

Project Update: May 2011

Facts from Local Villagers Spatial Knowledge

Our assumption is that rainfall events influence soil water availability which in turn dictates land use and land based livelihoods distribution that affect loss of habitat and consequently the distribution of elephant, their numbers and poaching intensities. We used participatory mapping to start test the hypothesis.

Participatory mapping was based on geo-referenced scale maps to understand villager's common concerns and sensitive actions. Before the activity starts the village leader introduced the technician team, which in turn clarified that the process consists on drawing on the map valuable natural resources information. The position of features on the map is determined by looking at their position relatively to landmarks such as roads, village borders, rivers, lakes, reference houses and names. Children, women and man were present in the process and expressed their indigenous spatial knowledge.

The Mupa village case study has identified that human lives rely on agriculture, livestock keeping, timber and non-timber plant collection, exploitation of Marula for production of traditional beer (NIPA), exploitation of *A. digitata* fruits, beekeeping and hunting. Also they use soil and fire wood for production of bricks. Mainly elephant, great kudu, roan antelope, Thomson gazelle, porcupine and warthog are found in the village. Surprisingly was the fact that when villagers were asked on why they allocate their yields along Mupa River and western Calombolombo village while they know that might be raided by elephant. They were unanimously saying that "We follow Water River during dry season and soil fertility in wet season, respectively. Also we are running far away from domestic livestock crop raiding near settlements."

Of course, cattle, goats, sheep and pigs are of free grazing management system in Mupa. Free grazing force farmers to move into remote areas searching new lands for agriculture and in turn they badly interact with elephant. In Mandie, along Luenha river, where water is permanent free grazing leaves thousands of hectares vulnerable to drought and soil erosion. The Mandie facts were not yet expected. This proves that although higher water availability increases the efficiency of forage use by animals but also in a liberalised system of grazing it might cause range forage degradation. In these areas elephant will be absent. Water availability distribution seems to respond conservation issue of semi-arid rangelands. Thus, due to complex response of different surfaces to rainfall characteristics which is not yet fully understood, it is unclear to what extent water is actually redistributed in space (along differential land uses and land management systems) after rainfall event. If so, how are the plants' water consumption and biomass production are affected and how different animal species respond to these variations?



Participatory maps are used for land resources advocacy in Mupa Village. The more the participation the more the map reflects common concerns, stories, lives, cultures, development orientations, future aspirations.



Left: Marula fruits are used for NIPA bear production by villagers and also are key for elephant diet. Having on map resource interest of both species, we can manage its utilization rather than using guns to deter elephant. Right: Elephant tracks.



Dry riverbed.