

This tip sheet aims to give specific guidance to the Education Sector in Sudan regarding how to better integrate environment in their humanitarian activities.

Key environmental issues for humanitarian actors in Sudan

In Sudan natural disasters and conflicts have led to mass-movements of people, which has direct and indirect environmental consequences. Communities and their livelihoods are vulnerable to shocks such as drought or conflict when environmental resources are scarce and/or unevenly distributed. Integrating environmental issues into humanitarian programming is essential to improve outcomes and create multiple benefits. Reducing the pressure on natural resources can support livelihoods through job creation opportunities, nutrition and protection, safeguard drinking water quality and quantity and provide shelter building materials. Human impact on the environment in Sudan is most visible in the areas of deforestation/ desertification, over-cultivation and over-grazing, and over-extraction of water.

Top 9 tips to better integrate environment in Education activities:

TREE PLANTING IN SCHOOLS & CFSs

Supporting fruit tree planting in schools can enhance the environment, provide shadowed places, and increase nutritional status.

Consider including the children in the planting of a vegetable garden or of fruit trees, and re-using grey water from hand washing facilities for extra water needs.

SOLID WASTE MANAGEMENT

Implement a system for SWM in schools and CFSs. Biodegradable material, when properly sorted, can be composted and used directly or sold for soil enrichment that could be used in school garden.

3R = Reduce, Reuse, Recycle

NATURAL FENCING AROUND SCHOOLS

Consider planting low-maintenance and drought-resistant bushes to create a natural fencing around schools.

FUEL EFFICIENT COOKING TECHNIQUES

Include fuel efficient cooking techniques (e.g. pre-soaking beans, cooking fires, etc.) in school feeding programmes, and promote Fuel Efficient Stoves for reduction of wood use for cooking.

AGE ADAPTED WASH FACILITIES

Ensure Water and Sanitation Facilities are adapted to the child's age to guarantee proper use of facilities, and reduce environmental risks due to standing water in connection to hand-washing stations, or open defecation.

USE LESS WOOD

Reduce wood consumption by supplying iron pipes and using environmentally friendly material for constructions and rehabilitation. If wood or bamboo is used for construction or rehabilitation consider compensating by re-planting trees.

Consider also alternative energy sources such as solar panels for lighting in classrooms and for water pumps.

ENVIRONMENT AND HYGIENE CLUBS

Include Environmental issues in School Hygiene Clubs, and conduct environmental awareness sessions for children and teachers. Combine with cleaning campaigns.

REPLACE THE USE OF FIRED BRICKS

Replace the use of fired bricks with Stabilised Soil Blocks (SSB) or Cement Blocks (CSB). Fired bricks need 27 trees (1 hectare of forest) to burn 1 clamp of bricks.

WORK WITH THE AUTHORITIES

Collaborate with National and Regional Education Authorities, promoting inclusion on environmental issues in school curricula.

Key facts and figures

Deforestation and desertification

- ✓ **The loss of forest and vegetation cover**, due to unregulated tree cutting and wood collection but also to humanitarian-aid related activities, especially construction, can lead to soil deterioration, desertification, loss of livelihoods and conflict (as a result of competition over land and resources), especially in the Darfur states. Issues around forest management, household energy, poverty alleviation, livelihoods and conflict mitigation need to be addressed together.

North central states have lost some 70% of their forest cover since independence, and the annual deforestation rate in Sudan is now 2.6%.

Water resources:

- ✓ **Water outtake.** It is essential to ensure that water outtake does not exceed the replenishment of the water source. Some IDP camps are already facing depletion of groundwater. Groundwater monitoring is essential, and in case the demand for water exceeds available resources there may be a need to cap wells and develop alternative sources.

Wood-fired brick kilns consume over 52,000 trees per year. In contrast, the production of SSBs does not require any wood, and also reduces water consumption by 30-60%.

Other key environmental issues:

- ✓ **Excavation of soil.** The excavation of soil for brick making has a significant environmental impact and is a potential health risk (flooded pits; vector breeding ground). In some places soil excavation around tree roots has destroyed established mango orchards.
- ✓ **Solid waste.** The accumulation of solid waste in towns is a significant health risk. It is also a risk for livestock that might consume plastic bags. Solid waste management should be seen as a priority for implementation.
- ✓ **Medical waste.** Medical waste, including livestock drugs should be disposed of in a safe and secure way, according to international standards. They pose both a direct health risk as well as risk of contamination of soil and water sources.
- ✓ **Pollution.** Handling and disposal of hazardous waste, fuel, oil and other types of chemicals should be done in a safe and secure way. During and after usage of such substances, it is important to avoid contamination of water sources or soil. Example of such waste are used batteries, petroleum products, air and oil filters etc.

In only 18 months (2007 – 2008) groundwater levels in Dereig camp in South Darfur with 25,000 IDPs, dropped 7 meters and then ran dry.

Integrating environment into humanitarian projects

The **Sphere 2011 Handbook** and **Environment Marker** have additional guidance and references for integrating the environment in each sector of humanitarian action. When assessing environmental issues, understanding the specific context is critical. For Sudan, deforestation/ desertification, and water scarcity are the two main environmental problems, and projects that could potentially affect forests and other land vegetation, and water sources need to eliminate and/or mitigate negative impacts as much as possible. It is also recommended to assess other potential environmental problems relevant in the specific project or region.

Mainstreaming the Environment into Humanitarian Action – Protection (UNEP): *Refugees and IDPs are often the most negatively affected by poor environmental practices with regard to fuel and energy, camp location, natural resources, water, food and agricultural in crisis situations.*

More resources and guidelines

- ✓ **Education and Environment** For more guidelines, tools and case studies on Education and Environment, please visit: http://postconflict.unep.ch/humanitarianaction/02_04.html
- ✓ **UNICEF – WASH in Schools.** <http://washinschoolsmapping.com/index.html>
- ✓ **UNEP /OCHA Environmental Emergencies Centre.** Supporting preparedness for environmental emergencies. <http://eecentre.org/>

Food Security & Livelihoods (FSL)

This tip sheet aims to give specific guidance to the Food Security & Livelihoods Sector in Sudan regarding how to better integrate environment in their humanitarian activities.

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Top 8 tips to better integrate environment in Food Security & Livelihoods activities:

ALTERNATIVE TECHNOLOGIES

Promote alternatives such as Fuel-Efficient Stoves to reduce use of wood, and solar panels for lighting and water pumps. Supporting markets with alternative technologies could help a more widespread adoption.

PROMOTE TREE PLANTING PROJECTS

Tree planting and seedling nurseries can support communities with sustainable access to woodfuel, which also contributes to reducing lengthy walks for firewood collection. It can provide an alternative source of income for a women's community group as they can sell fruit such as moringa on local markets. Tree planting is an efficient way to combat desertification. Support seedling nurseries as part of rehabilitation of degraded communal rangeland.

REPLACE THE USE OF FIRED BRICKS

Train people in the production of Soil-Stabilized-Blocks (SSB) and replace the use of fired bricks with SSBs or Cement-Stabilized-Blocks (CSB). Fired bricks need 27 trees (1 hectare of forest) to burn 1 clamp of bricks.

FOOD FOR WORK

Conduct environmental activities such as tree planting, camp clean-up and environmental rehabilitation through food/cash for work

AWARENESS RAISING

Include awareness raising on environmental protection, in projects. Train communities on sustainable management of natural resources and alternative farming techniques.

SOLID WASTE MANAGEMENT

Support SWM schemes, and train communities. Biodegradable material, when properly sorted, can be composted and used directly or sold for soil enrichment. Reduce the use of plastic bags by replacing with cotton bags.
3R = Reduce, Reuse, Recycle

FUEL EFFICIENT COOKING TECHNIQUES

Include fuel efficient cooking techniques (e.g. pre-soaking beans, sheltering cooking fires, etc.) in trainings. Work together with Nutrition and Health Sectors to promote crops with nutritional value and reduced cooking time.

WORK WITH THE NATIONAL AUTHORITIES

Support or enable National authorities to take the lead, and coordinate with WES on Integrated Water Resource Management (IWRM) on monitoring of water levels. Work together with authorities such as MoAR to ensure proper disposal of medical waste from live-stock vaccinations and drugs.

Key facts and figures

Deforestation and desertification

- ✓ **The loss of forest and vegetation cover**, due to unregulated tree cutting and wood collection but also to humanitarian-aid related activities, especially construction, can lead to soil deterioration, desertification, loss of livelihoods and conflict (as a result of competition over land and resources), especially in the Darfur states. Issues around forest management, household energy, poverty alleviation, livelihoods and conflict mitigation need to be addressed together.

North central states have lost some 70% of their forest cover since independence, and the annual deforestation rate in Sudan is now 2.6%.

Water resources:

- ✓ **Water outtake.** It is essential to ensure that water outtake does not exceed the replenishment of the water source. Some IDP camps are already facing depletion of groundwater. Groundwater monitoring is essential, and in case the demand for water exceeds available resources there may be a need to cap wells and develop alternative sources.

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Other key environmental issues:

- ✓ **Excavation of soil.** The excavation of soil for brick making has a significant environmental impact and is a potential health risk (flooded pits; vector breeding ground). In some places soil excavation around tree roots has destroyed established mango orchards.
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- ✓ **Medical waste.** Medical waste, including livestock drugs should be disposed of in a safe and secure way, according to international standards. They pose both a direct health risk as well as risk of contamination of soil and water sources.
- ✓ **Pollution.** Handling and disposal of hazardous waste, fuel, oil and other types of chemicals should be done in a safe and secure way. During and after usage of such substances, it is important to avoid contamination of water sources or soil. Example of such waste are used batteries, petroleum products, air and oil filters etc.

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Integrating environment into humanitarian projects

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More resources and guidelines

- ✓ **Agriculture and Environment.** For more guidelines, tools and case studies on Agriculture please visit: http://postconflict.unep.ch/humanitarianaction/02_01.html

- ✓ **Livelihoods and Environment.** For more guidelines, tools and case studies on Agriculture please visit: http://postconflict.unep.ch/humanitarianaction/02_01.html

- ✓ **UNEP /OCHA Environmental Emergencies Centre.** Supporting preparedness for environmental emergencies. <http://eecentre.org/>

Water, Sanitation & Hygiene (WASH)

This tip sheet aims to give specific guidance to the Water, Sanitation & Hygiene Sector in Sudan regarding how to better integrate environment in their humanitarian activities.

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Top 8 tips to better integrate environment in Water, Sanitation & Hygiene activities:

PROMOTE INNOVATIVE TECHNIQUES

Promote innovative technologies; alternative energy sources such as solar panels for water pumps and lighting for safer use of latrines and showers; ideas for water management and water conservation such as rainwater harvesting, grey water reuse for small plantations, and eco sanitation.

USE LESS WOOD

Reduce wood consumption by using environmentally friendly material for construction and rehabilitation. If wood or bamboo is used consider compensating by replanting trees. Pit latrines can be fitted with concrete slabs to eliminate the need for secondary wooden slabs or supporting beams, which also facilitates cleaning. Tree planting is the most efficient way to combat desertification.

3R's: REDUCE, REUSE, RECYCLE

Support schools, CFSs, communities and camps to implement a system for Solid Waste Management. Reduce packaging material and discourage use of plastic bags; Reuse old construction material when possible; recycle plastic sheeting to weave bags. Bio-degradable material, when properly sorted, can be sold or used directly as soil enrichment in a household or school vegetable garden. Reuse of grey water from hand-washing facilities for extra water needs.

REPLACE THE USE OF FIRED BRICKS

Replace the use of fired bricks with Stabilised Soil Blocks (SSB) or Cement Blocks (CSB). Fired bricks need 27 trees (1 hectare of forest) to burn 1 clamp of bricks. Supply of SSB presses and training of production can create new income opportunities.

AWARENESS RAISING

Include environmental messaging to beneficiaries, to raise awareness and also to support sustainable use and maintenance of WASH facilities.

ENVIRONMENT AND HYGIENE CLUBS

Include Environmental issues in School Hygiene Clubs, provide schools and CFSs with cleaning kit and combine with cleaning campaigns.

AGE ADAPTED WASH FACILITIES

Ensure WASH Facilities in schools are adapted to the child's age to guarantee proper use of facilities, and reduce environmental risks due to standing water in connection to hand-washing stations, or open defecation.

WORK WITH THE NATIONAL AUTHORITIES

Work together with and support WES for continuous monitoring of ground water levels through Integrated Water Resource Management (IWRM).

Key facts and figures

Deforestation and desertification

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North central states have lost some 70% of their forest cover since independence, and the annual deforestation rate in Sudan is now 2.6%.

Water resources:

- ✓ **Water outtake.** It is essential to ensure that water outtake does not exceed the replenishment of the water source. Some IDP camps are already facing depletion of groundwater. Groundwater monitoring is essential, and in case the demand for water exceeds available resources there may be a need to cap wells and develop alternative sources.

Wood-fired brick kilns consume over 52,000 trees per year. In contrast, the production of SSBs does not require any wood, and also reduces water consumption by 30-60%

Other key environmental issues:

- ✓ **Excavation of soil.** The excavation of soil for brick making has a significant environmental impact and is a potential health risk (flooded pits; vector breeding ground). In some places soil excavation around tree roots has destroyed established mango orchards.
- ✓ **Solid waste.** The accumulation of solid waste in towns is a significant health risk. It is also a risk for livestock that might consume plastic bags. Solid waste management should be seen as a priority for implementation.
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More resources and guidelines

- ✓ **WASH and Environment.** For more guidelines, tools and case studies on Agriculture please visit: http://postconflict.unep.ch/humanitarianaction/02_11.html
- ✓ **Global WASH Cluster and Environment.** Guidance Notes and Technical Briefs on Environmental issues in WASH: <http://www.washcluster.info/?q=content/environment>
- ✓ **UNEP /OCHA Environmental Emergencies Centre.** Supporting preparedness for environmental emergencies. <http://eecentre.org/>

Non-Food Items & Emergency Shelter (NFI/ES)

This tip sheet aims to give specific guidance to the Non-Food Items & Emergency Shelter Sector in Sudan regarding how to better integrate environment in their humanitarian activities.

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Top 8 tips to better integrate environment in NFI & Emergency Shelter activities:

USE ENVIRONMENTALLY FRIENDLY SHELTER MATERIALS

Locally available shelter material is recommended provided that it is not impacting negatively on the local/regional environment.

Environmental damage may be caused, for example, by unsustainable sand and gravel extraction from rivers as well as the felling of trees for construction purposes. Similarly, planning should consider the local implications of mass production of shelter material, specifically considering use of wood.

ALTERNATIVE TECHNOLOGIES

Promote alternatives such as Fuel-Efficient Stoves to reduce use of wood, solar panels for lighting and pumps. Supporting market for alternative technologies could help a more widespread adoption.

REPLACE THE USE OF FIRED BRICKS

Replace the use of fired bricks with Soil-Stabilized-Blocks (SSB) or Cement-Stabilized-Blocks (CSB). Fired bricks need 27 trees (1 hectare of forest) to burn 1 clamp of bricks.

Train people in the production of SSBs and support market for a more widespread adoption.

3R'S: REDUCE, REUSE, RECYCLE

Reduce packaging material and discourage use of plastic bags to reduce the amount of waste generated by NFI distribution.

Distribute shelter material, such as metal poles that can easily be reused if beneficiaries are relocated or return to their place of origin.

Implement a system for Solid Waste Management and promote composting of bio-degradable material that can be sold or used directly as soil enrichment.

TRAIN COMMUNITIES

Train communities in the construction of their own houses and/or create new income opportunities.

SHELTER LOCATION

Shelter location should be in a safe setting with adequate space for the provisioning of latrines, water points, washing areas and so forth.

Allow extra space for, and support to household vegetable gardens to help increase vegetation cover, but also nutrition security. Reuse grey water from hand-washing facilities for extra water needs.

INCLUDE FUEL EFFICIENT COOKING TECHNIQUES

Include fuel efficient cooking techniques (e.g. pre-soaking beans, sheltering cooking fires, etc.) in trainings.

AWARENESS RAISING

Raise awareness on environmental protection in combination with shelter material and NFI distribution.

Key facts and figures

Deforestation and desertification

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Water resources:

- ✓ **Water outtake.** It is essential to ensure that water outtake does not exceed the replenishment of the water source. Some IDP camps are already facing depletion of groundwater. Groundwater monitoring is essential, and in case the demand for water exceeds available resources there may be a need to cap wells and develop alternative sources.

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Other key environmental issues:

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Integrating environment into humanitarian projects

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More resources and guidelines

- ✓ **Emergency Shelter and Environment.** For more guidelines, tools and case studies on Agriculture please visit: http://postconflict.unep.ch/humanitarianaction/02_05.html
- ✓ **ProAct Network.** Environmental Partnerships for Community Resilience: <http://www.proactnetwork.org/proactwebsite/institutionalsupport/iasc-cluster-support/emergency-shelter-cluster>
- ✓ **UNEP /OCHA Environmental Emergencies Centre.** Supporting preparedness for environmental emergencies. <http://eecentre.org/>

This tip sheet aims to give specific guidance to the Protection Sector in Sudan regarding how to better integrate environment in their humanitarian activities.

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Top 8 tips to better integrate environment in Protection activities:

PROMOTE TREE PLANTING PROJECTS

Tree planting and seedling nurseries can support communities with sustainable access to woodfuel, which will contribute to reducing lengthy walks for firewood collection. It can also provide an alternative source of income for a women's community group as they can sell fruit on local markets. Tree planting is the most efficient way to combat desertification.

REPLACE THE USE OF FIRED BRICKS

Replace the use of fired bricks with Stabilised Soil Blocks (SSB) or Cement Blocks (CSB). Fired bricks need 27 trees (1 hectare of forest) to burn 1 clamp of bricks.

CHILD FRIENDLY SPACES

Support tree planting in CFSs to enhance the environment and provide shadowed places. Consider including the children in the planting of a vegetable garden or of fruit trees, and re-using grey water from hand washing facilities.

CONSULT THE LOCAL BENEFICIARIES

Beneficiaries should be consulted on environmental aspects, and take part of the implementation when possible. Often, local communities have traditional ways of coping with environmental issues, but if they are in a new location it is vital to ensure that activities are adapted to the context. For example, mud brick houses should not be constructed in flood prone areas; risk of conflict should be evaded by avoiding setting up farms in grazing areas, or livestock grazing on farmland.

ENVIRONMENTAL AWARENESS

Include environmental awareness sessions in projects, and support solid waste management schemes.

USE LESS WOOD

Reduce wood consumption by supplying iron pipes and using environmentally friendly material for constructions and rehabilitation; and promoting alternatives such as Fuel Efficient Stoves, and fuel efficient cooking techniques. Consider also alternative energy sources such as solar panels for lighting and pumps.

MINE ACTION

Follow the International Mine Action Standards for environmental protection, to avoid contamination of soil or waterways.

WORK WITH THE NATIONAL AUTHORITIES

Collaborate with Forest National Corporation (FNC) and other National authorities, for example in demining projects that takes place in forested areas.

Key facts and figures

Deforestation and desertification

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Water resources:

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Other key environmental issues:

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More resources and guidelines

- ✓ **Protection and Environment.** For more guidelines, tools and case studies on Protection and Environment, please visit: http://postconflict.unep.ch/humanitarianaction/02_10.html
- ✓ **International Mine Action Standards 10.70 – Protection of the Environment**
http://www.mineactionstandards.org/fileadmin/user_upload/MAS/documents/imas-international-standards/english/series-10/IMAS-10-70-Ed1-Am3.pdf
- ✓ **UNEP /OCHA Environmental Emergencies Centre.** Supporting preparedness for environmental emergencies.
<http://ecentre.org/>

This tip sheet aims to give specific guidance to the Nutrition Sector in Sudan regarding how to better integrate environment in their humanitarian activities.

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Top 8 tips to better integrate environment in Nutrition activities:

PROMOTE TREE PLANTING PROJECTS

Tree planting can support communities with sustainable access to both nutritional fruits and also to woodfuel, which will contribute to reducing lengthy walks for firewood collection. It can also provide an alternative source of income for a women's community group as they can sell fruit on local market. Tree planting is an efficient way to combat desertification.

SOLID WASTE & MEDICAL WASTE MANAGEMENT

Implement a system for SWM in Supplementary Feeding Centres and CFSs and train staff on the issue.

Biodegradable material, when properly sorted, can be composted and used directly for soil enrichment for example in vegetable garden.

Reduce the use of plastic bags, by replacing with for example cotton bags in nutrition distributions.

3R = Reduce, Reuse, Recycle

SCHOOLS & CFSs

Support planting of fruit trees, such as moringa, and vegetable gardens in schools and CFSs as part of nutrition programming. Combine with reuse of grey water from hand-washing facilities for extra water needs.

ENVIRONMENTAL AWARENESS

Include environmental awareness in health awareness messaging, highlighting the correlation between a safe environment and improved health status.

REPLACE THE USE OF FIRED BRICKS

Replace the use of fired bricks with Stabilised Soil Blocks (SSB) or Cement Blocks (CSB). Fired bricks need 27 trees (1 hectare of forest) to burn 1 clamp of bricks.

USE LOCALLY AVAILABLE MATERIALS

Locally available material is recommended for construction and rehabilitation, provided that it is not impacting negatively on the local/regional environment.

Environmental damage may be caused, for example, by unsustainable sand and gravel extraction from rivers as well as the felling of trees for construction purposes.

FUEL EFFICIENT COOKING TECHNIQUES

Include fuel efficient cooking techniques (e.g. pre-soaking beans, sheltering cooking fires, etc.) in trainings, and promote Fuel Efficient Stoves to reduce wood use for cooking.

Work together with Food Security & Livelihoods sector to promote crops with high nutritional value and reduced cooking time.

WORK WITH NATIONAL AUTHORITIES

Support or complement existing national response mechanisms rather than create parallel ones.

Key facts and figures

Deforestation and desertification

- ✓ **The loss of forest and vegetation cover**, due to unregulated tree cutting and wood collection but also to humanitarian-aid related activities, especially construction, can lead to soil deterioration, desertification, loss of livelihoods and conflict (as a result of competition over land and resources), especially in the Darfur states. Issues around forest management, household energy, poverty alleviation, livelihoods and conflict mitigation need to be addressed together.

North central states have lost some 70% of their forest cover since independence, and the annual deforestation rate in Sudan is now 2.6%.

Water resources:

- ✓ **Water outtake.** It is essential to ensure that water outtake does not exceed the replenishment of the water source. Some IDP camps are already facing depletion of groundwater. Groundwater monitoring is essential, and in case the demand for water exceeds available resources there may be a need to cap wells and develop alternative sources.

Wood-fired brick kilns consume over 52,000 trees per year. In contrast, the production of SSBs does not require any wood, and also reduces water consumption by 30-60%.

Other key environmental issues:

- ✓ **Excavation of soil.** The excavation of soil for brick making has a significant environmental impact and is a potential health risk (flooded pits; vector breeding ground). In some places soil excavation around tree roots has destroyed established mango orchards.
- ✓ **Solid waste.** The accumulation of solid waste in towns is a significant health risk. It is also a risk for livestock that might consume plastic bags. Solid waste management should be seen as a priority for implementation.
- ✓ **Medical waste.** Medical waste, including livestock drugs should be disposed of in a safe and secure way, according to international standards. They pose both a direct health risk as well as risk of contamination of soil and water sources.
- ✓ **Pollution.** Handling and disposal of hazardous waste, fuel, oil and other types of chemicals should be done in a safe and secure way. During and after usage of such substances, it is important to avoid contamination of water sources or soil. Example of such waste are used batteries, petroleum products, air and oil filters etc.

In only 18 months (2007 – 2008) groundwater levels in Dereig camp in South Darfur with 25,000 IDPs, dropped 7 meters and then ran dry.

Integrating environment into humanitarian projects

The **Sphere 2011 Handbook** and **Environment Marker** have additional guidance and references for integrating the environment in each sector of humanitarian action. When assessing environmental issues, understanding the specific context is critical. For Sudan, deforestation/ desertification, and water scarcity are the two main environmental problems, and projects that could potentially affect forests and other land vegetation, and water sources need to eliminate and/or mitigate negative impacts as much as possible. It is also recommended to assess other potential environmental problems relevant in the specific project or region.

Mainstreaming the Environment into Humanitarian Action – Protection (UNEP): *Refugees and IDPs are often the most negatively affected by poor environmental practices with regard to fuel and energy, camp location, natural resources, water, food and agricultural in crisis situations.*

More resources and guidelines

- ✓ **Nutrition and Environment**

For more guidelines, tools and case studies on Nutrition and Environment please visit:

http://postconflict.unep.ch/humanitarianaction/02_09.html

- ✓ **Safe Management of Wastes from Health-Care Activities**

<http://www.healthcarewaste.org/>

- ✓ **UNEP /OCHA Environmental Emergencies Centre**. Supporting preparedness for environmental emergencies.

<http://eectre.org/>

This tip sheet aims to give specific guidance to the Health Sector in Sudan regarding how to better integrate environment in their humanitarian activities.

Key environmental issues for humanitarian actors in Sudan

In Sudan natural disasters and conflicts have led to mass-movements of people, which has direct and indirect environmental consequences. Communities and their livelihoods are vulnerable to shocks such as drought or conflict when environmental resources are scarce and/or unevenly distributed. Integrating environmental issues into humanitarian programming is essential to improve outcomes and create multiple benefits. Reducing the pressure on natural resources can support livelihoods through job creation opportunities, nutrition and protection (by reducing lengthy walks for firewood collection), safeguard drinking water quality and quantity and provide shelter building materials. Human impact on the environment in Sudan is most visible in the areas of deforestation/ desertification, over-cultivation and over-grazing, and over-extraction of water.

Top 8 tips to better integrate environment in Health activities:

SCHOOLS & CFS

Encourage planting of fruit trees and vegetable gardens in schools and CFSs to enhance the environment and can also improve the nutritional status of children.

Reuse grey water from hand washing facilities for extra water needs.

TREE PLANTING

Consider tree planting in and around health facilities, which both provides shadow and helps reducing temperature in the local vicinity.

Tree planting also prevents soil erosion and lessens dust production, which in turn can reduce the risk of respiratory diseases.

FUEL EFFICIENT COOKING TECHNIQUES

Include fuel efficient cooking techniques (e.g. pre-soaking beans, sheltering cooking fires, etc.) in trainings.

MEDICAL WASTE MANAGEMENT

Management of Medical Waste and Hazardous Healthcare Waste (HHCW) needs to be properly established, to prevent contamination of soil and water sources, and to protect peoples' health. Support to health centres and hospitals should include construction of incinerators where these are non-existent, or construction of temporary, safe facilities for storage until such waste is removed for incineration.

USE LESS WOOD

Replace the use of fired bricks for construction/ and rehabilitation, with Soil-Stabilized-Blocks (SSB) or Cement Blocks (CSB). Fired bricks need 27 trees (1 hectare of forest) to burn 1 clamp of bricks. Consider also alternative energy sources such as solar panels for lighting and pumps.

AWARENESS RAISING

Include environmental awareness in health awareness messaging, highlighting the correlation between a safe environment and improved health status.

SOLID WASTE MANAGEMENT

Implement a system for SWM in health centres and hospitals, and train staff on the issue. Supporting communities in establishing a SWM system could also be implemented as a prevention activity. Biodegradable material, when properly sorted, can be composted and used directly or sold for soil enrichment.

3R = Reduce, Reuse, Recycle

WORK WITH THE NATIONAL AUTHORITIES

Support or enable National authorities to take the lead, and to follow minimum standards when it comes to management of medical waste and HHCW.

Key facts and figures

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More resources and guidelines

- ✓ **Health and Environment**

For more guidelines, tools and case studies on Health please visit:

http://postconflict.unep.ch/humanitarianaction/02_07.html

- ✓ **Safe Management of Wastes from Health-Care Activities**

<http://www.healthcarewaste.org/>

- ✓ **UNEP /OCHA Environmental Emergencies Centre.** Supporting preparedness for environmental emergencies.

<http://ecentre.org/>

For further guidance please contact Anna Hjärne (hjarne@un.org; 09121 66342)

or Julia Ismar (julia.ismar@unep.org; 09121 73615) on how to assess a project and develop mitigation measures.