Members of the Tchicolongilo Community building and planting a 'Leaky weir' near the Caungo Natural Springs. (Projecto RETESA)

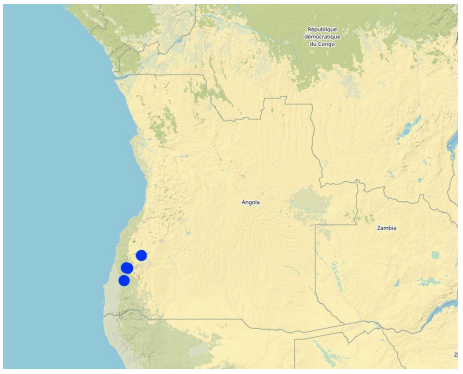
Community supported pasture and rangeland rehabilitation works (Angola)

DESCRIPTION

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.

This technology was developed and implemented through the RETESA Project "Land rehabilitation and rangelands management in smallholder agropastoral production systems in south-western Angola". RETESA is a project owned and implemented by the Ministry of Environment of the Government of Angola, with technical and methodological assistance from The Food and Agriculture Organization of the United Nations (FAO), and financed by the Global Environment Facility (GEF).
Inappropriate grazing regimes and poor livestock management by pastoral communities in SW Angola have led to degradation of rangeland and pastoral resources, with perennial grassland species and shrubs having been 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 works, selecting mostly areas around water points that have been in use both by local and transhumant herders. 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 Bibala and Virei Municipalities were identified for the activities.
The communities were closely involved in the selection and propagation of plant species for the rehabilitation works. The project field staff also ran field palatability trials 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, seed was collected by the communities and the Project Technicians, and was multiplied in 32 Agro-Pastoral Field School Nurseries and 2 Government funded Veterinary Research Stations. A total of 15 species were identified, with the grasses Eragrostis superba, Urochloa mosambicensis, and the trees Acacia nilotica, Faidherbia albida, Leucaena leucocephala and Moringa oleifera 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 - early field trials having ruled out direct seeding methods. Thus they were multiplied by root division of plants collected from cultivated fields. This avoided removal of grass from natural areas.
As the majority of the areas selected for the rehabilitation works were focused around water points and waterways, the soils were generally alluvial, sandy loams. Precipitation is highest in the areas to the north: it ranges from 600 mm in the upper areas of the Bibala 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 Colophospermum mopane being the dominant tree species, with forest cover decreasing in height and density as one moves south toward drier areas.
Through close collaboration with the participant communities, three rehabilitation methods were designed and improved upon throughout the Project's 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, land management plans and other supporting activities were also carried out.

LIEU



Lieu: Municipalities of Bibala and Virei, Province of Namibe, Angola

Nbr de sites de la Technologie analysés: 2-10 sites

Géo-référence des sites sélectionnés
- 13.56537, -14.44931
- 12.91683, -15.04958
- 12.84542, -15.0204
- 12.74792, -15.61841

Diffusion de la Technologie: appliquée en des points spécifiques ou concentrée sur une petite surface

Dans des zones protégées en permanence ?:

Date de mise en oeuvre: il y a moins de 10 ans (récemment)

Type d'introduction
- ☐ grâce à l'innovation d'exploitants des terres
- ☐ dans le cadre d'un système traditionnel (> 50 ans)
- ☐ au cours d'expérimentations / de recherches
- ☑ par le biais de projets/ d'interventions extérieures

Planting works being implemented in Kamupapa, Bibala. (Projecto RETESA)

Planting and fence repair around stock water point to improve water quality, stabilise banks and produce forage for dry season, Tchitemo, Bibala. (Projecto RETESA)

CLASSIFICATION DE LA TECHNOLOGIE

Principal objectif

- ☑ améliorer la production
- ☑ réduire, prévenir, restaurer les terres dégradées
- ☑ préserver l'écosystème
- ☐ protéger un bassin versant/ des zones situées en aval - en combinaison avec d'autres technologies
- ☑ conserver/ améliorer la biodiversité
- ☑ réduire les risques de catastrophes
- ☑ s'adapter au changement et aux extrêmes climatiques et à leurs impacts
- ☑ atténuer le changement climatique et ses impacts
- ☑ créer un impact économique positif
- ☐ créer un impact social positif

L'utilisation des terres

Pâturages

- Pastoralisme de type semi-nomade
- Transhumance movements

Type d'animal: bétail - laitier, bétail - bovins à viande, caprine
Produits et services: viande, lait

Voies d'eau, plans d'eau, zones humides - Voies de drainage, voies d'eau, Etangs, barrages, retenues d'eau
autre (précisez): Natural springs

Approvisionnement en eau

- ☑ pluvial
- ☐ mixte: pluvial-irrigué
- ☐ pleine irrigation

But relatif à la dégradation des terres

- ☐ prévenir la dégradation des terres
- ☑ réduire la dégradation des terres
- ☑ restaurer/ réhabiliter des terres sévèrement dégradées
- ☐ s'adapter à la dégradation des terres
- ☐ non applicable

Dégradation des terres traité

érosion hydrique des sols - Wt: perte de la couche superficielle des sols (couche arable)/ érosion de surface, Wr: érosion des berges

dégradation biologique - Bc: réduction de la couverture végétale, Bh: perte d'habitats, Bq: baisse de la quantité/ biomasse, Bs: baisse de la qualité et de la composition/ diversité des espèces, Bl: perte de la vie des sols

Groupe de GDT

- pastoralisme et gestion des pâturages
- Amélioration de la couverture végétale/ du sol

Mesures de GDT

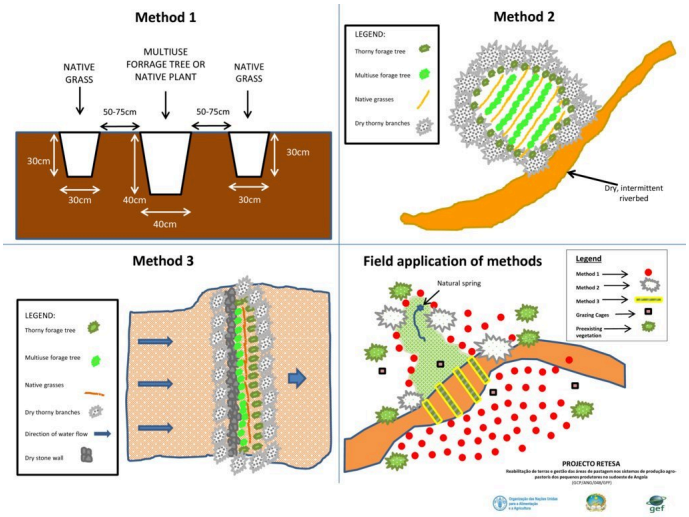
pratiques végétales - V1: Couverture d'arbres et d'arbustes, V2: Herbes et plantes herbacées pérennes

modes de gestion - M2: Changement du niveau de gestion / d'intensification

DESSIN TECHNIQUE

Spécifications techniques

Planting is typically based on three different methods, as seen in the figure above.
- Method 1 relies on placing a leguminous, multipurpose tree species in the ground with two native grass species to each side of the tree. The holes are dug and a small amount of manure is placed in the bottom of the hole, adding some water if it is readily available. Then the trees and grasses are planted and well-watered. Finally, a branch or two of thorny shrubs or trees are placed over the plants to protect them from being grazed (where possible, dead branches should be used, rather than cutting living plants).
- Method 2 requires the creation of an enclosed, protected area which is then planted at high densities, preferably in low-lying areas where adequate soil moisture is available. Dry, dead branches from thorny trees and shrubs are used to create the enclosures and provide protection to these plantings.
- Method 3 is based on the creation of a 'leaky weir', which is a small stone barrier, horizontal to the flow of water (on the contour) planted with a mixture of native riparian species. This is intended to slow the flow of water and stimulate the recovery of riparian vegetation. The plants are also protected with dry, dead branches from thorny trees and shrubs in this method.
To increase their effectiveness, it is recommended that the three methods be combined within the landscape, as seen in the 4th slide 'Field application of methods'.



Author: Projecto RETESA

MISE EN ŒUVRE ET ENTRETIEN : ACTIVITÉS, INTRANTS ET COÛTS

Calcul des intrants et des coûts

- Les coûts sont calculés : par entité de la Technologie (unité : **3345 seedlings produced, delivered and planted** volume, length: **3345 units**)
- Monnaie utilisée pour le calcul des coûts : **dollars américains**
- Taux de change (en dollars américains - USD) : 1 USD = n.d.
- Coût salarial moyen de la main-d'oeuvre par jour : 6 Dollars

Facteurs les plus importants affectant les coûts

The activities and costs given were those needed to produce and plant 3,345 trees and grasses in the 4 rehabilitation areas. Given that 3.345 plants were produced at a cost of $3284.75, the cost per plant produced and planted in the field is $0.98. Seedlings avaliable through local, government nurseries were $2.00 per unit, but only exotic ornamentals were avaliable. However, it can be expected that in other contexts and locations, it would be cheaper to buy seedlings instead of training communities and creating numerous small scale nurseries, though clearly these communities will not appropriate the process as well as if they were involved from the beginning.

Activités de mise en place/ d'établissement

1. Meetings and field visits with participant communities to identify plant species and their uses (Calendrier/ fréquence: Best during growing season)
2. Further meetings to decide on which species are to be multiplied and arrange seed collection (Calendrier/ fréquence: Near end of growing season)
3. Seed collection and transportation (Calendrier/ fréquence: When seed is available (varies with species))
4. Instalation of irrigation systems (Calendrier/ fréquence: Most communiites need a water extraction and distribution system to create nurseries)
5. Delivery of nursery supplies and instalation of shade cloth (Calendrier/ fréquence: Nurseries should have water access and shade)
6. Planting of seeds and care for seedlings at nursery (Calendrier/ fréquence: Formed part of Agro-Pastoral Farmer Field School activities)
7. Identification of planting areas and timing (Calendrier/ fréquence: Should be at beginning of rainy season, or when soil moisture permits)
8. Organisation of materials and tools (Calendrier/ fréquence: At least 1 week before the planting)
9. Planting day (preparation of planting holes and transplanting of seedlings) (Calendrier/ fréquence: 2 days maximum was seen to be optimal)
10. Watering until the plants are established (Calendrier/ fréquence: Usually a maximum of 3 watering over 1 week after the plantings)
11. Follow up visits to make sure management agreements are being respected and plants are not being eaten by stock until they are ready (Calendrier/ fréquence: Plants should not be grazed for at least 6 months from planting time until they are well established)

Intrants et coûts de mise en place (per 3345 seedlings produced, delivered and planted)

Spécifiez les intrants	Unité	Quantité	Coûts par unité (dollars américains)	Coût total par intrant (dollars américains)	% des coût supporté par les exploitants des terres
Main d'œuvre					
Project Technicians/Drivers/Consultants, etc	Person-days	30,0	20,0	600,0	
Plant identification activities and seed collection	Person-days	10,0	6,0	60,0	100,0
Plant nursery creation and plant production	Person-days	16,0	6,0	96,0	100,0
Participation during planting days	Person-days	25,0	10,0	250,0	90,0
Equipements					
Vehicle	Trips	10,0	40,0	400,0	
Nursery supplies (including water system which also supplies water to Farmer Field School)	Materials	1,0	800,0	800,0	10,0
Planting supplies (shovels, hoes, wheelbarrows, etc.)	Materials	1,0	120,0	120,0	
Other improvements to water point (fencing, cement blocks, cement, hoses, etc.)	Materials	1,0	250,0	250,0	

Maps (traced onto paper from projected images for management purposes)	Materials	1,0	10,0	10,0	
Food and Refreshments	Per person	25,0	2,5	62,5	
Engrais et biocides					
Manure (50 grams per sack, 12.500 sacks)	Kilos	625,0	0,25	156,25	100,0
Matériaux de construction					
Shade-cloth	m2	320,0	1,5	480,0	
Coût total de mise en place de la Technologie				**3'284.75**	
Coût total de mise en place de la Technologie en dollars américains (USD)				*3'284.75*	

Activités récurrentes d'entretien

1. Meetings to ensure management agreements are being respected. (Calendrier/ fréquence: Once every 3 to 6 months, especially before and after rainy season.)
2. Repairs and replacement of nursery supplies. (Calendrier/ fréquence: Once a year.)
3. Replanting of dead seedlings (Calendrier/ fréquence: Just before and during rainy season.)

Intrants et coûts de l'entretien (per 3345 seedlings produced, delivered and planted)

Spécifiez les intrants	Unité	Quantité	Coûts par unité (dollars américains)	Coût total par intrant (dollars américains)	% des coût supporté par les exploitants des terres
Main d'œuvre					
Visits to sites and tour of planting areas.	Person-days	4,0	20,0	80,0	50,0
Driver.	Person-days	1,0	20,0	20,0	
Replanting of dead seedlings	Person-days	2,0	6,0	12,0	100,0
Watering	Person-days	14,0	6,0	84,0	100,0
Equipements					
Vehicle	Trips	1,0	40,0	40,0	
Watering cans and buckets	Materials	4,0	5,0	20,0	
Coût total d'entretien de la Technologie				**256.0**	
Coût total d'entretien de la Technologie en dollars américains (USD)				*256.0*	

ENVIRONNEMENT NATUREL

Précipitations annuelles

- ☐ < 250 mm
- ☑ 251-500 mm
- ☐ 501-750 mm
- ☐ 751-1000 mm
- ☐ 1001-1500 mm
- ☐ 1501-2000 mm
- ☐ 2001-3000 mm
- ☐ 3001-4000 mm
- ☐ > 4000 mm

Zones agro-climatiques

- ☐ humide
- ☐ subhumide
- ☑ semi-aride
- ☐ aride

Spécifications sur le climat

In the past, the rainy season started in October or November and ran until May. However, the rains in the last few years have fallen in January to April.
Nom de la station météorologique : None in the area.

Pentes moyennes

- ☐ plat (0-2 %)
- ☐ faible (3-5%)
- ☑ modéré (6-10%)
- ☐ onduleux (11-15%)
- ☐ vallonné (16-30%)
- ☐ raide (31-60%)
- ☐ très raide (>60%)

Reliefs

- ☐ plateaux/ plaines
- ☐ crêtes
- ☐ flancs/ pentes de montagne
- ☐ flancs/ pentes de colline
- ☑ piémonts/ glacis (bas de pente)
- ☑ fonds de vallée/bas-fonds

Zones altitudinales

- ☐ 0-100 m
- ☑ 101-500 m
- ☐ 501-1000 m
- ☐ 1001-1500 m
- ☐ 1501-2000 m
- ☐ 2001-2500 m
- ☐ 2501-3000 m
- ☐ 3001-4000 m
- ☐ > 4000 m

La Technologie est appliquée dans

- ☐ situations convexes
- ☐ situations concaves
- ☑ non pertinent

Profondeurs moyennes du sol

- ☐ très superficiel (0-20 cm)
- ☑ superficiel (21-50 cm)
- ☐ modérément profond (51-80 cm)
- ☐ profond (81-120 cm)
- ☐ très profond (>120 cm)

Textures du sol (de la couche arable)

- ☑ grossier/ léger (sablonneux)
- ☐ moyen (limoneux)
- ☐ fin/ lourd (argile)

Textures du sol (> 20 cm sous la surface)

- ☑ grossier/ léger (sablonneux)
- ☐ moyen (limoneux)
- ☐ fin/ lourd (argile)

Matière organique de la couche arable

- ☐ abondant (>3%)
- ☐ moyen (1-3%)
- ☑ faible (<1%)

Profondeur estimée de l'eau dans le sol
- [ ] en surface
- [x] < 5 m
- [ ] 5-50 m
- [ ] > 50 m

Disponibilité de l'eau de surface
- [ ] excès
- [ ] bonne
- [ ] moyenne
- [x] faible/ absente

Qualité de l'eau (non traitée)
- [ ] eau potable
- [x] faiblement potable (traitement nécessaire)
- [ ] uniquement pour usage agricole (irrigation)
- [ ] eau inutilisable

La qualité de l'eau fait référence à:

La salinité de l'eau est-elle un problème ?
- [x] Oui
- [ ] Non

Présence d'inondations
- [x] Oui
- [ ] Non

Diversité des espèces
- [ ] élevé
- [x] moyenne
- [ ] faible

Diversité des habitats
- [ ] élevé
- [ ] moyenne
- [x] faible

CARACTÉRISTIQUES DES EXPLOITANTS DES TERRES APPLIQUANT LA TECHNOLOGIE

Orientation du système de production
- [x] subsistance (auto-approvisionnement)
- [ ] exploitation mixte (de subsistance/ commerciale)
- [ ] commercial/ de marché

Revenus hors exploitation
- [ ] moins de 10% de tous les revenus
- [x] 10-50% de tous les revenus
- [ ] > 50% de tous les revenus

Niveau relatif de richesse
- [x] très pauvre
- [ ] pauvre
- [ ] moyen
- [ ] riche
- [ ] très riche

Niveau de mécanisation
- [x] travail manuel
- [ ] traction animale
- [ ] mécanisé/ motorisé

Sédentaire ou nomade
- [ ] Sédentaire
- [x] Semi-nomade
- [ ] Nomade

Individus ou groupes
- [x] individu/ ménage
- [ ] groupe/ communauté
- [ ] coopérative
- [ ] employé (entreprise, gouvernement)

Genre
- [x] femmes
- [x] hommes

Âge
- [ ] enfants
- [x] jeunes
- [x] personnes d'âge moyen
- [ ] personnes âgées

Superficie utilisée par ménage
- [ ] < 0,5 ha
- [ ] 0,5-1 ha
- [x] 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
- [x] > 10 000 ha

Échelle
- [ ] petite dimension
- [ ] moyenne dimension
- [x] grande dimension

Propriété foncière
- [ ] état
- [ ] entreprise
- [x] communauté/ village
- [ ] groupe
- [ ] individu, sans titre de propriété
- [ ] individu, avec titre de propriété

Droits d'utilisation des terres
- [x] accès libre (non organisé)
- [ ] communautaire (organisé)
- [ ] loué
- [ ] individuel

Droits d'utilisation de l'eau
- [x] accès libre (non organisé)
- [ ] communautaire (organisé)
- [ ] loué
- [ ] individuel

Accès aux services et aux infrastructures

santé	pauvre ✓ bonne
éducation	pauvre ✓ bonne
assistance technique	pauvre ✓ bonne
emploi (par ex. hors exploitation)	pauvre ✓ bonne
marchés	pauvre ✓ bonne
énergie	pauvre ✓ bonne
routes et transports	pauvre ✓ bonne
eau potable et assainissement	pauvre ✓ bonne
services financiers	pauvre ✓ bonne

IMPACT

Impacts socio-économiques

production fourragère

en baisse ✓ en augmentation

Quantité avant la GDT: Low rangeland production
Quantité après la GDT: Slight improvement
Difficult to measure. Rehabilitation works and the management plans for the rangeland areas have led to some improvement, though the droughts affecting the area during the interventions significantly affected rangeland fodder production.

qualité des fourrages

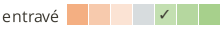
en baisse ✓ en augmentation

Quantité avant la GDT: No crop residues or fodder plantings used
Quantité après la GDT: Crop residues and fodder plantings incorporated in cropping areas
The process allowed Project Technicians to educate communities on the use of crop residues as fodder and the planting of multiuse trees within cropping areas to provide green fodder in the dry season. The reintroduction of drought tolerant, quality indigenous grasses should also lead an increase in fodder production over the coming year.

production animale

Quantité avant la GDT: No planning for dry season grazing, apart from transhumance movements
Quantité après la GDT: Crop residues and other cultivated forages produced for those animals that stay
The transhumance movements of livestock are still seen as the most adequate solution to changes in natural rangeland production, though most families leave behind some animals with the main family unit. These animals are now receiving the quality feed they need to remain productive and healthy.

gestion des terres



Quantité avant la GDT: No management plans in place for commonly managed natural resources
Quantité après la GDT: Participatory land management plans have been negociated and agreed
Simplified land management plans based on traditional livestock movements and cropping seasons have been negotiated and agreed by local stakeholders and municipal Administrators.

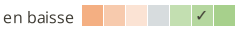
qualité de l'eau potable

Quantité avant la GDT: Livestock and communities drink from same water
Quantité après la GDT: Separate water drinking points for livestock and community
Unrestricted access of livestock to community domestic water points led to waterborne diseases and poor water quality. Separating livestock and domestic use has improved community health.

disponibilité de l'eau pour l'élevage

In addition to restricting livestock access to main water bodies, new drinking troughs have been built with community support.

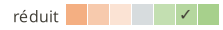
qualité de l'eau pour l'élevage



By separating livestock drinking points and domestic water points, waterborne illnesses have been reduced. In at least one area a water tank and new drinking trough have been built with community support.

Impacts socioculturels

connaissances sur la GDT/ dégradation des terres



Quantité avant la GDT: No education or training on land degradation
Quantité après la GDT: Education and training on land degradation issues and rehabilitation methods
The majority of communities that have gone through the process now understand how poor land management leads to land degradation and steps they can take to reduce it.

Impacts écologiques

quantité d'eau

Improved ground cover and the return of riparian vegetation would increase infiltration rates and decrease evapotranspiration rates and restore the micro water cycle. But this is also a long term process.

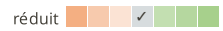
qualité de l'eau

Quantité avant la GDT: Low
Quantité après la GDT: Low in short term, improved in long term
Revegetation of river plains and river banks should lead to improved water quality though it will be a long term effect if the rehabilitation areas are respected.

ruissellement de surface

Quantité avant la GDT: No method to deal with the high surface runoff rates in the area
Quantité après la GDT: A method has been devised for reducing surface runoff rates.
The 'leaky weir' method (Rehabilitation method 3) has shown promise over the duration of the Project and could be applied at other landscape levels to reduce surface runoff.

couverture du sol



The reintroduction of native grasses in the area should lead to improved ground cover, binding the soil and reducing erosion rates.

perte en sol

en augmentatio ✓ en baisse

The reintroduction of native grasses in the area should lead to improved ground cover ratios, binding the soil and reducing erosion rates.

couverture végétale

en baisse ✓ en augmentation

Quantité avant la GDT: Reduced number of poor quality grass species
Quantité après la GDT: Communities capacitated in plant multiplication methods
Apart from the rehabilitation works themselves, the local communities have been capacitated with methods to approach and deal with land degradation.

biomasse/ au dessus du sol C

en baisse ✓ en augmentation

diversité végétale

en baisse ✓ en augmentation

The reintroduction of native and leguminous plants has improved plant diversity both within rehabilitation areas and cultivated lands.

impacts de la sécheresse

en augmentatio ✓ en baisse

microclimat

détérioré ✓ amélioré

The works around the water points over time should lead to increase in vegetative cover, shade, habitat and reduced temperatures.

Impacts hors site

capacité tampon/de filtration (par les sols, la végétation, les zones humides)

réduit ✓ amélioré

ANALYSE COÛTS-BÉNÉFICES

Bénéfices par rapport aux coûts de mise en place

Rentabilité à court terme: très négative ✓ très positive

Rentabilité à long terme: très négative ✓ très positive

Bénéfices par rapport aux coûts d'entretien

Rentabilité à court terme: très négative ✓ très positive

Rentabilité à long terme: très négative ✓ très positive

CHANGEMENT CLIMATIQUE

Changements climatiques progressifs

précipitations annuelles décroît: pas bien du tou ✓ très bien

précipitations saisonnières décroît: pas bien du tou ✓ très bien — Saison: printemps

ADOPTION ET ADAPTATION DE LA TECHNOLOGIE

Pourcentage d'exploitants des terres ayant adopté la Technologie dans la région

- [x] cas isolés/ expérimentaux
- [ ] 1-10%
- [ ] 11-50%
- [ ] > 50%

Parmi tous ceux qui ont adopté la Technologie, combien d'entre eux l'ont fait spontanément, à savoir sans recevoir aucune incitation matérielle ou aucun paiement ?

- [x] 0-10%
- [ ] 11-50%
- [ ] 51-90%
- [ ] 91-100%

La Technologie a-t-elle été récemment modifiée pour s'adapter à l'évolution des conditions ?

- [ ] Oui
- [x] Non

A quel changement ?

- [ ] changements/ extrêmes climatiques
- [ ] évolution des marchés
- [ ] la disponibilité de la main-d'œuvre (par ex., en raison de migrations)

CONCLUSIONS ET ENSEIGNEMENTS TIRÉS

Points forts: point de vue de l'exploitant des terres

- Communities learn about plants' role in the wider ecosystem, how to select and multiply key fruit, fodder or timber species and should see an increase in their horticultural and livestock production, leading to improved nutrition or income.
- Done properly, it can be a cost-effective and reliable way to produce the plants needed within family units.

Faiblesses/ inconvénients/ risques: point de vue de l'exploitant des terrescomment surmonter

- Can require stable supply of water, and labour costs can increase if water sources are not easily accessible. Locate nurseries near reliable and accessible water sources.
- Can require permanent residence, so as to be able to care for plants until they are developed and placed in the ground at the

Points forts: point de vue du compilateur ou d'une autre personne-ressource clé

- When the plants are produced in collaboration with the local pastoral communities, the benefits are wide ranging, promoting everything from environmental awareness to technical and practical knowledge.
- It remains a cost-effective way of improving key productive species and increasing community resilience.
- Increasing biomass and introducing better management cycles contribute to reducing land degradation and improve nutrient and energy cycling.

proper date in the calendar (before or during rainy season). Not easy in nomadic cultures.

- Early attempts often fail to produce lasting results. Concentrate early efforts on small experimental plots so as to fine-tune planting methods and timing.

Faiblesses/ inconvénients/ risques: point de vue du compilateur ou d'une autre personne-ressource clécomment surmonter

- The technology is usually not suitable for large areas of land (>1,000 hectares). Compliment any rehabilitation efforts with improved management plans which are developed with stakeholder input and approval.
- Plant losses are typically high, especially if rains fail to arrive, or if the year is abnormally dry. Watch weather forecast to try and focus planting campaigns on those days with a high probability of rain.
- Local species are often not valued by local officials and technicians, leading to a predominance of exotic species in rehabilitation works. Undertake awareness and training sessions which highlight the value and uses of native species with local land users and administrative officials.

RÉFÉRENCES

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Description complète dans la base de données WOCAT
https://qcat.wocat.net/fr/wocat/technologies/view/technologies_3141/

Données de GDT correspondantes
sans objet

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- FAO Angola (FAO Angola) - Angola

Projet
- Book project: Guidelines to Rangeland Management in Sub-Saharan Africa (Rangeland Management)
- Reabilitação de terras e gestão das áreas de pastagem nos sistemas de produção agro-pastoris dos pequenos produtores no sudoeste de Angola (RETESA)

Liens vers des informations pertinentes disponibles en ligne

- FAO in Action: Using indigenous knowledge to reverse land degradation in Angola.: http://www.fao.org/in-action/using-indigenous-knowledge-to-reverse-land-degradation-in-angola/en/