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LULUCF-TR
GHG Monitoring and Reporting System

Technical Assistance for Developed Analytical Basis for Land Use, Land Use Change and Forestry (LULUCF) Sector

THE TRAINING PROGRAM BACKGROUND

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Agriconsulting Europe - AESA

CFCU CENTRAL FINANCE & CONTRACTS UNIT

AESA CONSORTIUM

T.C.
ÇEVRE VE ŞEHİRCİLİK BAKANLIĞI

PRESENTATION OUTLINE

- Research Subjects to Improve LULUCF Inventory
- Training Needs Identified by GDEM
- Training Needs Identified by GDAR
- Training Needs Identified by GDF

Research subjects to improve LULUCF sector ınventory	TANA needs	Req. Agency
Improved spatial data for key categories of land cover		
Consistent Land Use Matrix since 1990, bringing tog Corine, Envanis and LPIS		
Completion of National Forest Inventory for Turkey		
Improved estimations of C stocks and GHG calculations		
Average above-ground and below-ground C stocks grasslands for climate and soil types		
Soil C stock values for climate (ecozone) and soil types		
Volume/DBH to biomass equations		
Soil and C modelling		
Biomass, increment and CF for perennial croplands		
Flux measurements (through pilot projects)		
CF and EF for the peats extracted in the country		
Improved understanding of the impact of disturbances on C		
Logging, both legal and illegal, wildfires, insects, drought, w		
Additional research projects of relevance to the Inventory s		
Research for EF and AD across all climate types and cov all tree species and age classes		
Estimation of GHG emissions/removals which take place changes in land use, and the amount of carbon sequestra soil, dead wood, wetlands and grasslands.		

- Kilit kategoriler için gelişmiş mekansal veri
- Tutarlı arazi kullanma matrisi
- Ulusal Orman Envanterinin tamamlanması
- Gelişmiş Hesaplama Algoritmaları
- Meralar için iklim ve toprak tipine göre ortalama karbon stok değerleri
- İklim ve toprak tipine göre toprak karbon stok değerleri
- Allometrik denklemler
- Modelleme
- Çok yıllık tarım ürünleri için biyokütle, artım ve karbon fraksiyonu değerleri
- Akı ölçmeleri
- Turbalıklar için CF ve EF değerleri
- Etkilerin (disturbances) karbon stoklarına etkileri
- Tüm ağaç türleri ve yaş sınıfları için EF ve AD verileri
- Arazi Kullanım değişikliği sonucu karbon havuzlarında ortaya çıkan sera gazı salım ve tutumları.

TRAINING NEEDS IDENTIFIED BY GDEM

1. EU harmonization and EU Directives: Need to understand the current and forecasted EU regulations on LULUCF inventory, accountability and reporting, and promote harmonization of current inventory practices.

2. Correct data collection and integrity of data: enhancing (procedures of) data collection to increase data quality, avoid data-loss, and enhance National GHG Reporting on the LULUCF sector.

3. Spatial data analysis: participate in introduct
datasets (e.g. CORINE, Sentinel 1 and 2, GokTu
through GIS systems.

ÇYGM Önerileri

AB direktifleri ve uyum

Veri toplama ve veri kalitesi

Mekansal veri analizi

TRAINING NEEDS IDENTIFIED BY GDEM (Cont.)

4. Collective data needs: assistance support through an external consultant in identification of collective data needs of the re departments/directorates.

5. Activity Data and Emission Factors: identify t AD and EF by comparing the existing data with

6. Working with LULUCF (sub-) categories: dete and area per (sub) category.

7. Experience sharing: international sharing of Inventory

ÇYGM Önerileri devam

Daireler arası veri toplama süreci

AB düzenlemeleri ile uyumlu AD ve EF konusunda ihtiyaçlar ve boşluklar

AKAKDO sektörü genel ve alt kategorileri arazi verisi

Tecrübe paylaşımı. AKAKDO raporlaması konusunda uluslararası tecrübenin paylaşımı.

TRAINING NEEDS IDENTIFIED BY GDAR

1. Spatial data analysis: training on CORINE and LPIS, with focus on

   a. common understanding of basic processes of CORINE and LPIS (interpretation and processing;

   b. harmonization and integration of satellite-base information ("ground-truthing") from ENVANIS.

2. Land use change matrices and Land use / land us land use change matrixes for historical time-series, a change monitoring system for Turkey; related to Act

3.LULUCF (sub-) categories: determining key land ca land area and area per (sub-) category.

TRGM Önerileri

Mekansal veri analizi

Arazi kullanma matrisi

Kilit arazi kullanma kategorilerinde daha iyi bir izleme

TRAINING NEEDS IDENTIFIED BY GDAR(cont.)

4. Land use management practices: overall LULUCF training and understanding of good Land Use Management with emphasis on how land use management practices affect carbon stocks and GHG emissions and removals in different land categories and sub-categories. Attention to be provided to the impact of disturbances on carbon stocks and GHG emissions and removals.

TRGM Önerileri devam

Arazi kullanım uygulamaları ve karbon stoklarına etkileri yanında dış etkilerin salım/tutum lara etkileri.

TRAINING NEEDS IDENTIFIED BY GDAR(cont.)

5. Activity Data and Emission Factors: improved modelling, calculations and use of algorithms for carbon stock changes in carbon pools, and overall emissions and removals. E.g.:

a. identification of AD and understanding its role, in order to determine land use and land use change in LULUCF sector, resulting in improved estimates or calculations for carbon and carbon stock changes in the different carbon pools and under land use changes (conversion of land from one category
focused on the situation in Turkey;

b.greenhouse gas emission and sink calculatio
wetland, settlements and other lands;

c.improved common understanding of AD and the implementation in algorithms. To enhance exchange of knowledge between different departments and directorates within MoFAL.

TRGM Önerileri devam

Gelişmiş hesaplama yaklaşımları

TRAINING NEEDS IDENTIFIED BY GDAR(cont.)

6. Grassland inventory: collecting specific data for grassland inventory (methodology) and determining the actual total land area and per grassland (sub-)category.

7. Improvement of overall GHG reporting skills: training to the Core Group members for the writing and preparation of the National Greenhouse Gas Emission Inventory.

TRGM Önerileri devam

Mera hesaplamaları

NIR yazımı

TRAINING NEEDS IDENTIFIED BY GDF

1. Activity Data and Emission Factors: improved modelling, calculations and use of algorithms for carbon stock changes in carbon pools, and overall emissions and removals. E.g.:

a. understanding the role of AD, resulting in improved estimates or calculations for carbon and carbon stock changes in the different carbon pools and under land use changes (conversion of land from one category to another);

b. calculations of above- and below-ground carbon sinks and sources, for all land categories and sub-categories, and conversions of land use and for biomass increments and carbon fraction assessment, soil organic matter and litter/deadwood;

c. determining human influence for land categ and/or emissions, with focus on peatlands and

OGM Önerileri

Gelişmiş hesaplama yaklaşımları (TRGM ile paralel)

TRAINING NEEDS IDENTIFIED BY GDF (cont.)

2. Spatial data analysis: training on CORINE and LPIS, i.e. on

a. common understanding of basic processes of CORINE and LPIS (interpretation and processing;

b. characterization of land and (historical) land use through spatial changes in land use. Moving from (currently) assumptions on historical land use change to calculation of conversion of FL to other land categories based on satellite information from Envanis. Related to Activity 4.2 Implementation of satellite-based land monitoring system for Turkey;

c. harmonization and integration of satellite-bas information with land-based information ("ground-truthing"). An anticipated from European Expert to assess datasets and re integrate satellite information with land-based information.

OGM Önerileri devam

Mekansal veri analizi

TRAINING NEEDS IDENTIFIED BY GDF (cont.)

3. Land use change matrices and Land use / land use change monitoring system: preparing land use change matrixes for historical time-series, and develop a land use and land use change monitoring system for Turkey; related to Activity 4.2.

4. LULUCF (sub-) categories: determining key land c

total land area and area per (sub-) category.

5. Carbon fluxes in the forest area: Estimation/calcu

emissions from HWP.

6. Calculation of emissions and removals: quantifica

CO2, (CH4), and (N2O), specifically for wetlands an

OGM Önerileri devam

Arazi kullanım matrisi

Arazi kullanım aktivite verisi

Ormanlardan karban akı ölçmeleri ve HWP

Ormana dönüşen alanlar için karbon stok değişimi. Özellikle sulak alanlardan salımlar

TRAINING NEEDS IDENTIFIED BY GDF (cont.)

7. Grassland inventory: collecting specific data for grassland inventory (methodology) and determining the actual total land area and per grassland (sub-)category.

8. Land use management practices: overall LULUCF training and understanding of good Land Use Management with emphasis on how land use management practices affect carbon stocks and GHG emissions and removals. Attention to be provided to the impact of disturbances on carbon stocks and GHG emissions and removals, to prepare a disturbance matrix, and the effect and impact of logging and n

9. Uncertainty calculations: a better understanding forest land, ensuring a comprehensive and balanc and outputs for each pool.

OGM Önerileri devam

Meralarda karbon stok değişimi

Arazi kullanım uygulamalarının etkileri

Belirsizlik analizi

TRAINING NEEDS IDENTIFIED BY GDF (cont.)

10. Soil classification and soil maps: basic training in general soil-science with focus on soil-carbon content and carbon fluxes, connecting soil information/classification to soil-characteristics, and relating this to carbon sinks and emissions.

11. Basic training in grass-cover / cropland charact
of forest land activities to land use change (e.g. FL

12. Monitoring & Evaluation of GHG development
carbon stocks and removals/emissions associated
analysis and forecasting. This could come in the fo

13. Improvement of overall GHG reporting skills: e
(training elements from the above) with adequate

OGM Önerileri devam

Toprak karbonu ve haritaları

Orman-mera orman-tarım dönüşümlerinin daha iyi hesaplanması

Sera gazı hesaplamaları ile ilgili izleme ve değerlendirme

Genel olarak hesaplama ve raporlama kapasitesinin artırılması

LULUCF – TR

GHG Monitoring and Reporting System

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