

REPORT ON THE OUTCOMES OF THE ESIA STUDY OF SELECTED POULTRY FARMS WITHIN THE NAIROBI METROPOLITAN AREA, KENYA

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MARCH 2026

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This report is based on a project funded by a grant from Brighter Green.

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Scope Disclaimer

This report presents the outcome of the environmental and social impact study done on selected poultry farms in Nairobi, Kenya. We acknowledge that the report is non-exhaustive of the issues arising in relation to the subject matter thereof. LAPA published it for further consideration within the framework of a multi-phased project.

Legal Disclaimer

This report provides the outcome of the environmental and social impact study done on selected poultry farms in Nairobi, Kenya, acknowledging that we may only be able to develop preliminary findings for the issue. This report is for African researchers opposing factory farms and blocking their introduction on the continent. We assume no liability if third parties use this report for unintended purposes.

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LAPA welcomes feedback on this report and other aspects of their work.

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ACYONYMS

<i>CDE</i>	County Director of Environment
<i>CoC</i>	Code of Conduct
<i>CPHO</i>	County Public Health Officer
<i>CPP</i>	Consultation and Public Participation
<i>CSOs</i>	Civil Society Organisations
<i>DOCs</i>	Day-Old Chicks
<i>DOHSS</i>	Directorate of Occupational Health and Safety Services
<i>EA</i>	Environmental Audits
<i>EHS</i>	Environment, Health and Safety
<i>EMCA</i>	Environmental Management and Coordination Act
<i>ES</i>	Environmental Statement
<i>ESIA</i>	Environmental and Social Impact Assessment
<i>ESMP</i>	Environmental and Social Management Plan
<i>ESSs</i>	Environmental and Social Standards
<i>EO</i>	Environment Officer
FARM	Farm animal responsible minimum standards

GDP	Gross Domestic Product
GRM	Grievance Redress Mechanism
HSE	Health and Safety Expert
NEMA	National Environment Management Authority
OHS	Occupational Health and Safety
OP	Operational Policy
PAPs	Project-affected persons
PPE	Personal Protective Equipment
POs	Producer Organisations
SEA	Sexual Exploitation and Abuse
SEM	Sustainable Environmental Management
SEP	Stakeholder Engagement Plan
SWM	Solid Waste Management
WIBA	Workplace Injuries and Benefits Act
WOAH	World Organisation for Animal Health

INTRODUCTION

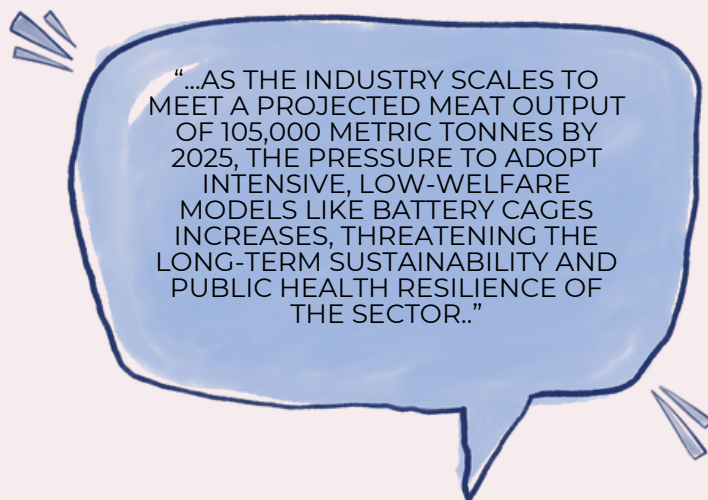


The poultry sector in Kenya is undergoing a rapid transformation, driven by robust demographic shifts and urban economic growth. These factors provide significant incentives for increased output and a shift in production models: advancements in breeding techniques, specialised feed formulations, and automated processing are increasing efficiency. Hereby favouring large-scale, corporate-dominated agribusiness over traditional, diverse family farms.

As urban land becomes a limiting constraint, the traditional free-range technique is becoming marginalised, as farmers in metropolitan areas increasingly rely on intensive systems to maximise bird density in limited spaces.

A National flock data underscores this trend: between 2016 and 2024, the total chicken population rose from 44 million to approximately 59.3 million, with indigenous breeds maintaining a dominant 84% share. Yet, a distinct sectoral divide persists—while indigenous poultry remains the bedrock of the rural economy, intensive broiler and layer units increasingly command the urban market

Poultry farming contributes approximately 12% to the national GDP and over 40% to the agricultural GDP. However, this profitability comes with a trade-off: as the industry scales to meet a projected meat output of 105,000 metric tonnes, the pressure to adopt intensive, low-welfare models such as battery cages increases, threatening the sector's long-term sustainability and public health resilience.



POULTRY PRODUCTION SYSTEMS IN KENYA

The Kenyan poultry industry is strategically divided into two primary production systems, with smallholders representing the overwhelming majority of the producer base and bird population.

Two primary production systems, namely, characterise the industry:

i. The Commercial Hybrid Poultry Production System

It is a high-intensity, market-driven production model that forms the backbone of Kenya's urban poultry supply chain. Strategically clustered around major cities like Nairobi, Nakuru, Mombasa, and Kisumu, this sector leverages imported genetics to produce high-yielding day-old chicks (DOCs) for commercial use.

This production system is predominantly Sector 1-3 of the FAO poultry production classification.

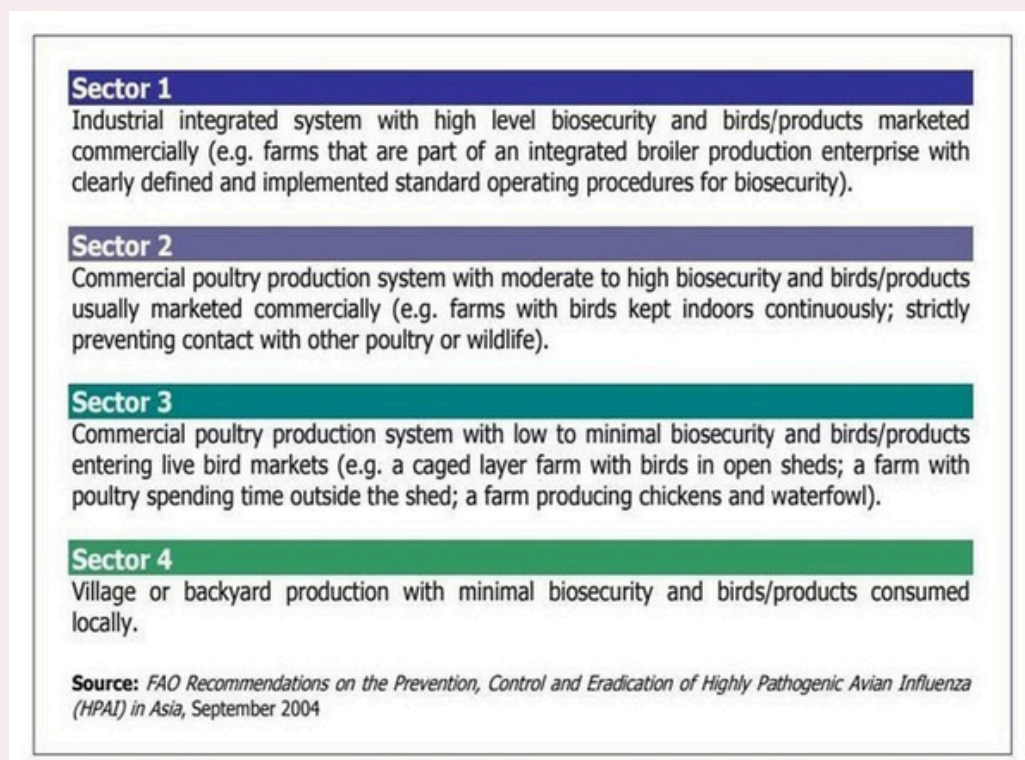
ii. Indigenous/Traditional Poultry System

This system dominates the poultry production system. Approximately 71% of eggs and poultry meat in Kenya are derived from this system.

This sector is sensitive to feed costs, as they account for up to 70% of total production expenses, making efficiency and high-welfare management critical to maintaining profitability in a competitive market.

This production system is predominantly Sector 4 of the FAO poultry production classification.

These production systems are classified by the Food and Agriculture Organisation (FAO) of the United Nations, as seen in the figure below.





ILLUSTRATION

To bring into perspective how significant the upfront and recurring investment costs are for a small-scale farmer to transition their farm into a high-welfare farm, we used a 5000-bird poultry operation to calculate the costs.

The estimates, as follows, are based on regulatory rates and industry standards:

1. Statutory Licences & Legal Compliance (Annual)

These are the hard costs required by the Kenyan government to move from an invisible smallholder to a formal agribusiness.

Item	Estimated Cost (KES)	Frequency	Legal Mandate
NEMA EISA Licence	10,000-25,000	Once/Renewal	EMCA 1999 (0.1% of project cost)
Annual Env. Audit	10,000-15,000	Annual	EMCA (Expert Fee + Submission)
DOSHS Registration	2,000-5,000	Annual	OSH Act 2007 (Size-Dependent)
County Permits	5,000-10,000	Annual	County Finance Acts (Varies)
Movement Permits	1,000-2,000	Annual	Animal Diseases Act (CAP 364)
Sub Total	28,000-52000		



ILLUSTRATION - CT'D

2. Extension Services & Welfare Management

Item	Estimated Costs
Private Extension Visits (High-welfare farms require at least one monthly visit from an animal health professional.)	KES 3,000–5,000 per visit ≈KES 36,000–60,000 per year.
Comprehensive immunisation (Gumboro, Newcastle, Fowl Pox, etc .)	<u>For 5,000 birds</u> ≈KES 15 per bird = KES 75,000 per batch
Biosecurity & PPE	≈KES 20,000 – 30,000 per year



To achieve high welfare standards, a farm must compensate for the shortage of public health workers by employing private experts.



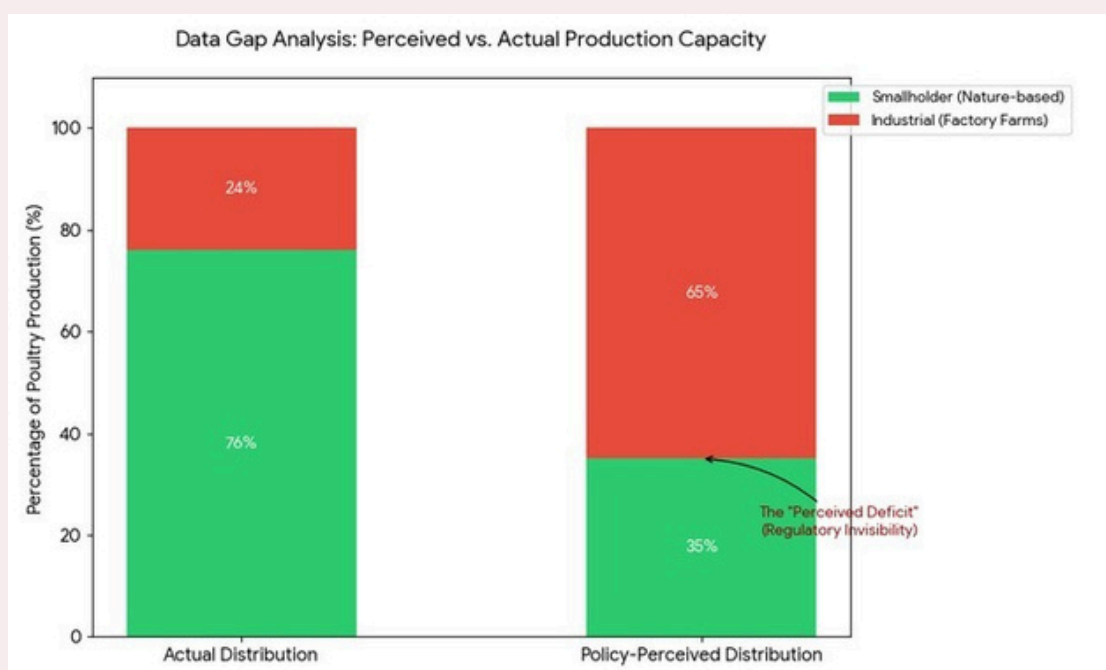
“...for the Kenyan smallholder, an animal is not just food; it is a liquid asset. A cow, hen or a flock of goats represents school fees, emergency medical funds or a daughter's dowry...”

IMPACT SNAPSHOT

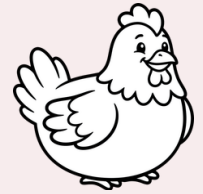
Current environmental laws (like EMCA) often apply the same rigorous standards to a smallholder with 500 chickens as they do to an industrial plant with 100,000. The cost of a private environmental impact assessment (EIA) can be more than a smallholder's entire annual profit. This creates a compliance chasm where farmers want to be legal but simply cannot afford the entry fee to formal markets.

Smallholder farmers manage approx. over 76% of Kenya's poultry population, yet they often operate in regulatory invisibility because many are not formally registered owing to hidden complexities and systemic challenges of the industry

This data gap creates a dangerous "policy vacuum". When the state lacks data for the smallholder majority, national policies are drafted based on a perceived deficit in local production capacity.



THE PROJECT



Poultry farming is a cornerstone of global nutritional security and one of the most resource-efficient methods of animal husbandry.

However, its expansion carries profound implications for environmental integrity and public health.

In Kenya and across Africa, livestock policies have historically prioritised immediate and maximum output to address food security concerns.

Driven by UN projections of exponential population growth, governments often enter into concessions for intensive, large-scale factory farms backed by corporations and international financial institutions such as the World Bank.

Despite the push for industrialisation, a critical data gap exists: governments are operating on perceived production deficits rather than reality.

In Kenya, smallholders currently control approx. over 80% of animal production, yet they remain largely undocumented. For instance, a study by the Ministry of Agriculture in 2019 documented an approx. 85% of dairy milk had not been formally processed, reflecting a vast, invisible economy.

This lack of transparency leads to the following:

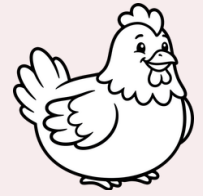
- **Misinformed Policy:** Promotion of battery cage systems as cost-effective, despite detrimental impact on welfare and sustainability.
- **Market Exclusion:** Smallholders remain unattractive to premium international markets due to a lack of verifiable high-welfare practices.
- **Public Health Risks:** Invisible production chains encourage poor husbandry, increasing the risk of spillover of zoonotic diseases.

REALITIES

livestock policies have historically prioritised immediate and maximum output to address food security concerns

Despite this push to maximise output, a critical data gap persists, as governments continue to operate on perceived production deficits attributable to the “invisible” smallholder farmers. For example, in Kenya, smallholders currently account for over 80% of animal production, yet they remain largely unacknowledged by policy.

PROJECT PROCESS



The research was premised on the fact that smallholder non-compliance is not a result of a lack of inherent capacity but a systemic failure rooted in inaccessible extension services and the high cost of compliance. This pushes them toward low-welfare models that accelerate environmental degradation and heighten public health risks.

It evaluated the environmental and social impacts of the poultry value chain within the Nairobi Metropolitan Area. Through rigorous laboratory analysis of soil, water, and air, the study assessed contamination levels and regulatory compliance across diverse production scales.

The project was structured around three primary pillars:

01

Evaluate and identify the environmental and social compliance status of poultry farms within the Nairobi Metropolitan Area, specifically comparing the "compliance gap" between large and small-scale producers.

02

Evaluate the cost-effectiveness of high-animal-welfare standards, positioning compliance not as a burden, but as a critical tool for premium market entry and long-term financial sustainability.

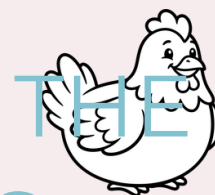
03

Identify emerging opportunities and technological trends that the industry can leverage to move toward a more inclusive, humane, and nature-based food system.

Crucially, the study revealed that a successful transition to high-welfare standards requires profitable, humane husbandry. By aligning production with rigorous welfare standards, smallholders can unlock a "green premium" in both domestic and global markets.

When welfare is transformed from a regulatory cost into a strategic asset, farmers see improved productivity and reduced mortality rates, ensuring a highly desirable, traceable, and truly secure food system that protects animals, empowers marginalised communities, and stabilises the national economy.

DESCRIPTION OF THE STUDIED POULTRY FARMS



The study utilised a stratified random sampling technique to select nine (9) poultry establishments within the Nairobi metropolitan area. These facilities span the full spectrum of the FAO production systems (sectors 1–4).

Est. No.	Location	FAO Classification and Description
Est 1	Dagoretti	Sector 3: 1,200 birds, deep litter
Est 2	Njiru	Sector 3: 3,200 birds, deep litter
Est 3	Ololua	Sector 3: 1,200 birds, deep litter
Est 4	Kibiko Ngong	Sector 3: 2,450 birds, deep litter
Est 5	Ngong Hills	Sector 3: 5,000 birds, deep litter
Est 6	Karura Ruaka	Sector 2: 20,000 birds, deep litter + processing plant
Est 7	Kikuyu	Sector 1: 30,000 birds, processing plant + hatchery
Est 8	Kilimambogo	Sector 1: 150,000 birds/day processing plant. It is part of an integrated production system with breeder farms, a hatchery, its own broiler farms and contracted broiler farmers.
Est 9	Kakuzi	Sector 2: 160,000 birds, operates on a deep litter system. The establishment is a contract farmer for an integrated producer



Photo shots from a farm in Kikuyu: The farm is renowned for improved Kienyeji breed (Kuroiler)



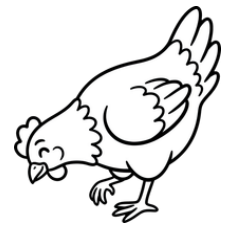
Photos from a farm in Kajiado



This farm operates a modern poultry farm



View of an electrically controlled poultry farm, each handling 40,000 birds. The houses rely upon electronic controllers. Through the use of controllers, it is possible to keep house temperatures within a desired controlled temperature, regardless of the outside temperature. This system makes it possible to keep the birds comfortable so they are not diverting energy from growth to stay warm or cool



METHODOLOGY

This study employed a cross-sectional research design to evaluate selected poultry establishments. To ensure robust findings, the study utilised a mixed-methods approach, integrating both quantitative and qualitative data.

A. LAB INVESTIGATION

Water and soil samples were systematically collected from the three (3) processing facilities to evaluate their environmental impact. To ensure the highest degree of data integrity and result accuracy, all samples were delivered to the laboratory within a strict 24-hour window, preventing degradation or microbial transformation.



Soil samples are being drawn from one of the farm sites



Effluent, discharged from a processing plant, being collected for laboratory analysis

B. FIELD OBSERVATION

Each establishment underwent a site audit to evaluate operational sustainability and legal standing. The assessments focused on the following critical environmental and regulatory parameters:

Discharge mechanisms, treatment protocols (e.g., soak pits, septic tanks, or biodigesters), and the final disposal pathways

01

Assessment of the collection, segregation, and disposal methods for biological waste (carcasses, offal), litter, and manure, with a focus on mitigating groundwater contamination and odor

02

Adherence to the Environmental Management and Coordination Act, specifically regarding valid EIA licenses, annual environmental audits, and required discharge permits.

03



Effluent from the processing plant discharged into a water stream. Livestock spotted drinking on the polluted Athi River



Raw effluent from a factory poultry slaughtering area before being directed to effluent treatment system



A poultry processing plant has a well-functioning effluent treatment system

C. ETHICAL CONSIDERATIONS

Participants were informed of the study, and consent was obtained from everyone. The study team ensured that every respondent was fully briefed on the nature and purpose of the research, emphasising that their participation was entirely voluntary. Thereafter, consent was obtained from the participants.

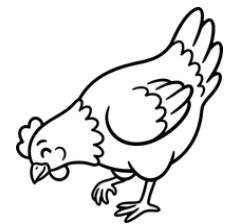
Additionally, respondents were sensitised to their right to withdraw from the data collection process at any stage, without the need for justification and free from any pressure or risk of retaliation. This ensured that the data gathered was not only accurate but also ethically sound, adhering to international research standards for human subject protection

D. LIMITATIONS OF THIS STUDY

The study encountered several constraints that influenced the scope and depth of data collection:

- **Limited access due to biosecurity issues:** Direct interaction with live birds was restricted across several establishments to maintain institutional biosecurity. Consequently, observations were primarily focused on infrastructure and management processes rather than direct physiological assessments of the flocks.
- **Confidentiality:** To secure site access, farm management emphasised the protection of data, and photographic documentation was restricted to specific operational zones as directed by site management.
- Due to a defined project timeline and available funding, the primary data collection was limited to nine (9) selected farms, and the findings should be interpreted within this localised context.

CORE FINDINGS



Analysis of the 9 study sites (ranging from 1,200 to 160,000 birds) identified a direct correlation between scale and compliance:

- Integrated Large-Scale (Est 8 & 9): Demonstrated full compliance with EIA licences, annual audits, and humane slaughter protocols (e.g., controlled atmosphere stunning).
- Small/Medium Operations (Est 1-4, 6-7): Exhibited critical failures in waste management. They lacked evidence of EIA reports or environmental audits submitted to NEMA. Common practices included discharging raw effluent into municipal sewers or open soak pits, leading to localised soil and water pollution.

This is illustrated in the tables that follow:

Effluent waste management system for poultry operation and other facilities	Solid Waste Management	Market for the poultry products	Regulatory Compliance EMCA CAP 370
None No dedicated treatment plant	Condemned carcasses from the slaughtering of the birds are disposed of with other municipal wastes	Restaurants and Eateries within the town	Not compliant No evidence of EIA report submitted to NEMA No evidence of an environmental audit submitted to NEMA
Effluent generated is washed down into Nairobi water and sanitation	Feathers, bedding material, excreta, feed, hatchery waste (empty shells, infertile eggs, dead embryos, and late hatchlings), dead birds, and mortality waste are disposed of as municipal wastes	Muindi Mweusi Supermarket in Njiru	Not compliant No evidence of EIA report submitted to NEMA No evidence of an environmental audit submitted to NEMA
None No dedicated treatment plant	Non-existent collection systems lead to ineffective disposal.	Orders by Individuals	Not compliant No evidence of EIA report submitted to NEMA No evidence of an environmental audit submitted to NEMA

Open disposal	Non-existent collection systems lead to ineffective disposal.	Orders by Individuals	Not compliant No evidence of EIA report submitted to NEMA No evidence of an environmental audit submitted to NEMA
Effluent generated is washed down into a soak pit	Contracted waste collection company	Non-disclosed Customers details	Not compliant No evidence of EIA report submitted to NEMA No evidence of an environmental audit submitted to NEMA
Soak Pit Existence of slaughterhouse	Contracted waste collection company	Non-disclosed Customers details	Compliant with Public Health Act No evidence of EIA report submitted to NEMA No evidence of an environmental audit submitted to NEMA
Soak Pit	Contracted waste collection company	Naivas retail store – Ngong Clean Shelf Supermarket, Limuru	Compliant with Public Health Act No evidence of EIA report submitted to NEMA No evidence of an environmental audit submitted to NEMA

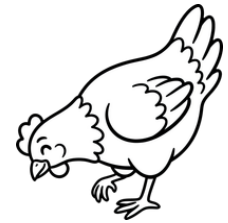
Effluent treatment plant with primary and secondary treatment system	Contracted waste collection company	The company operates retail shops and fast food outlets in Kenya, and exports to South Sudan and Congo	The EIA licence for the factory is available. An effluent discharge licence from NEMA is available. Annual environmental audits submitted to NEMA are available. Compliant with the Public Health Act. Use of stun-kill controlled atmosphere for humane slaughter
Soak Pit	Contracted waste collection company	The company operates retail shops and fast food outlets in Kenya, and exports to South Sudan and Congo	An EIA licence for the farm is available. An effluent discharge licence from NEMA is not available. Annual environmental audits submitted to NEMA are available. Operation compliant with the Public Health Act.

	Est 9		Est 7		Est 6	
Environmental & Public Health Compliance	Yes	No	Yes	No	Yes	No
Recycling of wastes (chicken Feed packaging, plastics, droppings as manure)	✓		✓		✓	
Recycling of wastewater through effluent treatment plant	✓			✗	✓	
Harvesting of Rainwater	✓			✗		✗

	Est 9		Est 7		Est 6	
Solar lighting at the farm	✓			✗		✗
Annual Environmental Auditing of the operation and reporting to NEMA (show proof)	✓			✗		✗
Sampling of effluents generated to know if the same meets standards set by EMCA Water Quality Regulations of 2006 (show proof)	✓			✗		✗
Solid wastes are collected by NEMA-accredited firms (show proof)	✓		✓		✓	

	Est 9		Est 7		Est 6	
Routine Disposal of poultry carcasses through appropriate means such as incineration and composition	✓		✓		✓	
Public Health Clearance	✓		✓		✓	
Effluent Discharge License	✓			✗		✗
Single Business Permit	✓		✓		✓	

EFFLUENT AND SOIL RESULTS



	Soil Analysis	Water Analysis
Est 9	Within set parameters	Within standards
Est 7	Not within set parameters	Not within set parameters
Est 6	Not within set parameters	Not within set parameters

See the copy of the lab results below:

Ecosustainability Hub Consultants Ltd C/O poultry processing facility-Kiambu County

Test report number: 2316013242	
Sample	Water/effluent
Date and place submitted	██████████ Road C Enterprise Road Sameer Industrial Park Unit 2
Date analysis started	██████████
Sampling method	Potentiometric, Gravimetric, incubation, reflux and colimetric
Marks	----

Results							
Parameter	Unit	Result	Guide Low	Guide High	Low	Optimum	High
pH		6.70	6.50	8.50			
*Total dissolved solids	ppm	352		< 1200			
*Total Suspended Solids	ppm	26.2		< 30.0			
*B.O.D	ppm	25.8		< 30.0			
*C.O.D	ppm	38.5		< 50.0			
*Ammonium	ppm	19.10					
*Nitrite N	ppm	1.01					
Nitrate N	ppm	0.03					
*Total N	ppm	22.1		< 100			
*Faecal E. Coli	cfu/100 ml	ND		ND			
*Total Coliforms	cfu/100 ml	293		< 1000			

ND = Not Detectable

Nairobi Laboratory

Dated: ██████████

Analyst

██████████



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Lab analysis of effluent from a poultry farm investigated of a discharge point indicates that parameters are within standards for discharge into the environment

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TEST REPORT

REPORT NO : M-22-407

CLIENT: Ecosustainability Hub Consultants Ltd
0727841483
Source: [REDACTED]

Designated Product	Effluent	Sampled By	Client
Date Received	[REDACTED]	Sampling date	[REDACTED]
Container Type	In a chilled plastic bottle	Sampling Location	As supplied
Date of Analysis	[REDACTED]	Sample Source	Effluent water
Date Reported	[REDACTED]	Sample Preservation	-
Sample Markings	Soak pit	No. of Pages	1

Test	Standard	Result	Nema 3 rd schedule spec
pH @ 25°C	ISO 10523	7.09	6.5 – 8.5
Total suspended solids, mg/l	ISO 11923	17.21	30 Max
Biochemical Oxygen Demand, mg/l	ISO 5815	21.12	30 Max
Total dissolved solids	ISO 3025-10	1302	1200 Max
Chemical Oxygen Demand, mg/l	ISO 6060	48.26	50 Max
Total suspended solids, mg/l	ISO 11923	17.21	30 Max
Ammonia (Total)	APHA 4500NH3	19.63	100 Max
Residual chlorine mg/l	ISO 7393	0.2	-
Oil and grease	ISO 9377-2	Nil	Nil
Bacteriological test			
Coliforms, cfu/100ml	APHA 9222G	Not detected	Max 1000
E.coli, cfu/100ml	ISO 16649-2	Not detected	Nil

Remarks: TDS failed to meet Nema 3rd schedule specification.
The parameters denoted with * were subcontracted.

[REDACTED]
Laboratory Analyst.

[REDACTED]
Laboratory Manager.

RESULTS REPORTED RELATED ONLY TO ITEMS TESTED

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Lab analysis of effluent from the discharge point of a poultry farm investigated indicates that parameters are not within standards for discharge into the environment, thus polluting the soil and water in that environment.

NEMA Analysis Report NEMA 6th Treated Effluent into Environment



Report Ref#: CN-171230



Customer	Rio-Poultry	Water use	NEMAS Treated Effluent into Environ	Date received	16/6/2022
Address	0738632518	Stage		Analysis date	
Full names		Condition	Filled	Report date	
Contact person	Peter Oluch	Comments		Sample id	CN254N17AD01D

Water Source: Final Effluent- To maintain the correct history ensure that the next sample sent from this Water Source is labelled: Final Effluent

Parameter	Unit	Result	Guide Low	Guide High	Low	Optimum	High	Symbol	Current
pH		6.81	6.50	8.50				pH	6.81
*B.O.D	ppm	500		< 30.0				BOD	500
*C.O.D	ppm	1090		< 50.0				COD	1090
*Total Suspended Solids	ppm	258		< 30.0				TSS	258
Nitrate N	ppm	< 0.01						NO3N	< 0.01
Ammonium	ppm	3.41						NH4	3.41
*Nitrite N	ppm	0.041						NO2N	0.041
*Total N	ppm	3.46		< 100				T-N	3.46
*Total Dissolved Solids	ppm	591		< 1200				TDS	591
E. Coli	cfu/100 ml	> 1800		ND				Ecol	> 1800
Total Coliforms	cfu/100 ml	> 1800		< 1000				TC	> 1800

ND = Not Detectable - < 1% the result is below the limit of detection.

COMMENTS #

High TSS indicates higher than normal sediment load and likely high turbidity. > High chemical oxygen demand is an indicator of high organic waste in the water. > High BOD may cause suffocation of fish and aquatic organisms that require oxygen to survive.

	Jo Gakubo Lab Manager Approval Date: [Signature]	Condingley Jeremy Managing Director Approval Date: [Signature]
--	---	---

Disclaimer Statement: "This report and all its contents are based on the samples presented to the Laboratory for examination. It is the responsibility of the client to ensure that the samples are representative of the material to be tested. The Laboratory is not responsible for the accuracy of the results if the samples are not representative. The results are only valid for the purpose of the test. The results are not to be used for any other purpose. The results are not to be used for any other purpose. The results are not to be used for any other purpose."

Crop Nutrition Laboratory Services Ltd, Limuru, Kenya
Mobile: +254 (0)71 891 441
Email: lab@cropnuts.com

Page 1 of 1

www.cropnuts.com

Lab analysis of effluent from the discharge point of a poultry farm investigated indicates that parameters are not within standards for discharge into the environment, thus polluting the soil and water in that environment

Ecosustainability Hub Consultants Ltd C/O poultry processing facility-Kiambu County

Test report number: 2316013241	
Sample	Soil
Date and place submitted	██████████ Road C Enterprise Road Sameer Industrial Park Unit 2
Date analysis started	██████████
Sampling method	N/A
Marks	-----

Results

TEST	METHOD	RESULTS	UNITS	CLIENT SPECIFICATIONS
BTEX				
Benzene	PQALIM002	<0.01	mg/kg	-
Toluene	PQALIM002	<0.01	mg/kg	-
Ethyl benzene	PQALIM002	<0.01	mg/kg	-
Xylene	PQALIM002	<0.01	mg/kg	-
IPH				
Total Petroleum Hydrocarbons	PQALIM003	<0.01	mg/kg	-
PAH				
Naphthalene	PQALIM004	<0.01	mg/kg	-
Acenaphthylene	PQALIM004	<0.01	mg/kg	-
Acenaphthene	PQALIM004	<0.01	mg/kg	-
Fluorene	PQALIM004	<0.01	mg/kg	-
Phenanthrene	PQALIM004	<0.01	mg/kg	-
Anthracene	PQALIM004	<0.01	mg/kg	-
Fluoranthene	PQALIM004	<0.01	mg/kg	-
Pyrene	PQALIM004	<0.01	mg/kg	-
Benzo(a)anthracene	PQALIM004	<0.01	mg/kg	-
Chrysene	PQALIM004	<0.01	mg/kg	-
Benzo(b)fluoranthene	PQALIM004	<0.01	mg/kg	-
Benzo(k)fluoranthene	PQALIM004	<0.01	mg/kg	-
Benzo(a)pyrene	PQALIM004	<0.01	mg/kg	-

-----End of test results-----

Limit of Quantification (LOQ) = 0.01 mg/kg

Nairobi Laboratory

Dated: ██████████

Analyst

██████████



Where a statement of conformity is made, the following disclaimer applies not constituting uncertainties: 'conformity' - Results are within limits of the test method used. If results are outside the limits of the test method used, the results are not conforming. This test report and/or certificate is issued subject to Polucon Services (Kenya) Limited Standard Terms and Conditions, a copy of which is available on request. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be liable to criminal prosecution and civil claims for damages. Polucon Services (Kenya) Limited is not liable for any loss or damage arising from the use of this report. *Unless otherwise stated the results shown in this test report refer only to sample(s) tested and such sample(s) are retained for 90 days only (if requested).

NB: This report relates to submitted sample(s) only. The source and/or markings are as provided by the customer.

1 of 1

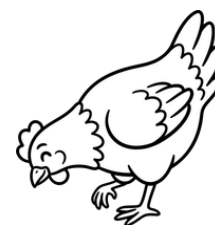
Polucon Services (Kenya) Limited

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CONSULTATIVE PUBLIC PARTICIPATION



Comprehensive community consultations were conducted to evaluate the perspectives and positions of local residents regarding the three (3) poultry processing facilities within their neighbourhoods.

This was done in line with the requirements of Legal Notice No. 101, Kenya Gazette Supplement No. 56 of June 13th, 2003, and the Environmental (Impact Assessment and Audit) Regulations, 2003.

CONSULTATIVE FEEDBACK

A. COMMUNITY

(80%) acknowledged the socio-economic contributions of the poultry industry. Participants identified the sector as a critical engine for local development, citing the creation of employment opportunities across the poultry value chain and the stimulation of local commerce.

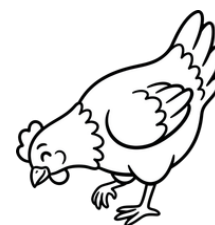
The scale of this impact is best illustrated by Establishment 9 (Est 9), which sustains a workforce of over 5,000 individuals across its integrated value chain.

The local economic ecosystem is deeply integrated with these farms, with a diverse customer base ranging from individual retail consumers and travellers to local shops and high-volume restaurants.

At a market rate of Kshs. 550 per 1.2 kg (dressed weight) for broilers, poultry production serves as a vital pillar for household resilience.

Beyond mere commerce, the sector addresses fundamental social needs by providing essential dietary proteins and generating the disposable income required to fund healthcare, education, and household stability.

CONSULTATIVE PUBLIC PARTICIPATION



B. FARMERS

The following were the constraints met by poultry farmers interviewed:

1. **Shortage of feed resources:**

insufficiency of food resources is a very important problem. Weakening of the Kenyan shilling against the dollar has made feed expensive, and not everyone is in a position to provide adequate feed to their flock.

2. High mortality and reproductive wastage (bio-insecurity): This was reported as another big challenge to poultry farmers because of a lack of necessary skills to raise poultry; their rate of productivity is reduced by different diseases and by uncontrolled predators. Many poultry farmers cannot afford the cost of housing their flock and are not in a position to procure vaccines for their animals, so this discourages many from investing in poultry, as they consider poultry farming a very risky business.

3. **Lack of appropriate skills for poultry management:**

Many poultry farmers are doing that activity without any training, and according to the survey, all respondents affirmed that they have never received any training.

4. **Inadequate extension**

services: This is principally due to the inadequate number of extension agents per county

5. **Inadequate institutional**

support: In most cases, farmers lacked collateral securities to facilitate obtaining loans to buy inputs and proper machinery for their farms. Also, insurance companies were reluctant to cover agricultural risks.



A. CONSUMER HABITS & TRENDS

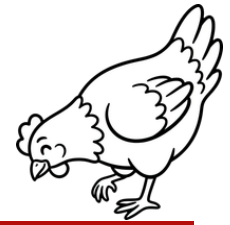
Consumer behaviour is a primary driver of production standards. However, in economies like Kenya, consumer behaviour exists within a complex tension between ethics and economic reality. When consumers cannot personally verify the safety or ethics of their food due to complex industrial value chains, they transfer their trust to the state. This reliance on government significantly dictates how food is sold and manufactured.

Under Article 46 of the Constitution of Kenya and the Consumer Protection Act, the state is mandated to protect the health, safety and economic interests of the consumers. This reliance has several systemic effects:

1. Government-mandated standards, such as those from KEBS and the Directorate of Veterinary Services, define what is marketable. This inadvertently creates a rigid, two-tiered food system that marginalises the smallholder majority.

While these regulations are essential for consumer safety, the high cost of compliance acts as a barrier that locks small-scale farmers out of the formal economy and premium markets, such as supermarkets and hotels. This compliance chasm pushes approx. 76% of Kenya's poultry population into an invisible, unmonitored informal sector, which not only stifles rural economic growth but also creates a significant national biosecurity threat by circulating uninspected products outside the reach of official oversight

EMERGING TRENDS

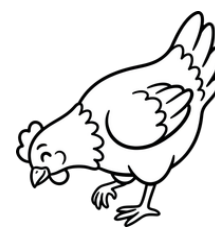


A. CONSUMER HABITS & TRENDS

2.The principle of consumer protection dictates that products must be of reasonable quality and that consumers must be provided with the information necessary to make informed choices. However, in Kenya, this framework often fails the average consumer who, faced with the high cost of premium, verified products, must rely on the government's perceived oversight while opting for cheaper, uninspected goods from the informal smallholder sector. This creates a dangerous transparency gap **where consumers lack the tools to verify welfare or safety claims**, resulting in a system where they unknowingly sacrifice quality for affordability, **further underscoring the urgent need for digital traceability to ensure that the most accessible food is also the most ethical and safe.**

3.Because consumers rely on government inspection to ensure food safety, they may become less vigilant in their own purchasing choices. This places a burden on state resources. If the government lacks the capacity to monitor all slaughterhouses, the reliance on the state creates a protection gap. This is where the one health, one welfare framework becomes critical; by protecting the welfare of the animal and the integrity of the environment, the government proactively safeguards human health.

EMERGING TRENDS



B. ONE HEALTH ONE WELFARE NEXUS

The global shift toward the One Health-One Welfare framework acknowledges that animal well-being is inextricably linked to human health and environmental integrity. Poor husbandry practices, particularly within "invisible" smallholder chains, act as a catalyst for antimicrobial resistance (AMR) and the emergence of zoonotic diseases.

Kenya has demonstrated significant continental leadership in this arena through the establishment and operationalization of the Zoonotic Diseases Unit (ZDU). As a multidisciplinary hub, the ZDU has been at the forefront of breaking down silos between human and animal health sectors. However, to achieve total sectoral resilience, we must now leverage this existing technical infrastructure to incorporate animal welfare as a core pillar of national biosecurity.

By aligning our sanitary and phytosanitary measures with WOAHA international welfare standards, we do more than protect animals; we fortify our national health security and unlock access to high-value global export markets that prioritize ethical and safe animal protein. At this critical juncture, as the poultry sector undergoes unprecedented expansion, we must move beyond incremental adjustments toward a systemic transformation of our agricultural policy.

To secure our future, we must bridge the data gap and ensure that producers across all four FAO sectors are accounted for and supported. This requires a transition toward a high-welfare, traceable, and truly secure food system: one that protects animals, empowers women as central economic actors, and stabilizes the national economy.

CONCLUSION AND RECOMMENDATIONS

Policy Re-Engineering

Policy re-engineering should be grounded in the one health, one welfare nexus. Transitioning animal welfare from a regulatory cost to a market asset – a policy environment where ethical and humane husbandry is the most profitable for farmers. The first step is to account for the hidden taxes of low- welfare systems. By formalising welfare standards, Kenya transforms its poultry sector into an export-ready sector, creating a self-sustaining cycle where the healthiest, most humane choice is also the most lucrative for the Kenyan farmer.

To move from "compliance" to "value", the Ministry of Agriculture must transition animal welfare from a peripheral regulatory cost to an intrinsic value at the heart of the husbandry value chain. Recognising that high welfare is not a luxury but a biological and economic imperative: a stressed animal is a biologically inefficient and financially risky asset.

Digital Formalisation

Digitising the value chain ensures that Kenya's agricultural growth is inclusive. The primary value for marginalised communities is the transition from economic invisibility to financial inclusion. A digital footprint serves as the "digital bridge" to turn smallholder assets into recognised economic capital. For a farmer living on \$1/day, this creates living collateral, allowing commercial lenders like AFC to issue credit without requiring traditional land titles.

By creating this transparency, we transform animal welfare and biosecurity from unverifiable claims into competitive market assets, allowing the smallholder to compete on the basis of quality, safety, and ethics rather than just scale.

CONCLUSION AND RECOMMENDATIONS

Devolved Extension Support:

Extension deficit is a systemic issue across the value chain where county governments, despite having a constitutional mandate to oversee animal husbandry, currently lack the fiscal and human capital necessary to reach millions of birds managed by the smallholders.

This gap means the state cannot effectively reach the millions of birds managed by the smallholder majority, leaving the backbone of the sector, and by extension, national food security, critically vulnerable due to a total absence of formal biosecurity oversight.

To secure the sector, the state must move beyond traditional civil service models and embrace digital tools and private-sector partnerships that can provide the decentralized auditing required to protect both animal welfare and human health.

Environmental Enforcement

Currently, the Environmental Management and Coordination Act (EMCA) requires individual Environmental Impact Assessments (EIAs) for projects likely to have a significant impact. For a 5,000-bird smallholder, the cost of a private EIA consultant is a total barrier to entry, leading to the 90% non-compliance rate observed in recent audits. NEMA should transition from requiring a predictive report (EIA) to a prescriptive management tool (EMP) for small-scale poultry operations.

Instead of each farmer hiring a consultant to write a 100-page report, NEMA, in collaboration with partners, should provide a pre-approved Environmental Management Plan (EMP) template for poultry farms under 10,000 birds. The EMP would be a checklist of required actions: mandatory composting distances, lining of effluent pits, and carcass disposal protocols. A simplified compliance certificate significantly reduces compliance tax – shifting NEMA's role from a policeman (penalising farmers for having no report) to a partner (assisting farmers in managing their waste)



Thank You!

Providing a voice for smallholders is not just an economic necessity but a human rights and environmental imperative. Thank you for being a part of that.

If you have any questions or need further clarification on the report, please don't hesitate to contact us.

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*For any questions, feedback,
or further inquiries, please don't
hesitate to reach out to us.*