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Experiences in the validation of reforestation projects

Japan International Forestry Promotion & Cooperation Center (JIFPRO)
10th March, 2009



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Overview

- Short Intro to TÜV SÜD
- Most relevant standards used for forestry projects
- Main steps in the development and audit of an AR-CDM project
- Experiences in validation of AR-CDM projects

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Consulting Testing Certification Training

on behalf of industry, trade and commerce, public institutions and private individuals.

- > 13,000 staff
- 600-plus locations worldwide
- 2008 sales: > Euro 1.3 billion
- Headquarters: Munich (Germany), Peabody (USA), Singapore (Asia)
- over 140 years of business success

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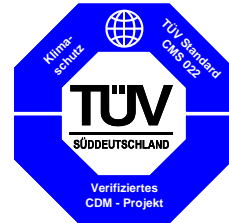
- As part of TÜV SÜD Industrie Service GmbH the **Carbon Management Service (CMS)** was founded in 2000
- The CMS team consists of **>40 professionals in the HQ in Munich.**
- Worldwide **>60 auditors** active for CMS within regional TÜV SÜD branch companies.
- Work approach: **as decentralized as possible** with technical and regulatory backstopping from Munich
- A key asset of CMS is the high level of **technical expertise** present in-house.





-TÜV SÜD believes that for land use based mitigation projects there is a growing demand for independent third party auditing.

-TÜV SÜD has been spearheading the auditing of afforestation and reforestation projects under the CDM.

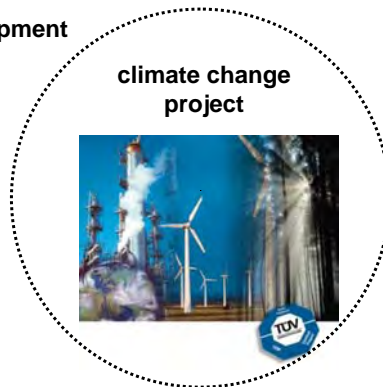


- TÜV SÜD is accredited to deliver auditing services under a wide set of standards that include forestry based project activities.



① **Project development**
→ PDD

② • **Validation**
• **Registration**



⑤ **Carbon Merchandising**

④ • **Verification**
• **Certification**
• **Issuance**

③ **Project implementation, incl. monitoring**

Overview

- Most relevant standards used for forestry projects

TÜV SÜD services in forestry

Validation and verification of forestry projects

1. Project based mechanisms of the Kyoto Protocol
 - CDM, afforestation/reforestation
 - JI, forest management, conservation, etc.
2. Other emerging emissions trading / offset regimes
 - Chicago Climate Exchange
 - California Climate Action Reserve (CCAR)
3. Voluntary standards
 - VCS
 - VER+
 - CCBA



VER+



Eligible VCS AFOLU Activities



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- **Afforestation, Reforestation and Revegetation (ARR)**
- **Agricultural Land Management (ALM)**
 - Improved cropland management
 - Improved grassland management
 - Cropland and grassland conversions
- **Improved Forest Management (IFM)**
 - Conventional to Reduced Impact Logging
 - Convert logged to protected forest
 - Extend rotation age
 - Conversion of low-productive forests to productive forests
- **Reducing Emissions from Deforestation (RED)**
- Further activities can be added

Addressing Permanence under VCS



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- A **buffer approach** has been introduced that compensates the risk of potential reversal / emissions of the achieved carbon benefits
- **Amount of credits in buffer can be reduced over time** as project's longevity is established and risks shown to be effectively mitigated
- On the standard level: a periodic “truing-up” process of the accumulated buffer and project performance is envisioned → adjustment of buffer values and/or risk criteria
- **Main risk categories:**
 - Project risk
 - Economic risk
 - Regulatory and social risk
 - Natural disturbance risk

In comparison: The setting for AR-CDM



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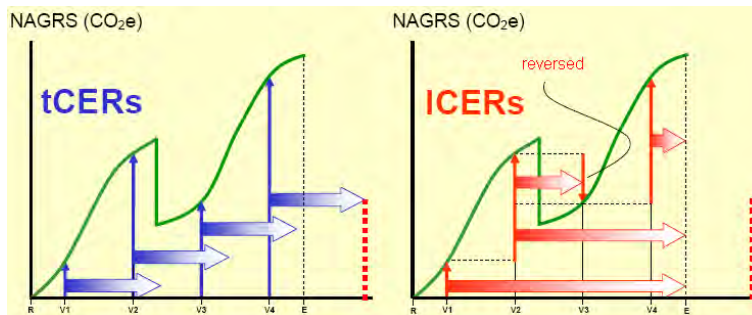
- Modalities and procedures for validation, registration, verification, issuance have been defined, also specifically for AR-CDM
- Operational answers defined for all key concerns:
 - ✓ Additionality (specific AR-tool)
 - ✓ Permanence: temp. CER (tCER), long term CER (ICER)
 - ✓ Crediting period: 20 years (+2x renewable); 30 years (fixed),
 - ✓ Forest definition : Crown 10-30%, Area 0,05-1 ha, Height 2-5 m
 - ✓ Eligibility of lands / areas being forest-free since end of 1989.
- UNFCCC oversees regulatory setting

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The world of tCERs and ICERs



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- Each tCER shall expire at the end of the commitment period subsequent to the commitment period for which it was issued.
- Each ICER shall expire at the end of the crediting period or, where a renewable crediting period is chosen, at the end of the last crediting period of the project activity.

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Graph from Pedroni et al. 2005

Consolidated methodology :

- AR-ACM 0001 approved (page volume reduced by half)
- Accompanied by development of tools (tool-ification)
- Net reduction in document volume of a regular LS meth. vs (ACM + tools) potentially not substantial.

Small scale methodologies:

- 3 methodologies approved – up to now only AR-AMS0001 used (for AR on cropland / grassland).
- Project size frequently 200-400 ha; Cap of 16 kt CO_{2e} p.a. would allow i.e. 1600 ha at a net sequestration rate of 10 t CO_{2e} ha / p.a.
- SSC is substantially simpler than LS (considering i.e. monitoring).

Programme of Activities (PoA)

- LS and SSC PDD templates for PoA and CPA available; not yet used.
- Considered an emerging window when ex-ante project area definition is not fully possible. Unclear liabilities for DOEs. Assessment of eligibility / baseline conditions of total land area should be assured.

Overview

- Main steps in the development and audit of an AR-CDM project

Typical steps in project design and audit I



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- Project idea
- Considerd project area / region
- Check on applicability criteria
- Defintion of project boundary



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Typical steps in project design and audit II



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- Stratification of the project area due to different criteria (i.e. soil, hydrology, vegetation)
- Baseline estimates



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Typical steps in project design and audit III



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- Baseline strata are matched with stand models (which differ in species composition, management, growth, harvesting, etc)

| | SM 1 | SM 2 |
|------|------|------|
| BS 1 | X | |
| BS 2 | | X |
| BS3 | | X |



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Land eligibility



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- Demonstrate **land use at project start**:
 - vegetation below forest threshold
 - no potential to surpass threshold
 - not temp. unstocked
- Demonstrate **historic land use**
 - showing that the above also applied on 31 Dec 1989 (reforestation) or that the area was under forest threshold >50 years (afforestation.)
- **Information sources**: Sat. Imagery, maps, ground surveys, or Participatory Rural Appraisal (PRA)



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Additionality tool



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For AR-CDM, additionality requirements are mirrored from regular CDM:

STEP 0. **Starting date** of the A/R project activity (consideration of CDM)

STEP 1. Identification of **alternative land use scenarios** to the A/R project activity;

STEP 2. **Investment analysis** to determine that the proposed project is not the most economically or financially attractive alternative; **or**

STEP 3. **Barriers analysis** (including evidence on their prohibitive character);

STEP 4. **Common practice** analysis

For SSC, the additionality analysis based on barriers is included to Appendix of the methodology.

Up to now, mostly barrier analysis.



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Overview

- Experiences in validation of AR-CDM projects

General impressions



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- ✓ Up to now, **high quality projects** with mutual ecologic and social co-benefits
- ✓ Early movers have gained hard lessons learnt in **meth approval** process.
- ✓ Increased number of methodologies facilitates AR-CDM. **Applicability** remains narrow. Differences among meths unclear to players. AR-ACM0001 has been an important step.
- ✓ Number of **consultants** working in the field is limited and expands slowly.
- ✓ Participants on the ground with vague knowledge on process and requirements - **underestimation on the complexity** of (AR-)CDM.
- ✓ **Interest of compliance market reduced** due to i) small volumes up to 2012, ii) unclear demand (i.e. no EU-ETS) and iii) unfamiliarity with AR-CDM



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Validation experiences



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Validation experiences:

- 30-40 % of all Requests are on **formal aspects** (i.e. participants table, dates, version numbers, etc)

Major issues:

- **Boundary definition** incomplete. Also requirements on how to **incorporate** verifiable boundary information to **PDD** unclear.
- **Documentation on land tenure** and carbon rights incomplete
- (Candidate) areas not yet controlled

Potential response:

- Further capacity building on processes and CDM requirements i.e. with regional focus.
- Guidance how to include information to PDD database with polygons i.e. c/o Google Earth
- Clarify documentation requirements (possession, tenure, C-contracts, incorporation to monitoring plan)
- PoA currently the only alternative

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Impressions on eligibility



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- Eligibility issues mostly **in tropical regions** (regeneration).
- Few project developers focus on the **current** vegetation – and not also on **potential** that this can become forest **at maturity**
- Partial confusion **CDM forest definition** with other **nat. definitions** by local foresters
- Partially **crown cover** not put to relation to reference area but entire plot.
- Discrete **parcels smaller than min. area** not eligible due to inability to demonstrate A/R compliance
- More theoretic: geographic **extension of discrete / minimum areas**.

In regard to information sources used, especially on historic land use:

- mostly **remote sensing**, and mostly with well developed **expertise**
- Partially not the „**right**“ **dates available for images** (e.g. early 90ies), which leads to hybrid approaches jointly with other sources.
- Consistency of **image resolution** (mostly Landsat, 30m) and min. area partially item of discussion.

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Photos on eligibility



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Validation experiences



Validation experiences:

- All projects opt for **reforestation**
- Frequently the **step wise approach** is not followed (for stratification, additionality, baseline)

Baseline:

- **Baseline study** is frequently carried ahead of final results of stratification. Adequate estimates relevant for removal calculations.

Additionality:

- mostly barrier focussed; as in reg. CDM, developers indicate numerous barriers, which need to be sustained.
- **financial analysis** of growing importance.

Potential response:

- No need to differentiate between A/R
- Guidance / general capacity building with focus on meth relevance.
- Guidance / capacity building on baseline estimates
- Cap. building: Further emphasis that barriers need to be prohibitive
- Guidance, since finan. analysis is challenging for long crediting periods

Validation experiences



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Validation experiences:

Leakage

- Main focus on **activity displacement**. Up to recently **no methodology included** the continuation of agricultural activities under project scenario (**agroforestry**).

Monitoring

- Parameter and monitoring requirements are **copied from methodology**. Local players partially uninformed about relevance of monitoring for issuance.

Net removal calculation

Potential response:

- Guidance. **If agricultural activities are continued as under baseline cond.**, it is considered that leakage is limited or does not emerge. Agroforestry / intercropping could be mixed with reg. reforestation.
- In line with efforts on streamlining methodologies, potential **reduction of parameters** to be monitored (from >100) should be pursued.
- **Use of a standardized tool** (i.e. TARAM) could be recommended.

Summary for AR-CDM policy makers



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- The **achievements on AR-CDM on the regulatory side are substantial** and worth to be emphasized – also in relation to VER standards and REDD. The delay in projects is not (only) because of sophisticated methodologies.
- **AR-ACM0001 has been an important step**. Further potentials for improved LS applicability should be explored. Impact of new tools to be seen.
- **Furhter capacity building on key AR-CDM concepts** (permanence, eligibility etc) considered necessary (i.e. for **traders** and/or in specific regions such as **Africa**).
- On the technical side further **guidance** is considered to be necessary on: how to include **boundary** data, incorporation of **agroforestry**, streamlined **monitoring** requirements, pot. revisit base year definition for **elegibility**
- Reduction of **formal requirements** to be complied by DNA; respectively increase DNA capacities to take AR-CDM related decisions necessary.
- All **potentials to streamline the methodological framework** without hampering conservativeness **should be explored**.

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Thank you for your attention!

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