Livestock Research Contributions to the SDGs

Starting with the End in Mind: Real-world evidence for real-world solutions

Jimmy Smith, ILRI Director General

Centre for Tropical Livestock Genetics and Health 2017 Annual Meeting, Edinburgh, 26–29 September 2017
LIVESTOCK ARE ESSENTIAL TO ACHIEVING THE SDGS—which are now the currency of development across the whole world
ILRI and CGIAR contributions to the SDGs

ILRI’s mission is to improve food and nutritional security and to reduce poverty in developing countries through research for efficient, safe and sustainable use of livestock — ensuring better lives through livestock.
4 LIVESTOCK PATHWAYS HELP MEET ALL THE SDGS with partnerships at the centre of each
PATHWAY 1: Economic Growth
Livestock build global and national economies

- The livestock sector contributes an average of 40% of the agricultural GDP of developing countries—and that percentage is growing.

- The market value of animal-source foods in Africa in 2050 is estimated at USD151 billion.

- Livestock value chains provide large numbers of jobs.
Livestock build household economies

<table>
<thead>
<tr>
<th>Region</th>
<th>Beef</th>
<th>Chicken meat</th>
<th>Sheep/goat meat</th>
<th>Milk</th>
<th>Pork</th>
<th>Eggs</th>
</tr>
</thead>
<tbody>
<tr>
<td>East Africa (≤ 6 milking animals)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>60-90</td>
</tr>
<tr>
<td>Bangladesh (&lt; 3ha land)</td>
<td>65</td>
<td>77</td>
<td>78</td>
<td>65</td>
<td></td>
<td>77</td>
</tr>
<tr>
<td>India (&lt; 2ha land)</td>
<td>75</td>
<td>92</td>
<td>92</td>
<td>69</td>
<td></td>
<td>71</td>
</tr>
<tr>
<td>Vietnam (small scale)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>80</td>
</tr>
<tr>
<td>Philippines (backyard)</td>
<td>50</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>35</td>
</tr>
</tbody>
</table>

Various sources: BMGF, FAO and ILRI
PATHWAY 2: Equitable livelihoods
Livestock provide livelihoods

- 70% of the world’s rural poor rely on livestock for important parts of their livelihoods.
- Of the >750 million poor livestock keepers in the world, about two-thirds are rural women.
- >100 million landless people keep livestock.
- For the vulnerable, up to 40% of benefits from livestock keeping are non-market, intangible benefits, mostly insurance and financing.
- In the poorest countries, livestock manure comprises over 70% of soil fertility amendments.
- Many poor people are employed in local informal livestock product markets.
- 90% of animal products are produced and consumed in the same country or region.
- Over 70% of livestock products are sold ‘informally’.
Livestock provide livelihoods for women

Animals are one of the few household assets women can control
PATHWAY 3: Nutrition and health
Animal-source foods provide essential nutrients

- Globally 13% of calories and 28% of protein
- Vitamins e.g. B12 only available in animal-source foods
- Minerals e.g. calcium, iron, zinc, iodine
- Consuming just one egg a day for 6 months reduces stunting in children
Livestock and other animals are a source of (zoonotic) diseases transmitted to humans.

Unlucky 13 zoonoses sicken 2.4 billion people, kill 2.2 million people and affect more than 1 in 7 livestock each year.
PATHWAY 4: Ecosystem health
Production of the greenhouse gas methane falls as animal productivity rises.
Rangelands are a vast carbon sink

Rangelands, covering up to 40% of the Earth’s surface, comprise a vast carbon sink

With moderate livestock grazing and good management, Africa’s rangelands alone could sequester 8.6 million tonnes of carbon each year
DELIVERING LIVESTOCK RESEARCH

‘WITH THE END IN MIND’
PATHWAY 1:
Economic Growth
PATHWAY 1: Economic Growth

Advanced bovine immunology research resulted in an infection-and-treatment method of immunization that prevents the disease East Coast fever in cattle, which occurs in 11 countries of Africa, annually killing 1 million animals and costing the region $300 million.
PATHWAY 1: Economic Growth

Can today’s state-of-the-art genetics, immunology and health research be employed to spur economic growth?
PATHWAY 2: Equitable livelihoods
Development of a thermostable version of the current effective vaccine against sheep and goat plague (‘peste des petits ruminants’), can improve the livelihoods of hundreds of millions of poor people by preventing the morbidity and mortality of some 30 million animals annually, with losses valued at $1.2 billion each year.
Can the new gene, genomics and vaccine sciences and technologies be used to develop ‘scale-neutral’ solutions that help ensure a transition to more equitable livelihoods?
PATHWAY 3:
Nutrition and health
International research teams used state-of-the-art models to determine the first-ever global assessment of the extent of use of antimicrobial drugs. Worldwide livestock antimicrobial consumption is expected to rise 67% between 2010 and 2030.
Can today’s genetics and health research come up with new means of preventing animal diseases, thereby enhancing the responsible and fair use of antimicrobials in livestock production systems?
PATHWAY 4: Ecosystem health
New technologies in animal nutrition, breeding and health led to a 63% reduction in the total carbon footprint per unit of milk in the US over a 60-year period.

Similar feasible improvements in animal feeds, health and husbandry in South Asia are expected to reduce mixed dairy farming greenhouse gas emissions by 38%.
What kinds of technology breakthroughs could deliver further significant efficiency gains while also reducing the carbon footprint of animal agriculture still further?
IMPERATIVES FOR CONDUCTING LIVESTOCK RESEARCH ‘WITH THE END IN MIND’
So research is an imperative—but not just any research.

I’ve argued that livestock research is an imperative for delivering on the SDGs.

But it’s not just any research that’s required.

Here are some of my thoughts on what doing research ‘with the end in mind’ looks like.
1 Deliver solutions for today as well as tomorrow

Demonstrate that research is delivering results over the: short, medium, longer, longer terms.
2 Conduct research with the future in mind

The developing world’s livestock systems are in big transition and transformation.

Our research solutions should ensure that today’s smallholder producers contribute to tomorrow’s sustainable livestock systems.
3 Ensure research is informed by the evolving smallholder context

SUSTAINABLE DEVELOPMENT GOALS

1. NO POVERTY
2. ZERO HUNGER
3. GOOD HEALTH AND WELL-BEING
4. QUALITY EDUCATION
5. GENDEREquality
6. CLEAN WATER AND SANITATION
7. AFFORDABLE AND CLEAN ENERGY
8. DECENT WORK AND ECONOMIC GROWTH
9. INDUSTRY, INNOVATION AND INFRASTRUCTURE
10. REDUCED INEQUALITIES
11. SUSTAINABLE CITIES AND COMMUNITIES
12. RESPONSIBLE CONSUMPTION AND PRODUCTION
13. CLIMATE ACTION
14. LIFE BELOW WATER
15. LIFE ON LAND
16. PEACE AND JUSTICE
17. PARTNERSHIP FOR THE GOALS

Understand the context in which research-based interventions will be used and the trajectories smallholders are taking. Put smallholders at the centre of our research for development: Transforming smallholder agriculture is key to meeting the SDGs.
Tackle livestock development challenges from the perspectives of ‘whole systems’.

Change what we do to ensure that our research complements and adds value to other research components.
5 Avoid blanket solutions

Take account of important trade-offs as well as potential synergies.

Tailor solutions to reflect the diversity of how farm animals worldwide are raised and how their products are processed, sold and consumed.
6 Harness the diverse priorities of our diverse investors

Different donors have different priorities and ambitions—e.g. upstream, mid-stream or downstream; technical, biological or social; community-based, institutional or political.

While serving the specific interests of donors, let’s harness this diversity to ensure that it adds up to holistic solutions covering short- to medium- to long-term interventions.
ILRI is delighted to be working in this productive partnership providing real-world evidence for real-world solutions for achieving the SDGs.
better lives through livestock

ilri.org

ILRI thanks all donors and organizations who globally supported its work through their contributions to the CGIAR system.