



WOCAT

World Overview of Conservation Approaches and Technologies

A Rede Global de Gestão Sustentável da Terra

Introdução ao Banco de Dados Global sobre
melhores práticas de
Gestão Sustentável da Terra (GST)

31 de Maio de 2023

slido



Já conhece a WOCAT?

ⓘ Start presenting to display the poll results on this slide.

Sobre a WOCAT

A Visão Mundial das Abordagens e Tecnologias de Conservação é uma **Rede Global estabelecida em 1992.**

A WOCAT apoia a compilação, documentação, avaliação, compartilhamento, disseminação e aplicação do **conhecimento em Gestão Sustentável da Terra (GST).**

Em 2014, a WOCAT ganha o **reconhecimento oficial da UNCCD** como o principal banco de dados global recomendado para as melhores práticas de GST.

<https://www.wocat.net/en/about>



A Rede Global de Gestão Sustentável da Terra

Parceiros de Consórcio

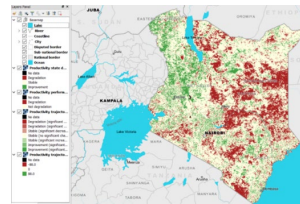


Parceiros de financiamento



WOCAT

apoia *inovação e tomada de decisões em GST* através de:



harmonização e desenvolvimento **ferramentas e métodos** com parceiros



manutenção da **rede de GST** global e aberta



WOCAT



providenciar **repositório global de dados de GST** com acesso aberto

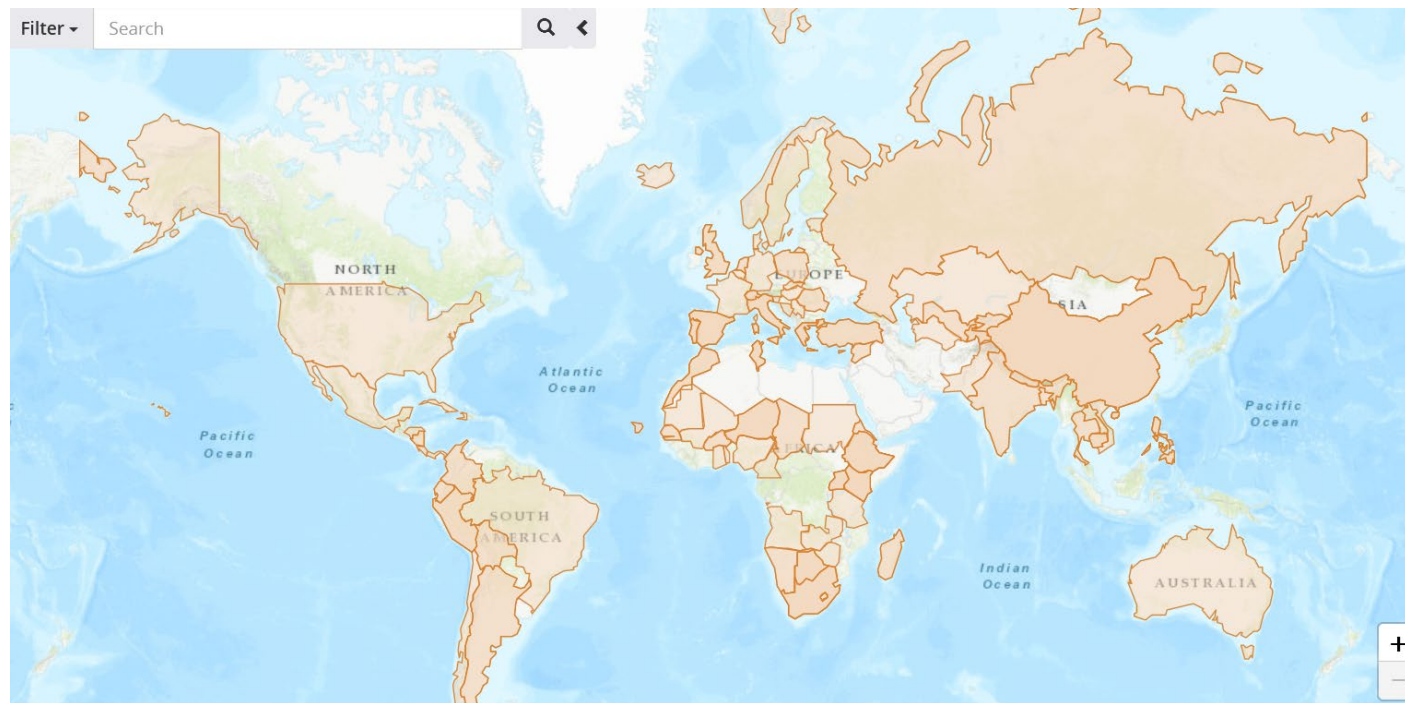


desenvolver capacidades a nível local, regional e nacional



WOCAT – a rede global de GST

A WOCAT colabora com **projetos e programas à traves de agencias nacionais, atores governamentais e atores não-governamentais** (ONGs, org. da sociedade civil, org. de pesquisa) – ao nível nacional e regional. Ferramentas e métodos da WOCAT são utilizados em projetos específicos, integrados em programas, e podem se tornar parte de estratégias nacionais.



Rede global de especialistas e profissionais em GST em mais de 60 países

Pesquisa sobre Cooperação Sul-Sul

Desenvolvida por WOCAT e FAO

Objetivos:

- identificar diferentes atores que trabalham na área da **GST e restauração de terras** e estão interessados em fazer intercâmbio com outros países/ regiões,
- entender **como melhor estabelecer ligações entre países** com interesses semelhantes
- **Criar conexões entre provedores e receptores de conhecimento** sobre GST e restauração de terras

Acesso: <https://forms.gle/BnHV6avJjvmA6NEK9>

Pesquisa sobre Cooperação Sul-Sul

Questionário em português: 3 respostas (AO, BR, CV)

América Latina e Caribe (em espanhol)

- 42 respostas (de 22 países)

Degradação de terras e avaliação da GST [%]	EXPERIÊNCIA no assunto				DEMANDA/INTERESSE em trocar informações sobre o assunto			
	nenhuma	pouca	boa	excelente	nenhum	pouco	medio	alto
Mapeamento da degradação de Terras								
o A nível nacional	14	26	37	23	0	12	29	59
o A nível subnacional	18	21	38	24	0	6	29	65
o A nível paisagístico	11	17	51	20	0	5	30	65
o A nível local	11	14	39	36	0	13	6	81

Grupos-alvo

- ❑ Especialistas em GST no **nível de campo**, incluindo equipes técnicas, trabalhadores de extensão, consultores agrícolas e implementadores de projetos.
- ❑ Especialistas em GST no **nível (sub)nacional**, incluindo planejadores, designer de projetos, formuladores e gestores de políticas públicas e pesquisadores.
- ❑ Especialistas em GST no **nível regional e global**, incluindo planejadores de programas internacionais e doadores.

Beneficiários-alvo e beneficiários finais:
Usuários da terra e o público que beneficiam de serviços ecossistêmicos mais seguros.



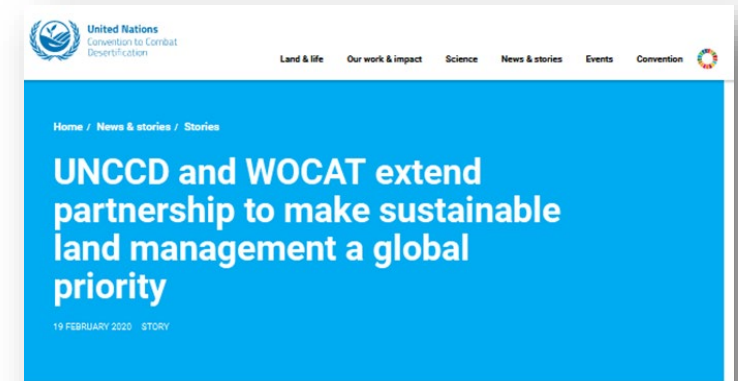
WOCAT & UNCCD

Em 2014 a UNCCD seleciona a WOCAT como o **principal banco de dados recomendado** para relatar as melhores práticas de GST e medidas de adaptação.

Em 2020 a **parceria UNCCD-WOCAT é estendida** para impulsionar a adoção de práticas de GST em todo o mundo por meio de uma parceira global fortalecida.

5 Decisões da COP.15 (2022) estão diretamente ligadas à WOCAT

<https://www.unccd.int/land-and-life/sustainable-land-management-and-restoration/get-involved/unccd-wocat-partnership-slm>




World Overview of Conservation Approaches and Technologies (WOCAT) – related decisions by the United Nations Convention to Combat Desertification (UNCCD) 15th session of the Conference of Parties (COP15)

Abidjan, Côte d'Ivoire, 9-20 May 2022
<https://www.unccd.int/sites/default/files/2022-06/cop23add1-advance.pdf>

Decision 9/COP.15 - Collaboration with the Global Environment Facility
 The Conference of the Parties [...] recommends the Global Environment Facility to promote, as appropriate, the use of the United Nations Convention to Combat Desertification-designated World Overview of Conservation Approaches and Technologies database into the Global Environment Facility projects and programmes to support knowledge-sharing and the dissemination of sustainable land management best practices;

Decision 11/COP.15 - Improving the procedures for communication of information as well as the quality and formats of reports to be submitted to the Conference of the Parties
 The Conference of the Parties [...] encourages Parties to: [...] provide United Nations Convention to Combat Desertification-relevant information and good practices to the designated World Overview of Conservation Approaches and Technologies database, where appropriate;

Decision 19/COP.15 - Interfacing science and policy: The Science-Policy Interface, the dissemination and accessibility of best practices, and the UNCCD Knowledge Hub
 The Conference of the Parties [...] Acknowledging the continuing efforts by the secretariat and the World Overview of Conservation Approaches and Technologies in promoting the analysis, dissemination and accessibility of sustainable land management best practices and developing tools relevant for United Nations Convention to Combat Desertification stakeholders; Welcoming the renewed partnership between the United Nations Convention to Combat Desertification and the World Overview of Conservation Approaches and Technologies aimed at implementing the renewed World Overview of Conservation Approaches and Technologies strategy (WOCAT 2020+) in line with the knowledge needs of United Nations Convention to Combat Desertification stakeholders;

[...] Also requests the secretariat, subject to the availability of resources, to continue the collaboration with the World Overview of Conservation Approaches and Technologies, facilitating an exchange of knowledge on sustainable land management between United Nations Convention to Combat Desertification stakeholders globally;

Decision 20/COP.15 - Policy-oriented recommendations resulting from the cooperation with other intergovernmental scientific panels and bodies
 The Conference of the Parties [...] Requests the secretariat, the Global Mechanism and the Science-Policy Interface and invites the designated World Overview of Conservation Approaches and Technologies Database, as well as other relevant agencies/bodies of multilateral environmental agreements, acting within their respective mandates, subject to the availability of resources, to explore options for targeted capacity-building and development and knowledge and technology transfer to support approaches to the implementation of the Convention that can simultaneously address desertification/land degradation and drought, sand and dust storms, support climate change mitigation and adaptation, and contribute to conservation and sustainable use of biodiversity and sustaining livelihoods;

Decision 24/COP.15 - Follow-up on policy frameworks and thematic issues: Gender
 The Conference of the Parties [...] Encourages the secretariat, subject to the availability of funds, to continue collaboration with the World Overview of Conservation Approaches and Technologies to enhance the implementation of the Gender Action Plan and its road map, including to generate gender-disaggregated data, to inform gender-responsive policy design for achieving land degradation neutrality;

Publications

UNCCD COP15 through the lens of drought: highlights, outcomes and the way forward
 The fifteenth session of the Conference of the Parties (COP15) of the United Nations Convention to Combat Desertification (UNCCD) took place from 9 to 20 May 2022 in Abidjan, Côte d'Ivoire.

Decisões relacionadas à WOCAT na UNCCD COP15

<https://www.wocat.net/library/media/265/>

WOCAT & UNCCD

Areas se colaboração e projetos conjuntos

- Relatório PRAIS da UNCCD, mapeamento de degradação de terras
- Neutralidade da Degradação das Terras (p. ex. <https://wocatapps.users.earthengine.app/>)
- Década das Nações Unidas para a Restauração do Ecossistema
- Iniciativa «Grande Muralha Verde»
- Iniciativa Global do G20 para Reduzir a Degradação de Terras e Melhorar a Conservação de Habitats Terrestres
- Questionário sobre perspectiva de gênero em GST
- Economia da GST (com o Mecanismo Mundial, GIZ/ ELD)



Banco de Dados Global de GST

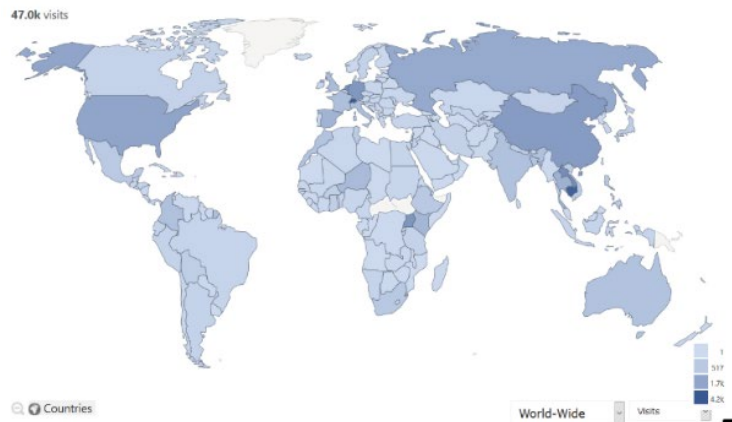
Principais características:

- ✓ **upload gratuito e compartilhamento mundial** de boas práticas de GST em inglês, espanhol, francês, russo, quechua, lao e **português**
- ✓ acesso gratuito a **mais de 2000 práticas de GST comprovadas e testadas** em campo de mais de 130 países;
- ✓ **filtros para procurar práticas** de GST relevantes para paisagens específicas, usos da terra, etc.

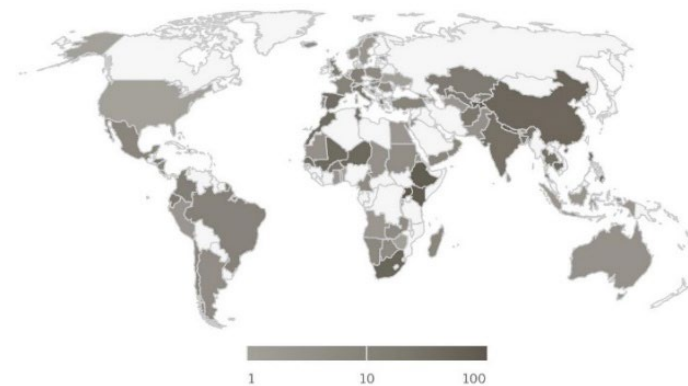


<p>Tecnologias SLM Uma Tecnologia SLM é uma prática de gestão de terras que controla a degradação da terra e aumenta a produtividade e/ou outros serviços ecossistêmicos.</p> <p>Ver</p> <p>Adicionar</p>	<p>Abordagens SLM Uma abordagem SLM define as formas e os meios utilizados para implementar uma Tecnologia SLM, incluindo as partes interessadas envolvidas e suas funções.</p> <p>Ver</p> <p>Adicionar</p>	<p>Práticas do UNCCD PRAIS Archived PRAIS SLM best practices, as previously shared through the UNCCD PRAIS system in the UNCCD reporting process.</p> <p>Ver</p>
<p>Projeto Benefícios de Carbono (CBP) Ferramentas para avaliar os benefícios de carbono e as emissões de gases de efeito estufa de uma Tecnologia SLM.</p> <p>Ver</p> <p>Adicionar</p>	<p>Gênero Tool for assessing gender-responsiveness of SLM Technologies and Approaches.</p> <p>Ver</p>	<p>Economics Analysing the Costs and Benefits of Sustainable Land Management Technologies.</p> <p>Ver</p>
<p>Sand and Dust Storm Sand and Dust Storm (SDS) relevant SLM Technologies</p> <p>Ver</p>	<p>Drought Drought relevant SLM Technologies</p> <p>Ver</p>	<p>LDN Tools and methods for monitoring, validating and implementing land degradation neutrality</p> <p>Ver</p>

<https://qc.at.wocat.net/pt/wocat/>



Visitantes do banco de dados



Boas práticas de GST no banco de dados

Exemplos: Brasil, Angola, Cabo Verde



The screenshot displays the WOCAT SLM Database interface. At the top, there are navigation links for 'Início', 'Pesquis', and 'Pesquis'. The main header includes the text 'WOCAT SLM DATABASE' and user information '3152 Joana Eichenberger Português'. Below the header, there are search filters for 'País' (Country) with options for 'Brasil', 'Cabo Verde', 'Angola', and 'Moçambique'. A search bar is present with a 'Pesquisa' button. A dropdown menu titled 'Classificação da tecnologia de gestão sustentável da terra' (Classification of sustainable land management technology) is open, listing various criteria such as 'Tipo de uso da terra', 'Tipo de degradação', and 'Ambiente natural e humano'. The main content area shows a list of technologies with titles and descriptions:

- Rotational grazing to restore degraded pastures [Afghanistan]**
The transhumance pastoral communities of Southern Angola traditionally held gatherings of chieftains and community leaders to discuss management of commonly held pastoral resources. However, the conflicts of the last century led to the breakdown in traditional governance and the majority of the traditional management systems were abandoned. The RETESA Project ...
Compilador/a: Nicholas Euan Sharpe 08/09/2017 11:51
- Reinforced terraces for stone walls [Cape Verde]**
Platforms created in series along the slopes, separated by punch of stone, vertical, reduced the length of slopes and facilitating the infiltration of water and increasing production
Compilador/a: Jacques Tavares 25/09/2013 11:27
- Afforestation [Cape Verde]**
Afforestation is one of the key technologies to address the fragility of ecosystems: it provides better protection against erosion and makes better use of rainfall in order to maintain the sustainability of agricultural systems.
Compilador/a: Jacques Tavares 05/08/2011 11:45
- Barreiras Vivas de Leucaena [Cape Verde]**
Vegetative measure based on the planting of the bush, *Leucaena leucocephala*, on line along the level curves in the steep slopes
Compilador/a: Jacques Tavares 25/09/2013 11:28

Examples: Angola, Brasil, Cabo Verde



Members of the Tchikongolo Community building and planting a Leaky well near the Caungo Natural Springs. (Project RETSA)

Community supported pasture and rangeland rehabilitation works (Angola)

DESCRICO
Rehabilitation of rangelands involves selection of key pasture and fodder species, and their reintroduction into strategic areas through stakeholder participation. The technology is also supported by communal management plans, which were created to address the root causes of land degradation.

LOCALIZAO
This technology was developed and implemented through the RETSA Project and rangeland and rangelands management in smallholder agricultural production systems in south-western Angola. RETSA is a project owned and implemented by the Ministry of Environment of the United Nations (FAO), and financed by the Global Environment Facility (GEF). Involvement of grazing regimes and poor livestock management by pastoral communities in SW Angola have led to degradation of rangeland areas, with several grassland species and shrubs being effectively eliminated. This is despite the fact that the pastoral communities of the area know their environment extremely well and are aware of the land degradation happening around them. Under the project, they identified crucial areas for rehabilitation work, selecting priority areas around water points that have been in use both by cattle and transhumant herds. Through these works, the local community sought to (a) increase ground cover to reduce sediment loads entering waterways (erosion control); (b) provide shade for livestock; (c) increase forage production and (d) introduce legumes and multipurpose forage trees in areas of high animal traffic. A total of four areas in the Biebe and Virei Municipalities were identified for rehabilitation.

The communities were closely involved in the selection and propagation of plant species for the rehabilitation works. The project field staff also visited field specialists with them to confirm that the plants selected met their expectations. These participatory trials were also aimed at enhancing their understanding of livestock nutrition and how it related to animal health. Once the species were chosen, seeds were collected by the communities and Project Technicians and were multiplied in 32 agricultural field school nurseries and 2 government funded Veterinary Research Stations. A total of 13 species were identified, with the grasses *Eragrostis superba*, *Urochloa moenchiana*, and the trees *Acacia robusta*, *Ficus* sp. and *Moringa* being the most valued by the communities as forage and multipurpose species. The trees were germinated from seed with success. However, native grass species failed to germinate by standard methods, so they had to be sown using direct seeding methods. Thus they were encouraged by rural division of plants collected from cultivated fields. This avoided removal of grass from riparian areas. As the majority of the area selected for the rehabilitation work were located around water points and waterways, the soil were generally alkaline, sandy loams. Precipitation is highest in the areas to the north, it ranges from 800 mm in the upper areas of the Biebe Municipality to 200 mm in the areas to the south in Virei, in general, the vegetation communities could be described as dry, sclerophyll woodlands with *Coleoptera* mounds being the dominant tree species, with forest cover decreasing in height and density as one moves south towards riparian areas.

Through close collaboration with the participant communities, three rehabilitation methods were designed and improved upon throughout the project duration. Method 1 was used to plant open areas within the rehabilitation zone, Method 2 was employed to introduce and protect concentrated plantings of the selected species in strategic locations within the landscape, and Method 3 was preferred for the recuperation of riparian vegetation and to reduce sediment loads in waterways. The three methods used are described in more detail in the Technical Drawings. To increase the sense of ownership and thus the sustained effectiveness of the rehabilitation works, and management plans and other supporting activities were also carried out.

LOCALIZAO
Localização: Municipidades de Biebe and Virei, Província de Namibe, Angola

Nº de sites de tecnologia analisados: 2-10 locais

Geo-referência de locais selecionados

- 13.9857, -14.4421
- 12.9181, -15.0498
- 13.5467, -14.6204
- 12.7479, -15.0141

Diffusão da tecnologia: Aplicado em pontos específicos/concentrado numa pequena área

Em uma área permanentemente protegida: Não

Data de implementação: menos de 10 anos atrás (intermittente)

Tipo de introdução

- ☑ através de inovação dos usuários da terra
- ☑ Como parte do sistema tradicional (50-90 anos)
- ☑ através de projetos/intervenções externas
- ☑ através de processos/interações sociais



Planting work being implemented in Kamupula, Biebe. (Project RETSA)



Planting and fence near around Biebe water point to improve water quality, stabilize banks and protect water. (Project RETSA)

[Trabalhos de reabilitação de pastos e pastagens apoiados pela comunidade \[Angola\]](#)



Experimental plots on a tropical agricultural soil (Ferralsol) after organic matter additions. (Marta Unger)

Carbon-enrichment of tropical agricultural soil with organic matter (Brasil)

DESCRICO
Carbon-enrichment of tropical agricultural soils with locally available organic matter in the Cerrado agricultural landscape, Brasil.

In the Cerrado Project viable land management strategies were explored to optimize the level of carbon in soil and water, helping to maintain and/or improve ecosystem functions, under changing climatic conditions in the Southern Amazon and the Brazilian Cerrado. In the framework of this project, on-farm experiments were performed to enrich tropical agricultural soils in the medium term, with different types of organic matter (OM), in the experiment the effect of different types of OM amendments on soil carbon and macro-nutrients (N, P, and K), soil physical properties (waterholding capacity) and crop yield (dry biomass and grain production) were assessed. The amendments applied are locally available, and are either free (being waste materials) or considered cost-efficient. The objective of this on-going experiment is to compare the impact of (i) the quality and quantity of OM applied; (ii) and the application methods (directly on the soil surface or incorporation by harrow) on soil chemical and physical properties, i.e. hypothesized that the addition of OM can enhance crop yields and, potentially, soil biodiversity. The effect of the different OM types, amounts and application methods were evaluated after one, two and three years. From the results, the aim is to provide recommendations for the development of soil OM-enrichment schemes and carbon-friendly landscape management programs for farmers, using local resources.

The experiment was established on an area of about one hectare on a Ferralsol (red latosol) at the Rio Egrégio Farm, in the Municipality of Campo Verde, Mato Grosso State. The farm has a total area of ca. 1500 x 800 m of which one cultivated with soybean and maize rotation, under a zero-tillage system, which is typical of many farms in this region. It is located in the Brazilian Cerrado savanna biome at about 800 m a.s.l. The biome covers 2 million km², which is 23% of the country area. It has a semi-arid climate with a pronounced dry season. The precipitation during the rainy season (September-April) varies between 800 and 2000 mm/year.

At the beginning of the experiment (February 2012), three different types of OM amendments were applied. They comprised (a) sugarcane filter cake (Saccharum officinarum from ethanol-biofuel production), (b) sawdust of peroba and cedrim (Pterocarpus and Brinjal uncoriary, respectively) and (c) cattle crop of *Bambusa* sp. Quantities applied were 6 (control), 6, 12 and 18 tonnes of each per hectare, using two methods: directly on the soil surface, and incorporated by harrow. There were three replicates per treatment. The area was not tilled to allow the farmer to continue with their field routines on all plots. In February 2013, 2014 and 2015 soil samples were taken to analyse their chemical and physical properties. Soybean samples were also taken in February 2014 and 2015 to estimate biomass and grain production. From the initial results, some conclusions can be drawn: 1) organic amendment addition to Ferralsol can significantly increase soil organic carbon, even in amounts as low as 6 t/ha. 2) Amendments should be reapplied every 2 years. 3) The amendment type and application method does not have a significant effect on increasing soil organic carbon. 4) The addition of OM amendments is a win-win situation as a solution for organic matter waste recycling and simultaneously to improve soil quality.

The area was not tilled to allow the farmer to continue with their arable field routines on all treatment plots. In February 2013, 2014 and 2015 soil samples were taken to analyse their chemical and physical properties. Soybean samples were also taken in February 2014 and 2015 to estimate biomass and grain production. From our first results we can draw some conclusions:

- 1) Organic amendment addition to Ferralsol can increase significantly soil organic carbon (SOC) percentage, even in small amounts such as 6 t/ha.
- 2) Amendment reapportion should be done in 2 years intervals.
- 3) The amendment type and disposition did not have a significant effect on increasing SOC.
- 4) The addition of OM amendments is a win-win situation as a solution for organic matter waste recycling and to improve soil quality.

LOCALIZAO
Localização: Campo Verde, Mato Grosso, Brasil

Nº de sites de tecnologia analisados: 2

Geo-referência de locais selecionados

- -55.0415, -16.7247

Diffusão da tecnologia: Uniformemente difundida numa área (0,011544 km²)

Em uma área permanentemente protegida: Não

Data de implementação: menos de 10 anos atrás (intermittente)

Tipo de introdução

- ☑ através de inovação dos usuários da terra
- ☑ Como parte do sistema tradicional (50-90 anos)
- ☑ através de experiências/práticas
- ☑ através de projetos/intervenções externas



Ferralsol soil after organic matter type addition on tropical agricultural soil (Marta Unger, Unger_marta@uev.br)

[Enriquecimento de carbono do solo agrícola tropical com matéria orgânica \[Brasil\]](#)



The design of the vegetative barriers of Aloe vera in the field structure in an orchard. (Instituto Nacional de Investigação e Desenvolvimento Agrário (INIA) Vila Verde, Cabo Verde)

Barreiras vegetais de Aloe vera (Cabo Verde)

DESCRICO
Cette technologie consiste à planter des barrières végétales le long des courbes de niveau afin de réhabiliter et stabiliser les pertes dégradées.

L'aloé vera est une plante charnue et résistante à la sécheresse plantée sous forme de barrières végétales afin de régénérer les pertes dégradées des lies du Cap Vert. Les plantes sont plantées de façon serrée le long des courbes de niveau pour former des barrières efficaces, afin de réduire les sédiments érodés et en suspension. Ces talus stabilisent le sol et agissent sur le taux d'humidité du sol en améliorant l'infiltration et la structure du sol. La terre accumulée derrière les barrières d'aloé vera et la partie supérieure considérablement au fil du temps. La récolte phénologique est principalement nocturne. La couverture du sol augmente et l'érosion diminue.

La mise en œuvre est relativement simple. Les courbes de niveau sont tracées grâce à un niveau à corde ou à eau, puis des plants sont plantés sous les 30-50 cm, en espaçant les lignes de 6-10 m, en fonction de la pente. La technologie est utilisée dans les zones sub-humides et semi-arides, sur des pentes fortes à très fortes, à érosion rapide et à forte érosion. Ces zones sont généralement exploitées par des paysans pauvres pratiquant l'agriculture pluviale de subsistance avec du maïs et des haricots, qui ne sont pas habituellement plantés sur ces terres pentues. Sur les pentes supérieures 30%, les barrières végétales sont souvent associées à des murs en pierres (hauteur 40-50 cm, hauteur 80-90 cm). Comme les plantes stabilisent les murs, cette mesure combinée est l'une des plus efficaces pour contrôler l'érosion sur le Cap.

L'aloé vera est bien adaptée aux conditions topographiques locales et au mode d'exploitation habituel des terres: elle peut être associée à toutes les cultures et est accessible aux fermiers. La plantation et le transport faciles, les feuilles ne sont pas consommées par le bétail, elle est extrêmement résistante au stress hydrique et pousse dans toutes les zones climatiques de l'île. De plus, l'aloé vera est réputée pour ses nombreux usages médicaux traditionnels.

LOCALIZAO
Localização: Santiago, Cabo Verde

Nº de sites de tecnologia analisados: 1

Geo-referência de locais selecionados

- -23.583, 15.074

Diffusão da tecnologia: Aplicado em pontos específicos/concentrado numa pequena área

Em uma área permanentemente protegida: Não

Data de implementação: 10-50 anos atrás

Tipo de introdução

- ☑ através de inovação dos usuários da terra
- ☑ Como parte do sistema tradicional (50-90 anos)
- ☑ através de experiências/práticas
- ☑ através de projetos/intervenções externas



Les barrières végétales d'aloé vera sont souvent associées à des murs de pierres pour mieux fixer l'érosion sur les pentes fortes (Instituto Nacional de Investigação e Desenvolvimento Agrário (INIA) Vila Verde, Cabo Verde)

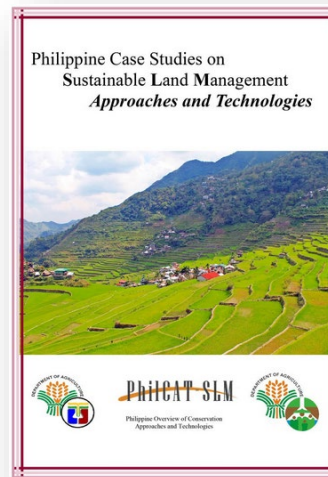


Les barrières végétales d'aloé vera sont souvent associées à des pierres locales (Instituto Nacional de Investigação e Desenvolvimento Agrário (INIA) Vila Verde, Cabo Verde)

[Barreiras para plantas de Aloe vera \[Cabo Verde\]](#)

Resumos de Tecnologias / Abordagens GST

- Gerado automaticamente
- Em todos os idiomas (disponíveis)
- Usados para compilações de boas práticas, materiais de aprendizagem para serviços de extensão, produtos de conhecimento, ect



DESENHO TÉCNICO

Especificações técnicas
Enrichment of Tropical a amendments. Experi...
disposition methods (dr...
variables: soil carbon a...
capacity) and crop yield
Location: Rio Engano Ra...
Date: 6.11.2015

Technical knowledge rec...
Technical knowledge rec...
Main technical functions...
stored in soil

Secondary technical fun...
runoff: impede / retard...
stabilisation of soil (eg b...
availability (supply, recy...
groundwater level / rech...
water supply

Manure / compost / ree...
Material / species: (a) ...
offi...
Qua...

Experimental plots on a t...

Carbon-enrichn
Enriquecimento de carb...

DESCRICO

Carbon-enrichment of tr...
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In the Carbiocoll Project...
the level of carbon in soi...
functions, under changir...
Cerrado. In the framewo...
with tropical agricul...
quantity of OM applied, i...
incorporation by harrow...
the addition of OM can e...
of the different OM type...
two and three years. Fro...
development of soil OM...
management programs

The experiment was est...
latosol) at the Rio Enga...
The farm has a total are...
maize rotation, under a...
It is located in the Brazi...
covers 2 million km2, wh...
pronounced dry season...
varies between 800 and...

At the beginning of the...
amendments were appli...
officinarum from ethanc...
jaune and Erismia uncina...
Quantities applied were...
methods: directly on the...
repetitions per treatmen...
their field routines on all...
to analyze their chemica...
February 2014 and 2015...
results: some conclusio...
significantly increase soi...
Amendments should be...
method does not have a...
addition of OM amendm...

ESTABELECIMENTO

Cálculo de insumos e c...

- Os custos são calculados
- Moeda utilizada par...
- Taxa de câmbio (pa...
- Custo salarial médic...
- 25,00

Atividades de implantaçã...
n.a.

Atividades de manutençã...
desenvolvimento de soil OM...
management programs

1. Transport of amen...
2. Spreading / incorp...

(Periodicidade/frequ...

Insumos e custos de ma...

Especifique a entrada

Mão-de-obra
labour

Equipamento
machine use

Truck transport
truck transport

Custos totais para a man...
Custos totais de manut...

AMBIENTE NATURAL

Média pluviométrica anu...

- <250 mm
- 251-500 mm
- 501-750 mm
- 751-1.000 mm
- 1.001-1.500 mm
- 1.501-2.000 mm

AMBIENTE NATURAL

Área utilizada por residência

- <0,5 ha
- 0,5-1 ha
- 1-2 ha
- 2-5 ha
- 5-15 ha
- 15-50 ha
- 50-100 ha
- 100-500 ha
- 500-1.000 ha
- 1.000-10.000 ha
- > 10.000 ha

AMBIENTE NATURAL

Média pluviométrica anual

- <250 mm
- 251-500 mm
- 501-750 mm
- 751-1.000 mm
- 1.001-1.500 mm
- 1.501-2.000 mm
- > 4.000 mm

Inclinação

- Plano (0-2%)
- ✓ Suave ondulado (3-5%)
- Ondulado (6-10%)
- Moderadamente ondulado (11-15%)
- Forte ondulado (16-30%)
- Montanhoso (31-60%)
- Escarpado (>60%)

Profundidade do solo

- Muito raso (0-20 cm)
- Raso (21-50 cm)
- Moderadamente profundo (51-90 cm)
- ✓ Profundo (81-120 cm)
- Muito profundo (>120 cm)

Lençol freático

- Na superfície
- < 5 m
- ✓ 5-50 m
- > 50 m

Diversidade de espécies

- Alto
- Médio
- ✓ Baixo

CARACTERÍSTICAS DOS US...

Orientação de mercado

- Subsistência (autoabastecimento)
- misto (subsistência/comercial)
- ✓ Comercial/mercado

Sedentário ou nômade

- Sedentário
- Seminômade
- Nômade

AMBIENTE NATURAL

Área utilizada por residência

- <0,5 ha
- ✓ 0,5-1 ha
- 1-2 ha
- 2-5 ha
- 5-15 ha
- 15-50 ha
- 50-100 ha
- 100-500 ha
- 500-1.000 ha
- 1.000-10.000 ha
- > 10.000 ha

Aonde?

Assistência técnica	Pobre	✓	Bom
Emprego (p. ex. não agrícola)	Pobre	✓	Bom
Mercados	Pobre	✓	Bom
Energia	Pobre	✓	Bom
Vias e transporte	Pobre	✓	Bom
Água potável e saneamento	Pobre	✓	Bom
Serviços financeiros	Pobre	✓	Bom

IMPACTOS

Impactos socioeconômicos

Produção agrícola

Diminuído	✓	Elevado aum...
Elevado	✓	Diminuído
Impedido	✓	Simplificado

Gestão de terra

There is not specific machinery for organic matter application in large scale

Demanda por água para irrigação

Elevado	✓	Diminuído
---------	---	-----------

Despesas com insumos agrícolas

Diminuído	✓	Elevado aum...
-----------	---	----------------

Rendimento agrícola

In case the technology reduces the crop demand for chemical fertilization, nonetheless this effect has not been yet evaluated

It provides a better environmental and technical use for agroindustrial residues costs of transport and application of OM amendments

Impactos socio culturais

Atenuação de conflitos

Agravado	✓	Melhorado
----------	---	-----------

Impactos ecológicos

Umidade do solo

Diminuído	✓	Elevado aum...
Diminuído	✓	Elevado aum...
Diminuído	✓	Elevado aum...

Ciclo e recarga de nutrientes

Diminuído	✓	Elevado aum...
-----------	---	----------------

Matéria orgânica do solo/carbono abaixo do solo

Diminuído	✓	Elevado aum...
-----------	---	----------------

Biomassa/carbono acima do solo

decreased	✓	increased
-----------	---	-----------

Increased soil micro-organisms and fauna

Impactos fora do local

ANÁLISE DO CUSTO-BENEFÍCIO

Benefícios em relação aos custos de estabelecimento

Retornos a curto prazo	multo negati...	✓	multo positi...
Retornos a longo prazo	multo negati...	✓	multo positi...

Benefícios em relação aos custos de manutenção

Retornos a curto prazo	multo negati...	✓	multo positi...
Retornos a longo prazo	multo negati...	✓	multo positi...

The technology cost of maintenance is the same as establishment cost. According with our results, amendment reapplication should be done in 2 years intervals, starting from small amounts such as 6 ton/ha.

MUDANÇA CLIMÁTICA

Mudança climática gradual

Temperatura anual aumento

não bem em...	✓	multo bem
---------------	---	-----------

Extremos (desastres) relacionados ao clima

Temporal local

não bem em...	✓	multo bem
---------------	---	-----------

Temporada de vento local

não bem em...	✓	multo bem
---------------	---	-----------

Seca

não bem em...	✓	multo bem
---------------	---	-----------

Inundação geral (rio)

não bem em...	✓	multo bem
---------------	---	-----------

Outras consequências relacionadas ao clima

Período de crescimento reduzido

não bem em...	✓	multo bem
---------------	---	-----------

ADOÇÃO E ADAPTAÇÃO

Porcentagem de usuários de terras na área que adotaram a Tecnologia

casos isolados/experimental	0-10%
-----------------------------	-------

De todos aqueles que adotaram a Tecnologia, quantos o fizeram sem receber incentivos materiais?

0-10%

Carbon-enrichment of tropical agricultural soil with organic matter [Brasil]

Criação: 27/07/2015 10:17 Atualização: 07/03/2019 10:15 Compilador/a: [Luísa F. Vega](#) Editor: -
Revisores: [David Streiff](#), [Deborah Niggli](#), [Alexandra Gavilano](#)

Enriquecimento de carbono em solo de lavoura com matéria orgânica (Brasil)

technologies_1250 - Brasil

EN

Imprimir resumo

Veja a história

Resumo completo em PDF

Resumo completo em PDF para impressão

Resumo completo no navegador

Resumo completo (sem formatação)

Rascunho

Revisão

Publicação

Produtos de conhecimento WOCAT

nível nacional

37 เทคโนโลยีและการขยายผลการจัดการที่ดินอย่างยั่งยืน

โดย
กองวิจัยและพัฒนาการจัดการที่ดิน
กรมพัฒนาที่ดิน
 กุมภาพันธ์ 2564

รหัสเอกสารวิชาการ 58-64-01-26-990001-009-001-01-26

NDT Ecuador

Esta plataforma tiene como objetivo dar apoyo a la toma de decisiones para lograr la Neutralidad de la Degradación de las Tierras en Ecuador mediante la identificación de zonas prioritarias para la implementación de prácticas sostenibles de manejo y la integración de indicadores cualitativos y cuantitativos relevantes para el monitoreo y evaluación de la degradación de las tierras.

Selecione una provincia o cantón de la lista o haga click en el mapa para obtener estadísticas. (*)

Seleccione provincia

Seleccione primero una pcd.

Sistemas de Uso de Suelo

Seleccione Sistema de Uso de Suelo

Seleccione en qué capa desea hacer click. (*)

Capas

- Provincias
- Cantones
- Cuencas
- Subcuencas
- Áreas clave de biodiversidad
- Áreas protegidas
- WOCAT MST Buenas Prácticas
- Unidades de Mapeo QM
- Sistemas de Uso de Suelo
- HHI Potencia Rural
- HHI Potencia Agrícola
- HHI Eficiencia Técnica
- WOCAT QM Extensión de la Degrad

nível regional/ global

WOCAT TERRAFRICA
Sustainable rangeland management in Sub-Saharan Africa
Guidelines to good practice

RESTORING LIFE TO THE LAND
The Role of Sustainable Land Management in Ecosystem Restoration

United Nations Convention to Combat Desertification WOCAT UNITED NATIONS PROGRAM ON ECOSYSTEM RESTORATION 2021-2030

WORLD BANK GROUP CONFERENCE EDITION

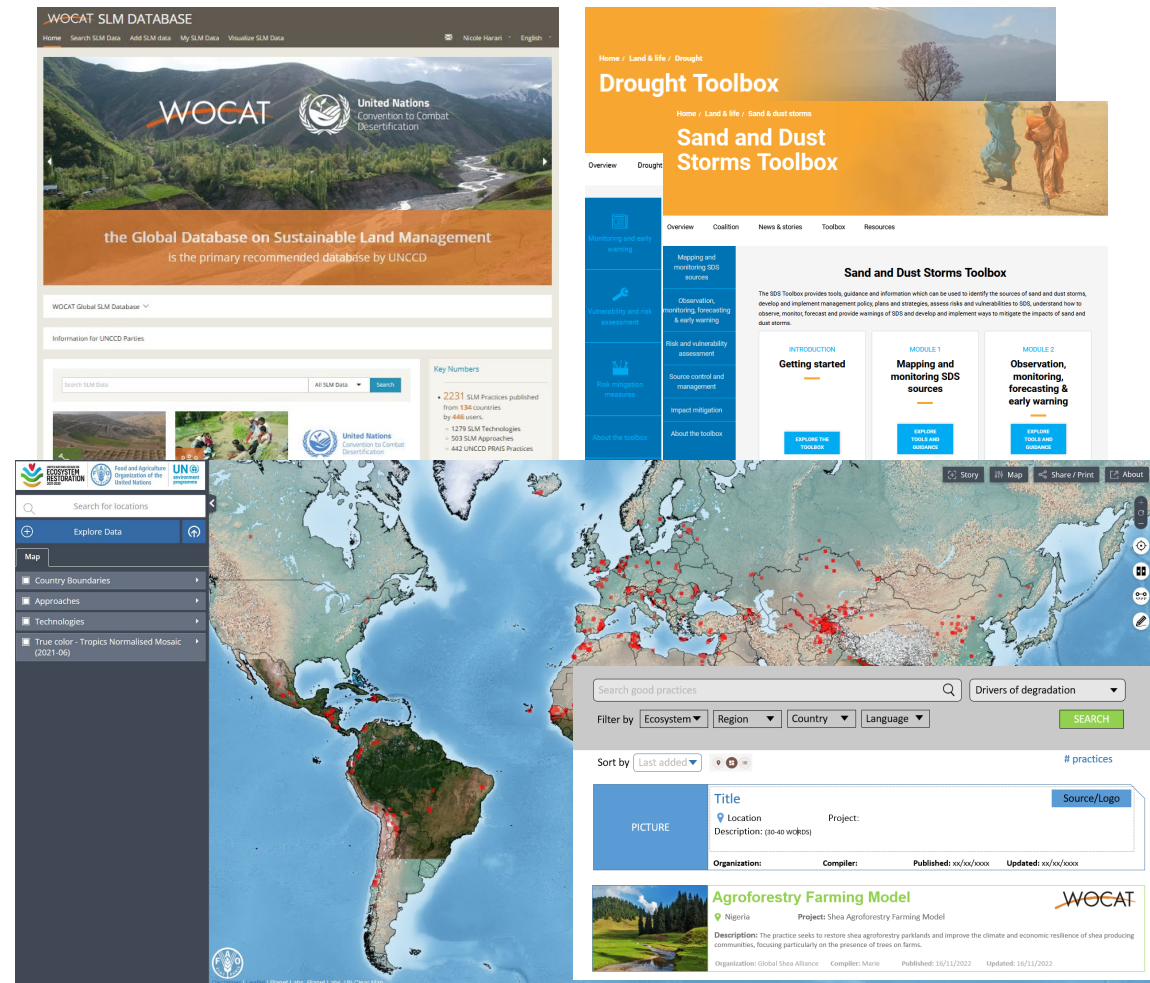
- ✓ harmonizado, padronizado, acesso aberto
- ✓ co-produzido, co-projetado
- ✓ diferentes públicos e níveis

API para permitir a interoperabilidade

APIs são canais de comunicação duráveis e confiáveis entre aplicativos.

Exemplos de conexões da API da WOCAT com outras plataformas:

- caixa de ferramentas de seca e de tempestades de areia e poeira
- Framework for Ecosystem Restoration Monitoring (FERM)

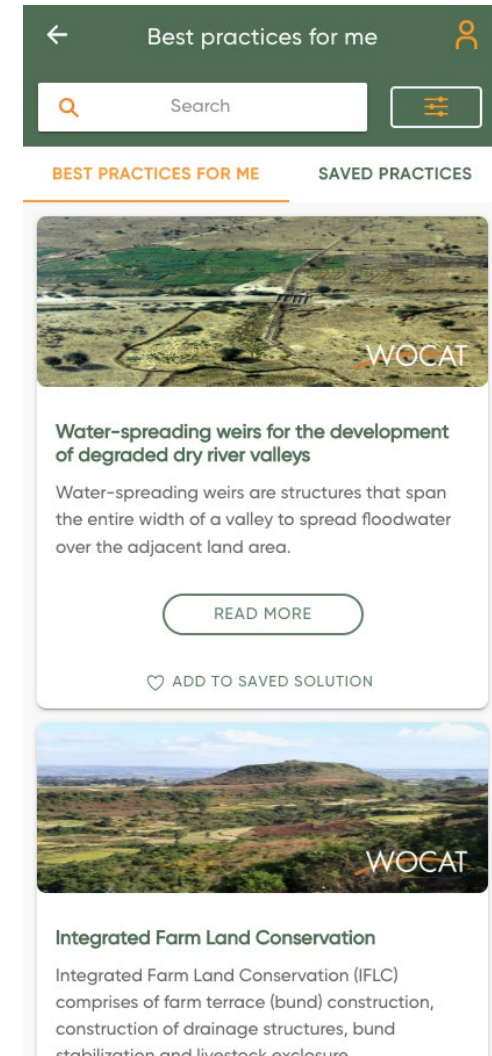


Colaboração com setor privado



- Aplicativo desenvolvido por empresa que desenvolve soluções digitais para pequenos agricultores e agentes de extensão.
- farmbetter baseia-se nos dados do banco de dado WOCAT para oferecer aos agricultores soluções de GST que atendam às suas necessidades e ao seu contexto para melhorar a resiliência climática e os meios de subsistência.

[farmbetter original – Google Play](#)



Medias Sociais

WOCAT @WOCATnet

It's **#WorldBeeDay!** 🌍 WOCAT Global Network documents & shares impactful solutions for **#Drylands** conservation through sustainable **#Beekeeping** 🐝

💡 From Cameroon @cifor, "Forest Beekeeping". Read in full bit.ly/41OOSJm ➡

@FAO @theGEF #DSLIP 🌐 #UNited4Land



UN Land and Drought Retweeted

WOCAT @WOCATnet

It's **#BiodiversityDay!** 🌍 WOCAT Global Network documents & shares impactful solutions for **#biodiversity** through **#SustainableLandManagement** 🌿

💡 From Germany @Thuenen_aktuell, "Adapted Management". Read in full bit.ly/43ajeH5 ➡

@UNbiodiversity @FERI_Biodiv 🌐 #UNited4Land



WOCAT @WOCATnet

It's **#BiodiversityDay!** 🌍 WOCAT Global Network documents & shares impactful solutions for **#biodiversity** through **#SustainableLandManagement** 🌿

💡 Colombia @FAO_Colombia @UPRAColombia @apropapur, "Agricultura Anfibia" bit.ly/43erlmf ➡

@UNbiodiversity @FERI_Biodiv 🌐 #UNited4Land



WOCAT @WOCATnet

أصدقاء الأعزاء في الشرق الأدنى وشمال إفريقيا

نود أن نسمع عن اهتماماتكم واحتياجاتكم وخبراتكم في **#SLM** و تعاون **#SouthSouth** لإجراء تحاليل أولي وتخطيط أنشطة WOCAT المستقبلية إلى الاستبيان bit.ly/3V85wkD ➡

Translate Tweet



FAO Land and Water and South-South Galaxy

WOCAT @WOCATnet

La semana pasada, más de 20 expertos participaron de un taller para definir las características más apropiadas para mapear la **#degradacióndelastiererras** en el contexto de la presentación de informes PRAIS4 a la CNULD

🔍 Leer más aquí bit.ly/3GGDfvv y bit.ly/3W9Wsex



UN Land and Drought and 2 others

WOCAT @WOCATnet

Дорогие друзья в Центральной Азии 🌍

Мы хотели бы получить от Вас информацию об интересах, потребностях и Вашем опыте, а также опыте Вашей организации в области сотрудничества **#УУЗР #Юг-Юг** для первого анализа и будущей деятельности WOCAT 🌿

Вот опрос ➡ bit.ly/3OlllVv

Translate Tweet



FAO Land and Water and 2 others

Membros da WOCAT

- Membros Individuais
- Membros Organizacionais
 - Instituições relacionadas à GST
 - Capacidade de se engajar em iniciativas e no desenvolvimento da WOCAT ao nível global, regional ou local.
 - Memodandum de Entendimento disponível no site

<https://www.wocat.net/en/wocat-membership>




 World Overview of Conservation Approaches and Technologies

Memorandum of Understanding for Organizational Membership

Overview

World Overview of Conservation Approaches and Technologies or WOCAT is a multi-stakeholder initiative first established in 1992 which has evolved to operate as a global network promoting the adoption of SLM practices ("WOCAT Network"), as further described in Annex 1.

Organizational Member desires to become a member of the WOCAT Network and has submitted an expression of interest which reflects its support and alignment with the strategic objectives of the WOCAT Network, as indicated in Annex 2.

WOCAT Secretariat will coordinate review of the Expression of Interest (Annex 3) and if approved, this countersigned Memorandum of Understanding (MoU) shall record the respective rights and responsibilities of each Party in the WOCAT Network.

Parties

The University of Bern, Centre for Development and Environment (CDE), in its capacity as host of the WOCAT Secretariat ("Secretariat").

and

[Name of Organization] ("Organizational Member")

together the parties ("Parties") to this Memorandum of Understanding ("MoU").

Obrigada!



Photo: RUA Cambodia



www.wocat.net



wocat.cde@unibe.ch



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