Enumeration of Nomadic and Semi-Nomadic (Transhumant) Livestock

Module 1: General Information and Advocacy
Introduction

• Nomadic livestock in arid and semi-arid areas is widely practiced and of great importance
• Guidelines on collecting livestock data are over 20 years since publication by FAO in 1992
• There has been revived interest in nomadic livestock statistics
  ✓ awareness of importance of livestock production in rural economies and wealth generation
  ✓ need to assess livestock production impact on environment
  ✓ pressing demand for quality cost effective data for policy formulation
  ✓ pressing demand for quality cost effective data for monitoring and evaluation of SDGs
• Revived interest is also based on
  ✓ emergence of new methods of assessing livestock resources and production parameters
  ✓ GPS and drone technology for geo-referencing, recording data also technology and computing capacity for entering, checking, analysing and displaying data.
• Enumeration of nomadic and semi nomadic (transhumant) livestock is demanding methodologically
  ✓ mobility of livestock and livestock holders complicates the undertaking
  ✓ difficulty in of reaching target population, Possibility of double counting, difficulty in building sample frame etc.
• Thus there is need for technical capacity at country level to secure collection and compilation of quality statistics in cost effective way
• Global Strategy has revised and updated FAO 1992 guidelines to reflect new methods and technologies
• GS has also prepared this training material to build capacity to enumerate nomadic and semi-nomadic livestock
Targeted Audience for Training in Enumeration of Nomadic and Semi-Nomadic (Transhumant) Livestock

<table>
<thead>
<tr>
<th>Training Item \ Audience</th>
<th>Agric. Ministry</th>
<th>NSO</th>
<th>Training &amp; Research Centers</th>
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<tbody>
<tr>
<td></td>
<td>Top Management</td>
<td>Top Management</td>
<td>Survey Managers/Supervisors</td>
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<td>Technical Staff</td>
<td>Technical/Analytical Staff</td>
<td>Researchers, Teaching Staff &amp; Students</td>
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<tr>
<td>Definitions of Nomadic &amp; Semi-Nomadic Livestock Keeping</td>
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<td>Rationale/Why Enumerate Nomadic &amp; Semi-Nomadic Livestock</td>
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<td>Methods to Enumerate Nomadic &amp; Semi-Nomadic Livestock</td>
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<td>Integrating Enumeration of Nomadic &amp; Semi-Nomadic livestock into Main Stream Agric. Survey</td>
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<td>Survey Designs &amp; Estimators</td>
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Expected outcomes of training

• After training, participants will be expected to be able to:
  ✓ Understand concepts and methods used in collection and compilation of nomadic and semi nomadic livestock data
  ✓ Identify and apply appropriate methods to collect and compile indicators for nomadic and semi nomadic livestock
  ✓ Improve data quality through selection of and use of appropriate sample surveys design for nomadic and semi nomadic livestock

• Sustain gained technical capacity through continuous self-learning using Global Strategy knowledge resources available online also through peer to peer knowledge transfer
Module 1: Objectives

Presentations of module 1 will...

• Introduce the concept of **nomadic** and **semi-nomadic (transhumant)** livestock

• Inform the audience WHY enumerate nomadic and semi-nomadic (transhumant) livestock

• Present recommended approach for **integrating enumeration** of nomadic and semi-nomadic (transhumant) livestock **into mainstream Agricultural Survey Framework**

• Provide some **general recommendations** for the enumeration of nomadic and semi-nomadic (transhumant) livestock
Presentation Outline

1. Definition of nomadism and semi-nomadism (transhumance)

2. WHY enumerate nomadic and semi-nomadic (transhumant) livestock

3. Integrating enumeration of nomadic and semi-nomadic (transhumant) livestock into mainstream Agricultural Survey Framework

4. General Recommendations for the enumeration of nomadic and semi-nomadic (transhumant) livestock
Definition of Nomadic & Semi-Nomadic Livestock
1.1 Introduction

- Old & new definitions for Nomadic Livestock production exists
- Previous definitions based on FAO (1992) guidelines on collecting livestock data
- According to FAO’s previous guidelines:
  - A **nomad** “is identified not as belonging to a particular locality, province or other delimited territory but belonging to a tribe which is a group of nomadic people usually having the same ancestral origin.”
  - **Nomadism** “is broadly defined as a movement of tribes or clans and/or herd keepers with their herds.”
- Definitions from FAO (1992) guidelines are not satisfactory to present situation hence have been updated
Current Definitions...

• Based on “Pastoralism”

“husbandry of grazing animals and the use of naturally occurring fodder resources for the production of livestock and maintenance of livelihoods.”

• Blench (2001) describes three main forms of pastoralism:
  agro-pastoralism, nomadism and transhumance
1.2 Agro-Pastoralism, Agro-Pastoralists & Agro-Pastoral Livestock

Agro-Pastoralist & Agro-Pastoral Livestock

- Agro-pastoralists are permanently settled and the movement of agro-pastoral livestock is local, irregular and very limited.
- Livelihoods of agro-pastoralists depend on both livestock and crops, with livestock being an important but not necessarily the major contributor to household livelihoods.
- Animals generate cash, food, insurance, manure, transport and hauling services, savings, and other goods and services for the household.
- Possible when livestock herds of agro pastoral households become large, are sent away for grazing with more nomadic pastoralists.
1.3 Nomadism, Nomadic Pastoralists & Nomadic Livestock

Nomadism

− The Oxford English Dictionary (11th edition) defines the terms "nomad", "nomadic" and "nomadism" as relating to people who travel from place to place to find fresh pasture for their animals and have no permanent home.

− According to Blench (2001), nomads are exclusive livestock producers, who grow no crops and depend solely on the sale or exchange of animals and their products to obtain foodstuffs. Their movements are opportunistic and follow pasture and water resources in a pattern that varies from year to year.
1.3 Nomadism, Nomadic Pastoralists & Nomadic Livestock (cont’d)

Nomadic pastoralists and nomadic livestock:

- Nomadic pastoralists are not permanently settled and the movements of nomadic livestock are irregular, erratic, and long distance.

- Pattern of movement depends on availability of forage resources;

- Livelihoods of nomadic pastoralists depend almost entirely on livestock.
1.4 Transhumance

Transhumant pastoralists and transhumant livestock

- The term “transhumant” in recent decades, is more used in place of the term “semi-nomadic”, meaning partially nomadic

- Transhumant pastoralists are not permanently settled, although they are usually settled for a part of the year.

- Movements of transhumant livestock are regular, cyclical and short-distance.

- Livelihoods of transhumant pastoralists depend largely on livestock
According to Blench (2001), …

– “transhumant pastoralists often have a permanent homestead and base at which the older members of the community remain throughout the year.
  • is often associated with the production of some crops, though primarily for herders’ own use rather than for the market.

– In many temperate regions, where snow is likely to block animals’ access to pasture, haymaking is an important component of the system.
1.4 Transhumance (cont’d)

• **Characteristic feature of transhumance is herd splitting**
  - Herders take most of the animals to search for grazing, but leave the resident community with a nucleus of lactating females.

• **Herd splitting practice may vary ...**
  - Improved modern transport in recent times allows households not to be split so radically;
  - Household members can travel easily between the two bases.
  - Whether milking females, weak animals or work animals are left behind depends substantially on the system being followed, and may vary within an individual system on a year-by-year basis.
1.4 Transhumance (cont’d)

• In other countries, large scale transhumance systems co-exists with crop farming systems ...
  – Transhumant herders co-exist with crop farmers, often competing for resources such as land and water.
  – Examples are found in Sahelian countries, East and Southern Africa

• Transhumant herders may move livestock between different regions of the country (internal transhumance) and to neighbouring countries (external transhumance)
WHY enumerate nomadic and semi-nomadic (transhumant) livestock
2.1 WHY enumerate nomadic & semi-nomadic livestock

• Livestock production (in sedentary & in nomadic and semi-nomadic systems) is one of the fastest-growing components of agriculture

• Livestock production expected to become the largest contributor to agricultural sector & economy with increase in economic development – agro processing

• Strong linkage of livestock sector to poverty, food security and environmental sustainability

• Information on livestock producers and on their animals is essential for designing, implementing, monitoring and evaluating socially desirable interventions in the sector, including those relating to selective breeding, animal health, improved feeding, processing and marketing policies and investments
2.1 WHY enumerate nomadic & semi-nomadic livestock (cont’d)

- Nomadism & Semi-Nomadism livestock production is **widely practiced**

- **It is difficult to collect data of nomadic livestock since they are highly mobile** unlike if the livestock was located in one place permanently.

- Nomadic and transhumant pastoralism are predicted to continue for the foreseeable future because...
  - Adaptability and mobility are proven sound strategies for using unpredictable, seasonal fodder and water resources that vary year to year and place to place amidst increasing climatic variability predicted for the years ahead.

- Let us see **the distribution and estimates of number of mobile pastoralist**...
2.2 How many mobile pastoralists are there? – Geographical distribution

- Nomadic and transhumant forms of pastoralism are widely practiced in many countries and regions of the world.
- Potential distribution of nomadic pastoralists is inferred from the distribution of rangelands and drylands associated with raising livestock.
- Snapshot of Global Livestock Production Systems (GLPS) is shown below.
2.2 How many mobile pastoralists are there? (cont’d)

GLPS land areas rangeland production systems extend over approximately 60 million km², or 45% of the Earth’s land surface. Dryland production systems, including all arid and hyper-arid systems, expand over 45 million km², or 34% of the Earth’s land surface.
2.2 How many mobile pastoralists are there? – the numbers

• Total number of pastoralists in the world cannot be known with any degree of confidence

• Among reasons for low degree of confidence is inconsistencies in the definitions applied

• Some estimates of number of nomads and semi-nomads exist:
  
  ➢ 20 million pastoral households (de Haan et al., 1997, referred to in Blench, 2001)
  
  ➢ 180.7 million pastoralist individuals (Thornton et. al., 2002)
  
  ➢ 200 million pastoralist individuals (Rota and Sperandini, 2009)
2.2 How many mobile pastoralists are there? – The numbers

<table>
<thead>
<tr>
<th>Region</th>
<th>Millions (of individuals)</th>
<th>%</th>
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<tbody>
<tr>
<td>West Asia</td>
<td>31.1</td>
<td>17</td>
</tr>
<tr>
<td>East Asia, including China</td>
<td>21.6</td>
<td>12</td>
</tr>
<tr>
<td>South Asia, including Pakistan and India</td>
<td>19.3</td>
<td>11</td>
</tr>
<tr>
<td>Former Soviet Union (excluding Russia)</td>
<td>8.2</td>
<td>5</td>
</tr>
<tr>
<td>South-East Asia</td>
<td>1.4</td>
<td>1</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>81.6</strong></td>
<td><strong>46</strong></td>
</tr>
<tr>
<td>Sub-Saharan Africa</td>
<td>61.9</td>
<td>34.3</td>
</tr>
<tr>
<td>North Africa</td>
<td>5.1</td>
<td>2.8</td>
</tr>
<tr>
<td><strong>Subtotal</strong></td>
<td><strong>67</strong></td>
<td><strong>37</strong></td>
</tr>
<tr>
<td>Central and South America</td>
<td>32.1</td>
<td>18</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>180.7</strong></td>
<td><strong>100</strong></td>
</tr>
</tbody>
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Source: Thornton et al. (2002).
2.2 How many mobile pastoralists are there?(cont’d)

• The figures are estimates of the animal keepers only
• When animals belonging to nomads and semi-nomads are enumerated, the figure is expected to be significantly large
• Table 2 given before excludes developed countries of Western Europe, Russia, North America, Australia, Japan, etc
• The global total of mobile pastoralists (individuals) is likely to be greater than 200 million when excluded regions are added (Kerven & Behnke, 2011)
INTEGRATING ENUMERATION OF Nomadic and transhumant livestock into AGRICULTURAL SURVEYS
3.1 Introduction

• It’s essential that all activities relating to the enumeration of nomadic and transhumant livestock are closely linked and coordinated with national agricultural surveys and censuses

• Essential also that they conform to national and international standards

• It is important thus to discuss how to build linkage and coordination of enumeration of nomadic and transhumant livestock into mainstream National Agricultural Census
3.2 Linkage and Coordination with National Agricultural Census

• The Global Strategy recommends that countries implement an integrated survey framework using an Agricultural Master Sampling Frame

• In the framework, surveys on nomadic and semi-nomadic livestock are recommended to be included in the periodic Agricultural Surveys

• The next slide shows the diagram/figure with the integrated framework
3.3 Linkage and Coordination with National Agricultural Census (cont’d)
3.3 Linkage and Coordination with National Agricultural Census (cont’d)

• The framework seeks to build agricultural indicators
• Livestock-related indicators including those from nomadic and semi nomadic livestock production are needed
• The framework shows data collection by Annual or Periodic Surveys should be based on an Agricultural Master Sampling Frame that is geo referenced to land cover and use
• The framework also shows other sources of data build agricultural indicators
  ➢ e.g. administrative data sources, remote sensing, agri-business, expert judgement and community surveys...
3.3  Linkage and Coordination with National Agricultural Census (cont’d)

- The Global Strategy has guidelines and training materials which countries can use to build Agricultural Master Sampling Frame available at
  
  http://gsars.org/en/tag/mastersamplingframe/

- Building Integrated Surveys
  
  
  http://gsars.org/en/tag/datacollection/

- The Global Strategy has a publications highlighting how to Improve Administrative data systems for more efficient Integrated Data systems available in Global Strategy website
  
  http://gsars.org/en/tag/administrativedata/
GENERAL RECOMMENDATIONS for the Enumeration of nomadic and transhumant livestock
1. Training and guidelines for standardized data collection

• It is important that field supervisors and enumerators are trained on:
  – the purpose of livestock enumeration exercise
  – recognizing livestock breeds
  – conducting surveys and interviews

• Staff involved in enumerating livestock should include statisticians and livestock specialists

• Use guidelines for enumeration of nomadic and semi nomadic livestock to ensure standardized data collection
1. Training and Guidelines for standardized data collection (cont’d)

• Global Strategy website has guidelines and training materials

  ➢ Guidelines for Enumerating Nomadic and Semi Nomadic (transhumant) Livestock
    

  ➢ Using Electronic Data Collection/Interview (CAPI)
    
    http://gsars.org/en/tag/datacollection/
2. Avoid double counting

• Nomadic and transhumant livestock are highly mobile both within and across national borders → This may cause double counting

• It is essential that reliable measures be introduced to avoid/minimize risk of double counting:
  – The zonation of large survey regions into discrete EAs, where different methods of assessment may be used as appropriate
  – Conducting field surveys in short span of time (preferably, less than one month)
  – Coordinating the timing of field surveys for cross border livestock movement with neighboring countries
  – Permanently marking enumerated animals
  – Issuing herders with date-stamped certificates for all animals enumerated
3. Advance public awareness campaign

- Essential to mount a well-organized and carefully targeted public awareness campaign to enlist cooperation
- Ensure all stakeholders are aware of the following:
  - the purpose of livestock enumeration exercise
  - information provided will remain confidential
  - information provided will be used for beneficial statistical purposes only
- Use traditional or formal organizations or associations that exist as channels to pass information
4. Dissemination of results to stakeholders

• Disseminate to all stakeholders your results in a readily understandable and accessible format

• Set adequate budget to ensure proper analysis and dissemination of findings to stakeholders

• Further useful reading on dissemination of survey datasets and results is available at
References

Thank You