ENCAP Visual Field Guide: RURAL ROADS
for quick identification of serious environmental and/or human health & safety (EHS) concerns related to rural roads activities

About the ENCAP Visual Field Guide Series
ENCAP Visual Field Guides are intended for use during field visits by USAID and Implementing Partner staff who are not environmental specialists.

They are intended to ensure that the most common serious environmental deficits in activity design and management are quickly and easily identified for corrective action.

Note that an activity may be subject to environmental design and management conditions specified in its Environmental Assessment or Initial Environmental Examination (or by host country regulation) which are not captured in this document.

The field guides complement the more detailed guidance found in USAID’s Environmental Guidelines for Small Scale Activities in Africa.

Consult the Guidelines for guidance regarding remedies, mitigation and corrective actions.


Disclaimer: This field guide was prepared by the International Resources Group (IRG) and by The Cadmus Group, Inc. for IRG under USAID Africa Bureau’s Environmental Compliance and Management Support (ENCAP) Program, Contract Number EPP-I-00-03-00013-00, Task Order No. 11. Its contents are the sole responsibility of the authors and do not necessarily reflect the views of USAID or the United States Government.

A. Pre-construction Route Survey. A “YES” answer to any of the following indicates that the proposed route presents higher than normal environmental or social risks. The route must be changed OR these risks must be addressed in design & pre-construction environmental review. Notify the Chief of Party and A/COTR.

A.1. Does the proposed/existing route traverse steep inclines or broad, flat floodplains? Does it cut across contour lines more than it follows them?

- YES
- NO

Issues: Cutting roads into steep slopes can channel water and result in significant damage to the slope, adjoining lands, and the road itself. Flooding can destroy or significantly shorten the life of the road and present safety and livelihood risks to communities depending on the road.

Image: Routing across the broad floodplain at left and the steep slopes at right both present challenges.

A.2. Does the route pass through or close to relatively non-degraded forest, wetlands or protected areas?

- YES
- NO

Issue: Such areas are high-value due to the biodiversity and/or other “ecosystem services” (e.g., flood control, breeding habitat) they provide. Roads can directly damage these resources. Beyond this, they can “open up” these areas for unsustainable exploitation.

Image: An illegal road is constructed across a papyrus wetland (inset).

A.3. Are homes, schools or clinics immediately adjacent to the proposed route?

- YES
- NO

Issue: Dust and noise can (1) adversely impact the quality of life of nearby inhabitants; (2) interfere with the learning environment in schools; and (3) pose health risks to patients in health care facilities.

A.4. Will construction on the proposed/existing route require (1) demolition of houses or shops; or (2) destruction of agricultural fields?

- YES
- NO

Issue: Displacing inhabitants or depriving owners/users of agricultural and other uses of land, can have significant social impacts if not addressed via compensation, resettlement, or negotiation.

Image: Improving this road on its current route would require demolition of houses & take land currently used for cropping.
**Minimum appropriate PPE**

**Answer “YES” to question B.4 if the answer to any of the following questions is “yes” OR if the PPE appears unused (new).** (Note: you will probably not be able to evaluate all questions during a short visit.)

<table>
<thead>
<tr>
<th><strong>Hardhats</strong></th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you see any workers NOT wearing a hardhat in an area/task where (a) flying debris may be generated (e.g., demolition) or (b) there is a risk of tools or materials falling from head height or higher?</td>
<td>Y N</td>
</tr>
</tbody>
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<table>
<thead>
<tr>
<th><strong>Footwear</strong></th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you see any workers wearing only foam flip flops or no shoes at all?</td>
<td>Y N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Respiratory Protection</strong></th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Is the construction supervisor unable to give you a 2-strap N-95 “dust” mask upon request?</td>
<td>Y N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Hearing Protection</strong></th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you see any workers WITHOUT hearing protection who are using power tools or working close to them?</td>
<td>Y N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Safety Glasses</strong></th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you see any workers engaged in demolition, grinding, cutting, or using power tools, or working in close proximity to these operations NOT wearing safety glasses?</td>
<td>Y N</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Reflective Vests</strong></th>
<th>Y N</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you see any workers near roads or heavy equipment, or engaged in demolition NOT wearing a reflective vest?</td>
<td>Y N</td>
</tr>
</tbody>
</table>

*a mask rated to capture 95% of airborne particulates

Adapted From Annex 1 of the “Small-Scale Construction” chapter of the Environmental Guidelines for Small Scale activities in Africa. [Visit the website](http://www.encapafrica.org/sectors/construction.htm)

**NOTE:** USAID contractors must comply with any applicable host country occupational health & safety standards. It should be assumed that failure to implement these minimum practices indicates significant non-compliance with any host country requirements.

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**B. Construction Management—EHS Deficits.** A “YES” answer to any of these questions indicates a deficit that will require corrective action. Notify the Chief of Party and USAID C/AOTR.

**B.1. Are fill, sand, and/or gravel being extracted from waterways or ecologically sensitive areas? (check stream crossings as you travel the road.)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

**Issue:** “Mining” materials from streambeds and wetlands degrades water quality, ruins critical habitat, alters drainage and flow, and can create standing water.

**Image:** In-stream gravel mining caused erosion and stopped flow in this creek. (Missouri Dept of Natural Resources)

**B.2. Are there fuel, oil, paint, or chemical spills on the ground or in streams?**

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
</thead>
</table>

**Issue:** Such spills can poison soils, surface waters, and groundwater.

**Image:** The ground by this road camp generator shed is stained with fuel and oil spills, despite the slab under the generator itself.

**B.3. Do construction camps lack improved latrines and/or hand-washing stations?** [Note: simple open-pit latrines are NOT adequate]

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
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</table>

**Issue.** In the absence of sanitary facilities, workers are likely to practice open defecation, substantially increasing worker and community risks of oral-fecal route disease. Simple open-pit latrines allow fecal pathogens to be spread by flies and other disease vectors.

**Image:** This latrine is open-pit AND lacks a handwashing station.

**B.4. Is personal protective equipment (PPE) inadequate or does it appear new?** (to evaluate question, see sidebar)

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
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</table>

**Issue:** PPE must be adequate and used consistently to fulfill its intended function: helping protect workers against injuries & disease.

**Image:** Unmarked white boots and shiny hardhats indicate that this PPE has been put on only for the site inspection.

**B.5 Are hand laborers engaged in unrelated tasks OR are passers-by in close proximity to vehicles/heavy equipment?

<table>
<thead>
<tr>
<th>YES</th>
<th>NO</th>
</tr>
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**Issue:** Persons in close proximity to vehicles and heavy equipment are at high risk of injury, unless they are (1) engaged in a task related to the operation of that equipment (for example, workers with shovels assisting excavation by backhoe) and (2) closely attendant to its operation.
### B.6 If the road is in active use, are either or both flaggers and protective signage absent in work areas?

| YES | Issue: Road workers may easily be injured or killed by vehicles. |
| NO | Image: Neither signage nor a flagger protect these road workers from traffic approaching from rear, over the blind crest of the hill. |

### B.7 Are schools or clinics immediately adjacent to the road AND being affected by construction noise and dust?

| YES | Issue: Dust and noise can (1) adversely impact nearby inhabitants; (2) interfere with the learning environment in schools; and (3) pose health risks to patients in health care facilities. |
| NO | |

### C. Pre-handoff/In-use Follow-up Survey. A “YES” answer to any of these questions indicates a deficit that will require corrective action. Notify the Chief of Party and USAID AOTR/COTR.

#### C.1 Is there standing water on or immediately beside the road? Is there evidence of such water even if it is not there now?

| YES | Issue: Standing water indicates inadequate and/or poorly maintained drainage structures, shortening the life of the road, and usually leading to erosion and destruction of adjacent lands.  
Standing water also is a disease risk, as it may breed insect disease vectors—particularly mosquitoes. |
| NO | |

#### C.2 Is there gullying at the roadway edge, around culverts, or in adjacent lands?

| YES | Issue: Gullying, an indication of poorly designed and/or inadequately maintained drainage structures, can permanently degrade adjacent land (including agricultural fields)—and shortens the life of the road itself. |

#### C.3 Are borrow pits full of water? Is there open access to un-restored or active borrow pits?

| YES | Issue: Borrow pits easily fill with water and present both drowning and disease risks—standing water breeds mosquitoes and other insect vectors.  
Therefore, most borrow pits should be decommissioned and remediated after construction. (If a limited number are retained for maintenance, access should be restricted and there should be no standing water. (If retained as dry-season impoundments, sides should be shallowly sloped to reduce drowning risks.) |
| NO | |
**C.4. Is one side of the road much wetter than the other?**

**YES**

**NO**

**Issue.** This indicates that the road is significantly interfering with drainage patterns. It may be creating flood risks, depriving agricultural lands of water, and disrupting local hydrology and ecosystems.

**Photo:** An aerial view shows much heavier vegetation—and thus wetter conditions—one side of the road.

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**C.5 Are waste, spills, and/or debris evident in road camps or former road camp sites?**

**YES**

**NO**

**Issues:** Solid wastes can pose physical hazards (e.g., rusty metal), create breeding habitats for disease vectors, and impede re-use of the site. Contamination from fuels or lubricant spills can poison soils, ground, and surface water.

**Image:** An open waste dump left behind at an abandoned road camp. Clean-up should be the responsibility of the contractor before hand-over.

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**C.6 Is there evidence of uncontrolled charcoal production or logging in areas close to the road? (check side of road for charcoal bags and logs)**

**YES**

**NO**

**Issue.** This indicates that the road may be contributing to uncontrolled forest resource exploitation, with potentially significant adverse impacts on these high-value ecosystems.

**Image:** Bags of charcoal are stacked next to a rural road.

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**C.7 Are schools or clinics immediately adjacent to the road AND affected by road noise and dust or traffic? (see sidebar)**

**YES**

**NO**

**Issue:** Dust and noise can (1) interfere with the learning environment in schools; and (2) pose health risks to patients in health care facilities. Traffic poses risk of injury to students.

**Image:** This picture, taken from a road, shows that the school is immediately adjacent to the road and no physical barrier separates the two.

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**C.8 Is the new or improved road resulting in a significant number of/increase in serious vehicle-pedestrian accidents? (see sidebar)**

**YES**

**NO**

**Issue:** New or improved roads support higher traffic speeds and volumes, and can increase dangers to pedestrians.