OCHA UNEP

# Environment Marker Sector Guidance

*This guidance accompanies the Environment Marker, and aims at giving specific guidance on mitigation measures for activities in a "B"-coded project. Activities are grouped under headings for easy reference, and the last section presents some enhancement activities that can be added to increase the overall quality of the project. Special consideration should be given to activities that impact forests/wood use, and water resources.*

***Note:* the heaviest activities in a project will determine the coding of the project. In order to get a positive coding (+), this/these specific activities needs to be mitigated against.**

| **CAMP/SHELTER MANAGEMENT & SITE PLANNING** * FOR WASH INFRASTRUCTURE PLEASE REFER TO WASH SECTOR GUIDANCE | |
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| ***Activity*** <br> ✓ *potential environmental impact* | ***Mitigation*** |
| **Site/shelter location & Site planning** <br> ✓Location close to areas of natural resources, such as forests and forest reserves, open water courses or fragile ecosystems should be avoided/ mitigated. Potential impact includes deforestation, erosion and pollution of water sources. Overuse/damage of resources can be a contributing cause to conflict. <br> ✓Location in or too close to disaster prone areas (floods etc). <br> ✓Disruption of natural water schemes. | ***Note:*** *Planning, construction, management and decommissioning of complete camp site would classify as a "C project" according to the Environment Marker, and thus require a complete Environmental Impact Assessment and appropriate Action Plan (see Environment Marker).* <br> ✓When possible, avoid location of *large* site near to forest reserves or other sensitive and/or protected area. <br> ✓Identify natural resources in surrounding areas that might be negatively impacted and mitigate with additional activities. Examples are: provision of Fuel Efficient Stoves, provision of shelter frames and/or support to trees/forest plantation programme for reduced use of wood; and alternative water harvesting/water saving methods for reduced water use. <br> ✓Shelter location should be in a safe setting with adequate space for latrines, water points, washing areas etc. If possible, consider extra space for compost, fruit trees, vegetable garden, construction for reuse of grey water. <br> ✓Use existing settlement patterns and topographical features to minimise adverse impact on the natural environment. <br> ✓Assess groundwater availability. <br> ✓Assess drainage also during rainy season to avoid flood prone areas. <br> ✓Minimize the impacts on forest resources through sustainable sourcing and creation of community woodlots to meet the needs of the affected people <br> ***TIP:*** *Forest replanting could be livelihoods activity and community project.* <br> ***TIP:*** *Household garden/woodlot with fruit trees seeds is a potential Nutrition support. Use grey water from hand-washing facilities for extra water needs.* |
| **Preparation of land** <br> ✓Removal of root-system and vegetation cover leading to soil erosion and decrease of water retention/absorption. Over time, soil erosion can increase desertification rate. <br> ✓Removal of bushes and trees cover. <br> ✓Disruption of natural drainage schemes. | ✓Avoid heavy machinery for land/ground preparation and avoid radical clearing of ground cover. <br> ✓Protect bush and trees cover to highest extent possible. <br> ✓Consider topography and follow contour lines. <br> ✓Avoid levelling out natural drainage schemes unless properly planned for. <br> ***TIP:*** *Manual labour for ground preparation could be a cash-for-work activity.* |
| **Decommissioning of shelter** <br> ✓Safety risk from unfilled latrines, erosion gullies and uncovered wells. <br> ✓Depleted vegetation or denuded sites that may develop erosion gullies. | ***Note:*** *all aspects of camp decommissioning should be accounted for already in the EIA. Camp construction and decommissioning is a C project.* <br> ✓Restore land and vegetation to reduce risk of further soil erosion. <br> ✓Collect and reuse any leftover material that could be used for new shelter construction. |

| **CONSTRUCTION/REHABILITATION** *FOR WASH INFRASTRUCTURE PLEASE REFER TO WASH SECTOR GUIDANCE* | |
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| ***Activity*** <br> ✓ *potential environmental impact* | ***Mitigation*** |
| **Construction and Rehabilitation works**<br><br>**- Shelters and other structures such as schools and classrooms, CFSs, offices and supra-structures for water and sanitation facilities.**<br><br>✓Unsustainable use of timber and woodfuel, and use of non-environmentally friendly material such as red brick, leading to increased pressure on forest resources.<br><br>✓Environmental damage may be caused by unsustainable sand and gravel extraction. Excavation may also create holes in the ground which could be a safety risk.<br><br>✓Excessive use of water related to production of non-environmentally friendly material such as red bricks.<br><br>✓Soil erosion as a result of loss of vegetation cover around shelter settlements.<br><br>✓Insufficient material for construction or shelter support structures such as poles, contributing to deforestation due to illegal woodcutting.<br><br>✓Inappropriate design for a specific need, site, community or culture, leading to misuse or non-use of shelter.<br><br>✓Waste generation due to inadequate disposal of construction and packaging material. | ***Note:*** *for location of a shelter, school or other type of building, please refer to above box "Site/shelter location & Site planning"*<br><br>✓Locally available shelter material is recommended, provided that it is not impacting negatively on the local/regional environment. Material such as grass, timber and soil can be considered if re-planting and soil excavation is done in a sustainable and responsible way.<br><br>✓Plan construction to coincide with harvesting season when thatching materials are available, ensuring that natural materials are harvested at the right time of the year to ensure sustainability of future harvests.<br><br>✓Use environmentally friendly material (thus excluding red bricks), such as:<br>➢ **SSB** (Soil Stabilized Blocks);<br>➢ CSB (Cement Blocks);<br>➢ Mud-bricks (where water is available and avoiding flood prone areas),<br>➢ Bamboo (if re-planted for regrowth).<br><br>✓Supply SSB machines and train on SSB production or other environmentally friendly construction technologies. Promotion of SSBs will help decrease pressure on woodfuel for the burning of red bricks.<br><br>✓Provision of SSB presses should be scaled up for availability at local markets in sufficient quantities.<br><br>✓Planning should consider the local implications of mass production of shelter materials (e.g. water requirements for mud brick/concrete).<br><br>✓Explore possibility to reuse construction material if available.<br><br>✓Construction waste should be recycled or properly disposed of.<br><br>✓Train communities in environmentally friendly house construction.<br><br>***Link: (****IASC Matrix on fuelwood*)<br>http://postconflict.unep.ch/humanitarianaction/documents/02_02-04_02-03.pdf<br><br>***TIP****: Providing SSB presses or investing in training for environmentally friendly construction materials offers an alternative income generating activity.*<br><br>***TIP****: Compensatory replanting of trees (if trees have been cut for construction or for burning in production process) to counter soil degradation. Trees plantations can be an income generating activity. Combine with environmental awareness sessions on sustainable natural resource management.* |
| **Provision of additional shelter material and roofing, and smaller structures (market stalls etc).**<br><br>✓Unsustainable use of local material, such as grass for thatching and roofing, leading to reduction of vegetation cover.<br><br>✓Insufficient material for construction or shelter support structures such as poles, contributing to deforestation due to illegal woodcutting. | ✓Supply shelter materials, including those brought from other areas, from sustainable sources, and of good enough quality to allow reuse when transitional shelter is upgraded or permanent shelter are built.<br><br>✓When only part of the materials for a basic shelter is provided (e.g. plastic sheeting), assess and mitigate any potential impact on the local economy or natural environment of other materials needed (e.g. timber poles for framing).<br><br>✓Provision of environmentally friendly and durable material such as steel for roofing; metal frame (low-maintenance, durable, easy to disassemble and transport). These use less wood in comparison to the wooden frame shelters.<br><br>✓Ensure that local materials such as grass and bamboo used in construction are sourced sustainably to limit environmental degradation.<br><br>✓Construction to be planned to coincide with harvesting season when thatching materials are available.<br><br>✓Exploring possibility to reuse construction material if available. |

| WATER AND SANITATION | |
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| ***Activity*** <br> ✓ *potential environmental impact* | ***Mitigation*** |
| **Drilling/Construction of borehole, wells or other water point.** <br><br> ✓Construction material for supra-structures for water supply could potentially impact forest cover/water supply if using non-environmentally friendly material. <br><br> ✓Over-use of water, increasing pressure on water resources. <br><br> ✓Risk of over-pumping if water outtake for human use is not coordinated with possible outtake from other water point for livestock watering or irrigation purposes. <br><br> ✓Risk of contamination of open water source for human use, from livestock using the same source. <br><br> ✓Installation of water points, such as hand-washing facilities, causing overuse of water due to improper design. | ✓ Borehole drilling should always be preceded by an assessment on the sustainable yield potential of water in the area. Coordinate with the *Water and Environmental Sanitation Department* (WES) for ensuring continuous monitoring of the groundwater. Groundwater levels should be monitored by organisations managing groundwater extraction to ensure that natural recharge rate is not exceeded by over-pumping. <br><br> ✓ Raise local awareness on importance of water conservation, and on Integrated Water Resource Management (IWRM) as a means to ensure sustainable water supply. <br><br> ✓ Promote new ideas to water management and water-saving techniques, such as rooftop rainwater harvesting, grey water reuse and eco sanitation. <br><br> ✓ Reuse grey water from the runoff of hand pumps and wells, for example to irrigate a vegetable garden. Good drainage also reduces the transmission of water borne diseases. <br><br> ✓ Promote new innovative technologies, such as solar-driven pumps, or solar panels for lighting. <br><br> ✓ Involve communities in the preparation and implementation of **drought mitigation measures and planning** if there is a risk of groundwater depletion. These should include: (i) Water surveys with community consultations, (ii) Community supported contingency plans for allocation of water if available resources are diminished, and (iii) plans should include identification of options for the development of alternative water resources. |
| **Construction of sanitation facilities such as latrines.** <br><br> ✓Construction material for supra-structures for water supply could potentially impact forest cover/water supply if using non-environmentally friendly material. <br><br> ✓Improper liquid waste management and drainage could risk contamination of soil and water. | ***Note:*** *for construction of a latrine or other supra-structure, please refer to previous box "Construction/Rehabilitation"* <br><br> ✓ Timber use should be significantly reduced in the construction of latrines. Where possible, pit latrines could be fitted with concrete slabs, which eliminates the need for secondary wooden slabs or supporting beams, and also facilitates easy cleaning. <br><br> ✓ Promote innovation in Eco sanitation <br><br> ✓ Promote the use of Arborloos - Latrines that have trees planted in them after they are full: http://www.irc.nl/page/42427 |
| **WASH in Schools and CFSs.** <br><br> ✓Deforestation as a result of non-environmentally friendly material such as red bricks or other unsustainable use of timber for supra-structures for WASH facilities, such as latrines. <br><br> ✓Running taps causing overuse of water and standing water due to improper design of handwashing facilities such as taps that children cannot use properly. <br><br> ✓Open defecation due to improper design of latrines and squatting plates. <br><br> ✓Solid waste, including plastic bags is both an environmental hazard as a health and safety risk for children. | ***Note:*** *for construction of a latrine or other supra-structure, please refer to previous box "Construction/Rehabilitation"* <br><br> ✓Ensure child-friendly design of hand-washing facilities, enabling proper use. This would include taps that can easily be turned on and off or, if necessary, including a small (safe) foot stool for children to be able to reach the taps. <br><br> ✓Reuse grey water from hand-washing facilities for watering of school vegetable garden or trees. <br><br> ✓Ensure child-friendly design of latrines, with squatting hole of appropriate size to allow safe use by children. <br><br> ✓Introduce Solid Waste Management (SWM) in schools, providing waste bins and cleaning kits, and have cleaning days. <br><br> ***TIP:*** *Plant low-maintenance, drought resistant, live fence around school ground. Use grey water from hand-washing facilities for extra water needs.* <br><br> ***TIP:*** *Include Environmental Awareness in School Clubs combined with active-* |

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| | *ties such as tree planting or small garden on school grounds.*<br><br>***TIP:** Make use of Solid Waste Management in school activities, having recreational activities in reusing and recycling waste to make toys.*<br><br>***TIP:** Advocate for and work together with the Ministry of Education to include Environmental Awareness in the school curricula.* |
| **ENERGY, DISTRIBUTION OF FOOD STUFF & NFI** | |
| ***Activity***<br>✓ *potential environmental impact* | ***Mitigation*** |
| **Distribution of NFI, food stuff and other support with basic needs.**<br><br>✓Waste generation from packaging material, such as excess plastic, or sachets from RUTF and plumpy-nut.<br><br>✓Plastic bag waste due to overuse of plastic bags for distribution purposes.<br><br>✓Wood and charcoal for cooking and household energy contributing to deforestation due to illegal woodcutting.<br><br>✓Distribution of food with long cooking time increasing need for fuelwood for cooking.<br><br>✓Renewable items, such as f ex detergents, contaminating soil and water ways/sources.<br><br>✓Provision of desks, benches, chairs etc could contribute to deforestation due to unsustainable use of wood. | ✓Promote and include fuel efficient cooking techniques such as pre-soaking beans, sheltering cooking fires, etc. in trainings.<br><br>✓Promote and distribute fuel-efficient stoves.<br><br>✓Promote new innovative technologies, such as solar-driven pumps, or solar panels for lighting.<br><br>✓Supporting market for alternative technologies for more widespread adoption.<br><br>✓Local procurement should be supported, provided that the use of wood for example for production of benches and other pieces of furniture is done in an environmentally sustainable manner.<br><br>✓Reduce packaging material to the extent possible and promote SWM. Discourage use of plastic bags. Consider replacing plastic bags with weaved bags or buckets with lid for distribution of NFIs and food stuff.<br><br>✓For disposable items, aim to find environmentally friendly/biodegradable detergents, washing liquids etc.<br><br>✓Promote sorting of food waste and composting. Biodegradable material, when properly sorted, can be composted and used directly or sold as fertiliser<br><br>***TIP:** Production of weaved bags, maybe even from recycled plastic sheeting, could be an income-generating activity.*<br><br>***TIP:** Production of Fuel Efficient Stoves could be an income-generating activity.*<br><br>***TIP:** Support forest plantation as a protection activity; reliance on woodfuel puts women's security at risk as they have to walk long distances to collect fire wood* |
| **MEDICAL & SOLID WASTE MANAGEMENT + DEMINING** | |
| ***Activity***<br>✓ *potential environmental impact* | ***Mitigation*** |
| **Health activities & Drug supply**<br><br>✓Potential soil and water contamination from burying medical waste and ash from burning (if burning temperature is not high enough).<br><br>✓Health risk due to transmission of diseases from inappropriate manage-ment of medical waste and Hazardous Health Care Waste (HHCW). | ✓Ensure Medical Waste Management system is in place, and train medical staff in proper handling of medical waste and HHCW.<br><br>✓Support health care centres, mobile clinics and hospital with incinerator. If health facility is too small to have an incinerator, support with temporary, safe storage facilities, and safe transport to nearest incinerator.<br><br>✓Work with and support Ministry of Health (MoH) to support legislation and capacity building regarding proper management of medical waste and HHCW<br><br>**Link**: http://www.healthcarewaste.org/ |
| **Waste Generation**<br><br>✓Many humanitarian activities will cause generation of waste, for example NFI distribution, shelter construction, FSL, health and education activities etc. Solid waste is an environmental problem as well as a health problem. | ✓Introduce Solid Waste Management in schools, community centres and health facilities, promoting the **3R's: Reduce, Reuse, Recycle.**<br><br>✓Design and implement a Community Led Solid Waste Collection, sorting and composting scheme.<br><br>✓In camps and urban/peri-urban settings, waste collection, sorting and disposal can become an income-generating activity, if only for a small proportion of the |

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| ✓Vector breeding due to blocked drainage channels, causing standing water.<br>✓Plastic bags and sharp objects posing a direct threat to both humans and livestock. | community.<br>✓Reduce the use of plastic bags and provide support to the clean-up of plastic bags. Some states in Sudan have already banned the use of plastic bags.<br>**Link:** http://eecentre.org/DisasterWasteManagementGuidelines.aspx<br>***TIP**: Biodegradable material, when properly sorted, can be composted and used directly or sold for soil enrichment.*<br>***TIP:** Providing alternatives to plastic bags, such as weaved bags, could be an income-generating activity.*<br>***TIP:** Solid Waste Management should be included in Health activities, as a prevention activity in terms of vector control.* |
| **Demining activities**<br>✓Risk for contamination of soil and water courses.<br>✓Removal of vegetation cover due to land preparation prior to demining activities.<br>✓Removal of vegetation cover in setting up and management of base camp. | ***Note**: MRE (Mine Risk Education) activities should not include environmental awareness in session, not to risk focus on safety and security.*<br>✓All demining activities need to be consistent with the International Mine Action Standards (IMAS 10.70)<br>**Link:** http://www.mineactionstandards.org/fileadmin/user_upload/MAS/documents/imas-international-standards/english/series-10/IMAS-10-70-Ed1-Am3.pdf<br>✓Avoid heavy machinery for land/ground preparation and avoid radical clearing of ground cover. Protect bush and trees cover to highest extent possible.<br>✓Establish contact with FNC to ensure sustainable management of forest land once cleared from mines.<br>***TIP:** Conduct awareness sessions with communities regarding sustainable land and forest use,* after *clearing of mines are completed.* |
| **FOOD SECURITY & LIVELIHOODS** | |
| ***Activity***<br>✓ ***potential environmental impact*** | ***Mitigation*** |
| **Drilling/construction of boreholes and wells; water irrigation schemes**<br>✓Use of non-environmentally friendly material for supra-structures for water supply could potentially impact forest cover and water supply.<br>✓Risk of over-pumping if water outtake for human use is not coordinated with outtake from other water point for livestock watering or irrigation purposes.<br>✓Risk of contamination of open water source for human use, from livestock using the same source.<br>✓Location of livestock water points will have an impact on the ground cover and risk of overgrazing. | ***Note:** for drilling of boreholes and any other activity that will comprise use of water, refer to previous box "Water and Sanitation"*<br>***Note:** for any construction activity including supra-structure for water outtake points, please refer to previous box "Construction/Rehabilitation"* |
| **Income-Generating Activities.**<br>✓Depending on what type of IGA the potential environmental impact will differ. | ✓Conduct environmental activities such as tree planting, camp clean-up and environmental rehabilitation through food/cash for work. Though temporary, this will increase engagement of displaced and host populations to engage in environmental activities.<br>✓Support production of environmentally friendly construction material such as SSB as an income-generating activity by vocational training<br>✓Production of weaved bags, maybe even from recycled plastic sheeting, could |

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| | be an income-generating activity. Other items that could be produced locally could be mats and baskets.<br>✓Train and encourage composting of biodegradable waste, to be used as fertiliser of vegetable garden or sold. |
| **Construction Activities.**<br>✓Construction of buildings, market stalls etc could potentially impact forest cover and water supply if using non-environmentally friendly material. | ***Note:*** *for any construction activity such as market stalls, offices etc, please refer to previous box "Construction/Rehabilitation"*<br>✓Support production of environmentally friendly construction material such as SSB as an income-generating activity by vocational training<br>✓Train on environmentally friendly building techniques, and support market to support a more widespread adoption of environmentally friendly solutions.<br>✓Planning should consider the local implications of mass production of shelter materials (e.g. water requirements for mud brick/concrete). |
| **Agricultural support**<br>✓Risk of soil and water contamination due to use/overuse of fertilizers and insecticides.<br>✓Improper farming techniques causing loss of top soil and nutrients, reduced water retention.<br>✓Planting of crops on unsuitable soil type could cause loss of nutrients and overuse of water. | ✓Agro-based communities should be assisted with improved yielding seed varieties suited to the region.<br>✓Support and train on environmentally friendly farming techniques, such as rotational crop farming, use of ecological fertilisers and insecticides, and multi-crop production.<br>✓Support seedling nurseries as part of rehabilitation of degraded communal rangeland. Promote livelihoods related to sustainable forest management and creation of community woodlots<br>✓Training on soil and water conservation, farming techniques, management of natural resources. |
| **Provision of livestock**<br>✓Overgrazing and erosion as a result of high number of ruminants.<br>✓Risk of contamination of water sources for human use. | ✓Assess the area where livestock will be grazing and watering, and follow up with necessary awareness raising and training to herders and farmers on sustainable land use, and sustainable management of water and other natural resources.<br>✓If necessary, support with (environmentally friendly) fencing around wadis or water sources used by humans.<br>✓Support with protective fencing to avoid livestock from grazing in forests or any other sensitive area. |
| **Livestock drug supply & vaccinations**<br>✓Potential soil and water contamination from livestock drug and vaccination waste if not properly handled. | ✓Cooperate with MoAR (Ministry of Animal Resources) to ensure proper disposal of equipment used for vaccination and treatment and leftover drugs. |

## GENERAL – ENVIRONMENTALLY ENHANCING ACTIVITIES

✓**Environmental Education and Awareness** should be integrated into community sensitisation programmes and school curricula, as well as in IDP and refugee camps. Increased knowledge and understanding is a prerequisite for sustainability of projects and for environmental protection.
Components should include: deforestation and sustainable use of natural resources; water saving techniques; improved animal husbandry practices; water conservation management; improved general environmental awareness.

✓**Tree planting** on household and camp/community level. Support tree planting in schools, CFSs, health facilities which also contributes to reducing local temperature, lessens dust production and provides shadow. Use grey water from hand-washing facilities for extra water use.

✓Establishing **tree/seedling nurseries and community gardens** could be an income generating activity.

✓Support **Solid Waste Management** systems both on household level, community level and in schools, CFSs, health facilities etc. 3R's: Reduce, Reuse, Recycle.