

*CHAPTER 2:*  
*SCOPE*  
*AND*  
*OBJECTIVES*

## 2. SCOPE AND OBJECTIVES

- The *Upper Kasai* (non-perennial river) watershed is situated in hot-dry sub-humid agro-ecological sub-region (AESR 12.3) of Eastern Plateau of India (Puruliya district, West Bengal), where the rainfall is very erratic (Velayutham *et al.* 1999). Several soil studies were conducted in the Chotanagpur plateau {Mandal *et al.*, 1975; Haldar *et al.* 1996; Mathur *et al.*, 2000; Wasteland Atlas (NRSA), 2000} which is the major part of Eastern Plateau, but systematic generation of soil resource inventory in the form of mapping on watershed basis was tried for the first time in the concerned area.
- Earlier the watershed approaches were mainly concentrated upon soil erosion *vis-a-vis* soil-water conservation. But in the present case the soil physical, chemical, fertility and mineralogical resources were taken into consideration for getting more detailed overview of patches facing soil related problems.
- It is very difficult to manage any watershed development programme to a large area at a time, that's why the concept of critical and priority area was undertaken in the present investigation where a smaller micro-watershed was selected from a larger watershed based on limitations of soil / landform attributes.
- The systematic suggestion of multi-directed action plan at a time starting from detailed soil survey over a micro-watershed to soil site suitability investigations, lime requirement and fertilizer scheduling etc. was not yet performed by any research workers.
- The study described in the present thesis might apparently be very much area specific, but its concept regarding critical as well as priority area assessment and

land use suggestion could be extrapolated to other relevant areas with a broader spectrum.

In the context of what is stated above, the proposed study was undertaken to address the following **objectives**:

1. To delineate a watershed and to identify the critical area of that watershed from the soil/ landform attributes obtained from reconnaissance soil survey in order to select a micro watershed.
2. To conduct detailed soil survey (1:4000 scale) of the selected micro watershed.
3. To prepare soil resource inventories with special emphasis on the morphological, physico-chemical, physical, chemical, fertility and mineralogical parameters along with land use pattern, crop productivity, climate and socio-economy for the selected micro-watershed (taken as present reference) thereby generating the respective thematic maps.
4. To identify the locations suffering from various soil constraints and to prepare an action plan as a whole for protection / amelioration.
5. To develop suggested land use options in terms of locally dominant crop choice for the given micro-watershed based on land evaluation and soil site suitability study.