



Food and Agriculture  
Organization of the  
United Nations

Good practices to sustainably enhance  
the productivity of small-scale  
livestock producers – compilation of  
exemplars and guidelines

1. This document complements the discussion document Good practices to sustainably enhance the productivity of small-scale livestock producers (COAG:LI/2022/3). It provides (i) exemplars of good practices that supported enhancements in small-scale livestock productivity through interventions at production unit, value chain and policy levels and (ii) a non-exhaustive and illustrative compilation of publications aimed at supporting productivity improvements for different livestock themes, production systems and species. For the purpose of this document, a good practice is defined as an approach, tool or technique that has proven to work well and produce sound, sustainable results.

## I. Good practices exemplars

2. A participatory approach was employed to collect examples of good practices for enhancing the productivity of small-scale livestock producers. An open call for partner agencies and FAO Offices to submit examples of good practices was complemented by a literature search and three regional workshops involving FAO and partner agencies, academia, research institutes and other public and private sector actors.

3. The exemplars listed were selected based on their relevance and information available and to represent a variety of technical areas, livestock species, production systems and geographical areas. Following the list of exemplars, each practice is presented through a short description including an overview of the practice and its impacts, the geographic area where the practice has been implemented and for how long. This is followed by a list of the key organization(s) involved and the links to online resources available for further information.

- Example 1: “Balde Cheio” (full bucket) programme
- Example 2: BeeScanning
- Example 3: CAP'2ER®
- Example 4: Collect Mobile for dairies
- Example 5: Community-based breeding programmes
- Example 6: Control of Newcastle disease in village chickens using appropriate vaccines
- Example 7: Efficient feed utilization across seasons through improved feed troughs for small ruminants
- Example 8: Dimitra Clubs
- Example 9: Feed Assessment Tool (FEAST)
- Example 10: Feed balance sheets
- Example 11: Good agricultural practices for milk production: diagnosis and non-compliances adjustment
- Example 12: Good husbandry and biosecurity practices to support registration, auditing and certification system of hatcheries
- Example 13: Guar cultivation
- Example 14: Hivelog – Keep it simple
- Example 15: Index-based livestock insurance
- Example 16: Innovative semi-intensive rural poultry production model
- Example 17: Integrated crop-livestock and fruit-growing systems for milk producers
- Example 18: Integrated dairy schemes
- Example 19: Integrating soil conservation and fodder production as climate adaptation strategy
- Example 20: Landcare grazing groups
- Example 21: Linking community-based animal health services with natural resource conflict mitigation
- Example 22: Livestock emergency guidelines and standards
- Example 23: Livestock farmer field schools
- Example 24: Low-cost shelter preparation
- Example 25: Mobile services for nomadic pastoralists

- Example 26: Plant-based and ethnoveterinary medicine
- Example 27: Practical dairy learning farms
- Example 28: Quality-based milk payment systems

### Example 1: “Balde Cheio” (full bucket) programme

The “Balde Cheio” (full bucket) programme was launched in 1999 in São Paulo state and gradually spread in all regions of the country reaching more than three thousand small-scale dairy farmers. The programme aims to develop and adapt production processes and administrative tools for small-scale dairy farmers and extension service technicians. The approach aims to closely link research to producer needs and their local situation.

Following the implementation of the approach, milk volume produced by small-scale producers in the State of São Paulo increased by 2.3 times (from 113 to 260 l / day), on average. A study conducted in five regions in Brazil, showed that the average gross margin per hectare increased almost two-fold. This was obtained by the combination of increases in different indicators such as more milk produced (4 percent), using less area (-7 percent), with gains of 54 percent in the productivity of land and greater productivity per cow (24 percent). In addition, there was a significant improvement in labour performance (37 percent). Another interesting feature was the generation of more jobs at the rate of 0.2 personnel / ha.

#### *Geographic focus*

Latin America and the Caribbean: primarily Brazil (country-wide)

#### *Number of years of implementation*

> 20 years

#### *Key organization(s)*

Embrapa (Brazilian Agricultural Research Corporation) and local private and public partners

#### *Additional information*

<https://www.embrapa.br/balde-cheio>

### Example 2: BeeScanning

BeeScanning is a digital application (app) used by 12 000 beekeepers globally that helps to control varroa mites, the first cause of honeybee colony losses worldwide. The app analyses bee images in photos taken with a mobile phone camera, allowing effective early detection of varroa and sick broods in hives.

BeeScanning saves beekeepers’ time and expenses while reducing bee mortality and increasing productivity. It has detected about 26 000 varroa mite incursions by 2021 and the images from hives across the globe, stored through the app, form the largest collection of live honeybees on the comb.

#### *Geographic focus*

Africa, Asia and the Pacific, Europe and Central Asia, Latin America and the Caribbean, Near East and North Africa

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| <i>Number of years of implementation</i>                            |
| 3–5 years   |
| <i>Key organization(s)</i>  |
| BeeScanning Global AB and Swedish Commercial Beekeepers Association |
| <i>Additional information</i>                                       |
| <a href="http://www.beescanning.com">www.beescanning.com</a>        |

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| <b>Example 3: CAP'2ER®</b>   |
| <p>CAP'2ER® (“Calcul Automatisé des Performances Environnementales en Elevage de Ruminants”) is a method for evaluating sustainability on ruminant farms. The method can be applied by producers by themselves (Level 1) or with technical support (Level 2) to estimate aspects of sustainability such as greenhouse gas emissions, carbon sequestration and biodiversity.</p> <p>Currently, this method is used by more than 22 000 dairy producers in France in production systems of different types and scales, including small-scale systems. The method contributes to improved livestock productivity and once a positive Level 2 assessment is achieved (i.e. when both producers and technicians agree that the assessment is positive) producers can gain access to carbon markets.</p> |
| <i>Geographic focus</i>  |
| Europe and Central Asia: primarily France  |
| <i>Number of years of implementation</i>   |
| > 5 years  |
| <i>Key organization(s)</i>   |
| French Livestock Institute (“Institut de l'élevage”, IDELE) and partners   |
| <i>Additional information</i>  |
| <a href="https://idele.fr/detail-article/cap2err">https://idele.fr/detail-article/cap2err</a>  |

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| <b>Example 4: Collect Mobile for dairies</b>   |
| <p>Collect Mobile is an interactive, innovative and customisable mobile software that can be used on phones or tablets with embedded Global Positioning System (GPS). Milk processors can use the app to conduct surveys on the ground and geo-locate current and potential milk suppliers. The app also helps to optimise collection routes to reduce transportation costs and forecast the capacity need for cooling tanks and refrigeration transport. Processors receive accurate information about existing sources of raw milk, including volume, seasonal availability and the growth potential of each supplier.</p> <p>Collect Mobile promotes direct interaction between processors and small-scale producers and enables dairy companies to provide targeted advice on various topics, from improved milk hygiene to farm management. This helps smaller farms comply with food safety standards and also grow their businesses. It also assists dairy companies in taking informed decisions on their supply chain management and expansion investments.</p> |

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| <i>Geographic focus</i>   |
| Europe and Central Asia: Kazakhstan   |
| <i>Number of years of implementation</i>  |
| 5 years   |
| <i>Key organization(s)</i>  |
| FAO and partners  |
| <i>Additional information</i>   |
| <a href="http://www.fao.org/fao-stories/article/en/c/1402540/">http://www.fao.org/fao-stories/article/en/c/1402540/</a> |

### Example 5: Community-based breeding programmes

Community-based breeding programmes are an alternative to commercial livestock breeding methods that are often unsuitable for resource-poor households with small herds and flocks raised under harsh local conditions. They are focused on indigenous breeds (often small ruminants) suited to small-scale producer conditions. Community-based breeding programmes increase the productivity and profitability of indigenous breeds without undermining their resilience and genetic integrity, and without expensive interventions. Key elements of the practice include:

- producers are trained to improve selection methods – e.g. retaining fast-growing rams/buck lambs/kids for breeding, rather than selling them;
- community flocks are pooled to enlarge the gene pool and increase the average genetic merit during the selection of breeding males;
- interactions between producers and scientists enable the evaluation of different breeding options and informed decisions on flock management; and
- a recording system monitors the performance of individual animals, leading to the estimation of breeding values for selection decisions and continuous genetic improvement.

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| <i>Geographic focus</i>  |
| Africa, Latin America and the Caribbean and the Near East and Northern Africa: Ethiopia, Iran, Indonesia, Uganda, Malawi, South Africa and many other countries  |
| <i>Number of years of implementation</i>   |
| > 10 years   |
| <i>Key organization(s)</i>   |
| International Center for Agricultural Research in the Dry Areas (ICARDA), International Livestock Research Institute (ILRI), BOKU University of Austria  |
| <i>Additional information</i>  |
| <ul style="list-style-type: none"> <li>• <a href="https://pubmed.ncbi.nlm.nih.gov/25823840/">https://pubmed.ncbi.nlm.nih.gov/25823840/</a></li> <li>• <a href="https://www.icarda.org/research/innovations/community-based-breeding-programs-sheep-and-goats">https://www.icarda.org/research/innovations/community-based-breeding-programs-sheep-and-goats</a></li> </ul> |

### **Example 6: Control of Newcastle disease in village chickens using appropriate vaccines**

This practice aims to control Newcastle disease (ND) in extensively raised chicken flocks. Key elements of the practice include:

- support and coordination by relevant government agencies and private sector suppliers for the promotion and implementation of ND vaccination programmes;
- an appropriate vaccine (preferably thermotolerant), vaccine technology (i.e. non-invasive application methods such as eye-drop or drinking water) and vaccine distribution mechanisms (i.e. reliable cold chain, and cold chain and stock monitoring);
- range of effective extension materials and methodologies for capacity development of men and women producers, community vaccinators, extensionists and animal health personnel;
- inclusive, cost-efficient evaluation and monitoring systems covering both technical and socio-economic indicators; and
- economic sustainability based on the commercialization of the vaccine and vaccination services and the marketing of surplus chickens and eggs.

The practice creates micro-businesses for community-based vaccinators. It improves production of animal-source foods through improved chicken production which contributes to improved household nutrition. It has a strong element of promoting gender equality.

#### *Geographic focus*

Africa: Ethiopia, Malawi, Mozambique, Tanzania, Uganda and Zambia

#### *Number of years of implementation*

> 18 years

#### *Key organization(s)*

Kyeema Foundation, Malawi Rural Poultry Centre, National Veterinary Services, Producer Associations and agricultural and veterinary suppliers

#### *Additional information*

<https://www.cambridge.org/core/journals/world-s-poultry-science-journal/article/abs/technically-sound-and-sustainable-newcastle-disease-control-in-village-chickens-lessons-learnt-over-fifteen-years/0A36E26FEF7BD8372E3752701DB852CA>

### **Example 7: Efficient feed utilization across seasons through improved feed troughs for small ruminants**

This practice focuses on the training, construction and use of improved and cost-effective feed troughs made with locally sourced materials to promote efficient feed use. The use of improved feeding troughs leads to reduced feed wastage, improved feed efficiency and to an increase in the amount of manure collected.

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| <i>Geographic focus</i><br>Africa: Ghana   |
| <i>Number of years of implementation</i><br>2 years  |
| <i>Key organization(s)</i><br>ILRI   |
| <i>Additional information</i><br><a href="https://cgspace.cgiar.org/bitstream/handle/10568/109919/imprvdfeedtroughs_Ghana.pdf?sequence=1&amp;isAllowed=y">https://cgspace.cgiar.org/bitstream/handle/10568/109919/imprvdfeedtroughs_Ghana.pdf?sequence=1&amp;isAllowed=y</a> |

### **Example 8: Dimitra Clubs**

Dimitra Clubs are informal groups of rural women and men who come together on a voluntary basis to discuss and implement solutions to community problems by using local and collective efforts and resources. Crop and livestock production are common themes, but not the only ones; other topics include climate change, education, health, infrastructure, nutrition, peace and women's status. Dimitra Clubs create a space to also discuss and take action in relation with community social norms and behaviors affecting women – enabling women's leadership and encouraging men's engagement. Nearly all clubs own a solar-powered radio. By fostering partnerships with local radio stations, Dimitra Clubs learn from one another, broadcast their initiatives and spark dialogue in the wider community and beyond.

#### *Geographic focus*

Africa

#### *Number of years of implementation*

> 10 years

#### *Key organization(s)*

FAO

#### *Additional information*

<https://www.fao.org/in-action/dimitra-clubs/en/>

### **Example 9: Feed Assessment Tool (FEAST)**

The Feed Assessment Tool (FEAST) is a systematic method used to describe local feed resources and farm systems, and identify priority feed issues for the local community. The method involves using a participatory rural appraisal approach, designed to inform local decision making. FEAST is accompanied by a set of feed intervention technical sheets that can be used by decision makers to identify locally relevant interventions.

Small-scale livestock producers benefit from the process and the evidence generated. The process

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| <p>provides an opportunity for them to share perspectives and to come to a consensus on core issues related to their livestock enterprises. The evidence generated can then be used to prioritise core constraints and to improve the enabling environment for livestock enterprises. Given the scope of FEAST, benefits include: access to markets or services, improved knowledge and capacities, gender equity and resilience.</p> |
| <p><i>Geographic focus</i><br/>Africa and Asia and the Pacific</p>  |
| <p><i>Number of years of implementation</i><br/>&gt; 10 years</p>   |
| <p><i>Key organization(s)</i><br/>ILRI, International Center for Tropical Agriculture (CIAT) and others</p>   |
| <p><i>Additional information</i><br/><a href="https://www.ilri.org/feast">https://www.ilri.org/feast</a></p>  |

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| <p><b>Example 10: Feed balance sheets</b></p>  |
| <p>Feed balance sheets assess the resources (used or potentially usable and accessible) in feed (fodder, agricultural by-products, agro-industrial by-products, concentrates), and compares them with the needs of livestock. A fundamental element in this assessment is the accessibility to these products, especially for pastoralists.</p> <p>Feed balance sheets can assist producers (small and large), livestock sector stakeholders and policy-makers improve their planning and sector assessment, especially when feed deficits are forecast. In particular, they are essential for taking measures such as distributing fodder or destocking livestock in the event of a forecast deficit. Feed balance sheets are also an essential step in assessing the consequences of spatio-temporal variations in rainfall on crop production, which is necessary for estimating the impact of climate change on food production. Feed balances are also used for assessments at different scales, e.g. for global or regional balances of feed-human competition or estimates of greenhouse gas emissions from livestock.</p> <p>Feed balance sheets are used by technical services in Sahelian countries at the end of the year as a forward-looking tool to prepare for the next dry season. In addition, feed balances have proven essential for improving the resilience of pastoral communities over the long term: the estimation and mapping of structural deficits and / or feed surpluses are essential information for the development of supply chains, production of animal feed, the organization of transhumance and the establishment of infrastructure such as: water points, stopover lodges, pastoral reserves, access rights, livestock markets, etc.</p> |
| <p><i>Geographic focus</i><br/>Africa: Sahel region of West and Central Africa</p>   |
| <p><i>Number of years of implementation</i><br/>5–10 years</p>   |
| <p><i>Key organization(s)</i><br/>FAO and partners</p>   |

*Additional information*

<https://www.fao.org/documents/card/en/c/ca9111fr>

**Example 11: Good agricultural practices for milk production: diagnosis and non-compliances adjustment**

This practice consists on the development, validation and use of a novel diagnostic tool (PROTAMBO), based on the FAO and International Dairy Federation (IDF) “Guide to Good Dairy Farming Practice”. After the assessment of Good Agricultural Practices (GAP) by using the PROTAMBO, customized corrective protocols are proposed by the technical advisor and the farmer, taking into account thirty-three indicators in six key areas (i.e. animal health, milking hygiene, nutrition (feed and water), animal welfare, environment, and socio-economic management), as recommended by FAO and IDF.

This practice can assist in overcoming existing and emerging GAP challenges to maximize dairy quality on milk production farms to achieve international recommendation standards. This ultimately fosters product quality, safety and integrity, amidst widely desirable economic, environmental and social impacts.

*Geographic focus*

Latin America and the Caribbean: Brazil, South region, states of Rio Grande do Sul and Paraná

*Number of years of implementation*

5–10 years

*Key organization(s)*

Embrapa

*Additional information*

- <https://www.scielo.br/j/abmvz/a/3KbC4ycmxvPRT5MT8NQ33Dp/?lang=pt>
- <https://www.embrapa.br/en/busca-de-publicacoes/-/publicacao/1078086/importancia-e-diagnostico-das-boas-praticas-agropecuarias-em-sistemas-de-producao-leiteira>
- <https://www.embrapa.br/en/busca-de-publicacoes/-/publicacao/1110110/boas-praticas-agropecuarias-na-pecuaria-leiteira>

**Example 12: Good husbandry and biosecurity practices to support registration, auditing and certification system of hatcheries**

A practice to improve biosecurity in poultry hatcheries at both producer and local authority level. At the producer level, pre- and post-intervention assessments were conducted, action plans for improvement were prepared, and trainings on good hatchery/farm management practices (including prudent use of antimicrobials) and biosecurity were provided. On the other hand, at local government level, biosecurity checklists were developed and staff were provided trainings on auditing and certifications.

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| With this practice, poultry farmers experienced a great reduction in their cost of production, an increase in productivity and they could sell their products as 'certified safe' outside the province and command a higher price for their products. |
| <i>Geographic focus</i><br>Asia and the Pacific: Viet Nam, Bac Giang Province and nationally  |
| <i>Number of years of implementation</i><br>1–2 years   |
| <i>Key organization(s)</i><br>FAO in partnership with Department of Livestock Production, Viet Nam  |
| <i>Additional information</i><br><a href="http://www.fao.org/3/ca5516en/ca5516en.pdf">http://www.fao.org/3/ca5516en/ca5516en.pdf</a>  |

### **Example 13: Guar cultivation**

A practice which introduces the use of guar (cluster bean) on farms as a fodder/forage crop. It has led to high rate of scaling up of individual range reserves amongst households. Guar has been widely adopted by communities and farmers and has resulted in an increase in household income and food security, the availability of high palatable and nutritive fodder, milk productivity, animal growth, among others. There has also been a decrease in the cost of production.

#### *Geographic focus*

Near East and North Africa: Sudan, Butana, Butan Locality, Aldraiha village

#### *Number of years of implementation*

2–3 years

#### *Key organization(s)*

International Fund for Agricultural Development (IFAD)

#### *Additional information*

<http://www.ccuifad.sd/>

### **Example 14: Hivelog – Keep it simple**

This programme can be used by anyone with a smartphone or a computer. It helps beekeepers to increase their knowledge and learn from experiences in an ongoing manner. The diary feature of the programme supports record keeping and decision-making. Key elements of the practice include:

- a small software package that can be installed on smartphones and computers;
- the basis software package is available for free download;
- it provides an easy way to compare queens, colonies, behavior, feed, varroa count, varroa

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| <p>treatment and honeybee diseases;</p> <ul style="list-style-type: none"> <li>• the programme provides simple statistics directly on the smart phone and can also export Excel spreadsheets to enable beekeepers to do their own statistical analyses; and</li> <li>• beekeepers are able to use the programme in their apiary and at a time convenient to them.</li> </ul> <p>The programme has been translated into 11 languages and supports both small- and large-scale beekeepers.</p> |
| <p><i>Geographic focus</i></p> <p>Europe and Central Asia: Nordic countries, England, Germany, Estonia, Austria, Italy and other European countries.</p> <p>Latin America and the Caribbean: Chile with minor numbers in other countries.</p>  |
| <p><i>Number of years of implementation</i></p> <p>3–5 years</p>   |
| <p><i>Key organization(s)</i></p> <p>Danmarks Biavlerforening (Danish Beekeepers Association)</p>  |
| <p><i>Additional information</i></p> <p><a href="https://english.stadekort.dk/">https://english.stadekort.dk/</a></p>  |

### **Example 15: Index-based livestock insurance**

The index-based livestock insurance (IBLI) is aimed at designing, developing and implementing market-mediated, index-based insurance products to protect livestock keepers, particularly in the drought-prone arid and semi-arid lands, from drought-related asset losses.

The IBLI index is based on satellite data, which measures the quality of the pastureland every 10–16 days. When evolving range conditions predict livestock mortality in excess of a critical threshold (say 15 percent) over a predetermined area, the insurance pays contract-holding pastoralists for their losses, allowing them to manage their individual risk. IBLI differs from conventional insurance in that it offers compensation (in the form of a cash payout) based on an index rather than on verification of individual losses, which would prove prohibitively costly in remote regions.

*Geographic focus*

Africa: Kenya and Ethiopia

*Number of years of implementation*

10 years

*Key organization(s)*

ILRI and partners, including the Technical Centre for Agricultural and Rural Cooperation (CTA), Cornell University, University of Wisconsin-Madison, Syracuse University, World Vision and Mercy Corps

*Additional information*

- [https://cgspace.cgiar.org/bitstream/handle/10568/97904/2044\\_PDF.pdf?sequence=1&isAllowed=y](https://cgspace.cgiar.org/bitstream/handle/10568/97904/2044_PDF.pdf?sequence=1&isAllowed=y)
- <https://www.ilri.org/news/livestock-insurance-schemes-pastoralists-there-future-regional-approach-horn-africa>

**Example 16: Innovative semi-intensive rural poultry production model**

Through this practice, small-scale indigenous chicken producers adopt new sustainable practices to transition their poultry production system from ‘small extensive scavenging’ and ‘extensive scavenging’ to ‘semi-intensive’. The model involves a training and knowledge-sharing programme on good poultry production and health practices and the development of integrated market clusters (i.e. setting up of poultry breeding and poultry fattening units) in village communities.

The implementation of the model (i) reduced the mortality rates of indigenous chickens from 80 to 5–10 percent; (ii) improved producers’ income by USD 150–200/month from poultry production (before household consumption and occasional sale); and (iii) enhanced producers’ access to markets giving the opportunity to sell poultry at higher prices.

*Geographic focus*

Asia and the Pacific: Cambodia

*Number of years of implementation*

> 5 years

*Key organization(s)*

IFAD and Green Innovet Cam (GIC)

*Additional information*

[https://www.ifad.org/documents/38714170/41804382/cambodia\\_case\\_poultry.pdf](https://www.ifad.org/documents/38714170/41804382/cambodia_case_poultry.pdf)

**Example 17: Integrated crop-livestock and fruit-growing systems for milk producers**

The crop-livestock and fruit-growing integration system for milk producers is an association of fruit tree species compatible with dairy cattle herds on the pastures where the animals feed. Certain species of smaller size can be used for young animals while those of larger size are associated with adult animals. The species most used and already in use by small-scale producers have been: cashew trees, guava trees, coconut trees, lychees, olive trees, baru trees, cacao trees, pequi trees, grape vines and passion fruit, among others. The management depends on the combination of species used, and the producer and technician should seek the best combination indicated for conditions involving climate, market, compatibility, soil, level of intensification, etc. This practice has also been used for sheep and goats.

The range of benefits is wide, including an increase in the income of the small-scale producers due to the adoption of a new activity; environmental improvement due to the greater insertion of trees in the ecosystem, sequestering carbon from the atmosphere; improving the environment and protecting

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| animals in stressful tropical conditions; and complementary feeding of the herd with leaves and fruits that fall on the ground, among others.  |
| <i>Geographic focus</i><br>Latin America and the Caribbean: All regions of Brazil. This system is present also in several other countries of South and Central America   |
| <i>Number of years of implementation</i><br>2–3 years  |
| <i>Key organization(s)</i><br>Embrapa with the support from universities, regional technical assistance institutions and cooperatives  |
| <i>Additional information</i> <ul style="list-style-type: none"> <li>• <a href="https://www.scielo.br/j/rcaat/a/5VFzhDTkP3sNbWzR5QzQpsm/?lang=en">https://www.scielo.br/j/rcaat/a/5VFzhDTkP3sNbWzR5QzQpsm/?lang=en</a></li> <li>• <a href="https://www.youtube.com/watch?v=ATnZMUjCMF8">https://www.youtube.com/watch?v=ATnZMUjCMF8</a></li> </ul> |

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| <b>Example 18: Integrated dairy schemes</b>  |
| The integrated dairy scheme (IDS) is a holistic approach that encompasses all activities required to boost income generation for rural households in Afghanistan. This ranges from increasing milk production to channeling it through sustainable milk market networks. The IDS model has evolved throughout the implementation of various dairy industry development projects across Afghanistan since 2005. It has been recognized by the Government of the Islamic Republic of Afghanistan as an effective model for increasing milk production while empowering rural Afghan women. |
| <i>Geographic focus</i><br>Asia and the Pacific: Afghanistan   |
| <i>Number of years of implementation</i><br>> 15 years   |
| <i>Key organization(s)</i><br>FAO and partners   |
| <i>Additional information</i> <ul style="list-style-type: none"> <li>• <a href="https://sdgs.un.org/partnerships/integrated-dairy-scheme-ids-livelihood-improvement-and-women-empowerment-rural">https://sdgs.un.org/partnerships/integrated-dairy-scheme-ids-livelihood-improvement-and-women-empowerment-rural</a></li> <li>• <a href="https://www.fao.org/3/i4585e/i4585e.pdf">https://www.fao.org/3/i4585e/i4585e.pdf</a></li> </ul>   |

### **Example 19: Integrating soil conservation and fodder production as climate adaptation strategy**

This practice involves an integrated approach involving fodder production and soil and water conservation as a means of rapidly obtaining alternative sources of fodder, controlling erosion and increasing resilience to extreme weather events. Key elements of the practice include:

- planting of fodder on anti-erosive structures (such as vegetates, soil bunds or fodder grass strips) on unproductive, eroded farmland; and
- initially, fodder is planted on non-erosive structures and then directly as pure fodder hedges, then along paths surrounding fields and finally turned into a permanent fodder production plot.

This practice addresses multiple problems including soil erosion and loss of fertility, fodder scarcity and moisture retention. It has been applied in a range of situations and has led to a wide range of benefits, including generating new sources of income and reducing women's workload.

#### *Geographic focus*

Africa: Ethiopia

Latin America and the Caribbean: Ecuador and Uruguay

#### *Number of years of implementation*

> 10 years

#### *Key organization(s)*

CTA with Interaide, Agence Française de Développement, Regional Centre for Business Development and Innovation and ILRI

#### *Additional information*

[https://cgspace.cgiar.org/bitstream/handle/10568/97900/2042\\_PDF.pdf?sequence=4&isAllowed=y](https://cgspace.cgiar.org/bitstream/handle/10568/97900/2042_PDF.pdf?sequence=4&isAllowed=y)

### **Example 20: Landcare grazing groups**

Landcare is a movement of over 6 000 groups and hundreds of thousands of volunteers across rural and urban Australia. Key elements of the approach adopted by grazing groups include:

- core values are to be inclusive, supportive and stimulating;
- group members choose the production system that they wish to focus on;
- encourage balanced decision making, taking into consideration environmental, economic and emotional aspects;
- producers implement as many of the following six core principles of regenerative grazing as economically and practically feasible, in line with their production goals:
- planning, monitoring and managing grazing activities;
- giving plants adequate rest to recover after grazing;

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| <ul style="list-style-type: none"> <li>• matching stocking rate to available carrying capacity;</li> <li>• managing livestock effectively for optimal performance;</li> <li>• using animal density as a tool for change, and</li> <li>• managing for diversity of plants, animals and microbiology.</li> <li>• seasonal meetings are held to address issues expected to be important in the upcoming season so that producers can make necessary changes in advance to increase the chances of improving their productivity.</li> </ul> <p>Benefits of the Landcare grazing model include increased soil water retention, enhanced soil health and ecological landscape sustainability, improved productivity and ultimately profitability.</p> |
| <p><i>Geographic focus</i></p> <p>Asia Pacific: Australia and over 20 other countries, including low- and middle-income countries.</p>  |
| <p><i>Number of years of implementation</i></p> <p>10 years</p>   |
| <p><i>Key organization(s)</i></p> <p>Landcare NSW, Australia</p>  |
| <p><i>Additional information</i></p> <ul style="list-style-type: none"> <li>• <a href="https://upperlachlanlandcare.org.au/projects/83-main/122-upper-lachlan-landcare-grazing-group">https://upperlachlanlandcare.org.au/projects/83-main/122-upper-lachlan-landcare-grazing-group</a></li> <li>• <a href="https://www.rcsaustralia.com.au/the-rce-story/stories-from-clients/case-studies/">https://www.rcsaustralia.com.au/the-rce-story/stories-from-clients/case-studies/</a></li> <li>• <a href="https://www.rcsaustralia.com.au/rce-regenerative-grazing-principles/">https://www.rcsaustralia.com.au/rce-regenerative-grazing-principles/</a></li> </ul>  |

### **Example 21: Linking community-based animal health services with natural resource conflict mitigation**

This is a conflict resolution practice using a livelihood analysis approach to facilitate social dialogue between parties involved in conflict linked to natural resources, in order to promote equitable access to and sustainable management of these valuable assets through promoting trust among actors, strengthening social cohesion to mitigate competition over limited natural resources, and strengthening traditional/local institutions.

Consistent results have been recorded including improving livestock health, strengthening beneficiary livelihoods, improving conflict-sensitive programming, sustaining peace between parties in conflict, and allowing free movement of people.

*Geographic focus*

Africa: Abyei Administrative Area situated between Sudan and South Sudan

*Number of years of implementation*

10 years

*Key organization(s)*

FAO, Secretariat of Agriculture; Animal Resources and Fishery (SAARF); Abyei Joint Oversight Committee (AJOC Sudan); Missiriya Community Animal Health Workers; United Nations Resident Coordinator's Office (UNRCO); United Nations Office for the Coordination of Humanitarian Affairs (UNOCHA)

*Additional information*

<http://www.fao.org/3/i7422e/i7422e.pdf>

**Example 22: The livestock emergency guidelines and standards**

The livestock emergency guidelines and standards (LEGS) provide clear and effective guidance for designing, implementing and evaluating livestock interventions to help people, including small-scale producers, affected by humanitarian crises. These guidelines and standards cover all types of livestock from small species to large animals and diverse settings (from rural communities to peri-urban and urban to displacement camps or centres). LEGS is based on three livelihood objectives: (i) to provide rapid assistance, (ii) to protect livestock assets, and (iii) to rebuild livestock assets of crisis-affected communities.

*Geographic focus*

Global, with emphasis on low- and middle-income countries

*Number of years of implementation*

15 years

*Key organization(s)*

LEGS and partners

*Additional information*

<https://www.livestock-emergency.net/>

**Example 23: Livestock farmer field schools**

The Farmer Field School (FFS) approach is a form of farmer education and empowerment, based on hands-on and participatory learning. It was originally developed with a focus on crops and then applied to many different livestock production systems, including pastoralism and agro-pastoralism, dairy production, poultry production, beef production, small ruminant production, pig production, integrated rice-duck systems, rabbit production, beekeeping and camel production. Over the years, FFS has contributed to developing the critical analysis, decision-making and communication skills of small-scale livestock producers in many different contexts and environments, allowing them to build more efficient and sustainable systems.

*Geographic focus*

Africa, Asia and the Pacific, Latin America and the Caribbean, Europe and Central Asia and North Africa and the Near East

|  |
|--|
| <i>Number of years of implementation</i><br>~ 20 years   |
| <i>Key organization(s)</i><br>FAO, ILRI, the World Bank, IFAD and several civil society organizations                            |
| <i>Additional information</i><br><a href="http://www.fao.org/3/I8655EN/i8655en.pdf">http://www.fao.org/3/I8655EN/i8655en.pdf</a> |

#### **Example 24: Low-cost shelter preparation**

A practice which makes use of locally available materials such as straw, bamboo and tree branches to produce low-cost shelter options for livestock which hitherto had no specific place for their feeding and sleeping. The practice led to numerous benefits including improved health and feeding management. The low inputs required to implement the practice enabled quick adoption by small-scale livestock producers.

##### *Geographic focus*

Asia and the Pacific: Bangladesh (Chittagong Hill Tracts districts)

##### *Number of years of implementation*

5–10 years

##### *Key organization(s)*

Caritas Bangladesh and French Development Agency

##### *Additional information*

N/A

#### **Example 25: Mobile services for nomadic pastoralists**

This practice involves the use of mobile units (different types of prototypes have been developed in different countries) which combine primary care, processing units such as simple dairy units and abattoirs and chillers and operate on solar power. Such units can also take essential services to pastoral communities. Firstly, essential medicines and vaccines can be transported in the vehicle to reach pastoral communities. Further products made by pastoralists can be transported back to markets after initial processing. By using solar power it enable pastoralists to get electricity and also provides them with a renewable source of energy. Perishable products can be transported quickly. The mobile units can have refrigeration which enables storage of products.

##### *Geographic focus*

Europe and Central Asia: Turkey (prototype developed)

Asia and the Pacific: India (prototype under development)

|  |
|--|
| <i>Number of years of implementation</i>                                   |
| 5 years  |
| <i>Key organization(s)</i>   |
| Animal Husbandry Department in Turkey, Anthra and shepherd unions in India |
| <i>Additional information</i>  |
| <a href="https://edepot.wur.nl/520615">https://edepot.wur.nl/520615</a>    |

### **Example 26: Plant-based and ethnoveterinary medicine**

This practice involves promoting plant-based medicine and ethnoveterinary (i.e. traditional) medicine treatments that have been documented and validated and provide an alternative to commercial veterinary biological products for the control of certain diseases, in conjunction with training on improved management practices. Such treatments can offer a first line of treatment, especially relevant in remote areas where veterinary care is limited or inaccessible.

#### *Geographic focus*

Asia: India, Nepal and Sri Lanka

#### *Number of years of implementation*

25 years

#### *Key organization(s)*

Anthra, Natural Livestock Farming, Seva, India's National Dairy Development Board (NDDB) and Heifer Project International

#### *Additional information*

<http://www.anthra.org/publications/books/plants-used-animal-care/>

### **Example 27: Practical dairy learning farms**

In practical dairy learning farms (or practical dairy training centres), dairy producers open their gates for neighbouring producers to receive practical hands-on training in dairy farming (usually in return for payment). The training covers key husbandry (including quality feed and fodder) and marketing (improved milk quality, functional value chain linkages) elements under on-farm conditions.

Practical dairy learning farms have proven to be a sustainable and effective model for training in practical skills for enhanced dairy production. They have also contributed to transformative change in fodder production and distribution.

#### *Geographic focus*

Africa: Kenya, Uganda and Zambia

#### *Number of years of implementation*

5 years

|  |
|--|
| <i>Key organization(s)</i><br>Stichting Nederlandse Vrijwilligers (SNV) – East Africa  |
| <i>Additional information</i><br><a href="https://snv.org/assets/explore/download/kmdp_-_pdte_presentation.pdf">https://snv.org/assets/explore/download/kmdp_-_pdte_presentation.pdf</a> |

|   |
|---|
| <b>Example 28: Quality-based milk payment systems</b>   |
| The quality-based milk payment system (QBMPS) puts the focus of payment for milk not only on the quantity but also on milk procurement based on the quality, quantity and timing parameters. The milk quality attributes considered vary from processor to processor, but may include physical (density, freezing point), chemical (total solids, antibiotic residues, and adulteration), and microbial (total plate counts) traits. Some socio-economic parameters, such as biodiversity protection and animal welfare, might also be considered as quality criteria. A QBMPS does not necessarily introduce a new pricing setting, but modifies the existing price structure to improve the quality and safety of the milk. |
| <i>Geographic focus</i><br>Africa: Kenya and Uganda (also implemented in other countries such as India and Brazil)  |
| <i>Number of years of implementation</i><br>5 years   |
| <i>Key organization(s)</i><br>SNV, Happy Cow Ltd in Kenya and The Inclusive Dairy Enterprise Project in Uganda and others   |
| <i>Additional information</i><br><a href="https://edepot.wur.nl/520615">https://edepot.wur.nl/520615</a>  |

## II. Guidelines and manuals

4. A number of guidelines and manuals that relate to good practices for enhancing productivity in small-scale livestock producers have been published by FAO, governments and other public and private sector actors. Such documents target small-scale livestock producers, decision makers, development workers or other actors operating in the subsector and generally focus on specific livestock species, themes and/or production systems. A non-exhaustive and illustrative list of such good practice guidelines and manuals published over the last fifteen years is provided below:

**Ahlers C., Alders R.G., Bagnol B., Cambaza A.B., Harun M., M Gomezulu R., Msami H., Pym B., Wegener P., Wethli E. and Young, M.** 2009. *Improving village chicken production: a manual for field workers and trainers*. ACIAR Monograph Number 139, 194 pp.  
<https://www.fao.org/3/aq632e/aq632e.pdf>

**Båge, R., Jacobson, M., Dione, M., Gertzell, E., Genfors, E., Kiara, H., König, U., Rajala, E., Ström-Hallenberg, G., Wieland, B. and Magnusson, U.** 2020. *A practical guide to herd health management in pigs, dairy and small ruminants*. Nairobi, ILRI.  
[https://cgspace.cgiar.org/bitstream/handle/10568/110502/herdHealthManagement\\_guide.pdf?sequence=5&isAllowed=y](https://cgspace.cgiar.org/bitstream/handle/10568/110502/herdHealthManagement_guide.pdf?sequence=5&isAllowed=y)

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- Blauw, H., Hertog, G. den. and Koeslag, J.** 2015. *Goat keeping: Useful management practices for smallholders*. Agrodok 7. Wageningen, Agromisa/CTA.  
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- FAO.** 2009. *Milk testing and payment systems – A practical guide to support milk producer groups*. Rome. <https://www.fao.org/3/i0980e/i0980e00.pdf>
- FAO.** 2011. *Rearing young ruminants on milk replacers and starter feeds*. FAO Animal Production and Health Manual Number 13. Rome. <https://www.fao.org/3/i2439e/i2439e00.pdf>
- FAO.** 2013. *Understanding and integrating gender issues into livestock projects and programmes: A checklist for practitioners*. Rome. <https://www.fao.org/3/i3216e/i3216e.pdf>
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- FAO.** 2016b. *Technical and investment guidelines for milk cooling centres*, by Moffat, F., Khanal, S., Bennett, A., Thapa, T.B. & Malakaran George, S. Rome. <https://www.fao.org/3/i5791e/i5791e.pdf>
- FAO.** 2017. *Questions & answers handbook for good management practices and biosecurity in small and medium-scale poultry hatcheries*. Ha Noi. <https://www.fao.org/3/i7492e/i7492e.pdf>
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- FAO.** 2018b. *Farmer field schools for small-scale livestock producers – A guide for decision makers on improving livelihoods*. FAO Animal Production and Health Guidelines Number 20. Rome. <https://www.fao.org/3/i8655en/I8655EN.pdf>
- FAO.** 2018c. *Thematic catalogue for smallholder farmers to promote innovation – Main bee diseases: Good beekeeping practices*. Rome. <https://www.fao.org/3/I9466EN/i9466en.pdf>

- FAO.** 2019. *Developing sustainable value chains for small-scale livestock producers*. Edited by G. Leroy & M. Fernando. FAO Animal Production and Health Guidelines Number 21. Rome. <https://www.fao.org/3/ca5717en/ca5717en.pdf>
- FAO.** 2020a. *Estimation des bilans fourragers dans la région du Sahel d'Afrique de l'Ouest et Centrale.* Edited by Assouma, M.H. and Mottet, A. FAO Animal Production and Health Guidelines Number 22. Rome. <https://doi.org/10.4060/ca9111fr>
- FAO.** 2020b. *Good beekeeping practices: Practical manual on how to identify and control the main diseases of the honeybee (Apis mellifera)*. TECA – Technologies and practices for small agricultural producers, 1. Rome. <https://doi.org/10.4060/ca9182en>
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