

Dedication

*To my parents
and
My great family*

Acknowledgement

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Glossary

Forest degradation:

Forest degradation is a change process which FAO defines as "change within the forest which negatively affects the structure or function of the stand and site, and thereby lower the capacity to supply products and services". The Convention on Biological Diversity (CBD) defines a forest as a state which delivers a reduced supply of goods and services from the given site and maintains only limited biological diversity. Such a forest may have lost its structure, species composition or productivity normally associated with the natural forest type expected at the site (FAO, 2002).

Deforestation:

Kyoto protocol defined deforestation as "direct human induced conversion of forested into non forested land". In Forest Resource Assessment (FRA), deforestation is "conversion of forested land to another land-use class or long- term reduction of the tree cover below the minimum to present threshold."

Afforestation:

In Kyoto protocol, it is defined as "conversion of land that has not been forested for at least 50years to forested land through planting, seeding, and/or human induced production of natural seed sources". FAO, 2000, "defined it as the conversion of non-forested into forested land as the result of direct human action through planting or seeding".

Natural forest: Is a forest which is composed of indigenous trees and not classified as forest plantation.

Forest plantation: Is a forest established by planting and/or seeding. In the process of afforestation or reforestation it consists of introduced species in some cases, indigenous species.

Acronyms

CARE: Corporation of America Relief Everywhere Organization

C.B.D.: Convention on Biological Diversity

COR: Commission of Refugees

ENSO: Implementation National Support Organization

FAO: Food and Agriculture Organization

F.R.A: Forest Resource Assessment

I.M.B .U.R.P: International Movement for Brotherly Union between Races and
People

IUCN: International Union for Conservation of Natural Resources

NGOs: Non Governmental Organizations

OAU: Organizations of African Unity

.R.A.A.P: Refugees Affected Area Project

UNEP: United Nations Environment Programme

UNHCR: United Nations Higher Commission for Refugees

USCR: United States Committee for Refugees

WFP: World Food Programme

Abstract

The Sudan is a vast country with nine neighbouring countries around its borders. Since more than three decades Sudan hosted refugees from African neighbouring countries especially Eritrea and Ethiopia. Formal conventions made by United Nations (UNHCR) gives the refugees the right of settlements and support and the Sudan Government gave them the lands for both settlement and agriculture. Severe environmental degradation took place to the natural resource (Forests resources).

Moreover, loss of wildlife habitat, range lands, soil productivity, which leads to environmental degradation due to over exploitation and misuse by refugees' population on the areas settled by refugees in addition to the study area which is located at South East Gedarif State at ElRahad locality. Therefore a research is conducted to:

- (i) Investigate the effect of refugees on natural forests at Abu-Rakham Camp.
- (ii) Suggest solution and methods of rehabilitation for areas affected by refugees.

A questionnaire is made for refugees at Abu-Rakham camp population about 100 families. The results indicated that about (72.9%) of the refugees use wood as fuel. 54.1% were obtaining their fuel from the area around the camp. Age class which shows high percentages is between 20 to 30 years (72.9%). Most of the refugees (62.2%) use Aladais as a stove. The measurement result shows that the percentage of the loss of trees per hectar of Abu-Rakham East forest plantation (Plantation established by CARE) was 45.6 % which is an indicator to severe deforestation in the future.

The recommendations of the study include energy saving methods, and using of energy, should be assessed and disseminated for all community. On the other hand the encouragement and facilities should be given to refugees to use gas energy.

Research should be focused on the following fields:

- pest control
- biodiversity

- soil seed bank
- natural regeneration
- Selection of species according to ecological factors

Forest guard should be assured incase the forest abuses are not stopped.

To improve the productivity of the lands, Tungia system should be applied on agricultural lands. In that case the area will be protected form environmental hazards such as flooding and soil erosion.

ملخص البحث

فاطمة آدم حسن

تأثير اللاجئين على الغابات الطبيعية في منطقة معسكر أبو رخم

السودان قطر شاسع مترامي الأطراف، له تسع دول جوار حدودية. منذ أكثر من ثلاث

عقود نزح عدد ليس بالقليل من اللاجئين إلى السودان من الدول الأفريقية خاصة دولتي

اثيوبيا واريتريا بأعداد كبيرة نسبة لعدة أسباب منها: الاضطهاد والكوارث البيئية. أكبر

عدد من الاجئين جاء من دولتي أريتريا وأثيوبيا حيث استقروا في كل من ولايتي كسلا

والقضارف.

كانت ولا زالت حكومة السودان ووفقاً لاتفاقية اللجوء تقوم بمنح الأراضي الزراعية

والسكنية وتقوم الأمم المتحدة متمثلة في المندوب السامي اللاجئين UNHCR بمدعم بالمواد

الغذائية والإعانات.

وتبعاً لذلك تمت إزالة مساحات كبيرة من الغابات الطبيعية نتيجة لجمع الحطب للبناء

والوقود والحصول على دخول إضافية.هذا بالإضافة إلى فقدان الكثير من الموارد الطبيعية

من حياة برية ، أراضي رعوية والتنوع الشجري والحيوى، وفقدان التربة لخصوبتها، مما أدى

إلى تدهور بيئي على نطاق واسع.كل ذلك لحق بمناطق اللجوء بما فيها منطقة الدراسة وهي

معسكر أبو رخم للاجئين الواقع في معتمدية الرهد جنوب غرب محلية الفاو. لهذه الأسباب

اجريت هذه الدراسة لمعرفة أثر اللاجئين على الغابات الطبيعية في منطقة أبو رخم بعنوان

تأثير اللاجئين على الغابات الطبيعية ووضع الحلول المناسبة لتعمير المنطقة .

في هذا البحث تم اجراء استبيان للاجئين المدمجين في معسكر أبو رخم المغلق وعددهم 100 أسرة لمعرفة أسباب التدهور وأثر اللجوء على الغابات الطبيعية بمنطقة أبو رخم وكانت النتائج أن اللاجئين يستخدمون الحطب كمصدر للطاقة والبناء لفترة تناهز الثلاث عقود مما أدى إلى انعدام الغطاء الغبائي الطبيعي. تبين ذلك من خلال المقابلات التي اجريت مع زعماء القبائل لكل من اللاجئين والسكان الأصليين.

تم قياس الغابات المزروعة من قبل منظمة CARE حيث انعدمت الغابات الطبيعية ووجد أن الأثر السالب لنشاط اللاجئين انتقل إليها أيضاً وهناك تعدي واضح على الغابات الطبيعية والمزروعة بالإضافة إلى الممارسات الغير مسموح بها من قبل اللاجئين.

أوضحت النتائج إلى أن نسبة المستخدمين لحطب الوقود من الاجئين 72.9% وكان هذا أحد أسباب فقدان الغابات الطبيعية وأيضاً لوجودهم في المعسكر لفترة تفوق الثلاث عقود زيادة إلى استخدام المواد الغير محسنة للطهي الذي يستمر فترة من الزمن مما أدى إلى زيادة نسبة الاحتطاب حتى كانت النتيجة عدم وجود غابات طبيعية. من بعدها تحول الاجئون إلى الغابات المزروعة من قبل مشروع إعادة التعمير. والنتيجة هي أن نسبة فقدان من الغابات المزروعة لغابة أبو رخم شرق - وهي شمال شرق المعسكر- وفقاً للقياس الذي أجري ، قد وصلت إلى 45.6% وإذا استمرت هذه النسبة ولم يعوض الفاقد تكون النتيجة الحتمية هي تصحر المنطقة بأكملها.

جاءت هذه الدراسة بعدد من التوصات نوجز أهمها:

- ❖ استخدام المواد المحسنة لكونها اقتصادية في صرف واستهلاك الطاقة.
- ❖ استخدام بدائل للطاقة تحل محل الخشب - مثل البايوغاز أو الغاز الطبيعي إذا أمكن.

☆ استخدام نظام الاستزراع الغابي حتى تتم معالجة انهيار خصوبة التربة وتعويض ما فقد من غطاء شجري وزيادة الإنتاجية حتى تتم حماية المنطقة من الكوارث والمخاطر البيئية مثل الفيضانات وتعرية التربة.

☆ تأمين الحراسة الغابية بمقترح جديد عن طريق بتحفيز الحراس من الدخول الواردة من المخافات باستخدام حراس من الاجئين والسكان المحليين حتى يتم ضبط المخالفين للقوانين.

☆ البحث العلمي يجب أن يغطي المجالات التالية:

1. مكافحة الآفات
2. التنوع الحيوي
3. مخزون التربة من البذور
4. اختيار الأشجار للاستزراع الغابي.
5. التوالد الطبيعي.

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Table (7) the availability of tree species and their percentages

Tree rank	Number	Percentage
No answer	3	3.5
Acacia seyal (1)	28	32.9
Acacia melifera (2)	33	38.8
Balanitise aegyptiaca (3)	9	10.6
Others spp (4)	12	14.1
Total	85	100.0

From table (7) it is clear that, the *Acacia melifera* results 38.8% and *Acacia seyal* 32.9 total of 61.7% which represent the higher abundance when the refugees came to the camp. While the lower percentages of the refugees, mentioned that the least available tree species were other tree and *Balaniteis aegyptiaca*, 14.1%, 10.6% respectively. The highest percentages indicating to the plantations near to and far from the camp. The history of Abu-Rakham area mentioned that the area was grown by thorn trees (*Acacia* spp). And it was a part of *Acacia sengal* belt in addition to, the interview carried with Abu-Rakham village leadership, there was a forest which is called a Cook forest or *Acacia seibrana* forest, but from observations there were not more than three or two trees left alive because it is used by refugees. As the leadership motioned it was used as fodder which has valuable fodder trees (multi-purposes tree species) for their livestock.