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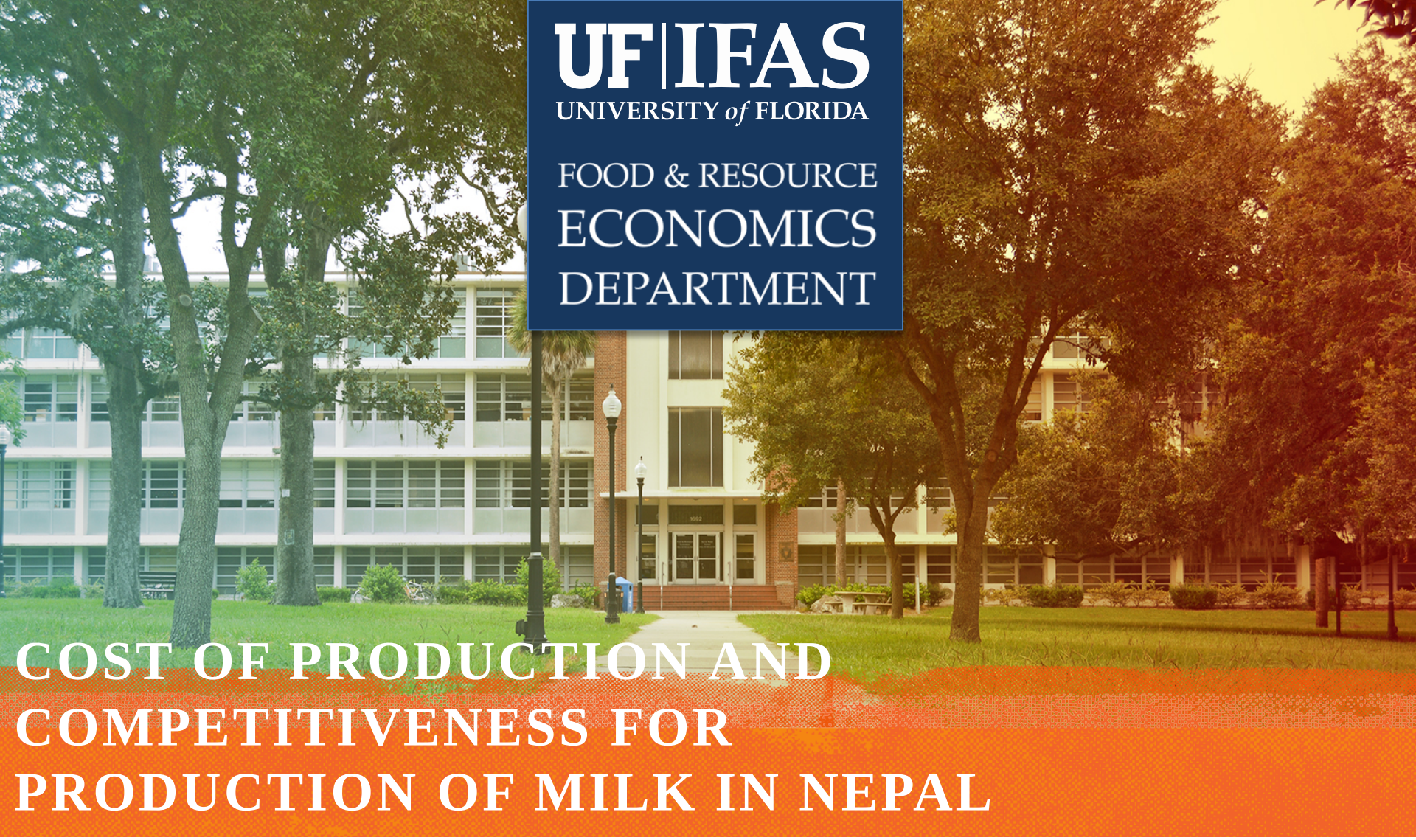

COST OF PRODUCTION AND COMPETITIVENESS FOR PRODUCTION OF MILK IN NEPAL

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Nepal Geographical Regions

1. Mountains

2. Hills

3. Terai (low land good for Agriculture)

Nepal has 75 districts

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Summary of Nepal Dairy production for 2014/2015	
Total dairy animals	12,409,480
Cattle	7,241,743
Buffaloes	5,167,737
Milking cows	1,025,947
Milking Buffaloes	1,345,164
Total Milk production (Metric tons)	1,724,823
Cow milk (Metric tons)	557,669
Buffaloes milk (Metric tons)	1,167,154
Dairy sector contibution to AGDP	33% (nearly one third)
Dairy sector contibution to GDP	8%
Source: Statistical information on Nepalese Agriculture- 2014/2015, MOAD	

Problem Statement

- Despite the high population of cows (7million) and buffalo (5million), milk production is not commensurate to the dairy animal population. 70% of milk production is from buffalo; the remaining 30% is from cattle.

Objectives

- The primary objective is to assess the cost of producing milk in Nepal and its associated risks to provide guidance to the policy process. Specific objectives:

- 1) Develop a production cost budget for in different geographical regions and animal types.

- 2) Assess the profitability of producing milk and associated risk factors that impact the competitiveness of milk production in Nepal.

- 3) Identify and evaluate key policy alternatives and research programs that impact competitiveness of milk production in Nepal.

Methodology

- Monte Carlo simulation were used to analyze a baseline for existing policy and production practices and for alternative milk production scenarios.

- Alternative milk production scenarios are defined to address key policies and production practices that constrain development of milk production in Nepal.

Scenarios

- Baseline scenario
  - No-slaughtering policy for cattle (as currently practiced)

- Alternative scenarios

  1. Animals are allowed to be slaughtered

  2. No slaughtering policy but Government bears part of cost of maintaining unproductive cattle

Stochastic Variables

- Price, productivity and feed costs are considered key stochastic variables for the model

- The stochastic variables will be forecasted for a 10 years planning horizon using Multivariate Empirical Distributions (MVE)

Stochastic Model

- Cost budgets will be constructed for different geographical zones and animal type.
- Income Statement and Cash flow statement will be prepared to estimate the profitability of producing milk.
- The Scenario Analysis will compute the Net Present Value of the cash flow for the 10 years horizon of the baseline and the alternative scenarios.

- $NPV_i = \sum_{t=1}^{T} \frac{Ending\ cash\ balnce_t}{(1+r)^t}$

  - Where NPV_i is the Net Present value cash flow for t years,
  - r is the discount rate
  - t is time period

Key Output Variables (KOV)

- KOV for this study include net cash income, ending cash balance, and the NPV.

- The KOVs will be simulated for 500 iterations and the 500 values will be used to estimate Probability Density Functions (PDF) and Cumulative Distribution Functions (CDF) for the baseline and alternative scenarios.

Data

- Production cost data have been obtained from NDDB (National Dairy Development Board).
- Milk production and Milk price data are available from the FAOSTAT website and MOAD (Ministry of Agriculture and Development) Nepal.
- Expert Opinions will be required for some of the data adjustments in the scenarios analysis.
- Data collection is ongoing for some variables

Expected Result

- Cost of production is higher for cattle because cow productivity declines after 5 to 6 lactations but must be kept in the herd because cattle cannot be slaughtered due to religious-based policy.

- Decision makers can make more informed decisions based on the PDF and CDF for the KOV of the scenarios and can look for other ways of dealing with the impact of keeping unproductive cows in the herd

THANK YOU

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QUESTIONS

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