

# Restoration of Badia ecosystem services for enhanced community livelihood

## Livestock Component



# Overall objective

- *Advocating livestock specific interventions to reduce the pressure on the grazing land in the Badia system*

# Methodology

- Three different working axis towards “defining interventions for a better adequacy between animal charge and the carrying capacity of the pastoral space”
  1. Resizing sheep and goats’ population by identifying unproductive animals: rational culling
  2. Characterizing and increasing the efficiency of the feedlot system
  3. estimating the surplus feed biomass resulting from the overall restoration interventions

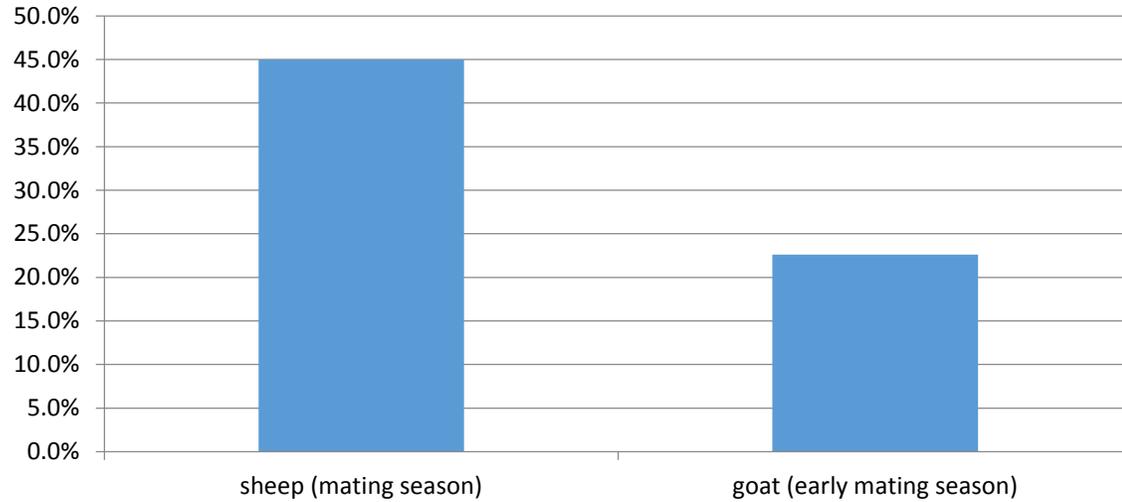
Progress

# Identifying unproductive animals: *Ultrasound pregnancy diagnosis to identify unproductive animals in the flocks*

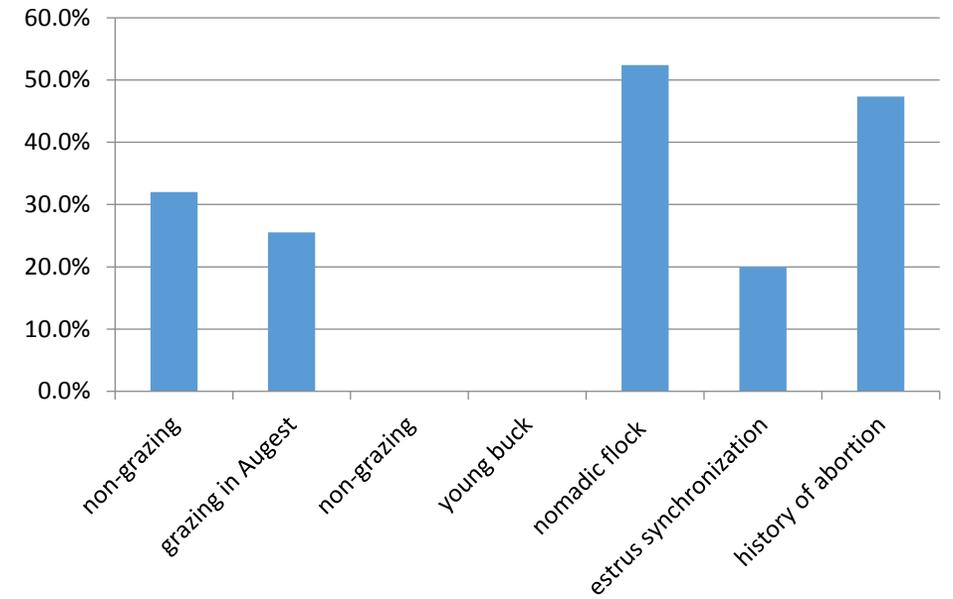
- 7 flocks of the Majdiya site including one nomadic sheep flock
- Pregnancy diagnosis in August
- Late mating season of sheep
- Mid mating season in goats



**% pregnancy**



**% pregnancy**



**Gap filling:**

- **Actual reproductive traits for cross checking**
- **Mortality rates (young and adults)**

# Badia Ultrasound Service Provision Unit

- Identifying barren females after mating season;
- Identifying the number of fetuses;
- Calculation of the age of fetuses
- Checking on repeat breeders;
- Checking on females with uterine pathologies;
- Prevent slaughter or selling of pregnant females.



*Mobile ultrasound pregnancy unit in the Badia - Jordan*



*The goat obstetric and gynecology clinic in Kordofan - Sudan*

*Characterizing and increasing the efficiency of  
the feedlot system*



# Diet composition and balance

Farmer	# Flock	Barley / head/ day (Kg)	Wheat Bran/ head/day (Kg)	Hay/ head/ day (Kg)	Bread/ head/ day (Kg)	CP% (Barley + wheat bran)	Energy Content (Barley + wheat bran) (Kcal / Kg)	Concentrate: Roughage
Abu Asker	35	1	0.34	0.29	0			82%: 18%
Abduallah	51	0.65	0.15	0.118	0.015			87% :13%
Minwer	200	0.75	0.115	0.3	0			74% : 26%
Khalid	50	0.4	0.46	0.5	0.5			73% : 27%
Awad	50	0.5	0.5	0.3	0			77% : 23%
Salem	12	1	0.5	0.29	0.33			86% : 14%

# Feed analysis

Feed Type	DM%	H2O%	Ash%	Protein%	Fat%	CF%	NDF%	ADF%	NFE%
Barley	95.8	4.2	2.3	4.38	1.69	3.94	50.35	4.95	83.49
Hay of AbuMohd	97.64	2.36	11.81	4.6	1.18	31.03	56.65	33.51	49.02
Hay of Awad	98.09	1.91	10.36	2.19	1.58	29.3	64.43	33.66	54.665
Hay of Khalid	97.77	2.23	11.7	4.38	1.07	33.125	59.52	35.4	47.495
Concentrate	95.66	4.34	4.2	8.69	2.81	4.2	50.49	5.25	75.76
Wheat Bran	95.85	4.15	4.39	13.35	3.85	7.95	38.51	10.11	66.31
Bread	95.77	4.23	1.77	9.63	0.65	1	51.44	0.15	82.72
<i>Atriplex Leuococlada Chenopodiaceae</i>	93.65	6.35	13.91	7	0.98	13.38	61.59	35.75	58.38
<i>Sinapis Arvensis Cruciferae</i>	93.25	6.75	11.5	5.25	0.69	32.37	62.79	40.77	43.44
<i>Anabasis Seitifera Chenopodiaceae</i>	93.25	6.75	25.83	10.22	0.81	15.25	28.79	13.29	41.14
<i>onopordum Macrocephalum Compositae</i>	94.17	5.83	20.35	3.92	2.01	18.93	44.68	31.25	48.96
<i>Iphiona Mucronata Compositae</i>	91.71	8.29	0	4.38	0	0	49.91	34.55	87.33

# Blood-borne nutritional metabolites (pregnancy stage)

Species	Glucose normal range	Glucose (mmol/l)	Protein normal range	Protein (g/l)	Creatinine normal range	Creatinine (umol/l)	Urea normal range	Urea (mmol/l)	Cholesterol normal range	Cholesterol (mmol/l)	P normal range	P (mmol/l)
Sheep	2.775-4.44	3.58	60-79	74.46	106-168	62.92	0.44-1.11	5.85	2.89-4.22	1.71	0.28-0.41	1.87
Goat	2.775-4.16	3.59	64-70	74.73	88 -159	59.47	0.56-1.11	6.05	4.44-7.23	1.86	0.23-0.51	2.16

For all animals, levels of Ca were under the normal physiological levels:  
severe deficiency in Ca.

# *Feed biomass production resulting from the restoration program*

- Yet to come
- Needs synergistic action