

ABSTRACT

The study was carried out in Wadi Kaja area, in El Geniena city, the capital of West Darfur State in August 2005. The study aims to assess the main causes of bank erosion of Wadi Kaja, with working hypothesis: the main cause of bank erosion is due to land degradation at watershed areas of the area. The study based on:

- Satellite images.
- General survey and observations.
- Previous records.
- Climatic data (rainfall, temperature, relative humidity and evaporation rates).
- Crop production data for sorghum and millet as cash crops.

The researcher found that the total areas cultivated by sorghum reduced by 24% and 70% in the years 2003 and 2004, respectively. The total production in tons also dropped by 22%, 37%, 44% and 72% for the years 2001, 2002, 2003 and 2004, respectively. The total areas cultivated by millet 17%, 15, 30% and 82% in the years 2001, 2002, 2003 and 2004, respectively. The total production in tons also dropped by 82%, 86%, 90% and 96% in the years 2001, 2002, 2003, and 2004, respectively.

Finally, it is found that the main cause of bank erosion of Wadi Kaja area is the degradation of the watershed areas in the upper stream due to human activities mainly deforestation and overgrazing and the degradation of Wadi Kaja area which resulted in lower crop production such as sorghum and millet as cash crops due to the shortages of rainfall, poor soil fertility, the drought and poor farming systems, and the intensive pressure on the vegetation cover inside / around the refugees camps. Therefore, detailed studies should be carried out in these areas to monitor the actual effects of the

displacement on vegetation cover.

The researcher recommended that:

- Reservation and protection of watershed areas by planting of fast growing species.
- Regulation, demarcation and re-opening of the animals routes in order to avoid the direct contact with the farmers.
 - Introduction of energy alternative sources such as improved stoves to reduce fuel wood consumption, hence reduce deforestation activities.
- Repatriation of the displaced people to their original homes in order to reduce intensive pressure on the vegetation covers around the camps
- Introduction of Agro-forestry systems so as to improve soil fertility and shelter belt system to protect the farms from wind erosion.

مستخلص الدراسة

أجريت هذه الدراسة فى وادي كجا بمدينة الجنية بولاية غرب دارفور فى أغسطس 2005 . تهدف الدراسة إلى فحص و معرفة الأسباب الرئيسية لظاهرة هدام وادى كجا على فرضية أن الأسباب الرئيسية لإنهيار الضفاف هى تدهور الأراضى حول مسا قط الوادى والفروع الرئيسية مما أدى الى جلب كميات من الطمى والمواد الأخرى التى أدت ترسيبها فى القاع إلى رفع منسوب المياه الذى أدت بدورها إلى عملية الهدم

: أجريت الدراسة بالإستعانة

- الإستشعار من بعد بإستخدام صور الأقمار الصناعية -
- المسح العام الشامل والملاحظات العامة -
- الدراسات السابقة -

جمع المعلومات المناخية مثل كمية الأمطار، درجات الحرارة والرطوبة النسبية -
جمع معلومات عن إنتاجية المحاصيل النقدية مثل الذرة والدخن -
لقد وجدت الباحثة أن المساحات المزروعة بالذرة قد تقلصت بنسبة
24%، 70%، في عامي 2003 و 2004 علي التوالي، والإنتاج الكلي للطن أيضا
إنخفض بنسبة 22%، 37%، 44%، 72% للسنوات 2001، 2002، 2003، و 2004
علي التوالي. كذلك المساحات المزروعة بالدخن أيضا تقلصت بنسبة 17%، 15%،
30%، 82% للسنوات 2001، 2002، 2003 و 2004 علي التوالي، كذلك إنخفاض
الإنتاج الكلي للطن بنسبة 82%، 86%، 90%، و 96% للسنوات 2001، 2002،
2003. و 2004 علي التوالي

خلصت الدراسة الى أن الأسباب الرئيسية للهدام تتلخص فى تدهور الأراضى
فى مسا قط الوادى نتيجة لممارسات الإنسان الخاطئة مثل إزالة الأشجار والرعى
الجائر، وتدهور المنطقة حول الوادى والمتمثلة فى إنخفاض إنتاج المحاصيل
الزراعية مثل الذرة والدخن كمحاصيل نقدية وذلك ل قلة الأمطار، فقر التربة، الجفاف
ونظم الزراعة التقليدية
:-توصى الدارسة بالأتى

حجز وحماية المسا قط بزراعة الأشجار سريعة النمو □

□ تحديد وتنظيم مسارات الرحل وإعادة فتحها لتجنب الإحتكاك مع □

.المزارعين

- إدخال مصادر بديلة للطاقة مثل المواقد المطورة, البوتوجاز وموافد الجاز لتقليل إستهلاك حطب الوقود وبالتالي تقليل ممارسات القطع الجائر
- إعادة توطين النازحين فى مواطنهم الأصلية لتقليل الضغط المكثف على الغطاء النباتى خاصة حول معسكرات النازحين
- تطبيق نظم التشجير الزراعى مثل نظام الهشاب والدخن والحراز والذرة لتحسين خصوبة التربة، وإدخال نظام الأحزمة الواقية لحماية المزارع من الرمال الزاحفة

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DEDICATION

I dedicate this dissertation to the spirit of my dear mother Targam Osman Mohammed, who spent all her life for us since the death of my father Abdel Rahman Yousif in 1967 until her death in 2005.

God forgive her.

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