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 "Utilisation of diversity in land use systems:
 Sustainable and organic approaches to meet human needs"



Contribution of Gum Arabic Production to Household Food Security in North Kordofan State, Sudan

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Objectives:

- Assessing dimensions of food insecurity at rural household level & identifying most vulnerable areas to food insecurity
- Measuring price distortions that affect financial & economic profitability of rural household in North Kordofan as an indicator of income disparity that leads to household food insecurity
- Expressing how the integrated approaches (PAM, VM and GIS & RS) can be used in establishing an early warning system for investigating household food insecurity in gum arabic producing areas of North Kordofan

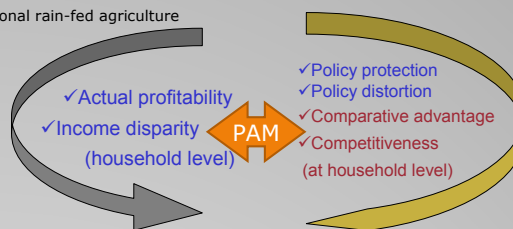


Definitions:

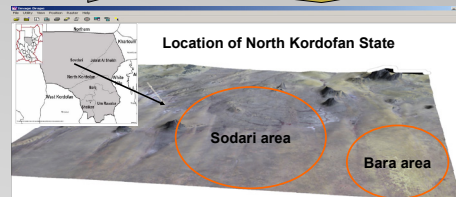
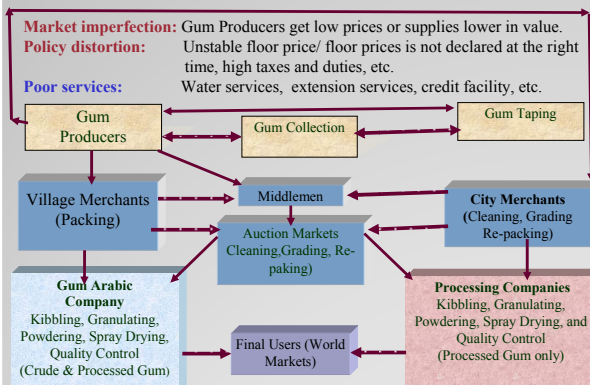
- ➔ Food security means availability of food to all households for their life and health. It is a multi-dimensional problem of food availability, accessibility (food & basic services and access to markets), vulnerability (identifying vulnerable areas to food insecurity) and stability
- ➔ Gum Arabic is a non timber forest product produced obtained in traditional rain-fed agriculture

Contribution of gum production to household: (Direct & indirect income/ Environmental benefits):

- Off-season income
- Provides finance to cultivation of other crops
- Labour force
- Ecological role in improving climatic conditions
- Fuel, forage, timber, medicine, handicraft & domestic utensils
- Shade & shelter
- Soil fertility & desertification stabilizaion

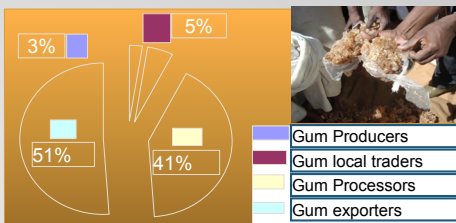


Gum Arabic prdtuction & marketing channels



Map shows most vulnerable areas to household food insecurity in North Kordofan

Income disparity among gum arabic beneficiary groups



Application of some integrated empirical approaches:

- ❑ **Policy Analysis Matrix (PAM):** shows extent to which actual prices of gum arabic and rotated crops diverge from its efficiency levels, i.e. the degree to which household resources can be allocated to reflect different income generating activities.
- ❑ **Verulnerability Mapping (VM):**
 - ✓ Identify vulnerable areas & sectors to food insecurity
 - Monitoring gum producers more closely, to help government to target food aid effectively
- ❑ **Giographical Information System & Remote Sensing (GIS & RS):**
 - ✓ Detection of Acacia trees & vegetation cover in the most vulnerable areas of household food insecurity.
 - ✓ Cassification of land cover and land use interms of rainfed, fallow, bare and grazing lands
 - ✓ Mapping of degraded areas to monitor the change in vegetation cover

Results of PAM, VM & GIS & RS indicate causes of food insecurity in North Kordofan:

1. Erratic rainfall (about 350 mm during the rainy season)
2. Misuse of the fragile natural resource base (Intensive cropping, Over-grazing, Over-cutting.. etc)
3. Natural calamities as recurrent drought and pest infestation
4. Low soil fertility
5. Expansion of desertification & land degradation
6. Weak purchasing power of rural households, including pastoralists in the drought stricken areas (Bara, Gabrat el Sheikh & Sodari)
7. Policy distortion especially in livestock and gum arabic sectors
8. Market failures (high & unstable food prices)

Concluding Remarks:

- Food security is a multi-dimensional problem of food availability, accessibility and stability
- Gum arabic contribute significantly to household food security
- Integration of the 3 approach helps Developing a nucleus for an efficient early warning system