

Dedication

I dedicated this

To

***My parents, who sacrificed so much for
my well-being***

***My husband whose loving company
kept me going***

To my brothers and sisters

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ABSTRACT

Assessment of Stakeholders Role in the Process of Sustainable Range Management in Northern Kordofan

This study was conducted at “Abusonoon” Mountains, nearly 40 km west of Elobied town in Sheikan locality in North Kordofan State in central Sudan. The objectives were to assess rangeland health attributes and indicators as compared with the role of the stakeholders and to investigate the role of the different stakeholders in contrast with the prevailing range management situation in the study area. The study concept based on addressing the main factors of integrated and sustainable rangeland management, including stakeholders as interactive components of integrated rangeland management and range health as an accumulative result of the different range management practices.

Indicators tested in this study included vegetation composition and frequency, ground cover, biomass production, erosion hazards, seed bank and soil integrity such as organic matter. Three sites were selected to represent rangeland types in the study area included flat sand, relatively depressed and goz sites were surveyed. Five transects were taken in each site based on releúe method and minimum area theory. In each site a plot of 1Km X 1km was selected and five transects were distributed on it to determine these indicators. Stakeholder analysis was conducted based on (ODA, 1995) where the main stakeholders were identified and their assumed roles based on their mandatory work were compared with their prevailing roles, in order to identify gaps and shortcomings and to realize what is required.

The study showed that plant composition of each site: The sandy site was dominated by *Fimbristyls dichotomo*. The depressed site was dominated by *Eragrostis tremula*, while in goz site the dominant species was *Dactyloctenium aegyptium*. The species with high frequency were *Cenchrus* spp in sandy site, while *Aristida* spp, was high frequency in both depressed and goz sites. Percentage of plant cover was affected by the pattern of the area, where flat sandy site scored 66.3%, depressed site scored 71.4% while goz site scored 77%. Also the litter coverage scored 21.9%, 10.5 and 9% for the studied sites , flat sandy, depressed and goz repectively. No erosion hazard were indentified since bare soil less than 25 %. Productivity as indicated by biomass showed 0.824 ton/hac. for flat sandy site, compared with 1.207 ton/hac. for depressed and 1.457 ton/hac. for goz site. Carrying capacity was 109.87 AU/hac./day for sandy site while for depressed site was 160.93 AU /hac./day and 194.27 AU /hac./day for goz site.

The study area showed very high diversity in three sites in seed bank and there was very high density of seed per square meter. The total seed bank for flat sandy site was 747,879 seed/m² and depressed site showed 721,410 seed/m² and goz site showed 691, 827 seed/m². The species of *Eragrostis tremula*, *Aristida* spp, *Schoenefoldia gracils* dominated the three sites in both cases dead and live seed. Many species were dominated in seed bank found in five dominant species in composition and frequency but *Cenchrus* spp. appeared in dominant species of vegetation and not appeared in seed bank, also this species was of high dead seed than live in flat sandy and goz sites. *Schoenefoldia gracils* was found in five dominated species in seed bank and did not appear in the vegetation.

The soil organic matter percentage was with low contain of plant materials, this showed 1.8 % in flat sandy site and 1.2 % in depressed and goz sites.

The results showed that nearly 42 % of the surveyed community practice both crop farming and livestock raising. Tribal system dominates and regulates the social life and natural resources use since 67 % of them confirmed that 46 % of livestock raiser was herding to get milk as source of income. Goats dominated livestock raised, in addition to sheep as both are more coping with environment of the area compared with cattle. Community participation found due to limit involvement of the leaders in community mobilization so provided that more capacity building for the leaders to doing their tasks, the level of involvement of CBOs in the area is limited.

The study showed that, Range and Pastures Administration is the authority of range management activities responsible for implementation of the range activities but it is faced with limited budgets from the State and localities. Limited co-ordination activities with Soil Conservation Department in relation to improving water catchment and distributions. Also limited or no clear co-ordination with Forests Natural Corporation to co-ordinate the work of natural stand management and fire management. And limited or lack of co-ordination with Research and University were of identifying problem or working to come out with solution

The study recommended that vegetation cover is healthy in the study area so there is a need for activities of improvements and conservation. And replantation of trees in the area such as *Acacia tortilis* and, *Maerua carssifolia*.

The study recommended that stakeholder co-ordination required the following to filling gap. More awareness for Community leaders towards involving their communities and motivation of their communities towards rational use, more capacity building and more skills on leadership aspects

for Leaders, working closely for CBOs as partners and making use of funding opportunities available for NGOs as main application.

Range Pasture Administration was authorities of range management and activities required to building the capacity of staff in the administration to do their job, mobilization the community, seeking funding and co-ordination with other government officials' bodies.

ملخص الدراسة

تقييم دور الجهات المعنية في عملية إدارة المراعي المستدامة في ولاية
شمال كردفان

اجريت الدراسة في منطقة جبل ابوسنون علي بعد 40 كم غرب مدينة الابيض بمحلية شيكان ولاية شمال كردفان. هدفت الدراسة الى تقييم مؤشرات صحة المراعي ومقارنتها بأدوار الجهات المعنية بذلك وكذلك بحثت دور كل جهة ومكانها في ادارة المراعي في منطقة الدراسة. بني مفهوم الدراسة علي العوامل الاساسية للادارة المتكاملة والمستدامة للمراعي وتضمن الجهات المعنية كعناصر فاعلة في ادارة المراعي والتي تشمل المجتمع وتداخله مع عملية الادارة المتكاملة للمراعي لتقييم وتفسير المؤشرات لرفع عملية الادارة والتي تحوي المؤشرات النباتية ومكونات التربة التي تمثل صحة المرعي كنتيجة تراكمية للممارسات المختلفة لادارة للمراعي والاستعمال والمؤثرات لتقييم نجاح الجهود السابقة. تشمل مؤشرات صحة المرعى التي تناولتها الدراسة التركيبة النباتية، التردد، نسبة الغطاء النباتي واثار التعرية ، الانتاجية ومخزون البذور في التربة ونسبة المادة العضوية في التربة. تم اختيار ثلاثة مواقع تمثل البيئات المحلية في المنطقة وهي الرمال، والمناطق المنخفضة والقيزان. في كل موقع تم اختيار مربع عينات (1 كم X 1 كم) باستعمال نظرية اصغر مساحة يمكن ان تمثل، وتم توزيع خمسة قواطع 100 متر عشوائياً داخل كل مربع لاختذ قراءات الغطاء النباتي.

كذلك تم تحليل ادوار الجهات المعنية (Stakeholders) لتعريفها ومعرفة ادوارها الافتراضية وعملهم الحالي والمقارنة بينها لمعرفة الفجوة والقصور لتدقيق الاحتياجات. اظهرت النتائج في التركيبة النباتية ان موقع الرمال يسوده نبات ام فسيفسات بينما موقع المنخفضات يسوده نبات البنو وموقع القيزان يسوده نبات ابواصابع. كذلك في نسبة التردد وجد ان نبات الحسكيت في موقع الرمال شكل اعلى نسبة تردد بينما نبات القو شكل اعلى نسبة في موقعي المنخفضات والقيزان. ايضا في نسبة الغطاء النباتي الذي يتأثر حسب المواقع في المنطقة شكل موقع الرمال حوالي 66.3% والموقع المنخفض 71.4% وموقع القيزان 77%. كذلك نسبة بقايا النباتات اعلى في موقع الرمال حوالي 21.9%. كذلك نسبة اثار التعرية حوالي 11.8% في موقع الرمال و 17.7% في موقع المنخفضات و 13.3% في موقع القيزان.

اظهرت الدراسة ان الانتاجية في موقع الرمال 0.83 طن /هكتار وفي موقعي المنخفضات والقيزان 1.2 طن /هكتار و 1.5 طن/هكتار على التوالي. كذلك وجد ان الطاقة الرعوية حوالي 109.9, 160.93 و 194.3 وحدة حيوانية/ هكتار/ اليوم في مواقع الرمال المنخفضات والقيزان على التوالي.

وجدت دراسة مخزون البذور في التربة ان هناك تنوع في بذور الانواع النباتية في المواقع الثلاثة وهناك كثافة عالية للبذور في المتر المربع و قد بلغت في موقع الرمال 747,879 بذرة /م² وبينما شكلت 721,410 بذرة/م² في الموقع المنخفض و 691,827 بذرة /م² في موقع القيزان. ووجد ان نباتات القو والبنو وضنب الناقة تسود المواقع الثلاثة في عدد البذور الحية وغير الحية. هناك عدد من انواع النباتات تسود في مخزون البذور في التربة نجدها ايضاً تسود الغطاء النباتي وذات تردد عالي لكن نجد ان نبات الحسكيت يظهر ضمن النباتات السائدة في الغطاء النباتي ولكنه لا يظهر ضمن النباتات السائدة في مخزون البذور في التربة, عكس نبات ضنب الناقة الذي وجد ضمن النباتات السائدة في مخزون البذور في التربة ولا يوجد ضمن النباتات السائدة في الغطاء النباتي.

اظهرت الدراسة ان حوالي 42 % من المجتمع المستهدف يمارس زراعة المحاصيل بجانب تربية الماشية. نظام القبلي يهيمن على تنظيم الحياة الاجتماعية واستخدام الموارد الطبيعية أكد ذلك 67 % من المستهدفين. أن 46 % من الرعاة يستخدمون الثروة الحيوانية للحصول على الحليب كمصدر للدخل. معظم الثروة الحيوانية هي الماعز بالإضافة إلى الضان وهي أكثر التأقلم مع بيئة المنطقة مقارنة مع الماشية.

اظهرت النتائج ان هناك محدودية في مشاركة المجتمع المحلي بسبب محدودية مشاركة القادة في تعبئة المجتمع المحلي يحتاج ذلك لرفع مقدرات القادة لأداء الادوار. كذلك وجدت الدراسة ان مستوى ارتباط المنظمات القاعدية مع الجهات المنفذة لانشطة الدراسة محدود.

كذلك اظهرت الدراسة ان ادارة المراعي والعلف التي هي المرجع لانشطة المراعي وان دورها محدود ويعتمد في تنفيذ الانشطة علي ميزانيات محدودة من الولاية والمحليات، وهناك محدودية في البحث عن التمويل. كذلك لا يوجد تنسيق مع صيانة التربة للعمل المشترك في الانشطة مثل ادارة تجمعات المياه وتوزيع المياه. ايضا لا يوجد عمل مشترك مع الهيئة القومية للغابات بالولاية في ادارة الغابات الطبيعية ومكافحة الحرائق. كما انه

لا يوجد اشراك للجامعات والبحوث الزراعية في البحث عن المشاكل السائدة في المنطقة وايجاد الحلول لها.

اوصت الدراسة بتطوير وصيانة المراعي في المنطقة بالاضافة الي اعادة الغطاء الشجري مثل اشجار السيال والسرح.

كذلك اوصت الدراسة بان تعمل الجهات المعنية للتنسيق لملى الفراغ في ادارة المراعي وذلك بتوعية المجتمع وتضمنهم في عملية ادارة المرعي ورفع م قدرات القادة وتنمية مهارتهم القيادية، يجب ان تعمل المنظمات القاعدية بالشراك مع ادارة المراعي والعلف لخلق فرص التمويل مع المنظمات غير الحكومية. كذلك رفع م قدرات العاملين بادرة المراعي والعلف لاداء مهامهم وتعبئة المجتمع والبحث عن التمويل والتنسيق في الانشطة مع الادارات الحكومية الاخرى.