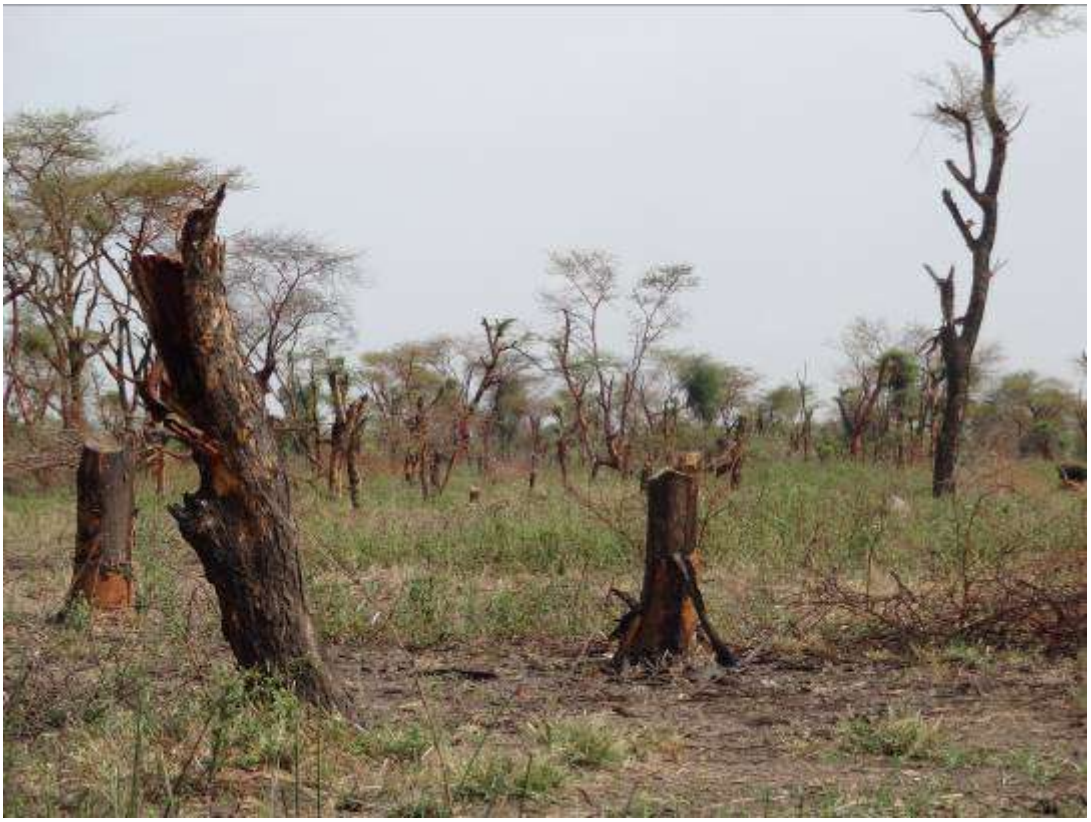
Joint (UNHCR, UNEP, OCHA, Government of South Sudan) Mission Report
Maban Camps, Upper Nile State, 16 to 22 November 2012



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EXECUTIVE SUMMARY

Protecting environmental resources in humanitarian programming is imperative, particularly in the context of South Sudan, where many livelihoods are vulnerable to shocks such as floods, drought or conflict over resources. In order to build resilience in communities, natural resources need to be well managed. There are well documented examples of crisis leading to the adoption of coping strategies that undermine a community's resource base, thereby exacerbating the challenge of recovery after the crisis is over. By using a livelihoods perspective on natural resources, the importance of avoiding environmental damage and natural resource depletion, as far as possible, during humanitarian responses to crisis becomes clear.

This report summarises the mission findings by a team comprised of the UNEP/OCHA Joint Environment Unit, UNEP Juba, UNHCR Geneva and Juba as well as forestry representative from state Ministry of Agriculture & Forestry, Upper Nile State and Maban County Directors of Forestry and Agriculture from 16 to 22 November 2012 during a visit to refugee camps in Upper Nile state of South Sudan.

In response to the Sudanese influx, UNHCR in collaboration with the South Sudan Government has established four camps (Doro, Batil, Jammam and Gendrassa) in Maban County since October 2011 to accommodate over 110, 940 refugees. A new site is also being prepared close to Gelguk village, Longechuk County, in anticipation of additional new arrivals.

The main purpose of the rapid environmental assessment mission was to enable an examination of the impacts of establishing refugee camps on the surrounding environment. The rapid assessment identified negative impacts associated with refugee operations, the effect on livelihoods of the host community and on the wider environment. The mission also identified measures to mitigate the negative impacts, while at the same time maximizing potential opportunities for sustainable development.

The mission concentrated on the causes of conflicts between the host community and the refugees. These include use of forest resources for domestic energy, depletion of grazing areas, water availability and waste management, and impact on agriculture production. Through the application of a holistic approach to land and natural resource management, there is potential to resolve conflicts and build peace, and improve harmony among the host communities and the refugee population, and also to reduce environmental degradation in the near future.

1. KEY FINDINGS

1.1 DOMESTIC ENERGY

1) In common with most refugees in rural Africa, the dominant cooking fuel used by the refugees in Maban camps is firewood. They have well-adapted cooking systems based upon firewood and their pots, stoves and food preparation techniques are designed around this fuel.

2) Current cooking methods suggest limited understanding of energy efficiency. Virtually all households are using the open fire system. This is compounded by lack of awareness on different energy saving techniques and methods. Average consumption is found to be 1.8 kg/person/day. This translates into over 218,000 tons of wood over a three-year period only for the current 110,940 refugees hosted in the four Mabaan camps.

3) At present a market for firewood and charcoal has been developed, supplied by both refugee and local communities. Although charcoal production by refugees is not allowed (according to local authorities), the mission observed that charcoal production is openly practiced by the refugee community, particularly in Jammam refugee camp. The refugees claimed to have

authorization for production, but could not tell who provided them the permission for charcoal burning. It appears that regulation of charcoal production is not enforced, nor likely to be enforceable.

1.2 ENVIRONMENTAL SUSTAINABILITY: FOREST RESOURCES, AGRICULTURE & LIVELIHOODS

4) The key environmental concern in Maban camps is the rapid depletion of forest resources with no natural regeneration capacity. Forest areas along the main access roads between Bunj and Jammam where the four refugee camps of Doro, Gendrassa, Batil and Jammam are located, are highly degraded.

5) The indiscriminate cutting of trees for fuel, animal feed, construction materials and charcoal production have potential to contribute to violent conflicts.

6) Speaking to host community leaders and local authorities, there are local norms and practices that refugees must follow in the use of natural resources including firewood collection and cattle grazing. However, according to the host leaders, the refugees have not respected all the customary norms and practices and this will be a driving force for conflict. The impact of over-grazing is already visible in areas adjacent to the camps. Host communities have expressed concern about deforestation and free-ranging animals eating crops. As a result, the tensions between refugees and locals are growing. In addition, there is concern that longer-term impacts will result in desertification.

7) In refugee areas, the number of livestock is high in proportion to available grazing lands. More than 117,000 animals are currently in the refugee areas of Upper Nile state, based upon a recent FAO/Veterinaires Sans Frontieres (VSF) survey, but the actual number is likely higher. Some refugee groups may therefore seek further grazing land in the dry season, raising the potential for conflict over grazing land in other counties.

8) Water for livestock is a challenge particularly during the dry season. Seasonal rivers and earth dams scattered along the road between Bunj and Jammam are currently used for livestock.

9) The host community practices traditional agriculture. Farm sizes are small. The major crops include: maize, sorghum, sesame and okra. Technology and improved inputs have not yet reached the community.

1.3 SOLID WASTE MANAGEMENT

10) Waste generation is fairly small at the moment. One issue is the disposal of animal carcasses. As the operation expands, waste issues will arise, generated by the aid operation and influx of refugees. There is no organized waste collection mechanisms put in place neither in the refugee camps nor in the host communities. Solid wastes are either buried or in some cases burned.

1.4 SHELTER MATERIALS

11) Providing appropriate shelter is a challenge given the climate. The tents can be extremely hot, and the area is prone to flooding during the rainy season. In addition, the durability of the tents will be a challenge as the operation extends past one year.

1.5 CAPACITY AND INSTITUTIONAL STRENGTHENING

12) The Maban County Departments of Agriculture and Forestry are handicapped both by lack of financial resources and technical capacity to provide agriculture and forestry extension services to the local community.

2. KEY RECOMMENDATIONS

2.1 DOMESTIC ENERGY

13) Improve energy efficiency through the introduction of fuel-efficient stoves that respond to the user's needs, monitor the level of usage and conduct training on energy saving practices and techniques.

14) Promote the use of renewable energy such as solar cookers, biogas and innovative technologies such as solar lanterns and street lighting to improve refugee protection. Access to this simple technology would not only give better protection and improve girls' education, but also help protect the fragile ecosystem and reduce the tension between refugees and locals.

15) Improve the supply side of the equation through the establishment of woodlots in and around the refugee areas. In addition, to reduce or better control the impact of firewood harvesting, a number of measures can be introduced such as controlled harvesting (only certain quantities of wood are collected from a designated area, perhaps focusing on deadwood or trees of certain species), natural forest management to promote regeneration and reforestation and afforestation.

16) Carry out research into wood harvesting distances and modalities: Additional studies should be conducted into the distances and directions travelled for wood harvesting, the means by which wood harvesting is carried and the way these factors are changing over time. With such information, UNHCR will be in a better position to estimate the rate of expansion of wood harvesting areas.

2.2 ENVIRONMENTAL SUSTAINABILITY: FOREST RESOURCES, AGRICULTURE AND LIVELIHOODS

17) Implement a holistic approach to sustainable land and natural resource management for conflict resolution, peace building and environmental sustainability. Environmental conservation and sustainable land and natural resource management is always a challenge under humanitarian situations. However, if a holistic approach to land and natural resource management including livelihoods are implemented as a comprehensive programme, deforestation in Maban could be arrested, forest resilience could be improved and environmental sustainability can be maintained.

18) Rotational grazing system should be introduced and agreed upon between the host communities and the refugee population. Such an option will ease the pressure on the existing forest areas and allow the forest to regenerate naturally or through re-forestation activities.

19) Develop nursery sites in Bunj, Gendresa and Jammam to supply seedling needs for the reforestation and afforestation project. This will help in scaling up the current small-scale tree planting activities through the procurement of tree seedlings from a distance (Malakal)

20) Set up a livestock de-stocking system using cash transfer in consultation with FAO with the participation of refugee community. Alternatively, promote substitution of animals which will have a lower environmental impact, for example providing chickens in lieu of goats.

21) Agriculture production and marketing programme. Considering the large number of refugee population, presence of aid community and government institutions in Maban, there is already an established market for agriculture produce. The communities, both host and refugees must be supported to enhance agricultural production through technological transfer. The provision of improved seeds and tools needs to be strengthened in all camps for both refugee and hosting communities.

22) Establish community managed hafirs with troughs in strategic grazing areas for cattle and fodder production. Empowering the community in decision making will reduce the social impact associated with hafir construction and maintenance. Alternatively, in other camps, where the ground water recharge is good, drill boreholes for livestock needs.

2.3 SOLID WASTE MANAGEMENT

23) Create an engineered landfill that would serve the aid operation, the host community and the surrounding camps. Develop a model of collection that involves both refugees and host communities. Ensure appropriate disposal of animal carcasses.

2.4 SHELTER MATERIALS

24) It is essential to construct transitional shelter. Controlled harvesting of poles and sticks must be allowed only from designated areas. If managed properly, the impact on the environment would be minimal. This requires the establishment of a mechanism for controlling the harvesting of the construction materials in such a manner that facilitates natural regeneration and avoids depletion of the vegetation cover in the designated areas. More importantly, the plan to use the iron bar of the old tents for the transitional shelter will significantly reduce the number of poles required thereby reduces the pressure on the environment. Indeed, the use of tents during the emergency phase in Maban camps was a strategy to minimize the damage done to the environment.

2.5 CAPACITY AND INSTITUTIONAL STRENGTHENING

25) Build capacity of local authorities including the capacity of the Ministry of Agriculture & Forestry, and the Ministry of Animal Husbandry and Fisheries. Current FAO programmes to strengthen government capacity should be expanded in Upper Nile state. Encourage additional partners such as UNEP, UNDP and oil companies to embed capacity within local government structures.

26) Build the capacity of refugee and hosting communities in natural resources management and conflict resolution.

27) Environmental awareness and need for stewardship should be promoted / taught to children and in adult education campaigns.

28) Increase UNHCR capacity to address environmental issues by creating environmental advisor positions in Juba and Maban levels to effectively coordinate and monitor environmental programmes.

29) Organize experience sharing tours for selected UNHCR and government staff to Assosa camps, Ethiopia to learn more on reforestation programme and to Uganda and Chad for different stove technologies.

3. DRAFT ACTION PLAN

No	Activities	TIME-FRAME 2013												Responsible Agency
		J	F	M	A	M	J	J	A	S	O	N	D	
1	Conduct training on energy-saving practices (UNHCR Hand book for Cooking Options)													HCR/DRC/WFP/ ACTED
2	Conduct training on appropriate mud FES (Ensure refugees build their own stoves, eg. SAVE Sudan by WFP)													HCR/DRC/ACTED
3	Pilot WFP Ceramic Stove (Jiko Powa) in all camps (1000 to 2000 Stoves)													WFP/HCR
4	Investigate a more efficient stove (Save80 in Chad, Darfurian Stove, Rocket, Envirofit etc)													HCR/DRC/WFP/ ACTED
5	Scale up the appropriate FES that responds to User's need & its efficiency assured/tested													HCR/DRC/WFP/ ACTED
6	Pilot solar cookers & biogas, & scale up if accepted													HCR/DRC/WFP/ ACTED
7	Procure solar lanterns for each family (27,900)													HCR
8	Carry out household energy survey (consumption rate & harvesting areas)													HCR/DRC/WFP/ ACTED
9	Establish 3 nursery sites with a capacity of half a million tree seedlings (Bunj 200,000, Gendressa 200,000 & Jammam 100,000)													UNEP/FAO/WFP/ACTED/MOAF/HCR
10	Carry out reforestation in degraded areas													
11	Facilitate community natural resources mapping													UNEP/FAO/UNDP/HCR
12	Implement community forestry programmes in all camps													UNEP/FOA/UNDP/MOAF/HCR/ Community
13	Carry out extensive community based environmental awareness creation campaigns													FAO/UNEP/ACTED/MOAF/DRC/ TBD
14	Construct haffirs with cattle trough in strategic grazing areas for cattle & fodder production in Jammam – community taking the lead													FOA/ UNOPS/MOAF/MSF/HCR
15	Drill boreholes for livestock in areas where ground water is available (Batil, Gendrassa & Doro), three in each camp													OXFAM/ EAE/MSF/HCR
16	Initiate dialogue among the communities to agree on rotational grazing & implementation													FOA/MOAF/HCR/UNEP
17	Facilitate systematic de-stocking in consultation with FOA to adjust with the grazing area													FAO/HCR/ACTED
18	Identification of input sources & tech. support for improving agricultural production													FAO/MOAF/ACTED/HCR/DRC…
19	Construct landfill that would serve both communities.													HCR & Partners
20	Introduce Controlled harvesting of poles and sticks in a designated area in consultation with MOAF (consider the species in Annex)													HCR/MOAF & Partners
21	Building local capacity, in particular that of government including community in NRM													UNDP/FAO/UNEP/NGOS/HCR …
22	Increase UNHCR capacity to address environmental issues by creating environmental positions at Juba and Maban levels													HCR
23	Organize experience sharing tours for selected HCR & government staff to neighbouring countries													HCR

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1. BACKGROUND AND CONTEXT

An environment mission was conducted by a joint team comprised of the UNEP/OCHA Joint Environment Unit, Geneva, UNEP Juba, UNHCR Geneva and Juba as well as forestry representative from Malakal and Directors of Forestry and Agriculture from Maban County, Upper Nile State, from 16 to 22 November 2012.

This report presents the mission findings following a visit to Maban county refugee camps in Upper Nile state of South Sudan. The camps have been established since October 2011 with the sudden influx of Sudanese refugees.

The main purpose of the rapid environmental assessment mission was to take stock of existing environmental interventions and review plans for 2013 for Maban camps. It would also enable a critical examination of the impacts of establishing refugee camps on the surrounding environment. The rapid assessment identified negative impacts associated with refugee operations, the effect on livelihoods of the host community and on the wider environment. The mission also identified measures to mitigate the negative impacts, while at the same time maximizing potential opportunities for sustainable development. The findings will form the basis for the formulation of environmental management interventions for the camps and their environs.

In conducting the rapid assessment process, the inter agency team carried out the following tasks:

- Took stock of the existing environmental initiatives and described the main characteristics of the existing environmental situation,
- Undertook a scoping exercise that enabled identification of impacts of concern,
- Identified and described the mitigation measures that need to be implemented to prevent, minimize or control (to an applicable level) the significant adverse impacts.

Prior to the site visit, the team held consultations with UNHCR Representation in South Sudan regarding the expected output of the mission, and areas of priority. During this discussion it was determined that the team should focus on the following areas:

- ✓ Domestic Energy
- ✓ Environmental sustainability: Forest resources, agriculture and livelihoods
- ✓ Solid Waste management and water
- ✓ Shelter materials
- ✓ Capacity and institutional strengthening

During the mission the team held meetings with relevant stakeholders, including Maban County Officials, Refugee Central Committees as well as local chiefs and Sheiks from host communities, women's groups, implementing partners, and conducted random interviews with refugees, host communities as well as direct observations at the camp level. All the four existing Maban camps and the planned new site were inspected to examine the current and potential impacts on the environment, assess pressing issues and discuss possible mitigation strategies.

2. CAMP PROFILE

In response to the Sudanese influx, UNHCR in collaboration with the South Sudan Government has established four camps (Doro, Batil, Jammam and Gendrassa) in Maban County since December 2011 to accommodate over 110, 940 refugees. A new site is also being prepared close to Gelguk, Longechuk County, anticipating additional new arrivals. The four camps consist of 27,829 households of which 40.8 % are female headed households. The refugees in these camps are composed of 46.8% male and 53.2% female, while children under 18 years old constitute 60%.

Age	Female	Male	Total	%age
0 -4	13,130	13,820	26,950	24.3
5 -11	13,313	12,705	26,018	23.5
12 -17	7,299	6,395	13,694	12.3
18-59	23,338	16,713	40,051	36.1
Over 60	1,965	2,262	4,227	3.8
Total	**59,045**	**51,895**	110,940	**100.0**

3. MISSION FINDINGS

3.1 DOMESTIC ENERGY

Meeting domestic energy needs is a frequent concern of most refugee operations, often accounting for significant resources, and can contribute to forest degradation and deforestation around camps. Yet this matter cannot be overlooked given the close links domestic energy has with protection, health, nutrition, WASH, education, settlements, shelter, and many other social and environmental issues.

In common with most refugees in rural Africa, the dominant cooking fuel used by the refugees in Maban camps (Doro, Batil, Jammam and Gendrassa) is firewood.

It is the most familiar fuel amongst the refugees in all the four camps of Maban. They have well-adapted cooking systems based upon firewood and their pots, stoves and food preparation techniques are designed around this fuel. It is readily available from the local area and can be harvested within a radius that is easily accessible at present and will probably remain accessible for a while.

Current cooking methods suggest limited understanding of energy efficiency. Virtually all households are using the open fire system. This is compounded by lack of awareness on different energy saving techniques and methods.

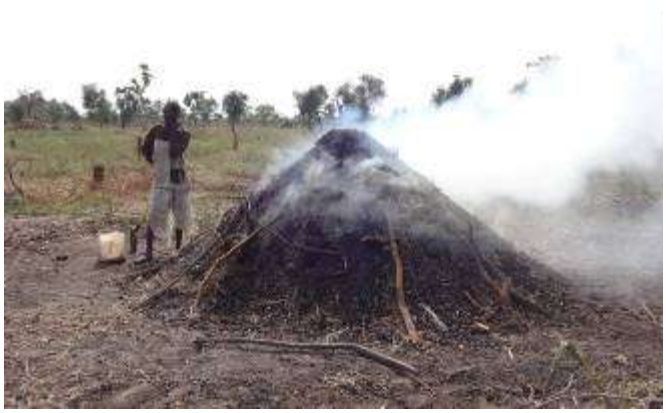
Figure 1: Three-stone stove (open fire)	*Figure 2: The refugees harvest dead firewood*
	

For the time being, the refugees in all camps are able to meet their firewood demands within a distance of approximately 3 - 4 km radius from the camps by collecting dead wood from the ground and chopping branches and cutting live trees. This distance is gradually increasing as the available dead wood is exploited and the forest resources degraded. During 2013 the refugees are likely to be travelling 5-7 km for foraging firewood, if the current trend continues unabated.

At present a market for firewood and charcoal have been developed, supplied by both refugee and local communities. Charcoal burning is openly practiced by the refugee community as well, particularly in Jammam and Batil refugee camps. Refugees who are engaged in charcoal making claimed to have license, but could not tell who provided them the permission for charcoal burning. A bag of charcoal is sold, at varying prices ranging from 20 to 35 South Sudanese Pound depending on the size. UNHCR has supported a designated forest management task force. However lack of enforcement of agreed polices continues to be a concern. Accordingly, the

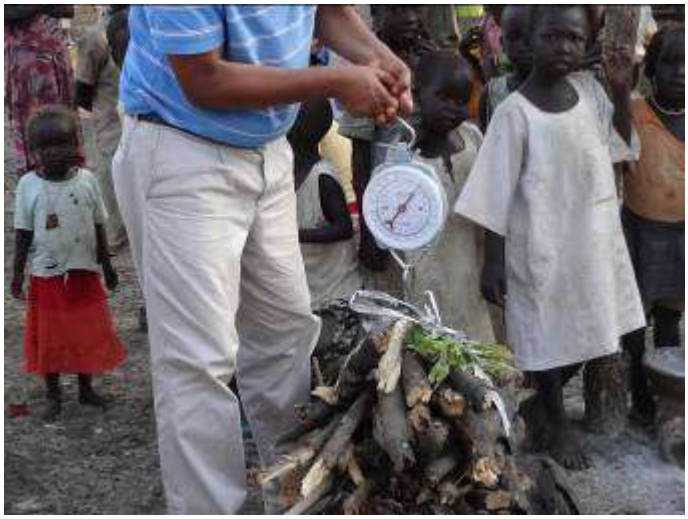
refugees should not produce charcoal, our first hand experience in Jammam and Batil proves otherwise.

Figure 3: Charcoal production in Jammam



A recent energy survey by ACTED confirmed that the refugees in Jammam camp use firewood almost exclusively for cooking. Average consumption was found to be 1.1 kg per person per day (p.p.p.d.), with higher consumption among the host community (1.16kg/p/d). Although circumstances and methods differ, the mission team came up with an average consumption of 1.8 kg/p/d in the four Maban camps (the Mission carried out some interviews and weighed some fire wood collected by the refugees). Other studies in East Africa have also shown that refugees consume, on average, 1.5 kg/p/day. Indeed, large families were found to be using less wood per capita than smaller ones because they benefit from economies of scale in cooking.

Figure 4: Household wood weighing during the mission



If we take the average value for Maban refugee camps, 1.8kg/p/day, this translates into 9.0 kg/day for a family of 5 persons or over 218,660 tons of wood and 109,330 tons of carbon emissions over a three-year period only for the current refugee population of 110,940 hosted in the four Maban camps, excluding new arrivals.

What if we could change this paradigm by introducing fuel-efficient stoves that cuts firewood consumption, on average, by 50%[1] (109,330 tons) and cut CO2 emissions by 50%[2] of wood

[1] Fuel efficient stove together with heat retention box can reduce the amount of wood consumed in cooking by 50%.

saved (54,665 tons), drastically decreasing the depletion of natural resources vital to a community's survival in the refugee hosting areas.

Over 430[3] hectares or close to 1,000 fedans of forest land would be saved from destruction for use as fuel wood in the course of three years of refugees stay by just promoting improved stoves coupled with training on fuel saving techniques. More importantly, on average, one efficient stove dramatically reduce the time a woman has to spend collecting firewood – 780 fewer hours spent collecting firewood which can be used in more productive activities.

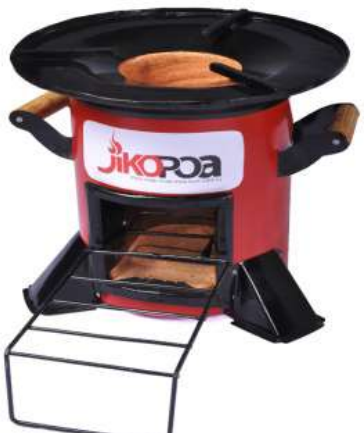
The refugees currently harvest their firewood within a distance of 3-4 km from the camp by collecting dead wood and cutting branches, at times the whole tree. The source area is estimated to be expanding, which implies that during 2013 the refugees are likely to be travelling 5-7 km for foraging firewood.

DRC has started demonstrating mud-stove in Batil camp. The quality, however, is poor and will not last long, per haps 3-6 months. There is a need to look for better design although used mud to construct the stove. WFP in its SAFE project has a plan to distribute pre-fabricated stove, Jiko Powa which is produced in Nairobi and is currently being used in Dadaab refugee camp and in Kenya in rural areas for testing. It efficiency reported to be 30 – 32 percent.

Fig. 6: Mud –stove demonstration in Batil by DRC

Fig. 7: Mud stove – taken from WFP Report

Fig. 8: Proposed stove for piloting by WFP



[2] For a Voluntary Gold Standard project, 1 ton of wood savings equals about 0.5 tones of CO2 equivalent. For calculating Certified Emissions Reductions (CER), the relationship is linear, meaning that if fuel use halves, emissions would halve.

[3] Estimated based on 39 trees saved /stove over a period of 3 years & 2,500 trees/ha.

With this proviso, which requires further investigation, the findings suggest that there is no immediate fuel wood challenges as such, but has a considerable impact on the environment and firewood collection may become an issue of conflict with local people.

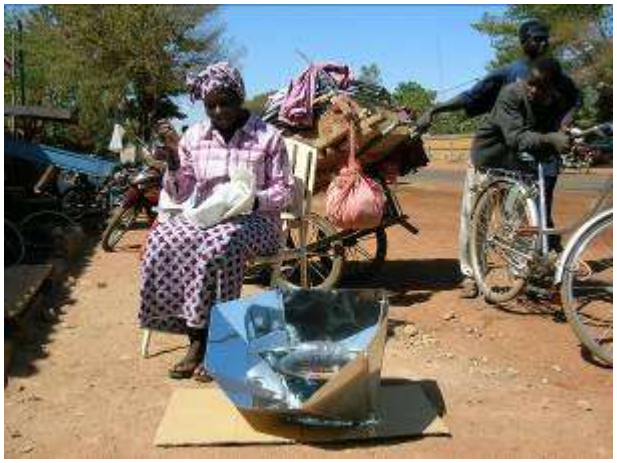
The most appropriate solution to resource-related conflicts seems to lie with the establishment of sound working relationships between refugees, locals and the government. To this end, UNHCR has initiated the creation of joint committee comprising refugees and locals to set rules for environmental exploitation and resolve conflicts that may occur. A system of clear regulation with rapid and fair response in case of infraction seems the best approach. In addition, introduction of fuel-efficient stoves and training on energy saving practices and techniques would help in reducing the amount of firewood consumption significantly. These measures indeed will keep the conflict to a minimum level.

In addition, to reduce or better control the impact of firewood harvesting, a number of measures can be introduced such as controlled harvesting, natural forest management to promote regeneration, and establishing woodlots around the camps.

For lighting refugees said that they are using firewood at night. It is also of paramount importance to introduce innovative technologies such as solar lantern and street light for better refugee protection. Access to this simple technology would not only give better protection and improve girls' education, but also help protect the fragile ecosystem and reduce tension between refugees and locals.

Solar energy: the concept of cooking using the sun, which is a free and unlimited energy source, is clearly very appealing. However the past reality of using solar cooking devices in refugee programmes has been disappointing. Cooker performance has not matched promoters' claims and changes required to traditional cooking practices have been so significant that refugees have been unwilling to adopt solar technology, even as a supplementary cooking option under conditions of energy shortage. The initial enthusiasm shown by recipients is not reflected in subsequent sustained use. Even among adopters, solar cookers have only been used as supplementary devices alongside wood and charcoal stoves. However, it may be worth piloting this scheme in order to verify its potential as a supplementary cooking method in the Maban context.

Figure 8: Solar Cooker in Dadaab camp, Kenya



In short, going from open fires to improved stoves will lead to saving lives, improving livelihoods, empowering women and preserving the environment.

3.2 Environmental Sustainability: Forest Resources, Agriculture and Livelihoods

The key environmental concern in Mabaan camps is the fast depletion of forest resources with no natural regeneration capacity. Forest areas along the stretch of the highway between Bunj and Jammam where the four refugee camps of Doro, Gendrassa, Batil and Jammam are located, are highly degraded.

Trees and shrubs are cut down from the nearby forests on a daily basis primarily for firewood needs for cooking and lighting, and construction materials. As the refugees are currently sheltered in tents, some refugees have built shelters from local grass and wood poles to avoid the intense heat of the dry season.

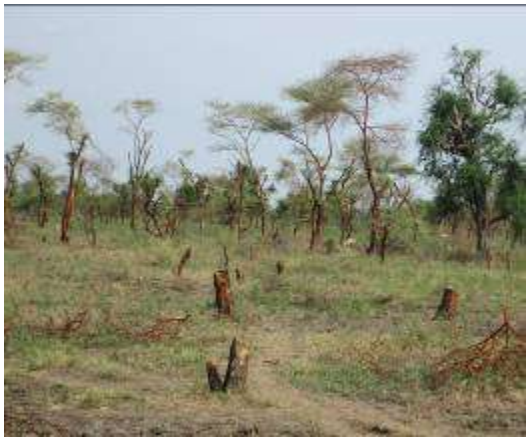
Grazing and browsing of the ground vegetation by the livestock have completely removed all herbal layer that there is almost nothing to browse in the forest stretches between camps and up to a radial distance of 3-4 kms from the camps. In addition, the refugee cattle herders have the habit of lopping tree branches to provide additional forage to the livestock which further exacerbates the forest degradation situation. The worst affected are the areas between Gendrassa and Batil due to the proximity of the camps to each other - a distance of only 4 kms.

Figure 9: Overgrazed area adjust to Batil refugee camp (area designated for refugee cattle)

Speaking to host community leaders and local authorities, there are local norms and practices that refugees must follow in the use of natural resources including firewood collection and cattle grazing. However, according to the host leaders, the refugees have not respected all the customary norms and practices. As a result, the impact of over-grazing is already visible in areas adjacent to the camps. Host communities have expressed concern about deforestation and free-ranging animals eating crops. There is concern that longer-term impacts will result in desertification.

In refugee areas, the number of livestock is high in proportion to available grazing lands. The environmental concerns include: grazing concentrated in areas that will negatively affect re-growth capacity and cutting of trees and branches to feed livestock leading to deforestation. More than 117,000 animals are currently in the refugee areas of Upper Nile state, based upon a recent FAO/VSF survey, but the actual number is likely higher. Some refugee groups may therefore seek further grazing land in the dry season, raising the potential for conflict over grazing land in other counties.

Figure 10: Branches are chopped first for animal feed and then for charcoal production - Deforestation



UNHCR and partner agencies have coordinated a series of dialogue between the host and refugee communities to streamline the use of natural resources for sustainable management as well as to reduce potential conflicts. A Joint Committee consisting of Umdas and Shiekhs of the different camps and host communities have been formed to discuss and agree on forest resources management mechanisms including potentials for designating additional forest areas for grazing and wood collection for the refugee camps.

The host community practices traditional agriculture. Farm sizes are small. The major crops include: maize, sorghum, sesame and okra. Technology and improved inputs have not yet reached the community. Through the provision of improved seeds and extension services, there is a potential to boost agricultural production. The demonstration site run by ACTED in Jammam for the host community is a step in the right direction. Some four thousand fruit tree seedlings have been supplied to the communities in 2012.This should be scaled up and expanded to other areas. Supporting both communities will also provide an opportunity for skills transfer.

Figure 11: Subsistence agriculture – Sorghum farm (local)

The Mabaan County Departments of Agriculture and Forestry are handicapped both by financial resources and technical capacity to provide agriculture and forestry extension services to the local community.

3.3 SOLID WASTE MANAGEMENT

The general observation is that waste generation is fairly small at the moment. There is no organized waste collection mechanisms put in place neither in the refugee camps nor in the host communities. Solid wastes are either buried or in some cases burnt.

3.4 SHELTER MATERIALS

Although providing of tents at the initial phase was to preserve the environment, refugees claimed that they were extremely hot, and could not prevent them from flooding during the rainy season. In addition, the durability of the tents will be a challenge as the operation extends past one year.

3.5 CAPACITY AND INSTITUTIONAL STRENGTHENING

The Mabaan County Departments of Agriculture and Forestry are handicapped both by financial resources and technical capacity to provide agriculture and forestry extension services to the local community.

Build capacity of local authorities including the capacity of the Ministry of Agriculture & Forestry, and the Ministry of Animal Husbandry and Fisheries. Current FAO programmes to strengthen government capacity should be expanded in Upper Nile state. Encourage additional partners such as UNEP, UNDP and including oil companies to support local capacity building.

3.6 VISIT TO THE PROPOSED NEW CAMP IN GELGUK, LONGECHUK COUNTY

The new site seems to be adequate in terms of size with some degree of slope (approximately 1%). Ecologically, the camp site lies under Savannah grassland vegetation. However, the surrounding areas have a better vegetation cover dominated by Acacia species, which could serve sourcing firewood. The host community welcomes UNHCR to establish a refugee camp in this locality. The host population looks at it positively in terms of bringing social infrastructures and services closer to them.

The team did not have time to make detailed observations to gauge the availability of forest resources. Therefore, proper assessment of the resource situation should be undertaken upon the opening of the camp in order to design appropriate intervention measures from the outset. From a cursory observation, however, there appears to be an inadequate supply of dead wood for both refugees and locals. As refugee numbers increase this will pose a significant problem and if not regulated, it could result in the cutting of live trees for fuel. Refugees may also travel 6-8 km for collecting deadwood within a year or so.

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Figure 12: the new camp site at Gelguk

ANNEX 1. RESTRICTED TREE SPECIES FROM CUTTING

	Latin name	Local name
1	*Acacia nilotica*	Sunt Giarad
2	*Acacia senegal*	Sunt Hashab
3	*Khaya senegalensis*	Mahogany, Murrya
4	*Ziziphus abyssinica ssp*	Nabak
5	*Balanites egyptiaca*	Heglig, Lalob
6	*Hypaene thebaica*	Dompaim
7	*Borassus aetiopum*	Deleib, African palm
8	*Celtis integrifolia*	Tutal
9	*Delbergia melanoxylon*	Babanus, African Black wood

ANNEX II: LIST OF OFFICIALS OR PERSONNEL MET DURING THE MISSION

Government representatives and host communities

1. David Batali, Undersecretary, Ministry of Environment, Juba
2. County Commissioner, Maban County, Upper Nile State
3. Mojok Stephan, County Director of Agriculture, Maban County
4. William Akol, County Director of Forestry, Maban County
5. Aljack Ali, Deputy Director of Forest Protection, Ministry of Agriculture & Forestry, Malakal, UNS
6. Gelguk Payam Committee, Longichuk County
7. Gendressa Community leaders
8. Charcoal sellers, Bunj market

Refugee Community

9. Batil Refugee Committee
10. Gendressa Refugee Committee
11. Gendressa Refugee Committee
12. Doro Refugee Committee
13. Jamman Refugee Committee
14. Jamman Women's Refugee Committee
15. Refugee families in Doro and Genderassa
16. Charcoal sellers in Batil and Jammam markets
17. Women in Yusuf Batil who attended ToT (training of trainers) training on fuel efficient stoves

UN Organizations

18. Frances Mona, FAO
19. Fernando Murillo, Senior Urban Expert, UNHCR, Juba
20. Frederic Cussigh, Head of office, UNHCR Field Office, Maban
21. Chris, Head of office, UNHCR Field Office, Jammam
22. John Kanani, WASH coordinator, UNHCR Field Office, Maban
23. Barun, UNHCR Field Office, Jammam
24. Ibrahim Kamau, UNOPS
25. Martin Dramani, UNDP Environment -Energy Unit

NGOs

26. Daniel Lesaigo, VSF Germany
27. Danish Refugee Council, Maban
28. Vincent Otieno, OXFAM
29. ACTED in Jammam

ANNEX III. FIREWOOD CONSUMPTION SURVEY FORMAT

Camp: _____

Section/Zone Details: _____

Name of Person Carrying out Survey: _____

Name of Respondent: _____

Family Size According to Ration Card: _____

Actual number of people normally cooking and eating together: Adults: _____

Children:_____

Fuels used for cooking: Firewood? Yes: _____ No: _____

Charcoal? Yes: _____ No: _____ Both? Yes: _____ No: _____

If using <u>both</u>, for which types of food is firewood preferred?

_____

…and for which types of food is charcoal preferred?

_____

Daily Firewood Consumption Record

Day	*Date*	*Weigh any firewood present in house in morning (kg)*	*Weigh any firewood added during day from collection or purchase (kg)*
1			
2			
3			
4			
5			
6			
7			
8			

Daily Charcoal Consumption Record

Day	*Date*	*Weigh any charcoal present in house in morning (kg)*	*Weigh any charcoal added during day from collection or purchase (kg)*
1			
2			
3			
4			
5			
6			
7			
8			

Daily Cooking Diary

Day	*Date*	*Times*	*Description of Foods Eaten*
1			
2			
3			
4			
5			
6			
7			
8			

Data on Dead wood harvesting Distance

Date	Distance from camp for dead wood (km)	Area harvested (sq.km.)	Monthly increase (sq.km.)	
Jan-13	X	Y	Z	based on first 12 months since camp establishment
June-13				

ANNEX IV: TERMS OF REFERENCE, JOINT UNEP/OCHA ENVIRONMENT UNIT (JEU) / UNHCR SCOPING MISSION TO SOUTH SUDAN

1. Background

The Joint UNEP/OCHA Environment Unit is a partnership between the United Nations Environment Programme (UNEP) and the UN Office for the Coordination of Humanitarian Affairs (OCHA). It is the integrated UN emergency response mechanism to activate and provide international assistance to countries facing environmental emergencies.

In 2005, as part of the Humanitarian Reform Agenda, environment was established as a cross cutting issue in the humanitarian cluster approach with UNEP as its focal point. However, recent IASC cluster approach evaluations has found that cross-cutting and multidimensional issues often are neglected, and that in reality there is little integration of cross-cutting issues. Insufficient attention to environmental considerations can trigger significant negative secondary impacts for refugees and local populations as well as counter resilience-building efforts. For instance, if environmental standards for latrines and building materials are not met, this affects the quality of humanitarian response. In addition, environmentally friendly innovations can improve the quality of humanitarian assistance. This can be done for example through rainwater harvesting techniques and solar powered hand pumps in drought prone areas, and the use of alternative energy NFI's in areas vulnerable to excessive deforestation. However, although ample anecdotal evidence supports the need for increased integration of environmental considerations in humanitarian action, documented country assessments are warranted (i.e. a more evidence-based approach). In addition to grounding messages to the needs and reality of the field, this approach would serve as a foundation for ownership at the country level, among those who have the contextual knowledge and will eventually implement the proposed actions.

JEU's objective is therefore to encourage a better integration of environmental considerations in humanitarian response(mainstreaming of the environment).UNEP and OCHA have agreed that JEU will work with the UNEP Post-Conflict and Disaster Management Branch (PCDMB) to implement and operationalize environment as a cross-cutting issue in humanitarian action. Underlying environmental causes and drivers of humanitarian crisis should be considered during all phases of the programme cycle from needs assessment onwards and opportunities identified to reduce environmental risks during humanitarian response.

In addition, information exchange and collaboration has recently been initiated with UNHCR environment unit (HQs) and joint activities have been initiated in the area of environmental mainstreaming in refugee operations.

Protecting environmental resources in humanitarian programming is imperative, particularly in the context of South Sudan, where many livelihoods are vulnerable to shocks such as floods, drought or conflict over resources. In order to build resilience in communities, natural resources need to be well managed. There are well documented examples of crisis leading to the adoption of coping strategies that undermine a community's resource base, thereby exacerbating the challenge of recovery after the crisis is over. By using a livelihoods perspective on natural resources, the importance of avoiding environmental damage, as far as possible, during humanitarian responses to crisis becomes clear.

Good environmental practises have been developed at country-level in South Sudan. One such example is the environment marker developed and rolled out by UNEP. The concept of the environment marker is based on the principles of "do no harm", environmental mitigation and sustainable resources management. Sector guidance specifically for the South Sudanese context has also been developed as some sectors need to be more mindful of the environment than others. UNEP and OCHA has agreed that the experiences from this work on mainstreaming the environment in South Sudan, including the environment marker, would benefit from being documented and evaluated (i.e. evidence based approach) and shared with humanitarian country teams in other countries. In addition UNHCR South Sudan has planned to undertake a comprehensive assessment of the environment so as to inform humanitarian programming to address refugee/IDP related environmental problems. This mission could support this initiative.

2. Mission Objective

The objective of the mission is to collect and document experiences to date and formulate a strategy and framework for further operationalization of environment as a cross-cutting issue. The mission will particularly review the theme of energy supply and management both in and around camps, the overall intention being to develop the required interventions to help ensure and support timely response in relation to domestic fuel programming.

In addition, discussions with national authorities regarding environmental emergency needs as well as services and tools available via the JEU and UNEP/UNHCR, such as Awareness and Preparedness for Emergencies at Local Level (APELL), Capacity Development for Disaster Risk Reduction Initiative (CADRI) and the Environmental Emergencies Centre (EEC) will be conducted. In addition, oil spill prevention and management tools as well as integration of industrial accident scenarios into contingency planning could be discussed.

3. Mission Composition

The team is likely to include the following personnel:

- Wendy Cue, Chief Joint UNEP/OCHA (JEU)
- Amare Gebre Egziabher, UNHCR Senior Environmental Coordinator
- Annica Waleij, Joint UNEP/OCHA (JEU), Environmental expert

4. Activities

The mission will undertake the following activities whilst in South Sudan:

- Briefing meetings and interviews with e.g. RC/HC, OCHA, UNEP, UNMISS, UNHCR, Cluster leads, relief officials, donors (DFID, USAID, CIDA/Sida etc) central, state and the local government, as well as site visits to identify on-going and planned activities in the area of environmental mainstreaming (jointly by Joint UNEP/OCHA and UNHCR) as well as environmental emergency contingency planning, where they exist, and collect relevant materials (Joint UNEP/OCHA only)
- Conduct a rapid environmental assessment (REA) in refugee/IDP camps to develop an environmental action plan in an integrated and cross-sectoral manner that is appropriate to mitigate protection risks and environmental degradation in collaboration with the Ministry of Environment, country teams, implementing partners, and refugee and host communities

In the activities above the mission will:

- identify what actions have been taken so far, what programmes and activities are planned; review capacities, weaknesses and gaps.
- identify needs that may be required to build local environmental emergency capacity
- identify needs in order to facilitate leverage of UNEPs environmental mainstreaming efforts to other missions and regions
- identify the potential role that JEU,PCDMB, UNHCR and UNEP and UNHCR country offices respectively can play in this
- identify any further studies that might be warranted
- Preparation of draft environmental action plan

5 Output of the Mission

The mission will provide a detailed report with an analysis of lessons learned and needs to be widely shared, including draft action plan.

6 Duration

The mission is expected to spend 10-13 days in South Sudan in the second half of November.

7. Budget

The costs related to the field visit will be borne by JEU and UNHCR respectively.