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Participatory identification of breeding objective traits for two goat breeds of Ethiopia

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Introduction

- Goats have a significant roles for Ethiopian smallholder farmers
- Goat genetic improvement programs are undeveloped
- A few attempts of goat genetic improvement through upgrading of local breeds with exotic breeds
- Local genotypes are more adaptive and suitable for the existing environment

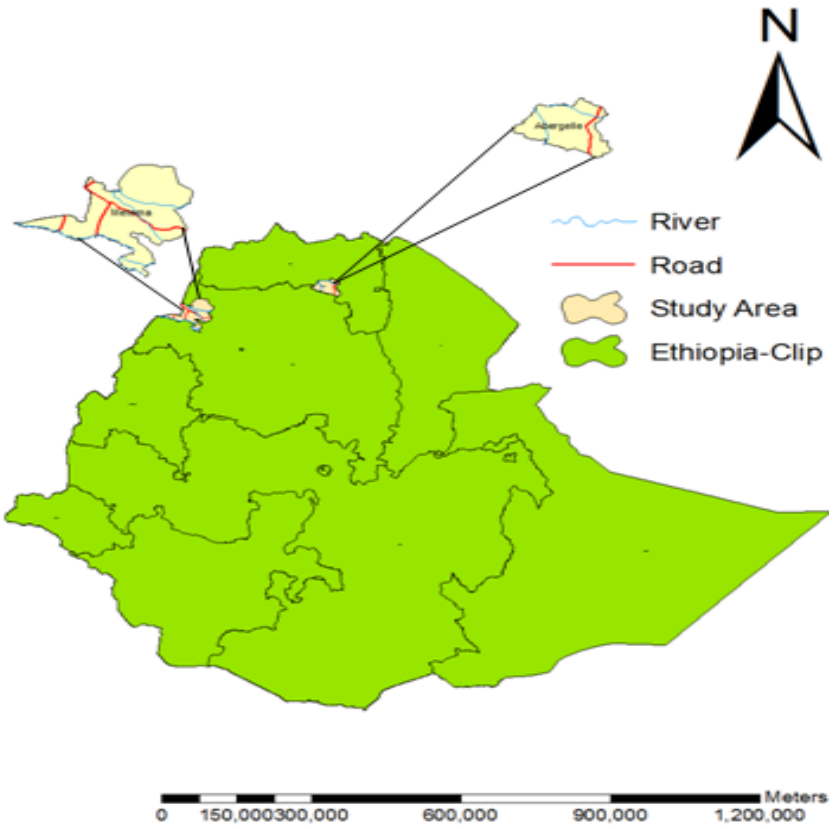
Introduction

- Need of designing appropriate breeding program for sustainable genetic improvement
- Community based breeding program for low input system
- Community participation at all stages of the breeding program is the peculiar feature of community based breeding program
- Designing of breeding programs should consider the trait preferences of the farmers

Objective

- Identify the breeding objective traits of two indigenous goat breeds for designing of community based breeding programs

Study sites



Site one (Metema)

Altitude: 550 to 1608 m

Temperature: 22 to 28°C

Location: 900 km northwest of Addis Ababa

Rainfall: 850 to 1100 mm

Agro ecological zone: Sub moist low land

Site two (Abergelle)

Altitude :1340 to 2200 m

Temperature: 16 to 27°C

Location: 720 km north of Addis Ababa

Rainfall: 350 - 700 mm

Agro ecology: Dry mid altitude

Breeds description


Western lowland buck


Abergelle buck


Western lowland doe


Abergelle doe

Production system

- Traditional mixed farming system
- In Metema crop production is more dominant
- In Abergelle goat production is more dominant
- Average flock size
  - In Metema 10 goats per household
  - In Abergelle 50 goats per household

Method

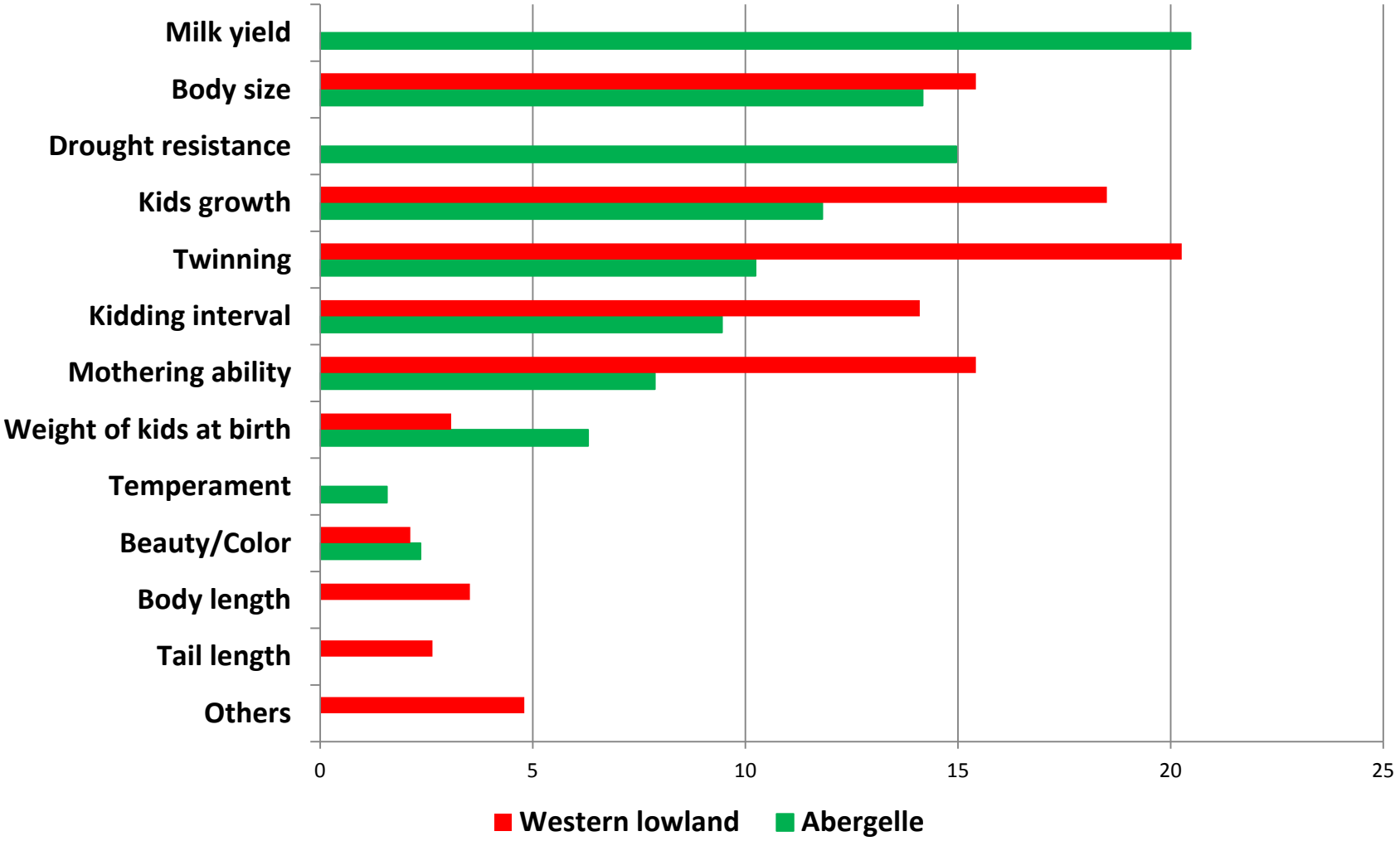
- Own flock ranking experiment
  - 60 households from Metema and 30 households from Abergelle areas were visited
  - They were asked to rank their three best and the worst breeding does with in their flock
  - The reasons of ranking and life history of the ranked animals were inquired and recorded

Data analysis

- Frequency procedure of SAS
  - For the relative importance of the preferred traits

- glm procedure of SAS
  - For the traits provided as life history and live weight of the ranked animals

Results: List of preferred traits identified by farmers



Results: Means of the traits for Abergelle does

	Rank			
	1st	2nd	3rd	Worst
Age (years)	6.3^{a}	4.9^{cb}	5.9^{ab}	4.7^{c}
Body weight(kg)	32.3^{a}	30.1^{b}	30.4^{b}	25.5^{b}
kidding	5.4^{a}	3.7^{cb}	4.4^{b}	3.1^{c}
kids born	6.7^{a}	4.3^{b}	4.6^{b}	3.1^{c}
kids weaned	6.4^{a}	3.9^{b}	3.9^{b}	1.3^{c}
Twinning rate	1.2^{a}	1.1^{a}	1.0^{c}	0.9^{c}
Milk yield(l)	0.6^{a}	0.5^{ba}	0.4^{b}	0.2^{c}

RESULTS: Means of the traits for Western lowland does

	Rank			
	1st	2nd	3rd	Worst
Age (Year)	5.5[a]	3.9[b]	2.9[c]	2.6[c]
Body weight(Kg)	34.0[a]	31.0[b]	27.2[c]	24.9[c]
kidding	5.8[a]	3.7[b]	2.8[c]	2.2[c]
kids born	10.7[a]	6.1[b]	4.1[c]	2.8[c]
kids weaned	9.8[a]	5.2[b]	3.1[c]	1.6[d]
Twinning rate	1.8[a]	1.6[b]	1.4[c]	1.2[c]

Conclusions

- Diverse attributes as selection criteria were identified
- Variations in the relative importance of breeding objective traits between the different production system
- This method can serve as a tool in identification of breeding objective traits in the areas no recording scheme is developed

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Thank you for your attention!!