

















ILRI Technologies

20 TECHNOLOGIES | CREATED ON JUN 30, 2025 BY TAAT PROFILING TEAM | LAST UPDATED JUL 21, 2025

















TECHNOLOGIES IN THIS TOOLKIT

- · Value Addition to Poultry Manure
- Low-Cost Cage and Free-Range Containment
- Special Chicken Breed: Dual-Purpose Chicken for Small-Scale...
- Genetically Improved Poultry Breeds for Optimized Meat and...
- Fodder system management
- Eradication through Thermostable Peste des Petits Ruminants...
- Biosecurity for Disease Prevention
- Best practices in pasture

- management: Pasture Improvement
- Semi-Automatic Incubator for artificial hatching
- Poultry Vaccination against Newcastle Diseases
- Mechanized Defeathering and Egg Sorting
- Hide Curing and Secondary Leatherworks
- Ethical Meat Processing: Humane Slaughtering and Meat Inspection
- Processing and Application of Composted Manures

- Short-Term Fattening and Supplemental Feeding
- · Cut-and-Carry Fodder Systems
- Small Ruminant Containment in Protective Sheds
- Community-Based Breeding Program
- Processing chicken meat for cold storage
- Local Production of Quality Affordable Poultry Feed





Value Addition to Poultry Manure

Transforming waste into wealth

Value Addition to Poultry Manure transforms chicken manure into nutrient-rich organic fertilizer. Composting detoxifies the manure, enhancing soil fertility and reducing reliance on chemical fertilizers.





International Livestock Research Institute (ILRI) Adeniyi Adediran

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals





Categories

Production, Pre-production, Practices, Animal waste management

Best used with

Tested/adopted in

- Biosecurity for Disease Prevention >
- Low-Cost Cage and Free-Range Containment >

This technology is **TAAT1** validated.

Gender assessment



Climate impact



Problem

- Pathogens and Unpleasant Odors: Fresh chicken manure can contain harmful pathogens and emit an off-putting odor.
- Underutilization: Chicken manure is often unused due to these issues.
- Environmental Impact: Large-scale poultry farms generate significant manure, leading to unpleasant odors, groundwater pollution, and methane emissions.

Solution

- Pathogen-Free Organic Fertilizer Production: Converts chicken manure into safe, nutrient-rich organic fertilizer through composting, ensuring plant health and human safety.
- Sustainable Environmental Impact Mitigation: Transforms raw chicken manure into valuable organic fertilizer, reducing odors, preventing groundwater contamination, and mitigating methane emissions.
- Cost-Efficient Waste Management: Repurposes chicken manure into valuable organic fertilizer, reducing waste management costs and enhancing overall farm profitability.

Key points to design your project

Poultry farming boosts women's financial independence and leadership roles. This technology transforms waste into valuable organic fertilizer, reducing odors, groundwater contamination, and methane emissions. It also reduces reliance on chemical fertilizers, supporting climate goals. This project contributes to achieving SDGs 1 (poverty reduction), 2 (food security), 5 (gender equality), and 13 (climate action).

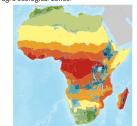
Key points for project step up:

- · Assess & Select: Identify farmers interested in value addition with suitable farm size and resources.
- Train & Build Capacity: Train extension agents and farmers on composting and value-added products.
- Implement & Support: Organize workshops, establish demonstration plots, and provide technical support and financing access.
- Market Access & Sustainability: Connect farmers with buyers and evaluate project impact.

Adopted Testing ongoing

Where it can be used

This technology can be used in the colored agro-ecological zones



Cost: \$\$\$ 5,000—10,000 USD

drying and pelleting equipment

30,000 USD

3.000 USD



15 m3 anaerobic digester able to process 300 kg of poultry manure per day

Open source / open access

organic fertiliser production plant of 15 ton per hour







Low-Cost Cage and Free-Range **Containment**



Safeguarding Chickens and reducing Costs

The technology is a movable chicken house that lets chickens roam freely during the day and return to safety at night. It's affordable, easy to move, and made from basic materials. Proper maintenance and predator protection are essential for its effectiveness, making it a practical solution for chicken farming.





International Livestock Research Institute (ILRI) Adeniyi Adediran

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals

















✓ This technology is <u>TAAT1 validated</u>.

Gender assessment

chicken houses.

uncomfortable spaces.

and organic chickens.

Problem



• Many small farmers can't afford expensive

• Chickens are sometimes kept in crowded and

• Predators and bad weather can harm chickens.

· Pests and diseases build up in one spot if

• Farmers want to meet the demand for free-range

Solution

Climate impact

- · Affordable movable houses for chickens.
- Gives chickens space to roam and find their own
- · Keeps chickens safe from predators and bad
- · Good for the environment and the farm.
- Easy to clean and take care of.

Key points to design your project

chickens stay in the same place for too long.

- Affordable poultry housing solutions empower smallholder farmers for commercial production and aid poverty alleviation.
- Boosts food security with organically raised poultry.
- Supports economic growth through job creation.
- · Promotes sustainable farming practices by reducing environmental impact and advocating for organic production.

Steps to incorporate the technology:

- Secure access to suitable land for free-range poultry production.
- Conduct market assessment to evaluate demand and profitability.
- · Allocate resources for comprehensive training and support.
- · Collaborate with agricultural institutions.
- Explore integration with complementary technologies like Biosecurity for Disease Prevention.

(ROI: \$\$\$) **50** %

Benefit from selling birds

Weight of mature meat chickens in 6 weeks

floor space for 100 birds.

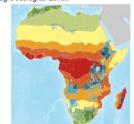
Best used with

• Biosecurity for Disease Prevention >





This technology can be used in the colored agro-ecological zones.



Initial cost to raise 150 to 200 chickens

Cost: \$\$\$ 350 USD

2.0-2.5 Kg

20 m²

 \bigcirc IP Open source / open access





Special Chicken Breed: Dual-Purpose Chicken for Small-Scale **Producers**



International Livestock Research Institute (ILRI) Tunde Amole

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals







Categories

Production, Improved varieties, Yield improvement

Best used with

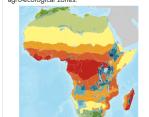
• <u>Semi-Automatic Incubator</u> for artificial hatching >

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

High-Performance Breeding Chicken Breed

The "Dual-Purpose Chicken for Small-Scale Producers" technology focuses on developing and distributing chicken breeds suitable for both high egg production and meat yield. These specialized chickens possess traits like low cost, disease resistance, and efficient feed utilization.



This technology is **TAAT1** validated.

7.7



Gender assessment



Climate impact



Problem

- Low Egg and Meat Productivity in Indigenous Chickens
- High Mortality Rate in Indigenous Chickens
- Limited Performance and Adaptability of Indigenous Breeds
- · Challenges in Rearing and Distribution for Small-Scale Farmers
- Need for Adaptation and Regional Adjustments

Solution

- · Introduction of dual-purpose chicken breeds addressing low productivity and high mortality.
- · Establishment of parent stock farms and hatcheries for consistent supply.
- · Distribution through brooder units for proper chick care.
- Enhanced performance in free-range systems with adaptability to local conditions.
- · Technical support and empowerment for operators.

Key points to design your project

- Enhances poultry productivity for rural poverty alleviation and food security
- Empowers women, creates jobs, and supports economic growth in rural areas
- Improves poultry industry through innovative breeding and distribution
- · Fosters sustainable agriculture and conserves biodiversity
- Requires building infrastructure, acquiring equipment, and estimating costs for integration
- · Collaboration with agricultural institutes and consideration of complementary technologies recommended

930 USD

Purchase and rear 1000 birds for five weeks

1.5-2.0 kg

120-180 eggs

30 %

Per batch in Nigeria

Open source / open access

Weight of chickens in 3 months

Production by chickens per year

Special Chicken Breed https://taat.africa/hjg Last updated on 18 September 2024, printed on 15 May 2025





Genetically Improved Poultry Breeds for Optimized Meat and **Egg Production**

Enhance Productivity with Resilient, High-Performance Chickens

This technology provides genetically improved chicken breeds for meat (broilers) and egg (layers) production. Developed through selective breeding, they offer higher yields and are distributed through hatcheries, requiring proper management for optimal results.





International Livestock Research Institute (ILRI) Tadelle Dessie

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals







Categories

Production, Practices, Yield improvement

Best used with

• <u>Semi-Automatic Incubator</u> for artificial hatching >

This technology is **TAAT1 validated**.





Gender assessment



Climate impact



Problem

- · Low-quality chicken breeds with poor genetics and susceptibility to diseases.
- Limited meat and egg production in naturally selected local chickens.
- · Insufficient management and resources for genetically improved chicken breeds in extensive production systems.

Solution

- meat and egg production.
- · This ensures that only chickens with the desired traits for meat and egg production are selected for breeding.
- By controlling the incubation process, the of survival and development.

Key points to design your project

The Flock Improvement of Meat and Layer Breeds technology enhances poultry production by breeding chickens with desired traits for meat and egg production, reducing reliance on inferior breeds. To integrate this technology:

- · Assess project needs for poultry breeding.
- · Provide comprehensive training on breeding practices.
- Select suitable chicken breeds based on goals and conditions.
- Ensure access to quality breeding stock and inputs.
- · Implement improved breeding practices.

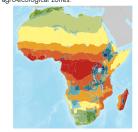
- The technology enhances genetic traits related to
- program ensures that chicks have a higher chance





Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Breeders

Cost: \$\$\$) Over 1 million USD Establishment of a poultry breeding company

OIP

Open source / open access



Genetically Improved Poultry Breeds for Optimized Meat and Egg **Production**

Enquiries <u>e-catalogs@taat.africa</u>





Eradication through Thermostable Peste des Petits Ruminants Vaccine

Reliable, Effective, and Accessible Disease Control for Small Ruminants.

The vaccine, available in two forms, effectively protects small ruminants against PPR. The ILRI thermotolerant PPR vaccine, produced through the Thermovac process, and Xerovac are both stable at ambient temperatures, even enduring spikes of 38°C for 9 days and 40°C for 7 days.





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Technology from

ProPAS

Commodities

Small livestock

Sustainable Development Goals















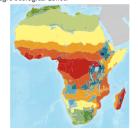
Categories

Production, Inputs, Pesticide





This technology can be used in the colored agro-ecological zones.



Target groups

Breeders

✓ This technology is <u>TAAT1 validated</u>.

8.7



Gender assessment



Climate impact



Problem

- High mortality rates among small ruminants due to
- Limited vaccine storage options hindering widespread use.
- Economic losses estimated at USD 2.1 billion
- · Previous constraints in maintaining vaccine
- · Restricted coverage of vaccination campaigns.

Solution

- · No need for cold storage, easing access and logistics.
- · Effective for up to two weeks without refrigeration.
- Demonstrated efficacy in multiple countries against PPR.
- Reduces storage costs, making it more affordable.
- · Vaccinates more animals in less time, enhancing disease control.

Key points to design your project

The technology reduces economic losses and poverty among small ruminant farmers by preventing PPR outbreaks and improving food security. It also enhances animal health, reduces disease spread, and promotes economic growth. To integrate this technology into your project:

- 1. Ensure availability and affordability of thermostable vaccines.
- 2. Educate producers on PPR vaccination benefits and encourage their investment.
- 3. Ensure compliance with vaccination instructions.
- 4. Train and certify animal health professionals.

Calculate required product quantity based on a cost of 0.3-0.5 USD per animal. Consider additional expenses like delivery, import clearance, and duties if sourced from specific countries. Budget for training and support during project implementation and consider collaborating with agricultural institutes.

Cost: \$\$\$ 0.3—1.0 USD

ROI: **\$\$**\$

Vaccine dose cost per animal







TAAT e-catalog for government

Biosecurity for Disease Prevention

Safeguarding Poultry Health

The "Biosecurity for Disease Prevention" technology involves practices and strategies in poultry farming to prevent disease spread. It focuses on three main elements: isolation, traffic control, and sanitation, along with training for farmers and workers. This technology emphasizes early disease detection and diligent surveillance to minimize impact. Biosecurity is crucial throughout the poultry value chain, from breeding to feed processing, to protect against various pathogens, including those harmful to humans.



This technology is **TAAT1 validated**.

8.7



Scaling readiness: idea maturity

8/9: level of use 7/9

Climate impact



Problem

Gender assessment

- High risk of disease introduction and transmission due to large, concentrated bird populations.
- Diseases can cause mass culling and significant economic losses.
- Effective strategies are needed to prevent disease transmission.
- Certain diseases, like Salmonella and Avian Influenza, also threaten human health.

Solution

- Implementing preventative measures such as isolation, traffic control, and sanitation.
- Emphasizing early disease detection through diligent surveillance.
- Offering training to poultry farmers and workers on the importance of biosecurity for health and profitability.
- Applying biosecurity practices across all stages of the poultry value chain, from breeding to processing.
- Protecting against a wide range of poultry pathogens, safeguarding both poultry and human health.

ILRI INTERNATIONAL LIVESTOCK RESEARCH

International Livestock Research Institute (ILRI) Adeniyi Adediran

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals









Categories

Production, Practices,

Pest control (excluding weeds)

Best used with

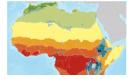
- Poultry Vaccination against
 Newcastle Diseases >
- Value Addition to Poultry Manure >

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Key points to design your project

Implementing biosecurity measures in poultry farming can enhance gender equality (SDG 5) by improving working conditions, particularly benefiting women. These measures also boost climate resilience by preventing disease outbreaks and reducing waste. Additionally, biosecurity supports various Sustainable Development Goals (SDGs), including good health (SDG 3), decent work (SDG 8), and responsible consumption (SDG 12).

To integrate biosecurity practices into your project, consider the following:

- Design secure premises with veterinarians and engineers.
- Engage with technology providers on the importance and profitability of biosecurity.
- Develop communication materials like flyers, videos, and radio broadcasts.
- Provide a team of trainers for installation, training, and support, including costs for these services.

Accompanying solutions include universal vaccination against Newcastle disease and adding value to poultry manure.

ROI: \$\$\$ 50 %

Veterinary costs reduced

0.036-0.076 USD

Materials per birds





Best practices in pasture management: Pasture **Improvement**





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Technology from

ProPAS

Commodities

Small livestock

Sustainable Development Goals











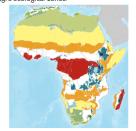


Production, Practices, Animal feed management



Where it can be used

This technology can be used in the colored agro-ecological zones



Target groups

Farmers

Revitalize Your Pastures, Sustain Your Livestock

This technology aims to enhance productivity in managed pastures through intensive management practices like fertilization, seeding, and irrigation. It includes controlling weeds, partially disturbing the land, and introducing highyield grasses and legumes, along with other methods such as planting grazing species in croplands and establishing shrub hedgerows.



This technology is **TAAT1 validated**





Scaling readiness: idea maturity 7/9; level of use 8/9

Gender assessment



Climate impact



Problem

- Limited Access to Affordable Feed
- Inefficient Pasture Establishment
- Climate and Region-specific Challenges
- Weed Invasion and Reduced Productivity
- High Costs of Pasture Establishment
- Limited Knowledge Sharing and Accessibility

Solution

- · Provides cost-effective methods for establishing
- Reduces reliance on expensive purchased feed.
- Equips producers with valuable pasture management skills.
- · Advises on suitable species and management
- · Tailors advice to the region's climate and
- · Offers strategies for weed management and productivity.

Key points to design your project

- · Steps to incorporate the technology into a project include identifying project needs, conducting training sessions, selecting suitable pasture species and practices, ensuring access to quality seeds and inputs, implementing management practices, and collaborating with stakeholders.
- · Budget estimation involves allocating costs across land preparation, weed control, fertilizer, and seed, considering an average cost of USD 400 to 600 per hectare spread over several years.
- · Adequate training and post-training support are essential, along with the development of communication materials to promote the technology.
- · Collaboration with private seed companies, cooperatives, seed growers, and farmers is crucial for successful technology implementation.

Cost: \$\$\$) 400-600 USD

Pasture establishment with improved perennial grasses/ha



Semi-Automatic Incubator for artificial hatching

Hatching Success, One Chick at a Time

This technology is **TAAT1 validated**.

• Limitation of natural incubation in producing

· Difficulty in responding quickly to the market

chicks, with a capacity of only 10-12 chicks per

· Risk of the spread of parasites and diseases in the

Gender assessment

demand for chicks.

natural incubation process.

Problem

This technology reproduces the natural incubation process on a larger scale. They are designed to accommodate 50 to 150 eggs at a time. They can be heated using kerosene or a battery-powered light bulb, offering an alternative to mains electricity.



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Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals













Production, Equipment

Key points to design your project

The Artificial Hatching in Semi-Automatic Incubators technology transforms poultry farming by accelerating chick production and ensuring a reliable supply. To integrate it in your project:

8.8

Solution

Climate impact

- · Conduct awareness campaigns, assist in selecting incubators, and develop marketing strategies.
- Evaluate quantity, consider delivery costs, and collaborate with institutes for implementation.

200 usp

fully automated 96 egg unit

· Training and communication support are vital, and association with other poultry farming practices enhances sustainability.

Best used with

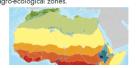
- Genetically Improved Poultry Breeds for Optimized Meat and Egg Production >
- <u>Dual-Purpose Chicken for</u> Small-Scale Producers >





Where it can be used

This technology can be used in the colored agro-ecological zones.





ROI: \$\$\$ 20 %

per cycle

Q_{IP}

Open source / open access

· This technology has the ability to hatch day-old

incubation, increasing production efficiency.

· Reduced risk of the spread of parasites and

diseases in the artificial incubation process.

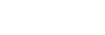
in response to market demand. • High success rate of 85-90% in artificial

chicks in just 21 days, increasing the capacity to produce a large number of chicks in a short time

500 USD

Hatchery start up

requirement



150 usp

64-egg manual solar unit







Poultry Vaccination against Newcastle Diseases

Low-cost vaccination for poultry

The "Universal Vaccination against Newcastle Diseases" is a method for widespread vaccination in poultry. It includes thermostable vaccines, efficient logistics, easy application, and vaccinator training.



ND I-2 vaccine is available in small vials



International Livestock Research Institute (ILRI) Tunde Amole



Problem

vaccine uptake.

This technology is **TAAT1** validated.

• High Mortality & Uptake: Newcastle disease

causes high mortality in poultry, with limited

disease knowledge are challenges.

• Accessibility & Knowledge: Vaccine access and

• Vaccination Issues: Inconsistent application and

poor systems hinder effective vaccination.

Gender assessment

7.7

Solution



Climate impact

diverse NDV strains.

administration.

• Thermostable & Broad Protection: Withstands

temperature variations and defends against

• Strong Immune Response & Ease of Use:

• Safety & Long-lasting Protection: Proven safe

and effective, offering enduring protection.

Triggers robust immunity with simple

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals



Categories

Production, Inputs, Animal healthcare

Best used with

• Biosecurity for Disease

Key points to design your project

The technology boosts women's empowerment, cuts carbon emissions, and aids SDGs 1, 2, and 5 by enhancing poultry health and income, and minimizing cold chain needs.

Adopting the "Universal Vaccination against Newcastle Diseases" technology involves:

- 1. Stakeholder Engagement: Engage all relevant parties.
- 2. Awareness Raising: Educate decision makers on family poultry benefits.
- 3. Vaccine Selection: Opt for a suitable vaccine like ND I-2.
- 4. Training and Extension: Plan and organize essential training covering vaccine characteristics, campaign organization, and progress monitoring.
- 5. Cost-Recovery System: Cover production, distribution, and administration costs, possibly through consumer payments or government subsidies. Focus on cost minimization if the vaccine is free.
- 6. Vaccination Implementation: Vaccinate all chickens simultaneously.
- 7. Monitoring and Evaluation: Track program progress and impact.

These activities should be systematically planned and executed.

Prevention >



Where it can be used

This technology can be used in the colored agro-ecological zones.

Target groups

Farmers

0.02 USD

A dose of the ND I-2 vaccine, is inexpensive to administer

2.5 usp

250 usp

 \bigcirc IP

per round of vaccination for 20 chickens

local vaccination campaign at the village level

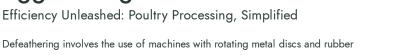




Mechanized Defeathering and **Egg Sorting**



Defeathering involves the use of machines with rotating metal discs and rubber fingers, efficiently removing feathers in 30 seconds. Egg sorting machines use weight-sensitive belts, ensuring precise grading based on quality parameters like weight, color, shape, and cracks.





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Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals





Categories

Transformation, Equipment, Land preparation

Best used with

• Processing chicken meat for cold storage >

✓ This technology is <u>TAAT1 validated</u>.

• Time-consuming and inaccurate manual

prices, affecting profitability.

defeathering and egg sorting processes

• Manual methods struggle to meet grade

grades, impacting market acceptance.

· Manual egg sorting increases breakage risk,

· Delayed chicken processing reduces productivity,

feed efficiency, and leads to rushed sales at lower

requirements for different poultry types and egg

causing losses and affecting the overall quality of

8.9

Climate impact



Gender assessment

graded eggs.

Problem



Solution

- Mechanized machines remove feathers in 30 seconds, enhancing productivity.
- · Quick defeathering maintains product quality, avoiding rushed sales.
- · Automated sorting reduces costs, attracting premium prices for eggs.
- · Machines efficiently handle various poultry types, reducing manual challenges.

Key points to design your project

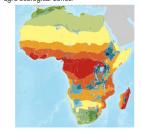
Introducing mechanized defeathering and egg sorting technology transforms poultry farming by offering a practical and efficient approach to processing poultry products. To integrate this technology,

- · Ensure a solid business plan aligning with market demand and prices and match production volumes with machine capacities
- · Having technically competent personnel and understanding environmental regulations and waste management procedures is crucial for successful implementation.
- · Training and post-training support from a dedicated team of trainers are essential, along with developing communication materials to promote the technology.



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Cost: \$\$\$ 250—550 USD

ROI: \$\$\$) 15—20 %

defeathering machine

ROI for defeathering business

 \bigcirc _{IP}

5500-7000 usp Egg sorting machine

Copyright







Hide Curing and Secondary Leatherworks

Turning hides into leather to enrich communities

The "Hide Curing and Secondary Leatherworks" technology underscores the importance of properly treating animal hides to maximize their value. Hides can be processed into various high-value products such as shoes, handbags, and clothing.



✓ This technology is <u>TAAT1 validated</u>.





Technology from

Adeniyi Adediran

International Livestock

Research Institute (ILRI)

ProPAS

Commodities

Gender assessment



Climate impact



Problem

- · Without proper treatment, hides, which are highly valuable, may be discarded or used as food along with the carcass.
- · Communities with access to hides may lack the means to process them, missing out on potential economic benefits.
- · Without effective curing and tanning methods, hides may not be preserved optimally, resulting in lower-quality products.

Solution

- This technology promotes the treatment of hides through cleaning, drying, and specialized methods, ensuring they are not wasted and can be utilized in the production of valuable items such as bags and shoes.
- It aims to educate individuals on the necessary skills for working with hides, providing them with the appropriate tools and materials to effectively
- · Additionally, it assists local communities in enabling them to create products and generate profits.

Sustainable Development Goals

- process hides.
- establishing small businesses for hide processing,













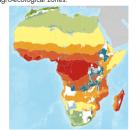


Transformation, Practices



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Breeders

Key points to design your project

Hide curing and secondary leatherworks technology maximizes the value of livestock production by creating valuable leather products. To integrate this technology effectively:

- · Understand the process: Learn hide curing and leatherworks techniques to ensure hides are properly
- · Invest in skills and materials: Provide training and access to tools for artisans to work with hides effectively.
- Establish local businesses: Help communities set up small businesses focused on hide processing to generate profit.

1,000 USD

ROI: \$\$\$) 100 %

Investment cost









Ethical Meat Processing: Humane Slaughtering and Meat Inspection

Enhance meat quality while prioritizing animal welfare.

The technology focuses on humane slaughtering practices in the meat processing industry. It ensures that animals are killed swiftly and without suffering, adhering to ethical standards.





Technology from

ProPAS

Commodities

Livestock

Sustainable Development Goals





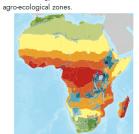
Categories

Transformation, Practices, Agri-food processing



Where it can be used

This technology can be used in the colored



Target groups

Breeders

This technology is **TAAT1 validated**.



Gender assessment





Problem

- · Animals often face mistreatment during transportation and slaughter,
- Stress and suffering experienced by animals can lead to biochemical changes, affecting the flavor and shelf life of the meat.
- Many slaughterhouses fail to comply with humane slaughtering regulations,

Solution

- It advocates for the use of suitable methods and equipment for transporting animals.
- · Animals are provided with overnight rest in appropriately sized holding pens.
- Emphasis is placed on bleeding the animal within one minute of unconsciousness, ensuring a swift and humane process.
- All stages of the slaughtering and carcass dressing process are subject to certified meat inspection.

Key points to design your project

To integrate humane slaughtering and meat inspection technology into your project, follow these steps:

- Conduct awareness campaigns on the benefits of humane slaughtering and improved meat inspection.
- Develop investment and regulatory frameworks with public and private entities.
- Provide training for slaughterhouse operators and meat inspectors.
- · Facilitate access to low-interest credit for modernizing facilities.

(Cost: \$\$\$) 2,000—2,500

ROI: \$\$\$) 30 %

Per animal

Goat and sheep slaughter slab 25-35 % Dressed meat value added

 \bigcirc_{IP}





Processing and Application of **Composted Manures**



Turning Waste into Wealth for Greener Fields

Composted goat and sheep manure is readily compressed into organic fertilizer pellets. These fertilizer pellets are convenient for application, transportation, and storage. After composting, production involves crushing, screening, granulating, drying and further screening for pellet uniformity.





International Livestock Research Institute (ILRI) Adeniyi Adediran

Technology from

ProPAS

Commodities

Small livestock

Sustainable Development Goals







Categories

Pre-production, Practices, Input processing

Tested/adopted in

This technology is **TAAT1 validated**.

8.8



Problem

Gender assessment

- Goat and sheep manure may contain human pathogens and weed seeds, posing hazards to crops and the environment.
- Nutrients in goat and sheep urine are often wasted, and improper manure handling can lead to environmental pollution.

Solution

Climate impact

- · Composting rapidly deactivates human pathogens and weed seeds in manure, making it safe for use as compost on vegetable crops.
- · Commercial technologies permit to produce organic fertilizers from goat and sheep manure, increasing its economic value and reducing waste.

200-1000 usp Composted manure per ton

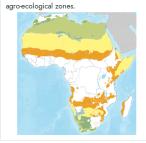
Key points to design your project

The Processing and Application of Composted Manures technology offers a solution for reducing poultry feed costs. To integrate this technology into your project, follow these steps:

- · Invest in compost turning and pellet making machinery.
- · Analyze feed ingredient composition and identify any constraints.
- Evaluate ingredient cost and availability.
- Engage a team of trainers for installation support and develop communication materials to highlight
- · Collaborate with breeders and local stakeholders.

Testing ongoing

Where it can be used This technology can be used in the colored



Target groups

Farmers

5000-10000

USD

Manure drying and composting equipment

ÛIP







Short-Term Fattening and Supplemental Feeding

Fast Feed, Fast Fatten, Fast Fortune: The Future of Livestock Farming!

The technology is a strategic feeding method used in feedlots to quickly fatten livestock, particularly goats and sheep, for slaughter. It aims for optimal fat deposits and three fattening cycles per year, timed with festive seasons for peak demand and prices. This ensures quick turnover, aligns with market dynamics, and makes the practice profitable and responsive to market needs.



Goat fattening with excess feed and limited movement



International Livestock Research Institute (ILRI) Adeniyi Adediran

Technology from

ProPAS

Commodities

Small livestock

Sustainable Development Goals





Production, Practices,

Categories

Animal feed management

Tested/adopted in

Problem

Gender assessment

• Limited space for extensive livestock farming.

This technology is **TAAT1 validated**

- High risks associated with livestock ventures.
- Long timeframes for returns in traditional farming.
- Challenges in implementing movement restrictions for intensive feeding.

Solution

7.7

Climate impact

- · Feedlot Farming: Maximizes space usage.
- Profitable Turnover: Minimizes risks.
- · Quick Returns: Ensures fast results.
- Effective Restrictions: Manages animal movement.

Key points to design your project

This technology aids in achieving SDG 2 (Zero Hunger) by boosting meat production and can support SDG 5 (Gender Equality).

For successful integration into a project, key steps include:

- Engaging stakeholders to tailor the technology to regional needs.
- Training breeders on the technology and its benefits.
- Developing necessary infrastructure like feedlots and feed storage.
- Managing supply chain for steady animal and feed supply.
- Monitoring and evaluating the project's progress and impact.

These steps should align with regional context and government livestock farming policies.

80 usp

ROI: \$\$\$ 50 %

Net return in few months

 \bigcirc _{IP}

Open source / open access



Where it can be used

This technology can be used in the colored



Target groups

Breeders

cost of a young animal

70 USD

cost to finish a young animal in four months





Cut-and-Carry Fodder Systems

Low-cost fodder system for livestock

"Cut-and-Carry Fodder Systems" technology delivers fresh feed directly to confined livestock, replacing traditional grazing. It involves daily harvesting and distributing feed, suitable for dairy cattle, goats, and sheep, particularly in areas with limited feed resources.





International Livestock Research Institute (ILRI) Adeniyi Adediran



This technology is **TAAT1** validated.

7.7



Scaling readiness: idea maturity 7/9; level of use 7/9

Gender assessment



Climate impact



Problem

- Feed wastage in free-grazing systems due to trampling, contamination, and inefficient utilization
- Traditional grazing results in delayed livestock fattening and longer timeframes for returns on investment, particularly after weaning.
- Underutilization of valuable resources like crop residues and seasonal vegetation in traditional grazing methods.

Solution

- Efficiently utilizes crop residues and seasonal vegetation, preventing wastage.
- Facilitates the collection and use of manure for enhanced soil fertility and productivity.
- Allows for both zero-grazing and partial confinement, offering flexibility in grazing practices.

Technology from

ProPAS

Commodities

Small livestock, Cattle

Sustainable Development Goals









Categories

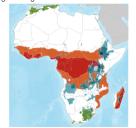
Production, Practices,
Animal feed management

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Breeders

Key points to design your project

Steps to integrate the technology into your project:

- Ensure availability of sufficient vegetation.
- Prepare for moderate expenses.
- Be prepared for labor-intensive tasks.
- Ensure access to improved breeds.
- · Acquire skills in animal diets, health care, and market intelligence.

Consider training and support during project installation, communication support, and collaboration with agricultural development institutes for implementation.

50-100 USD

20 USD



Feed and water troughs for 20 to 50 animals

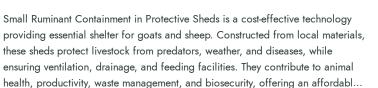
Suitable shed per m2





Small Ruminant Containment in Protective Sheds

Secure Shelters, Thriving Flocks







International Livestock

Research Institute (ILRI)

Adeniyi Adediran

Technology from

ProPAS

Commodities

Small livestock

Sustainable Development Goals





Categories

Production, Equipment, Production System

Tested/adopted in



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

Breeders

This technology is **TAAT1** validated.





Scaling readiness: idea maturity

Gender assessment 💧 4



Climate impact



Problem

- Security: Risk of predator attacks and theft.
- Basic Needs: Difficulty in finding food and
- Health: Risk of disease transmission.
- Cost: High expense of building shelters.

Solution

- Safety & Health: Protects livestock from predators and diseases.
- **Environment**: Shields from weather and manages
- Biosecurity: Reduces disease transmission.
- Affordability: Cost-effective and adaptable for small-scale farmers.

Key points to design your project

Small Ruminant Containment in Protective Sheds is a technology that positively impacts gender equality, climate, and contributes to SDGs. It provides an affordable livestock management method, mitigates climate change effects, and contributes to SDGs 1, 2, 13, and 15.

For project managers aiming to promote this technology among breeders, the approach includes:

- Awareness Campaigns: Educate breeders about the technology's benefits.
- Training Programs: Train breeders on shed construction and maintenance.
- Demonstration Sites: Show the technology in action.
- Compatible Technologies: Promote integration with other livestock management practices.
- Key Partners: Collaborate with local artisans and agricultural organizations.

This approach ensures successful technology adoption, leading to improved livestock management and productivity.

Cost: \$\$\$ 2,000 USD

Bulding construction

12,000 USD



Benefit in a year





TAAT e-catalog for government

Community-Based Breeding Program

Transforming Ruminant Farming Together

This program sets up special herds: a main group with chosen female sheep and goats, plus excellent male sheep or goats. A group of local community members choose and oversee these animals, paying attention to their best qualities. We track progress using measurements, sometimes with special computer tools."





International Livestock Research Institute (ILRI) Tunde Amole

Technology from

ProPAS

Commodities

Small livestock

Sustainable Development Goals

Problem

Gender assessment

· Poor genetics and diseases limit small ruminant productivity.

This technology is **TAAT1 validated**.

- · Mixed herd structure complicates breeding and tracking genetic progress.
- Lack of breeding records hinders genetic management.
- · Crossbreeding with exotic breeds yields mixed
- · Technical skills are needed to establish breeding programs and support breeders.

Solution

Climate impact

· Improved genetics through structured selection.

7/9; level of use 9/9

- Targeted breeding efforts for specific male
- · Data recording aids informed mating decisions.
- · Focus on community-based selection for better
- · Breeders receive technical support and training.











Categories

Tested/adopted in

Tested & adopted

Where it can be used

agro-ecological zones.

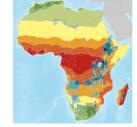
Production, Practices, Seed system

Key points to design your project

- The technology improves small-scale farmers' incomes and food security by enhancing small ruminants' productivity and resilience.
- It reduces disease prevalence and fosters economic growth in rural areas.
- · The technology promotes climate resilience and supports sustainable land use and biodiversity
- Steps to integrate the technology:
 - Identify suitable locations for implementation.

familly income increase

- Evaluate and prioritize breeding stock based on desired traits.
- Establish clear breeding objectives tailored to community needs.
- Implement recording systems for tracking breeding data.
- Select elite animals for breeding and provide technical support to community members.
- Collaborate with stakeholders to strengthen institutional relations and market linkages.



This technology can be used in the colored

Target groups

Breeders

15 %

O_{IP} Open source / open access







Processing chicken meat for cold storage

Preserving Quality, Expanding Opportunity: Value Addition for Poultry

The "Processing chicken meat for cold storage" technology is a streamlined method for poultry processing. It uses mechanized equipment to convert raw chicken into value-added products and includes cold storage for long-term preservation and transport. It's designed for small and medium enterprises, with cooperative models for capital and volume generation.





International Livestock Research Institute (ILRI) Adeniyi Adediran

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals







Categories

Transformation, Practices, Agri-food processing

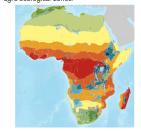
Best used with

• Mechanized Defeathering and Egg Sorting >



Where it can be used

This technology can be used in the colored agro-ecological zones.



Target groups

This technology is **TAAT1** validated.

8.7



8/9; level of use 7/9

Gender assessment



Climate impact



Problem

- Live market sales: Hurt farmer profits, risk public health, cause shortages.
- Unmet demand: Can't satisfy growing need for ready-to-cook chicken.
- SME challenges: Lack resources to build processing plants, limiting participation.

Solution

- · Value addition and storage: Converts raw chicken, enables long-term storage, ensures
- Hygiene and mechanization: Ensures hygiene, uses mechanized processing.
- SME empowerment: Accessible tech, boosts participation in poultry.

Key points to design your project

The "Processing chicken meat for cold storage" technology empowers women through income-generating roles in poultry. It promotes resource efficiency and waste reduction, aiding sustainable practices. Aligning with SDGs like Zero Hunger, Decent Work, and Responsible Consumption, it's a valuable tool for sustainable development and gender equality in government projects.

For successful integration in a project :

- 1. Awareness and Training: Educate breeders about the technology, covering equipment usage, hygiene, and cold storage management.
- 2. Laws and Regulations: Comply with food safety regulations and obtain necessary permits and licenses.
- 3. Infrastructure Setup: Assist breeders in procuring and installing equipment (e.g., cutting, deboning, chilling, refrigeration).
- 4. Technical Support: Provide ongoing assistance and troubleshoot issues.
- 5. Monitoring and Evaluation: Regularly assess adoption and impact using key indicators.

Remember to address both technical and regulatory aspects for effective implementatio

Cost: \$\$\$) 500—1000 USD

Prices of small electric processing machines

15,600 USD

(ROI: \$\$\$) 303 %

Internal return rate

 \bigcirc _{IP}

Unknown

basic processing plant with defeathering, cutting and storage lines for 500 chicken per day





Local Production of Quality Affordable Poultry Feed

Cutting Costs, Boosting Nutrition

This practice involves blending various ingredients to create a balanced feed ration for chickens, optimizing their growth and production. The basic formulation includes maize or wheat, soybeans, bran, oil press cake, fish and bone meal, poultry supplement, limestone, and salt. The feeds are further processed into mash for chicks or pelleted for larger birds.



Un poulet se nourrissant d'asticots riches en protéines



International Livestock Research Institute (ILRI) Tunde Amole

Technology from

ProPAS

Commodities

Poultry

Sustainable Development Goals







Categories

Pre-production, Equipment, Animal feed production

Best used with

Tested/adopted in

• Cassava Peels for Animal Feed Production >

This technology is **TAAT1** validated.

9.9



Gender assessment 💧 4

Problem

operations.

productivity.

profitability.



• Limited access to safe and low-cost poultry feed

inhibits enterprise profitability and expansion.

restricts small-scale farmers from scaling their

· Balancing the ration with the right combination of

• Leveraging locally available ingredients for feed

• Dependence on expensive purchased feeds

nutrients is essential for poultry health and

production can reduce costs and enhance

Climate impact

Solution

- Utilizing locally available and seasonal materials for feed production.
- Blending local energy and protein ingredients with purchased additives to create formulated
- · Reducing feed costs through free-ranging practices and using local by-products.
- Implementing proven technologies to improve local meat and egg supplies.

Key points to design your project

- The technology reduces poultry feed costs, aiding small-scale farmers and improving food security.
- It fosters economic growth by creating local job opportunities and promoting sustainable practices.
- · Steps for implementation include assessing nutrient requirements, analyzing feed ingredients, evaluating equipment needs, and considering collaboration with stakeholders.
- · Training and communication efforts are essential, along with exploring integration with complementary technologies for optimization.

Cost: \$\$\$) 3,000—36,000

ROI: **\$\$**\$

reduction of feed cost

USD

per machine

5 years

100-200 kg feed production per hour

life span

Open source / open access



Target groups









ILRI Technologies

ABOUT US

TA AT

TAAT, Technologies for African Agricultural Transformation, is an African Development Bank initiative to boost agricultural productivity by rapidly rolling out proven technologies to more than 40 million smallholder farmers.

TAAT aims to double crop, livestock, and fish productivity by 2025 by engaging both public and private sectors to expand access to productivity-increasing technologies across the continent.TAAT advises African government who receive funding from international financial institutions such as the African Development Bank to help them integrate the best agricultural technologies in their development projects. TAAT also offers technical assistance for the integration of these technologies, when needed.

TAAT Technologies

TAAT definition of agricultural technologies is very broad: they include improved varieties, inputs, equipment, agricultural infrastructure, practices and agricultural policies. In short, any solution to an agricultural constraint. TAAT technologies have been developed by a wide variety of organizations: the CGIAR, other international research institutions, national research organizations, or the private sector.

TAAT Clearinghouse

Within TAAT, the Clearinghouse has the remit to select, profile and validate agricultural technologies, and showcase them in online

catalogs to support the advisory role that the Clearinghouse offers to governments and the private sector. The Clearinghouse strives to be an 'honest broker' of technologies through its selection, profiling, validation and advice.

TAAT e-catalogs

The e-catalogs are designed to be used by decision-makers within governments, private sector companies or development organizations. They facilitate the search for appropriate solutions that are adapted to local conditions and requirements, and provide all necessary information, presented in jargon-free and easy to analyze technology profiles. Once a decision-maker has selected a technology of interest, the e-catalogs facilitate their direct contact with those who can help them implement the technology, whether they are a research group or a private company.

TAAT Technology Toolkits

Technology toolkits are hand-picked selections of technologies from the TAAT e-catalogs. We offer some curated toolkits for specific cases, and registered users can create their own toolkits, showcasing their selection of technologies. Toolkits can be used online and shared as links, as mini e-catalogs, they can also be downloaded, saved, shared or printed as collections of technology pitches in PDF format (pitches are one-page summaries of technology profiles, available for all technologies on the e-catalogs).





CONTACT

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