

SUSTAINABLE RURAL BIOMASS SUPPLY

Agro-ecology for Sustainable Development, Food &
Energy Security in Uganda

Presented by

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AGRO ECOLOGY

DEFINITION

- An integrative discipline that includes elements from agronomy, ecology, Sociology and economics (Hutchings and Porter, 2003).
- Interactions between plants, animals, humans and the environment within agricultural systems.”
- It involves land-use systems and practices where woody perennial plants are deliberately integrated with crops and/ or animals on the same land management unit in some form of spatial arrangement or temporal sequences.



THE CONCEPT OF AGRO-ECOLOGY IN UGANDA

- Optimizes the use of locally available resources by combining the components of the farm system i.e. plants, animals, soil water and climate
- It is highly knowledge intensive and is dev'p based on the farmer's knowledge and experimentation
- takes full advantage of local knowledge and practices, including innovative approaches not yet fully understood by scientists although widely adopted by farmers



AGRO-ECOLOGY PRACTICES IN SOUTHWESTERN UGANDA

- i. Silvopastoral which integrates livestock and trees
- ii. Agro silvopastoral which integrates annual crops, livestock, and trees.
- iii. Agrosilviculture which integrates annual crops and trees,
- iv. Agroforestry systems, such as alley cropping systems, intercropping, or hedgerow systems etc.
- v. Others such as crop rotation, mulching etc



AGRO-ECOLOGY PRACTICES

MUTUAL BENEFITS/FEATURES

- Provide feedstock for production of various forms of bioenergy, e.g. Solid biomass is used as firewood, charcoal.
- Maintain vegetative cover as an effective soil and water conserving measure, met through the use of no -till practices, mulch farming, and use of cover crops etc.
- Promote pest and weed regulation through enhanced activity of biological control agents achieved by introducing and/or conserving natural enemies and antagonists.



AGRO-ECOLOGY PRACTICES

BENEFITS - CONTINUED

- Provide a regular supply of organic matter through the addition of organic matter (manure, compost, and promotion of soil biotic activity).
- Enhance nutrient recycling mechanisms through the use of livestock systems based on legumes, etc.



AGRO-ECOLOGY

ENABLING CONDITIONS/FACTORS

- Farmer centered approaches in selection of technologies and provision of inputs in the initial stages.
- Diversity of knowledge from both local / traditional know-how and practices, common and expert knowledge.
- Community-based participatory research and innovation which facilitates the development of ecological production.
- Awareness and capacity building in agroforestry, land quality improvement, food and energy security to the farmers as this could lead to the wide scale adoption of the technology.





Thank you
for paying
attention

