

Supplementary files 1 :

Table S1: Descriptions of the subgroups

		Number of respondents (n)			Characteristics	
		Kandi	Kétou	Total	Herd size (n)	Cultivated land size (ha)
Agro-pastoralists	Pure crop farmers	4	41	45	0	4.5
	Agro-pastoralists	57	1	58	13	7.8
	Big crop farmers with small herds	16	0	16	4	21
		77	42	119		
Herders	Mid-size herders with small farms	41	53	94	35.7	2.1
	Large herders with small farms	1	13	14	124.6	2.1
	Pure herders	1	12	13	31	0
		43	78	121		

Table S2: Herders practices and rangeland use

	TOTAL (n=121)	Districts		χ^2	$P \leq$
		Kandi (n=43)	Kétou (n=78)		
Using of same grazing area				24,789	0.001
Yes	55.4	79.1	42.3		
No	42.1	14.0	57.7		
No answer	2.5	7.0	0.0		
Type of grassland use					
Natural pasture	76.9	37.2	98.7	59.119	0.001
Fallow land	11.6	30.2	1.3		
Cultivated land	11.6	32.6	0.0		
Grassland exploitation				104.391	0.001
Permanent grazing	20.7	58.1	0.0		
Rotational grazing	10.7	30.2	0.0		
Mixed grazing	67.8	9.3	100.0		
No answer	0.8	2.3	0.0		
Grassland state 5 years ago				16.195	0.001
Dense	90.9	76.7	98.7		
Less dense	9.1	23.3	1.3		
Current grassland condition				66.435	0.001
Dense	2.5	0.0	3.8		
Less dense	74.4	34.9	96.2		
Degraded	23.1	65.1	0.0		
No answer	11.7	21.0	0.0		

Does grassland degradation affect herd feeding				23.576	0.001
Yes	67.8	95.3	52.6		
No	18.2	4.7	25.6		
No answer	14.0	0.0	21.8		
Consequences				26.023	0.001
Low feeding	19.8	41.9	7.7		
Consumption of low quality grass	43.0	44.2	42.3		
No answer	37.2	14.0	50.0		
Solution: Feeding practices				18.592	0.001
Feed supplementation	82.6	62.8	93.6		
Supplementation + Transhumance	16.5	34.9	6.4		
No answer	0.8	2.3	0.0		

Table S3: Different practices of agro-pastoralists on lands (n=119)

	TOTAL (n=119)	Districts		χ^2	$P \leq$
		Kandi (n=77)	Kétou (n=42)		
Productive field				44.562	0.001
Yes	21.0	2.6	54.8		

No	79.0	97.4	45.2		
Mineral fertilizer use				2.093	0.148
Yes	47.1	51.9	38.1		
No	52.9	48.1	61.9		
Crop rotation				0.489	0.484
Yes	49.6	51.9	45.2		
No	50.4	48.1	54.8		
Cattle corralling on field				1.679	0.195
Yes	2.5	3.9	0.0		
No	97.5	96.1	100.0		
Fallowing				5.840	0.016
Yes	11.8	6.5	21.4		
No	88.2	93.5	78.6		
Fire arrangement				25.284	0.001
Yes	38.7	22.1	69.0		
No	61.3	77.9	31.0		

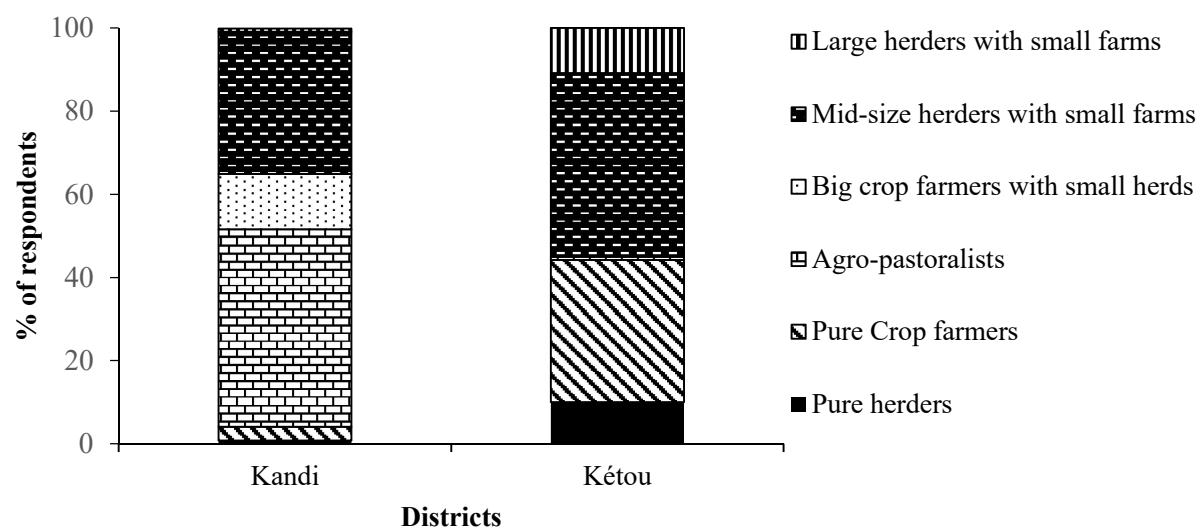


Figure S1. Distribution of the different sub-groups of farmers surveyed in the municipalities of Kandi in northeastern and Kétou in southeastern Benin.