28 - 31 MARCH 2022

ASIA-PACIFIC FORUM ON SUSTAINABLE DEVELOPMENT

Promoting Food Security through
Combating Soil Degradation in the Asia-Pacific.

30 March 2022, 12.15-13.45 Bangkok time

Gender considerations for sustainable and soil-friendly mechanization and Technology in mountain ecosystems (Bhutan)

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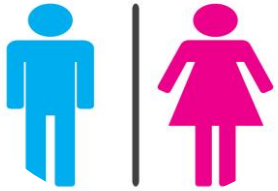
BHUTAN

Agriculture in Bhutan(scenario &issues)

Jobs in agriculture

66 % of population involved in agriculture

41.2% are **men**



58.8 % are **women**

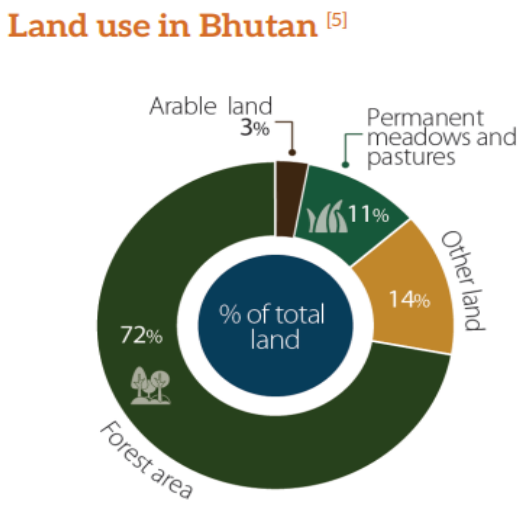
Subsistence agriculture

- almost 70% of the land owned by women
- **48.7%** - migrated to urban city -- Impact- women

Agriculture in Bhutan(scenario &issues)

- geographical size is **38,394 km^2.**
- cultivable land - 2.93% of its entire area
- limited cultivable land -geographical and topographic features.
- 70% of the agriculture land located on steep slopes
- 31% - on >50% slope
- small land holding
- Gender friendly- default
- Vulnerable to annual soil loss- 29 T/Ha (landslide/erosion)

- • The CLEWS-model shows that, to meet the food demand in future will need to increase cultivated area by another 47%
- restore soil fertility, improve water availability



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Agriculture in Bhutan(scenario &issues)

farming in a mountainous ecosystem is challenged by:

- low soil fertility
- coupled with cold stress
- frequent weather swings.
- Soil erosions

Policies and Strategies to promote mechanization and sustainable land management(SLM)

Land development & SLM

- land development (CMU,NSSC)

SLM practices-

I. terracing
II. check dams
III. contours stone
IV. bunds
V. Terraces hedgerows
VI. Bamboo and planted trees

(EVALUATION OF SUSTAINABLE LAND MANAGEMENT AND INNOVATIVE FINANCING TO ENHANCE CLIMATE RESILIENCE AND FOOD SECURITY IN BHUTAN report)

- fallow lands were brought under cultivation
- About 7746 acres brought under SLM
- Increase to 12000 acres by 2030
- reduced soil erosion
- eased workability on steep terrain
- increased fodder availability through hedgerows plantation
- stabilized the land & source of monetary income

Policies and Strategies to promote mechanization and sustainable land management(SLM)

Machinery

- state-owned subsidized machinery hiring services
- allotment to local government bodies
- soil-friendly machines(,mini tiller, reaper ,transplanter, direct seeder & Powe tiller)
- Norma power tiller – 9% s degree
- Extension device – 18.5 degree
- R&D - gender friendly technologies climate resilient technologies.
- Efficient water use technology
- IoT

Policies and Strategies to promote mechanization and sustainable land management(SLM)

Machinery

- Training -Incentive of Minimum daily allowances, free accommodations
- Awareness and hands on training at site

Finical Support

- multilateral donors- promotion
- Low interest credit to purchase machine
- Zero Tax on farm machinery

Conclusion

- Undulling topography, limited financial support, shortage of farm labor, small land holding, and human-wildlife conflicts – main issue
- Need to further sensitize the general public and build their capacity
- Further explore funds from external donors to scale up SLM activities and mechanization in the country