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Increasing productivity of chickens through the African Chicken Genetic Gains (ACGG) project

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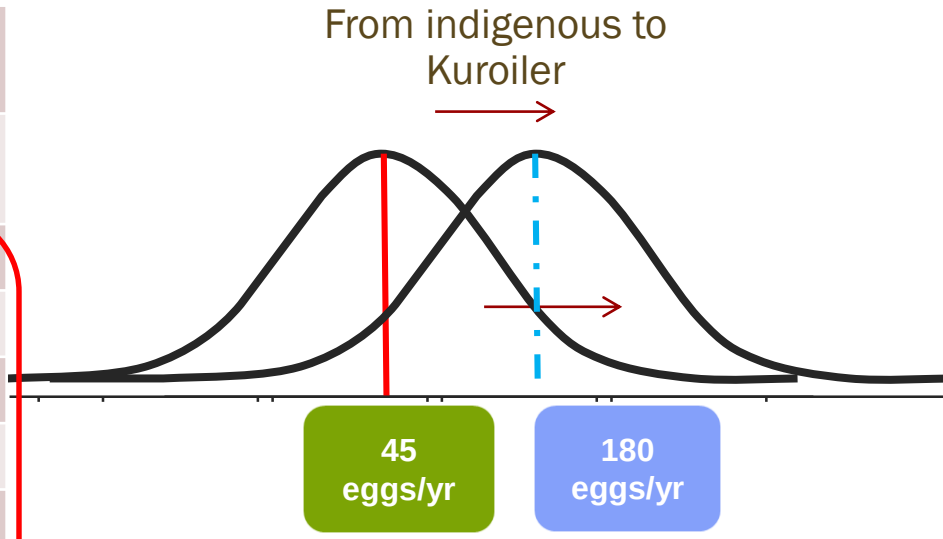
Scientific and Technical Partnerships in Africa

IFPRI

CGIAR Cultivating Science in Agriculture through Partnerships

What is the **science**?-*How we got here*

Geography / Conditions	Breed	Average eggs/ year
West Africa scavenging (sub)-humid	Indigenous	33
East Africa scavenging (sub)-humid	Indigenous	58
Egypt	Fayoumi	146
South Africa	Koekoek	204
Ghana (intensive feeding)	Naked Neck	288
Ghana (intensive feeding)	Frizzle Feather	287
Uganda	Kuroiler	180
India	Rainbow Star	160-180
India	CARI lines	198-220
Developed world	"Exotic"	300+



***Source**: Mwacharo et al 2008; Dessie et al 2011*

Identify most productive local ecotypes and multiply

Supplemental feeding, vaccination, and brooding

Smallholder adoption productive of tropically adapted birds

Give up other farming for full-time poultry; intensive grain feeding competes with cheap imports

Too risky for many Smallholders?

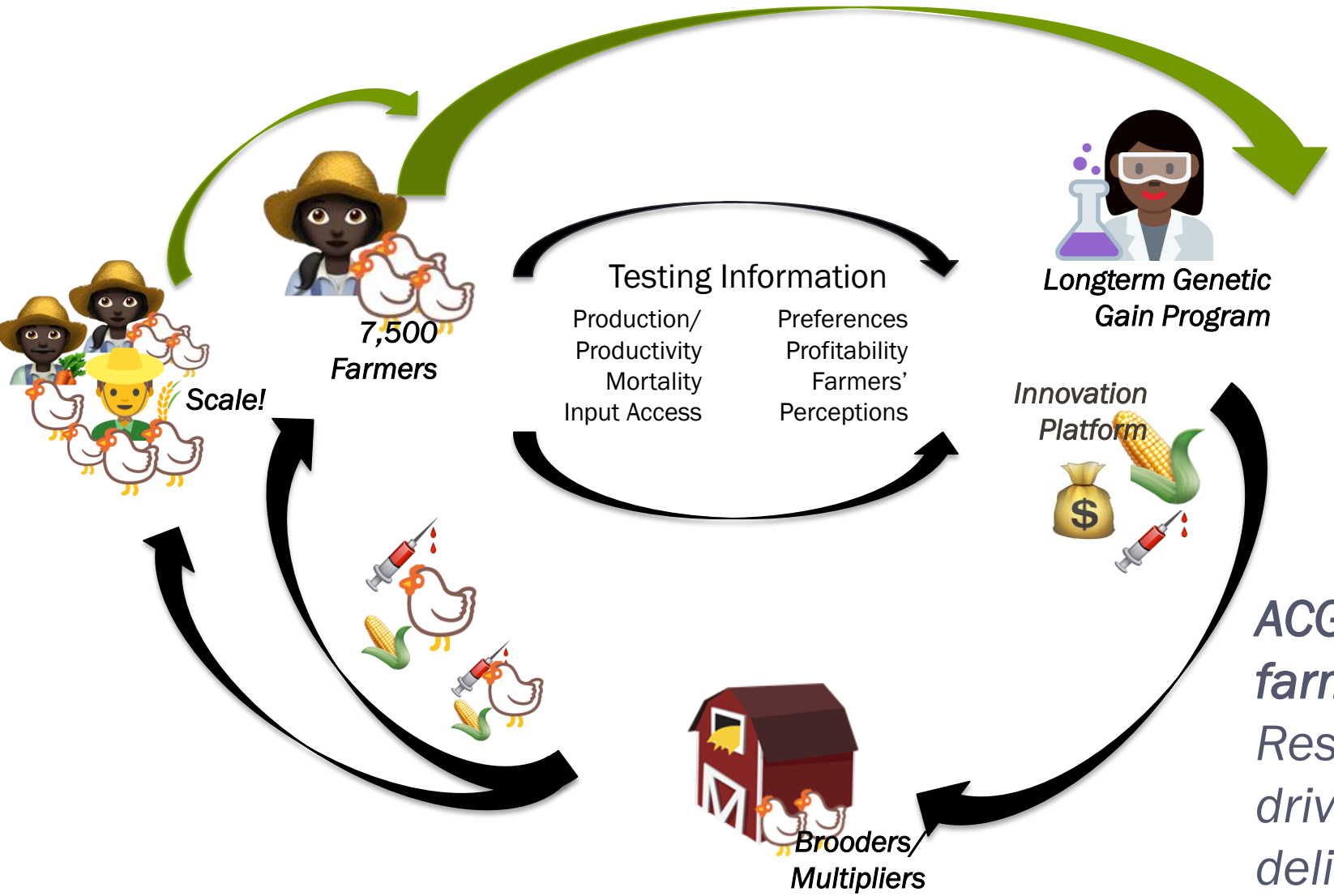
	Indigenous chickens	Selected indigenous chickens	Artificial hatching of indigenous chickens	Artificial hatching of tropically adapted / crossbreds	Intensive production
Egg Yield /Year:	40-50	~80	~80	120-150 (semi-intensive)	250-300
Mortality:	70-80%	50-70%	10-20%	5-10%	<5%

What is the **science**?-*How we got here*

Table. Relative contributions of the industrial and smallholder poultry sectors to total poultry production under different interventions to 2030

Ethiopia	poultry meat		eggs	
	industrial	smallholder	industrial	smallholder
2030 base	0.42	0.58	0.42	0.58

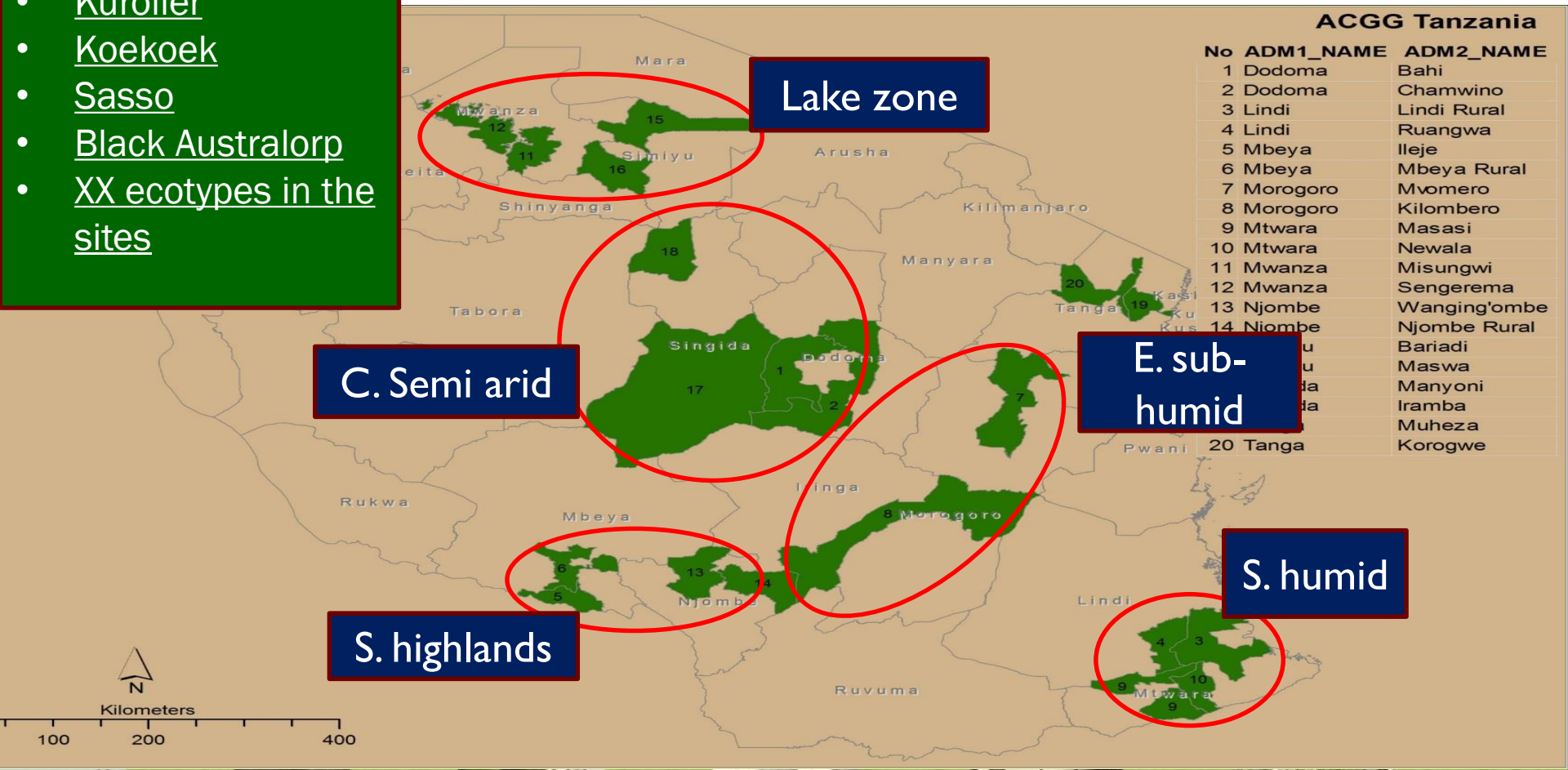
Source: *Herrero et al. 2016*



ACGG On-farm Testing- *Research driving delivery at scale*

Is there **evidence** of likely impact of successful technology/product adoption?-*The case of Tanzania*

- Kuroiler
- Koekoek
- Sasso
- Black Australorp
- XX ecotypes in the sites



ACGG Tanzania

No	ADM1_NAME	ADM2_NAME
1	Dodoma	Bahi
2	Dodoma	Chamwino
3	Lindi	Lindi Rural
4	Lindi	Ruangwa
5	Mbeya	Ileje
6	Mbeya	Mbeya Rural
7	Morogoro	Mvomero
8	Morogoro	Kilombero
9	Mtwara	Masasi
10	Mtwara	Newala
11	Mwanza	Misungwi
12	Mwanza	Sengerema
13	Njombe	Wanging'ombe
14	Njombe	Njombe Rural
		Bariadi
		Maswa
		Manyoni
		Iramba
		Muheza
20	Tanga	Korogwe

ACGG **Evidence**-*The case of Tanzania*

ACGG Targeted Beneficiaries

- *The case for poultry*- Evidence that the contribution of poultry keeping to livelihoods is comparable to that of livestock
- *Genetic potential and profitability*- ~94% of ACGG farmers practiced supplementary feeding prior to being engaged in the study

Preliminary Findings

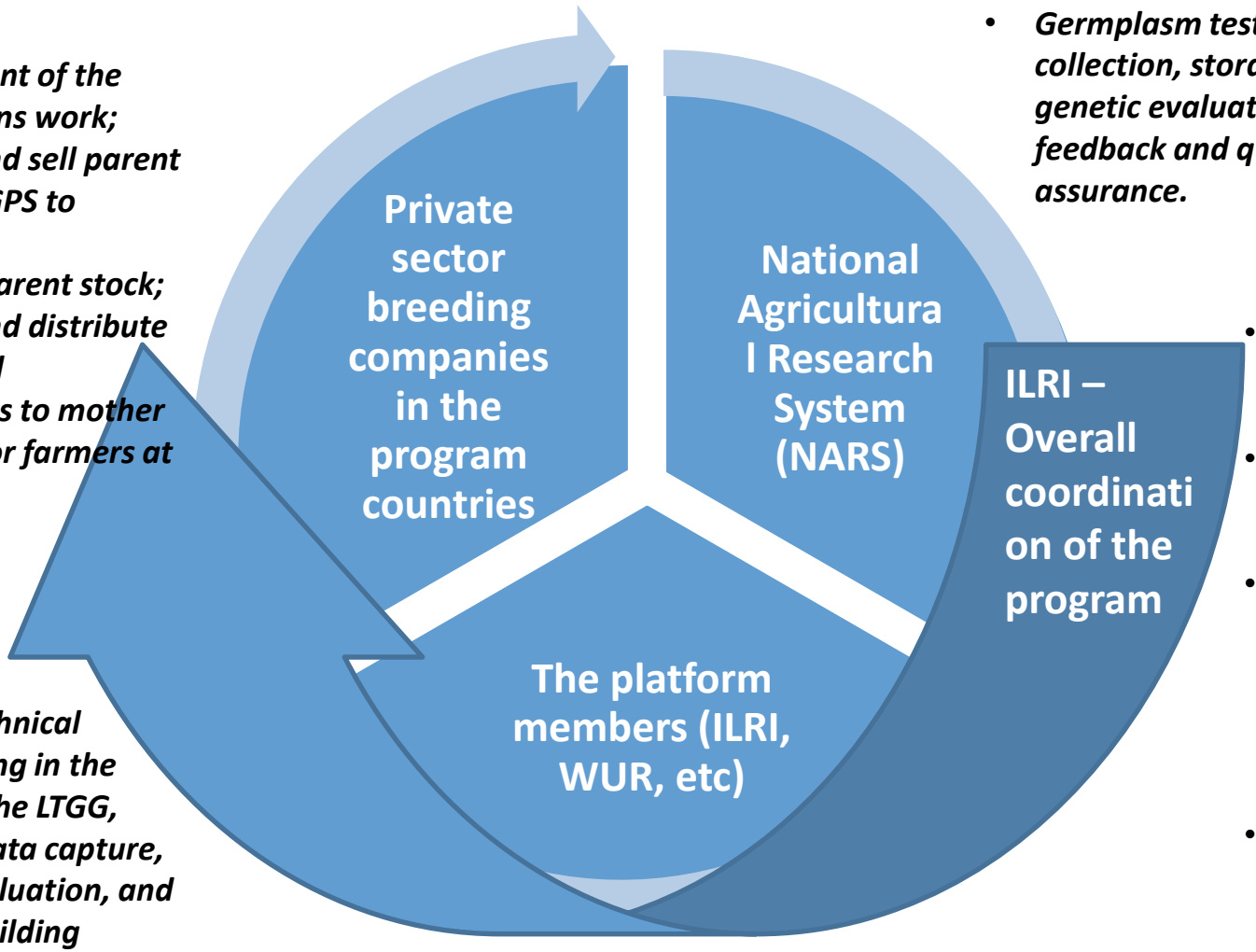
- *Production objectives*- Meat consumption and live sale
- *Trait preferences*- high egg production, less illness, large body size and weight

Is there a technology/product “**near to market**”?

What is required for **success**?

- *Day-to-day management of the genetic gains work;*
- *Multiply and sell parent stock and GPS to hatcheries;*
- *Maintain parent stock;*
- *Multiply and distribute commercial germplasms to mother units and/or farmers at scale*

- *Germplasm testing, data collection, storage and genetic evaluation of lines, feedback and quality assurance.*



- *Provide technical backstopping in the design of the LTGG, program-data capture, genetic evaluation, and capacity building*

- *Negotiate the IP and access to the preferred strains;*
- *Design and coordinate the LTGG program;*
- *Capacity assessment/gap analysis in the private/public sector partners; and*
- *Context specific capacity building*

Next Steps

- Continued strain selection and improvement
- Further private sector engagement
- Deeper engagement of input suppliers across the value chain
- Strengthening and contextualizing the Longterm Genetic Gains Program in each target geography
- **Upscaling!**


Questions?
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