist but in the long-run, cheaper than expert costs
- Independent 3rd party verification is required
- Community monitoring should be seen as a complement to other types of monitoring (s.a., remote sensing)