



Food and Agriculture
Organization of the
United Nations

Innovative Pastoralism

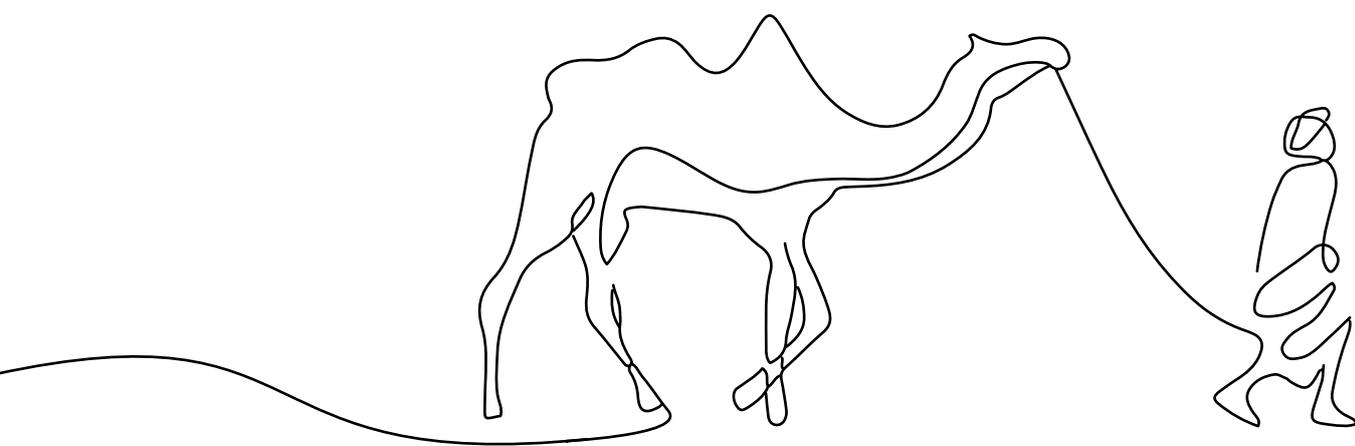
Achieving productivity and sustainability
for food security





Innovative Pastoralism

Achieving productivity and sustainability
for food security





*What is innovative pastoralism
and why do we need it?*



Pastoralism represents a critical pillar of food security and poverty alleviation in dryland areas. Although it is practiced by more than 200 million people worldwide, it is widely undervalued and misunderstood. Pastoralism is a flexible and sustainable approach to livestock production that involves herding locally-adapted breeds in variable environmental conditions. Production inputs are fairly low relative to outputs as a result of pastoralists working closely with nature to make use of existing natural resources such as water and forage.

While deeply rooted in human history, pastoralism is by its very nature innovative. It is characterized by ongoing experimentation, adaptation, and acclimation to new challenges in a changing world. In fact, pastoralism has evolved for more than 10 000 years through ongoing innovations in husbandry practices that have enabled production to continue through shifts in resource distribution and availability.

Now, more than ever, support is needed for continuing innovation in pastoralism to meet productivity and sustainability goals. Demand for animal products is expected to scale up with a growing global population, rising incomes, and increasing urbanization. The Food and Agriculture Organization of the United Nations (FAO) estimates that global demand for meat and dairy products will increase by 52 and 40 percent respectively by 2050, compared to 2012, under a “business as usual” scenario. However, increasing livestock production – all else being equal – is contributing to rising greenhouse gas emissions (GHGs), deforestation, soil depletion, and biodiversity losses, which are compromising ecosystem services. Livestock rearing is also a contributing factor in the emergence and spread of drug-resistant ‘superbugs’, where antibiotic misuse is exerting a selection pressure for antimicrobial resistance (AMR) in microbes that can become a threat to animal health and public health. Yet, livestock are providing key nutritional benefits and are supporting livelihoods and the resilience of families and communities worldwide, so a balanced approach is needed to achieve sustainable production.

Pastoralism can help countries diversify risk for livestock production in response to new health threats and climate destabilization. Pastoralism can also help countries make good use of all biomes for boosting production while effectively managing natural and genetic resources.

“Innovative pastoralism can be a beneficial complement to input-intensive production systems for achieving productivity gains and sustainability goals”

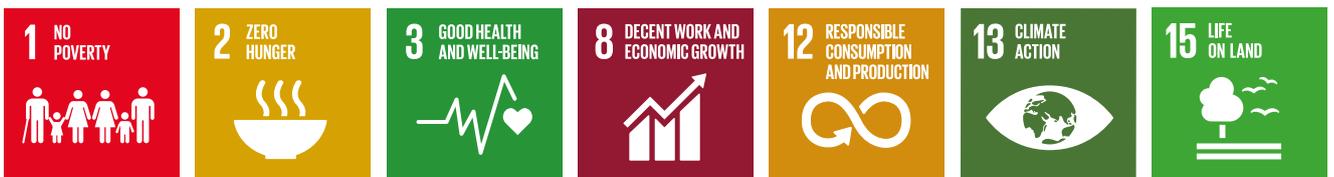


But what is it that makes pastoralism **innovative**? The innovation comes from evolving approaches for raising livestock that help to optimize outcomes, balancing production and sustainability in response to varied and changing conditions. This includes a thoughtful combination of deep-rooted knowledge with new methodologies, tools and technology for protecting the diversity of locally-adapted animal breeds and plant species by managing livestock in harmony with nature.

For this process of innovation to carry on, pastoralists need more support to continue at the scale needed by countries for contributing to the Sustainable Development Goals (SDGs). Support to sustain pastoralist systems will directly contribute to achieving the SDGs, including eliminating poverty (SDG1), reaching Zero Hunger (SDG2), promoting good health and well-being (SDG3), supporting economic growth (SDG8) and responsible consumption and production (SDG12), as well as bolstering climate action (SDG13) and the biodiversity of life on land (SDG15).



Pastoralism contributes to the Sustainable Development Goals



How can we better support innovative pastoralism?

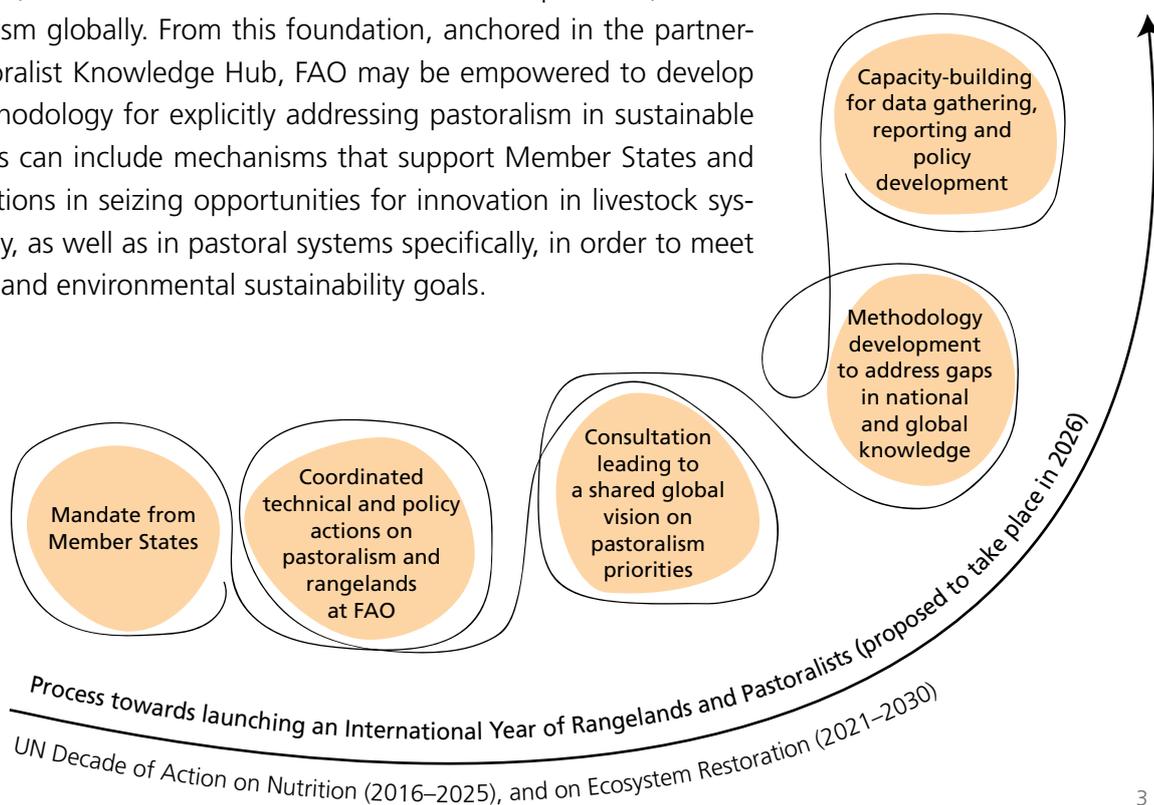


©FAO/Sergey Kozmin

In pursuit of the UN Agenda 2030, developing technical and policy programs on pastoralism – nationally and internationally – will help in harnessing the benefits of pastoralism. This will also help to mitigate the negative impacts stemming from neglect of this useful production system. Specifically, institutionalizing support for pastoralism through **coordinated technical and policy actions on pastoralism and rangelands at FAO will be instrumental in mainstreaming pastoralism more widely into FAO and country programming for achieving the SDGs.**

Given scant data on pastoralist households, and limited awareness of pastoralism’s benefits, there is an urgent need to leverage the capacity of FAO to raise awareness, and facilitate data collection to develop a new, shared vision of pastoralism globally. From this foundation, anchored in the partnerships of the Pastoralist Knowledge Hub, FAO may be empowered to develop an improved methodology for explicitly addressing pastoralism in sustainable development. This can include mechanisms that support Member States and relevant organizations in seizing opportunities for innovation in livestock systems more broadly, as well as in pastoral systems specifically, in order to meet economic, social, and environmental sustainability goals.

Roadmap for mainstreaming pastoralism at FAO



Top 10 benefits of investing in pastoralism

Pastoral activities span more than 100 countries, and contribute to global development and food security. This presents opportunities for securing widespread benefits of pastoralism and its tradition of innovation, including:

Boosting productivity through innovation and adaptability

Pastoralists lay claim to sophisticated methods for benefitting from the spatial and temporal variability of water and forage resources. Pastoralism affords ample opportunities to maintain and boost animal production across a spectrum of mobility under increasingly variable conditions, including those associated with climate destabilization. Building capacity for the development and integration of new methods, tools, and technologies will help to further optimize pastoral production. Examples include advancements in tracking resource availability, better managing seasonality in forage production, and updating health threat emergency response plans to better fit pastoral systems.

Diversifying food production for food security

In a changing world with increasing variability in climate patterns and natural resource availability, securing in-country sources of animal-source foods (ASF), such as meat and milk, through a diversity of production systems – including pastoralism – will help to spread out the risk of production failures. This can provide a buffer for protecting national economies and reducing reliance on food imports. The provision of inexpensive, high quality proteins raised in pastoral systems can supply domestic markets and also help to ensure food security of neighbouring countries through exports.

Achieving climate goals through regenerative grazing and a “circular bioeconomy”

A large proportion of the world’s rangelands are degraded and could capture far more carbon in soil organic matter to help offset GHG emissions. A range of specific practices can be deployed to help improve the carbon balance and overall resilience of livestock systems. For example, the mobility of pastoralist livestock enables movement to selective grazing areas and away from degraded areas to allow for recovery. Research, including in drylands, shows that pastoral landscapes have the potential to achieve a neutral carbon balance as regenerative forms of grazing can generate carbon offsets by stimulating plant growth and carbon sequestration in soil. Livestock can also be moved to areas where crops are grown to make better use of crop residues for supplemental animal feed, and to gather animal manure as fertilizer for crops as part of a “circular bioeconomy” to help recycle nutrients.

Protecting native tree species, grasslands and ecosystem services

Halting expansion of deforestation for feed crop production is an urgent priority and grazing systems offer an advantage. Pastoralism is compatible with tree-planting efforts to protect native species and bolster carbon offsets. The introduction of trees into tropical pastures – “silvo-pastoralism” – can help to protect productivity while also generating many social, economic, and environmental benefits. Optimizing the use of grasslands through regenerative grazing can further contribute to improved biodiversity, water use efficiency, nutrient cycling and soil carbon sequestration, as well as making the soil more resilient to a changing and more variable climate.

Expanding conservation initiatives by applying pastoralist knowledge



5

Pastoralists' intimate knowledge and experience of rangeland ecosystems can assist with biodiversity and conservation assessments, and the development of appropriate protection measures. Respecting, revitalizing and incorporating pastoralist practices and knowledge of rangelands can help to protect vital ecosystem services by more effectively managing species diversity, vegetation cover, soil quality, and water recycling.

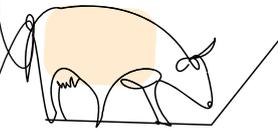
Strengthening the labour force and generating more business opportunities



6

With millions of pastoralists worldwide at risk of losing their livelihoods, de-marginalizing this group is a priority. Boosting education and training, improving access to services for information, livestock support, health and finances, and facilitating transboundary movement can yield substantial economic benefits. Investing in pastoral systems and in decentralized infrastructure will generate more business opportunities across the livestock value chain, from service suppliers, traders and processors, to wholesalers and retailers of animal-source foods (ASF).

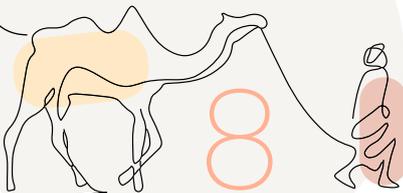
Capitalizing on a growing market and easing feed-food competition



7

Consumer demand for "grass-fed" ASF continues to expand the retail market for these products, presenting new opportunities for exports and profitability. As nearly 700 million people are undernourished worldwide, according to FAO estimates for 2019, grazing systems can help to speed progress towards Zero Hunger by reducing the burden of competition for cereals as livestock feed versus food for human consumption.

Securing the adaptive potential and resilience of livestock



8

Locally-adapted pastoralist animal breeds are reservoirs of genetic and phenotypic diversity because of ongoing exposure to highly variable conditions and corresponding selection pressures. This diversity is essential for maintaining the adaptive potential of livestock species in order to protect productivity and economic growth in the face of environmental changes, new or resurgent diseases, and changing market preferences. Pastoral systems are a helpful counterbalance to systems encompassing fewer breeds with less diversity in order to boost livestock resilience globally.

Accelerating progress towards gender equality



9

Women play a vital role within pastoralist societies as livestock producers, income generators, and caregivers, as well as key organizers and keepers of local knowledge. Ensuring equal access to education and equal representation for livelihood and resource rights expands the capacity and resilience of pastoral production systems in the face of resource loss, conflicts, and climate shock. Supporting pastoralism and championing the role and representation of women will pay dividends in programs designed to help countries in achieving the Sustainable Development Goals.

Promoting "one world and one health"

10

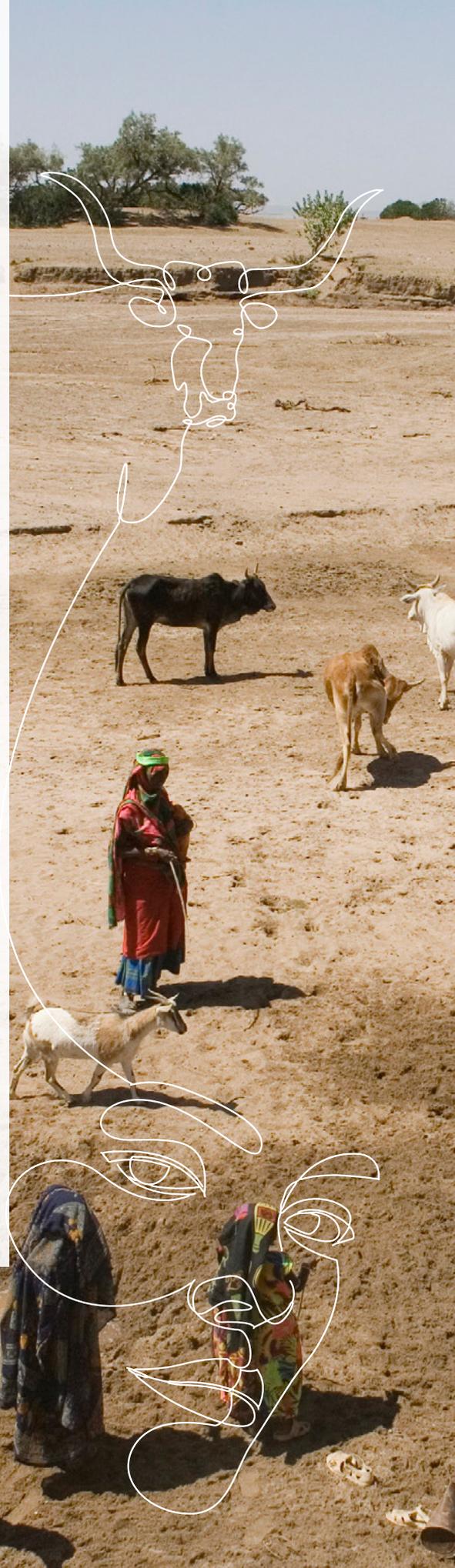


It is possible to guard against pandemics by addressing animal, human, and environmental health challenges at the same time. Better monitoring and control of zoonotic disease threats will enable countries to pivot from reacting to outbreaks to proactively preparing for and preventing them. Pastoralists can play an important role in "early warnings" of new infectious disease threats in wildlife populations. As access to animal health support is especially challenging for pastoralists, improving access to veterinary services and infection prevention measures – such as quality affordable vaccines – will help in meeting production needs while reducing risks of disease transmission in pastoralist communities. Support for more responsible antimicrobial use in pastoral livestock will also help protect the effectiveness of these medicines for animal and human health. These prudent use practices will lead to better control of the emergence and spread of drug-resistant pathogens through the food supply chain and the environment to protect food security and global health.

Five actions to support pastoralism

Accessing the benefits of pastoralism depends on first boosting support by taking action in the following ways:

- 1 Develop technical and policy programs on pastoralism – internationally and nationally – to create a shared vision and mechanisms for capitalizing on the benefits of pastoralism. A starting point is mainstreaming pastoralism at FAO, incorporating this focal area into SDG programming.
- 2 Support pastoralist mobility, including transboundary movement, by harmonizing and implementing effective regional policies.
- 3 Gather the necessary data on pastoralist households and monitor pastoralism to inform decision-making at the national and regional levels. For instance, national census instruments can be updated with better disaggregated questions relevant to pastoralists.
- 4 Engage pastoralists directly for policy planning and program development to ensure effective representation, including empowerment of women and inclusion of youth. This participatory approach also helps to identify potential barriers to change upstream of program implementation to improve outcomes.
- 5 Support capacity-building initiatives for developing innovations in methods, tools, and technologies relevant to pastoral systems.



Five consequences of neglecting pastoralism

Without action to support pastoralism, negative impacts will include:

- 1 Reduced food production potential and an increased risk of food insecurity under growing population pressure and demands for animal-source foods.
- 2 Increasing competition and conflict over limited viable land for sedentary farming.
- 3 Loss of livelihoods and displacement of millions of people.
- 4 Missed opportunities to speed progress in meeting climate change mitigation and natural resource management goals, for balancing increasing food production with sustainability.
- 5 Loss of valuable animal genetic resources for adaptive and sustainable production, as well as a loss of pastoralist knowledge, which could be used to secure ecosystem services and protect limited resources and biodiversity.

Achieving productivity and sustainability through a holistic approach

Securing the future of livestock production depends on a holistic approach that considers dimensions of productivity, ecological function, and socio-economic benefits at the same time. Pastoralist systems represent a strong vantage point for championing productivity and sustainability goals.

Contact us

E-mail: pastoralist-hub@fao.org

Web address: www.fao.org and www.fao.org/pastoralist-knowledge-hub

Join the forum to participate in the Pastoralist Knowledge Hub!

<https://dgroups.org/fao/pastoralist-hub>

Food and Agriculture Organization of the United Nations

Viale delle Terme di Caracalla

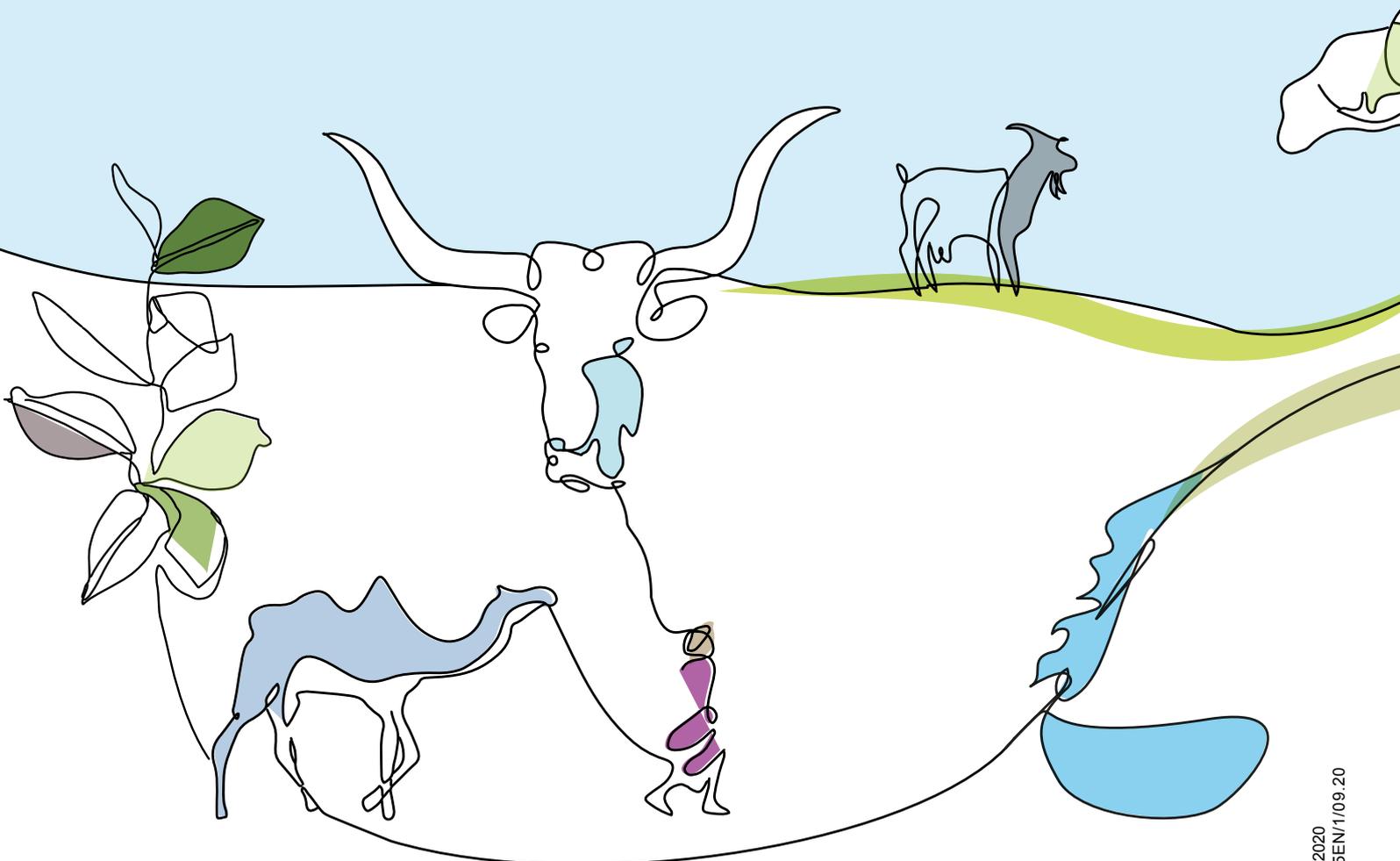
00153 Rome, Italy



Follow us on social media and join the conversation using these hashtags:

#InnovativePastoralism #Pastoralist #ZeroHunger

Twitter @FAO and @FAOAnimalHealth



Some rights reserved. This work is available under a CC BY-NC-SA 3.0 IGO licence