

*Development of Strategy for Building the resilience of Pastoral Communities to Climate Change in Two Ecosystems of Sudan Project (PSAP)*

*Working paper: on Role of Natural Forage Plants Diversity in Pastoral and Agro-pastoral communities Livelihood*

*Prepared by:*

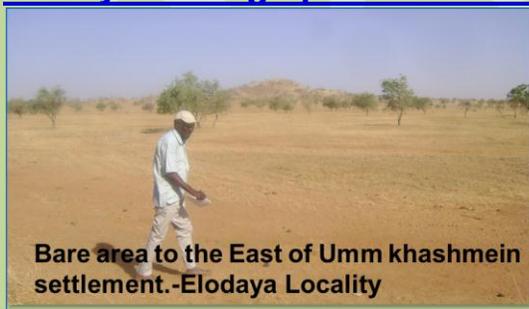
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April 2013*

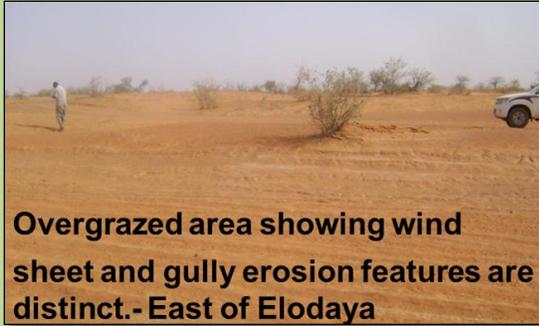
## **Summary**

The project lies in the Semi-Desert and the Low Rain Woodland Savanna Ecological Zones where the pastoralists and agro- pastoralists live. Their livestock are dependent on the natural forage plants in the rangeland areas and the by- products of rain- fed crops .The pastoralists communities besides relying for living on their animals for food and cash income they resort to the natural forage plants for building, shelter, medication and food during famine periods.

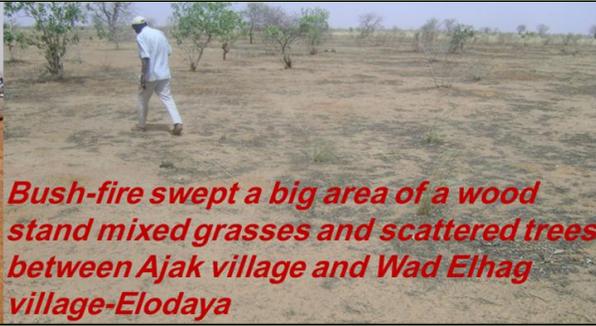
- Description of the two ecological zones encountering the natural vegetation of the country, geographical extent, rainfall amount ranges, soil types and forage plants species composition are given.
- The research findings reflecting the current status of the important natural forage plants diversity, as important to pastoralists and for the rural communities, the nature and extent of actual or potential threats are narrated.
- Suggestions of sustainable conservation strategy and action plan for natural forage plants genetic resources , that leads to improved production and food security with direct implications to address climate change and man-made misuses ;hence building the resilience and adaptation of the pastoral communities to climate change in the two pastoral ecosystems of Sudan.
- Conclusion and recommendations are given with respect to the Butana of Kassala State in the Semi- Desert ecosystem (Semi-Desert) and Elodaya Locality in the Low Rainfall Woodland Savanna ecological zones.

## **Elodaya Photographic Illustrations**





Overgrazed area showing wind sheet and gully erosion features are distinct. - East of Elodaya



*Bush-fire swept a big area of a wood stand mixed grasses and scattered trees between Ajak village and Wad Ethag village-Elodaya*

### Butana Photographic Illustrations

*Elnawasil hills area dominated by Acacia mellifera shrubs-the ground flora is absent except under the bushes. J. Elnawasil- Butana*



*Atypical rainy season, grazing area –overgrazed range area-North of J.Nawasil North of Elgerba . –Butana*



*Dry Panicum turgidum in a wind eroded area –sand deposited at the plant base-Adar habeeb –East of River Atbara*



*Oelmum americanum Undesirable aromatic plant West of New Halfa scheme -Butana*

## ***Findings***

The main findings indicated that in the two ecological zones some natural range plants are of great value to people especially during periods of food scarcity and famine, some are used as traditional food flavour and other of medical importance, while certain cultural and religious beliefs devoted to certain range plants or animals. Range plants and livestock are also used in some cultural festivals in many parts of Sudan. During the last **20** years there was a change in the plant species composition in the Low Rainfall woodland savanna on sand where five **(5)** grass species disappeared and one decreased, **16** of the herbs disappeared while one increased and another decreased, six of the fodder trees and shrubs decreased and two increased. In the semi desert zone six range plant species disappeared, in many areas in Butana, four forage range plants species are very localized (around wadies) ,the area is invaded by four unpalatable plants species and there is spread of wind erosions over vast area especially the north eastern part of Butana. For conservation, up – grading and capacity building the research recommended ten **(10)** of the grass species one of which is annex 1 species in addition to six**(6)** forage legumes, six **(6)** herbs other than legumes and ten **(10)** of the fodder trees and shrubs.