CHECKLIST #1 WELL BUILDING

A. Questions relating to the well site

1. What are the uses and activities on the land where the well is planned to be built? What are the existing wells and infrastructures, and where are they located? What is the land use master plan? Is there a policy or legislation with respect to wells? Is there much traffic through the site? Were needs, expectations, social activities, patterns of consumption and water-drawing practices taken into account? Could the project lead to:
   - displacements of the population (for example, migration towards water sources and/or departures as a result of conflicts between farmers and livestock herders);
   - changes in ways of life (for example, the settling of nomads), the accentuation of social inequalities and/or the loss of territory;
   - incompatible uses (for example, due to water pollution caused by nearby industries, latrines and so on) and/or social and value conflicts in the population (such as in the case of sacred grounds) and between the various users (for example, in defining priority use);
   - water supply and/or water quality problems, additional pressures on other resources and services, such as housing and sanitation facilities;
   - a decrease or an improvement in the quality of life;
   - a better awareness of the importance of a healthy environment and sanitary conditions;
   - improved access to good quality water (consider potability, odour,
   - taste, distance to travel, women's and children's workload and so on)?

2. In what type of soil and on what type of topography is the well to be built? Is the groundwater recharge rate low? What is the quantity and quality of the groundwater and depth of the groundwater table? Do other wells tap the same source? Could the project lead to:
   - the lowering or drying up of the groundwater table;
   - the sustainable management of water resources through the creation of a water management committee, the reforestation of designated areas, a well management strategy that takes into account existing wells, and so on?

3. What types of environment, landscape, flora and fauna are present in the area? What is their specific importance? Are there nearby water sources, wooded areas, slopes and other vulnerable sites? Is the area prone to soil collapse, floods, drought, earthquakes or other disasters? Are there any known conditions of climatic stress linked to rainfall (both in terms of quantity and over time), and to temperature and humidity (high evaporation)? Could the project have an effect on:
   - environments or sites of economic, ecological, cultural, archaeological or historical importance and the natural resources (water, soil and so on) they contain;
   - rare or vulnerable species and/or species of economic, ecological or cultural importance?

B. Questions relating to well building

1. What are the various activities associated with preparing the site and constructing the well? Will there be blasting, excavation, levelling, clearing, soil denudation or backfilling? What are the types, quantities and source of materials (riverbeds, other natural environments, local markets) needed to construct the well? What equipment is required? How will they be conveyed to the site and stored? Could the project lead to:

- changes in, encroachments on and/or the destruction of environments or sites of economic, ecological, cultural, archaeological or historical importance and the natural resources they contain;
- soil instability and risk of collapse;
- erosion of soils that are fragile, thin, on sloping or barren land;
- nuisances (foul odours, noise, vibrations, airborne dust, traffic), risks of accidents and/or health risks to workers and the local population during construction;
- pollution of groundwater (for example, if the groundwater table is close to the soil surface and there is seepage of contaminated water or solid waste), pollution of soils (oil, gasoline and so on) or air pollution (for example, emissions linked to transport);
- increased involvement of communities in taking charge of their needs;
- fair and equitable participation of the local work force and a positive effect on the economy?

C. Questions relating to the operational phase of the well

1. Will there be an increase in population as a result of migration? Will the project lead to unplanned human, agricultural or livestock-raising settlements? Will there be an increase in the demand for natural resources? Is pumping and water-drawing equipment suited to the environment (water depth, types of soil, patterns of consumption, and so on)? Could the project lead to:
   - a decrease in the quantity and quality of natural resources (water, fuelwood, arable land, wildlife and so on), if these resources cannot sustain an increase in demand and are threatened by an increase in traffic around the well site;
   - compaction of soils, changes in drainage and/or soil permeability, loss of vegetation cover as a result of increased traffic around the well site;
   - changes to the level, recharge rate and water circulation of the groundwater table and quality of the groundwater;
   - drying up of the groundwater table, if annual precipitation is very low, if evaporation is very high, if water availability during the dry season has not been considered, if the recharge rate has been ignored, if groundwater is limited or difficult to access, if the wells are too close together, if there is overutilization, and so on;
   - an increase in pressures on infrastructures and local services (schools, housing and so on);
   - an increase in harmful species and disease vectors associated with humid areas (for example, malaria and schistosomiasis);
   - nuisances, risks of accidents, health risks and problems in supplying good quality water;
   - socio-economic conflicts, or conflicts over ownership rights, land use and resource exploitation (among the various production activities, between landowners and users of the well, if the responsibility for the well has not been clearly defined, if there are occasional users who are not the stated recipients of the project and its agreements, and so on);
   - communities taking charge of their own development, through their involvement in monitoring, maintenance and user fees associated with the well;
   - an improvement in the quality of life, resulting from improved access to good quality water;
   - an improvement in environmental conservation through appropriate methods of pumping and drawing water and the restoration of degraded sites near the well, in accordance with the proposed follow-up program?

2. Is there a possibility that undesirable substances or pollutants (liquid or solid) could seep into the well, the groundwater and/or nearby water sources? Have usage, salubrity and pollution risks been considered in constructing the well (well casing above ground level,

covers, fences, covered drains, collection methods, neighbouring and planned activities)? Are there:

- risks of algal growth, if the water remains stagnant, if it is constantly exposed to light, if it becomes warmer, and if it receives nutrients;
- sanitation facilities or latrines that could pollute the groundwater (faecal coliform);
- nearby agricultural lands using pesticides and fertilizers;
- possible seepage of gasoline, solvents and so on from roads, workshops, factories and so forth;
- herds grazing close to the well that may jeopardize the water quality (faecal coliform, turbidity);
- will there be separate areas where livestock can drink;
- nearby cleaning activities (bathing, washing) that can contaminate well water (with soaps and suspended matter)?