

3-4-2 Field exploration

At the 5 sites selected by interpreting the satellite images and aero-photographs and preliminary exploration, a detailed field exploration was carried out to assess the feasibility of constructing a subsurface dam, also taking into account the results of the electric soundings mentioned below (see Section 3-4-3).

During the field exploration, the following surveys were carried out, and the distribution of villages was grasped.

(1) Grasping landform and geology

The landform and geology of the sites were grasped to detect the presence of shallow groundwater and to estimate its structure.

In these surveys, the landform classification maps drawn from aero-photographs were used as topographical maps and preliminary examination charts. Indeed, in surveying an area where flat relief predominates without precise topographical maps, it is sometimes impossible not only to understand the geomorphological significance of the phenomena observed in the field, but also to confirm the present location, without these land classification maps or aero-photographs themselves.

(2) Survey of existing wells

To grasp the presence of groundwater, the following surveys of existing wells were carried out. In these surveys, most of the useful information was obtained from “dug wells” whose side walls were not covered by concrete.

- 1) Confirmation of the locations of the wells, and landform and geology
- 2) Measurement of the groundwater level in the wells
- 3) Confirmation of seasonal fluctuation in the groundwater level by listening to inhabitants
- 4) Confirmation of geology of the aquifer and its upper strata by observation of the interior of the wells and the surplus soil produced by digging, as well as by listening to inhabitants

(3) Confirmation of the distribution of unconsolidated sediment

Grasping the distribution of unconsolidated sediment that can form aquifers of shallow groundwater was attempted. When it was difficult to directly grasp their distribution, it was estimated from the distribution of the outcrop of the basement rock, which was grasped by careful survey, of the lateritic crust in particular.

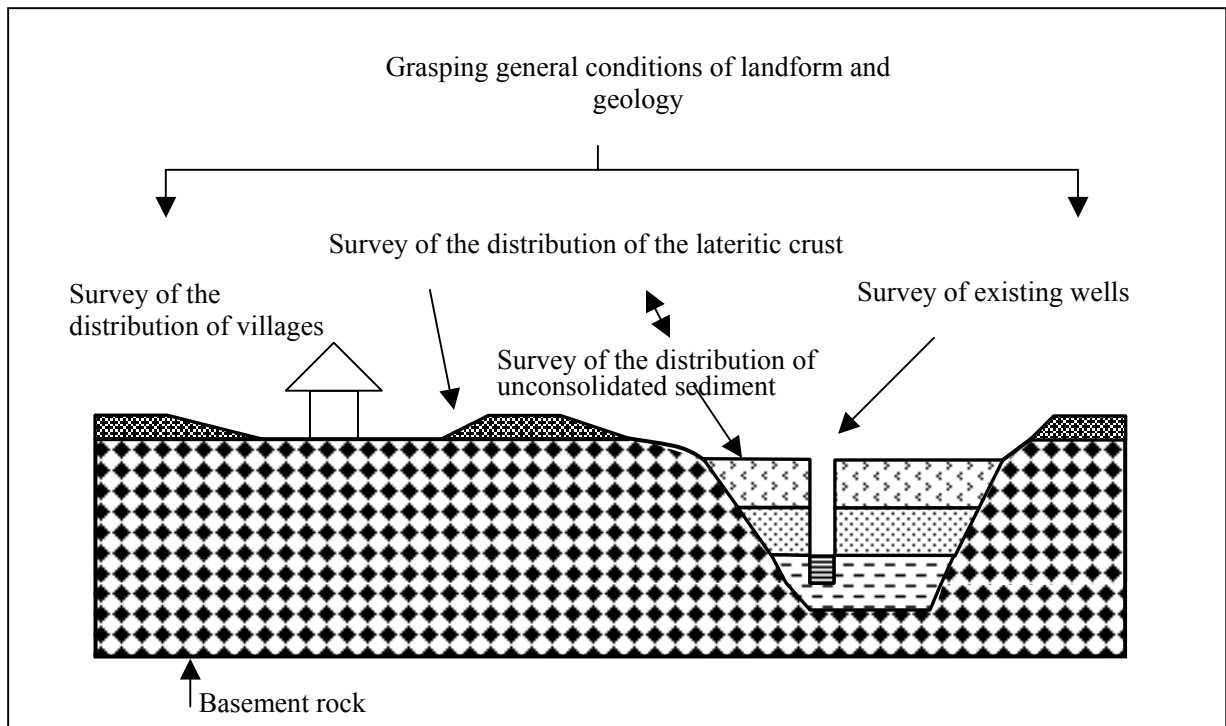


Fig. 3.5: Points of field exploration

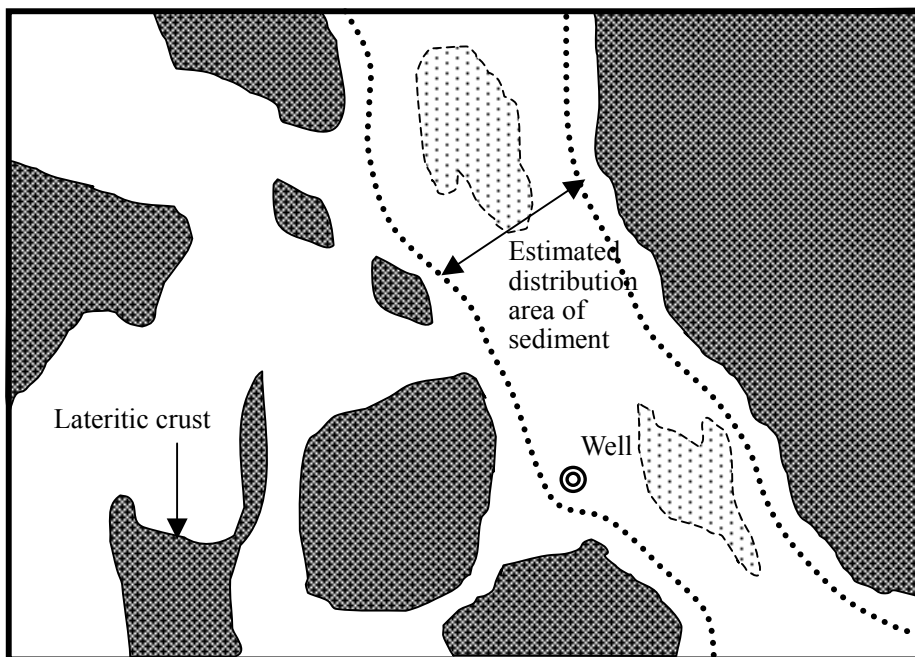


Fig.3.6: Relation between the distribution of the lateritic crust and unconsolidated sediment