Livestock Technology Change, Livelihoods Impacts & Policy Lessons

By
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Synopsis

• Introduction
• Project, Methodology and Secondary data analysis
• Primary data analysis
• Policy issues
• Key conclusions and recommendations
Introduction

• Project objective is
  “to take an evidence-based analysis approach to the development of strategies for poverty reduction through livestock interventions”
Introduction
- Project Outputs

• Evidence of policies and technologies that work and policies that impede pro-poor impact
• Proven policy analysis methods established
• Findings promoted to multi-stakeholder forum for validation & policy development
Introduction
– Project activities

• Project has collected
  – secondary data on the livestock sector, policies and technologies.
  – Primary data from livestock keepers in the Districts of
    • Lalitpur
    • Chitwan
    • Mustang

• Project has utilised a number of methods in order to develop an indication of the impact of policies and technologies
Methodology
LTIP Nepal - framework

Evidence-based policy advice
policies, institutions

Technology impact
assessment
productivity changes, markets, NRM etc.

Livestock & livelihoods
evaluation
poverty reduction, gender, equity, food security
Sampling frame
village study sites

<table>
<thead>
<tr>
<th>Village Types Regions</th>
<th>Poor Economy Poor Accessibility</th>
<th>Poor Economy Good Accessibility</th>
<th>Good Economy Poor Accessibility</th>
<th>Good Economy Good Accessibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Mid hills</strong>&lt;br&gt;Lalitpur</td>
<td>Burunchuli</td>
<td>Jhyalungtar &amp; Lekdanda</td>
<td>Manegaun</td>
<td>Seraphat</td>
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<td><strong>Lowlands</strong>&lt;br&gt;Chitwan</td>
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<tr>
<td><strong>Mountain</strong>&lt;br&gt;Mustang</td>
<td>Ghilling</td>
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<td>Kagbeni</td>
</tr>
</tbody>
</table>

Within each community a wealth ranking has been carried out to identify poor, medium and rich socio-economic groupings
<table>
<thead>
<tr>
<th>Village types</th>
<th>PE PA</th>
<th>PE GA</th>
<th>GE PA</th>
<th>GE GA</th>
</tr>
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<tbody>
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<tr>
<td>Lalitpur</td>
<td>Tamang (33)</td>
<td>Dalit (14) Tamang (44) Chhetri (8) Newar (1) Brahmin (2)</td>
<td>Dalit (1) Tamang (24) Chhetri (2) Brahmin (17)</td>
<td>Dalit (2) Tamang (8) Newar (34) Chhetri (1) Brahmin (24)</td>
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</tbody>
</table>
Analysis Methods and Methodology Development

- Livestock ownership patterns
- Livelihood analysis
- Livestock roles
- Timelines
- Limited gender analysis
- Conceptual village economy models
- Policy analysis
Data Analysis
Secondary data analysis

- Strong regional differences in terms of:
  - Livestock numbers and species mixes
  - Livestock economy
  - Livestock dependency
    - Numbers of LSUs per person, per household
  - Relationship of livestock dependency and poverty
  - Investments in livestock development
Livestock Units

Proportion of Nepal LSUs

- > 10%
- 9 to 10%
- 5 to 6%
- 2.5 to 5%
- < 0.3%
Human Development Index

Proportion of Nepal HDI

- Dark green: > 100%
- Gray: 95 to 100%
- Light gray: 90 to 95%
- Orange: 80 to 90%
- Red: 60 to 70%
Primary Data Analysis

• How does the primary data analysis compare with the secondary data analysis
  – Between study sites there are:
    • Species differences
    • Preference differences for species
    • Differences in adoption
    • Differences in species functions analysis
## Main economic activities

### contribution to livelihoods

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<td>Crops, Livestock</td>
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<td>Waged OnF &amp; OffF</td>
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<td>Waged OnF</td>
<td>Livestock</td>
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<td>Business</td>
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<td>Salaried</td>
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<td>Salaried</td>
<td>Caste BP</td>
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<td>Remittances</td>
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<td>Lalitpur</td>
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<td>Chitwan</td>
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<td>Crop, Livestock</td>
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<td>Business</td>
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<td>Pensions</td>
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<td>Caste BP</td>
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<tr>
<td></td>
<td>Pension &amp; Rs</td>
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</tbody>
</table>
Livestock Holdings
Average livestock ownership in Mustang

NB Virtually none of the animals are introduced breeds
Livestock ownership per household in Chitwan

NB Introduced breeds are concentrated in GEGA and are mainly buffalo followed by cattle. Cattle LSUs are dominated by bullocks.
Livestock ownership per household in Lalitpur

![Livestock Ownership Chart](chart.png)

**NB** High proportion of cattle and buffalo are introduced breeds.
Total livestock ownership per household in each study site

- PEPA
- PEGA
- GEPA
- GEGA

LSU/Household

- Lalitpur
- Chitwan
- Mustang
Qualitative analysis – livestock functions

- Poor use livestock for consumption and production purposes (mainly manure and urine)
- Very little evidence of income activities in poor households
- Richer households use livestock for a greater range of functions, but in the richest households the use of livestock as an insurance policy is less important as they have other assets.
Qualitative analysis – returns and risks of livestock enterprises

- Poor households show a preference for small livestock species
- This preference relates to the quick turnover of these enterprises and lower amounts of time required
- Richer households prefer large species and in particular buffalo
- This preference is related to regular income
Qualitative analysis – returns and risks of livestock enterprises

- Constraints are seen as market access and management in poor groups
- In the richer households the main constraint was feed resources
- In general, there is concern in all household groups about losses due to disease.
Livelihoods Analysis and Technology Adoption
Improving socio-economic status (Stepping up or out)

Maintaining socio-economic status (Hanging in)
Livestock related livelihood strategies: summary by SE strata

<table>
<thead>
<tr>
<th>Socio-economic strata</th>
<th>Hanging-in</th>
<th>Stepping-up</th>
<th>Stepping-out</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Poor</strong></td>
<td>Holdings too small for effective non-income functions. Livestock seen as costly, risky &amp; difficult to market</td>
<td>Some evidence found as a component of strategies</td>
<td>Not an important component of strategies</td>
</tr>
<tr>
<td><strong>Medium</strong></td>
<td>Central to livelihoods for income, consumption &amp; production.</td>
<td>Accumulation in herd. Technology changes. Market access driver. Services – work &amp; transport</td>
<td>Buffering (education costs). Sales to buy other assets</td>
</tr>
<tr>
<td><strong>Rich</strong></td>
<td>Not important for non-income functions. Consumption important</td>
<td>Part of portfolio when complementary to other activities &amp; strategies. Technology changes</td>
<td>Not a main component</td>
</tr>
</tbody>
</table>
## Adoption of introduced breeds of animal

<table>
<thead>
<tr>
<th>HH Status</th>
<th>Lalitpur</th>
<th>Study Area</th>
<th>Chitwan</th>
<th>Mustang</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poor</td>
<td>1 non-adopter community</td>
<td>3 non-adopter communities</td>
<td>3 non-adopter communities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 adopter communities</td>
<td>1 adopter community</td>
<td>1 adopter community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 buffalo (66, 75% HH)</td>
<td>Cow (33% HH)</td>
<td>1 Poultry (27% HH)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Poultry (27%)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Medium</td>
<td>1 non-adopter community</td>
<td>2 non-adopter communities</td>
<td>1 non-adopter community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 adopter communities</td>
<td>2 adopter community</td>
<td>3 adopter communities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3 Buffalo (44,100,100% HH)</td>
<td>2 Buffalo (18,50% HH)</td>
<td>3 Poultry (20,31,66% HH)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Poultry (17% HH)</td>
<td>2 Cow (18, 67% HH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Cow (11% HH)</td>
<td>2 Goat (10,33% HH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>2 Poultry (8,10% HH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rich</td>
<td>0 non-adopter community</td>
<td>2 non-adopter communities</td>
<td>3 non-adopter communities</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 adopter communities</td>
<td>2 adopter communities</td>
<td>1 adopter community</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4 Buffalo (25,56,75,100% HH)</td>
<td>2 Buffalo (12,75% HH)</td>
<td>1 Poultry (29% HH)</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2 Poultry (11,25% HH)</td>
<td>2 Cow (37, 37% HH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Cow (50% HH)</td>
<td>1 Goat (12% HH)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 Goat (25% HH)</td>
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</tr>
</tbody>
</table>

Moving from poor to rich economic status:

- number of adopting households and communities increases
- range of species adopted increases.
Timelines
## Timeline analysis

**Poor to rich using buffalo and cattle**

### Year 1972
- **Key events**: Migrated to the community - landless
- **Status**: Poor
- **Events**:
  - Purchased local breed cow
  - Consumed the milk
  - Sold all the calves
  - Money used to buy land

### Year 1974
- **Key events**: Transition between poor to medium
- **Status**: Poor to medium
- **Events**:
  - Sold and consumed milk

### Year 1976
- **Key events**: Purchased Buffalo cow
- **Status**: Medium
- **Events**:
  - 5-6 buffaloes raised from original buffalo
  - Sold and consumed milk
  - Excess buffalos sold

### Year 1988
- **Key events**: Purchased Jersey cow
- **Status**: Medium
- **Events**:
  - Production 6 litres per day per buffalo
  - Milk yield 10 litre a days
  - Excess buffalos sold

### Year 1993
- **Key events**: Two improved cattle
- **Status**: Medium
- **Events**:
  - Milk yield 10 litres of milk production
  - Money used to educate children

### Year 2003
- **Key events**: Milk sold
- **Status**: Rich
- **Events**:
  - Milk sold
  - Manure used in biogas plant

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31 years
## Timeline analysis

**Poor to medium using goat**

<table>
<thead>
<tr>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Key events</strong></td>
<td>Family have 2 or 3 goats</td>
<td>Roadhead construction</td>
<td>Forest grazing banned</td>
<td>Goats treated for worms on a regular basis</td>
<td>Different forage grass and fodder trees introduced by livestock services</td>
<td>Traders come to the village and buy goats at a good price</td>
<td>Family have 7 to 8 goats</td>
</tr>
<tr>
<td><strong>Access Improved</strong></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>They receive a good price for goats</td>
</tr>
<tr>
<td><strong>Technologies Improved</strong></td>
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<td></td>
<td></td>
<td>Goat rearing is seen as profitable</td>
</tr>
<tr>
<td><strong>Market Access Improved</strong></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td>Money used to cover household expenses</td>
</tr>
<tr>
<td><strong>Status</strong></td>
<td>Poor to Medium</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Transition from Poor to Medium</td>
<td>Medium</td>
</tr>
</tbody>
</table>

1990:
- Family have 2 or 3 goats
- Roadhead construction
- Forest grazing banned

1998:
- Goats treated for worms on a regular basis

1999:
- Different forage grass and fodder trees introduced by livestock services

2000:
- Traders come to the village and buy goats at a good price

2003:
- Family have 7 to 8 goats
- They receive a good price for goats
- Goat rearing is seen as profitable
- Money used to cover household expenses
Community Economy Models
Lalitpur District
– example of the village economy

Internal Village Economy

Rich
- Buffalo
- Good Land
- Business and/or Skilled jobs

Medium
- Poor to average land
- Bullocks, goats
- Some skilled jobs

Poor
- Landless
- No or few livestock
- Sell manual labour

Traction Rs.

Labour Rs.
Lalitpur District – a village economy with Dairy Development Corporation (DDC)

**Rich**
- Buffalo
- Good Land
- Business and/or Skilled jobs

**Medium**
- Poor to average land
- Bullocks, goats
- Some skilled jobs

**Poor**
- Landless
- No or few livestock
- Sell manual labour

**Internal Village Economy**
- Poor
  - Landless
  - No or few livestock
  - Sell manual labour

**Construction**
- Houses
- Traction
- Skilled labour

**Goods and services**
- TV, Education, Health

**Fresh Milk**
- Rs.

**Labour to Transport Milk**
- Rs.

**Labour**
- Rs.

**DDC**
Lalitpur District
– a village economy with Khuwa Trader

**Khuwa Trader**

Rich
- Buffalo
- Good Land
- Business and/or Skilled jobs

Poor
- Landless
- No or few livestock
- Sell manual labour

Medium
- Poor to average land
- Bullocks, goats
- Some skilled jobs

Internal Village Economy

Construction
- Houses
- Traction
- Skilled labour

Milk Processing
- Fresh Milk
- Firewood
- Labour

Goods and services
- TV, Education, Health

Khuwa Trader

Rs.

Labour to Transport Khuwa

Rs.

Labour

Rs.

Khuwa
Impact of Livestock Technologies and Policies
Livestock Policies

• The Nepal Government has a high regard for planning of its economy.
• At one stage in the 1990s there were as many as five overlapping plans running together: Ninth Plan; Agricultural Perspective Plan; Livestock Master Plan; Dairy Development Plan; and Third Livestock Development Plan.
Livestock Policies - Issues

• The role of the livestock in development
  – Supply driven
  – Demand is rarely mentioned and poorly understood

• Production versus a “Productivity” bias
  – Production is the principle focus
  – Only one productivity measure is used which is production per animal

• Monitoring, evaluation and analysis
  – Monitoring is focused on financial and physical targets
  – Evaluation is focused on production
  – Little or no analysis on the observed data
# Examples of successful technology adoption in Nepal

<table>
<thead>
<tr>
<th>Technology</th>
<th>Region</th>
<th>Source and date</th>
<th>Government Role</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potatoes</td>
<td>Sherpa region, but very widespread</td>
<td>Unknown, possibly 100 to 150 years ago. British Resident?</td>
<td>None</td>
<td>Become an integral part of the farming system. Important food product. Dried product used in trade</td>
</tr>
<tr>
<td>Use of draught animals</td>
<td>Sherpa region, but very widespread</td>
<td>Source unknown, but widespread adoption In the last 30 years</td>
<td>None</td>
<td>Change in cultivation practices relate to changes in labour costs since 1950s. When labour was cheaper land was cultivated by hand</td>
</tr>
<tr>
<td>Dzopa as a tourist pack animal</td>
<td>Mountain region</td>
<td>Local source, adopted in the last 30 years</td>
<td>None</td>
<td>Access to the areas by tourists requiring transport</td>
</tr>
<tr>
<td>Cattle and dzopa</td>
<td>Sherpa region</td>
<td>Local source, adopted in the last 30 years</td>
<td>Government restrictions on the use of forest for goat grazing</td>
<td>In general this has been done by poor people with little land.</td>
</tr>
<tr>
<td>Exotic buffalo genetics</td>
<td>Hills and Terai</td>
<td>India, adopted in the last 20 years</td>
<td>Limited</td>
<td>Private traders import mature cows from India</td>
</tr>
</tbody>
</table>
Less Successful Technologies

<table>
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<th>Government Role</th>
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</thead>
<tbody>
<tr>
<td>Exotic milk breed genetics</td>
<td>Hills</td>
<td>International, in the last 20 years</td>
<td>Importation of semen, AI provision</td>
<td>Limited adoption (see later)</td>
</tr>
<tr>
<td>Exotic goat genetics</td>
<td>Hills</td>
<td>International, in the last 20 years</td>
<td>Importation of male animals</td>
<td>Economics of these species poorly understood</td>
</tr>
<tr>
<td>Exotic grass genetics</td>
<td>All</td>
<td>International, in the last 50 years</td>
<td>Importation of seed, field station testing</td>
<td>Low returns in comparison to other land activities. Sources of fodder</td>
</tr>
<tr>
<td>Exotic fodder systems</td>
<td>All</td>
<td>International, in the last 50 years</td>
<td>Field testing of methods</td>
<td></td>
</tr>
</tbody>
</table>
## Comparative table for policy analysis

<table>
<thead>
<tr>
<th>Policy and private sector initiatives</th>
<th>Technology</th>
<th>Adoption</th>
<th>Demand for technology</th>
<th>Economic Returns</th>
<th>Comments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Increase milk production and availability</td>
<td>Cattle dairy genetics</td>
<td>Limited</td>
<td></td>
<td>Poor returns where there is no market for cull cows</td>
<td>Policy needs reviewing</td>
</tr>
<tr>
<td></td>
<td>Forage</td>
<td>Limited</td>
<td></td>
<td>Dependent on land-use alternatives</td>
<td>Necessary to review on case by case basis</td>
</tr>
<tr>
<td></td>
<td>Concentrate feed</td>
<td>Limited</td>
<td></td>
<td>Dependent on regularity of supply and product quality</td>
<td>What is the role of the public sector?</td>
</tr>
<tr>
<td></td>
<td>Veterinary services</td>
<td>Limited</td>
<td></td>
<td>Good</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Milk marketing</td>
<td>Limited</td>
<td></td>
<td>Where milk holidays there are problems</td>
<td>What is the role of the public sector?</td>
</tr>
<tr>
<td>Private sector initiative</td>
<td>Buffalo dairy genetics</td>
<td>High</td>
<td>Richer HH buffalo, poorer household goats and poultry</td>
<td>Good</td>
<td>Need for a review of access to this technology by the poor</td>
</tr>
</tbody>
</table>
Hills Leasehold Forestry and Forage Development Project

• Aimed to address poor people’s needs and also stop land degradation
• Coordination of four government departments to address issues as diverse as:
  – Land access and tenure
  – Technical support for livestock and pasture
  – Access to credit
• Costs would appear high
  – On average 0.63 hectares assigned to families
  – US$3,061 per hectare of degraded forest, US$1,937 per family or US$13,016 per leasehold group
### Is there enough land?
### Are there enough livestock?

<table>
<thead>
<tr>
<th></th>
<th>Terai and Inner Terai</th>
<th>Hills and Mountains</th>
<th>Kathmandu Valley</th>
<th>Nepal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number in the family</td>
<td>5.75</td>
<td>5.2</td>
<td>5.12</td>
<td>5.45</td>
</tr>
<tr>
<td>Average Income per Capita (PPP$)</td>
<td>1,267</td>
<td>858</td>
<td>2,059</td>
<td>1,237</td>
</tr>
<tr>
<td>Earnings per LSU (PPP$/LSU)*</td>
<td>1,018</td>
<td>1,018</td>
<td>1,018</td>
<td>1,018</td>
</tr>
<tr>
<td>LSU needed to achieve average income levels per family</td>
<td>7.16</td>
<td>4.38</td>
<td>10.36</td>
<td>6.62</td>
</tr>
<tr>
<td>LSU per family</td>
<td>1.24</td>
<td>1.92</td>
<td>1.08</td>
<td>1.54</td>
</tr>
<tr>
<td>Hectares needed per LSU**</td>
<td>1.22</td>
<td>2.00</td>
<td>1.27</td>
<td>1.61</td>
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<tr>
<td>Hectares required to achieve average income levels per family</td>
<td>8.73</td>
<td>8.75</td>
<td>13.16</td>
<td>10.68</td>
</tr>
<tr>
<td>Average cultivated landholding per family</td>
<td>0.70</td>
<td>0.65</td>
<td>0.34</td>
<td>0.62</td>
</tr>
<tr>
<td>Average land per family**</td>
<td>1.50</td>
<td>4.17</td>
<td>1.36</td>
<td>2.49</td>
</tr>
<tr>
<td>Maximum landholding</td>
<td>16.93</td>
<td>4.07</td>
<td>2.54</td>
<td></td>
</tr>
</tbody>
</table>

* Estimates exclude family labour
** Includes cultivated land and communal pasture and forest areas
Livestock Unit Analysis

LSU needed to achieve average income levels per family
- LSU per family

Terai and Inner Terai
Hills and Mountains
Kathmandu Valley
Nepal

LSU

0.00 2.00 4.00 6.00 8.00 10.00 12.00
Landholding analysis

- Hectares required to achieve average income levels per family
- Average cultivated landholding per family
- Average land per family**
- Maximum landholding

<table>
<thead>
<tr>
<th>Region</th>
<th>Hectares</th>
<th>Hectares required to achieve average income levels per family</th>
</tr>
</thead>
<tbody>
<tr>
<td>Terai and Inner Terai</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hills and Mountains</td>
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</tr>
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<td>Nepal</td>
<td></td>
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</tr>
</tbody>
</table>

** Average land per family**

Note: The chart shows the comparison of landholding in different regions of Nepal.
Emerging Methodology
Analysis of constraints to pro-poor livestock development

- Technology adoption analysis dis-aggregated by region, village and socio-economic groups
  - a) Identify technology adoption rates & patterns
  - b) Identify cases of non-adoption
- Identify factors related to non-adoption
  - Characterise constraining factors as those that can & those cannot be addressed through livestock development policies & interventions
  - Model impact if constraining factors can be resolved
  - Does pro-poor impact require other associated interventions?
- Policy lessons

Appraisal information & Questionnaire data

Enterprise budgets, HH models, livestock economy models (community)
Key Conclusions
- Methodology

• It can be improved
  – Clearer selection of representative households
  – The use of quantitative analysis (SAMs, PAMs)
  – Lessons could be learnt from forestry sector

• It has merits
  – Reference group
  – Secondary data analysis

• Questions
  – Is fieldwork justified in countries such as Nepal where so much has already been studied?
  – How can the methodology be kept simple without losing value?
Key Conclusions
- Livestock and Poverty

• The areas with the highest incidence of poverty have the highest dependence on livestock.
• This reflects the limited alternative economic opportunities in these regions
• Within all regions and communities there are strong differences
  – Poorer households have few livestock and the livestock they have tend to be small species
  – Relatively better off households have livestock and these tend to be both large and small species
• Poorer households would like livestock, but are limited by access to resources and capital
Key Conclusions
– Technologies

- There are clear examples of technology adoption by different ethnic groups, rich and poor
- Government’s role in many of these adoption has been very limited
- This indicates that Nepali people are capable and willing to adopt technologies
- There are also clear examples where livestock technologies have been used to improve livelihoods
Key Conclusions
– Technologies

• Technologies offered by government services have not always been appropriate
  – Due to the socio-economics of the situation
  – In general a lack of appreciation of working in mixed farming systems
  – A lack of appreciation of competing sectors – tourism and urban based employment

• Enabling environment has not encouraged adoption of some technologies
Key Conclusions
– Agricultural Sector

• Agricultural sector lacks flexibility due to:
  – Land tenure laws (fears of losing land and landholding ceilings)
  – A lack of social mobility
  – A constrained input sector

• In general there is stagnation of the sector due to:
  – Government regulations
  – Incomplete privatisation and liberalisation processes

• In its current state it is unlikely that the livestock sector can have much more than a small impact on poverty alleviation
Key Conclusions
– Policy Issues

• There have been statements of pro-poor poverty plans
• However, there appears to be a lack of targeting of poor regions and poor people within regions and communities
• In general there has been incomplete changes in policy in terms of privatisation, liberalisation and pro-poor focus
• Insurgency issues are not openly discussed, but it appears that the existence of the Maoists has focused minds on pro-poor actions
  – However, the present situation places at risk the poverty impact of livestock interventions
General Recommendations

• There is a strong need for the coordination of livestock policies and actions with other related sectors
  – Forestry is perhaps of greatest importance as access to forest areas is critical to poor people with livestock.
  – Coordination with agricultural policies would merit further work.
  – In the more general context, there is a need for consistent and sound land tenure, infrastructure, credit and business policies in order to support the development of the livestock sector.
General Recommendations

• Each law, regulation and action for the livestock sector needs to be assessed in terms of:
  – public and private responsibility applying concepts of public/private good generation, externalities and moral hazards.
  – increasing the flexibility of the livestock sector to provide opportunities to poor people.
Specific Recommendations

• Flexibility in the provision of technologies could be achieved by:
  – Having less prescriptive lists
  – Field staff who work with families in identifying problems and potential solutions
  – Adequate knowledge and financial support to help families adopt and adapt potential solutions

• A strong focus on the control, and where possible the eradication, of contagious livestock diseases, which would benefit poor livestock farmers through reducing risks.
Specific Recommendations

• Targeting of the poor and their needs in the implementation of the Community Livestock Development Project requires training in:
  – Wealth ranking
  – Livelihoods assessments
  – Community level economic assessments, in particular the impact of interventions
  – Methods to identify technology demands of the poor
  – Methods to supply technology to the poor