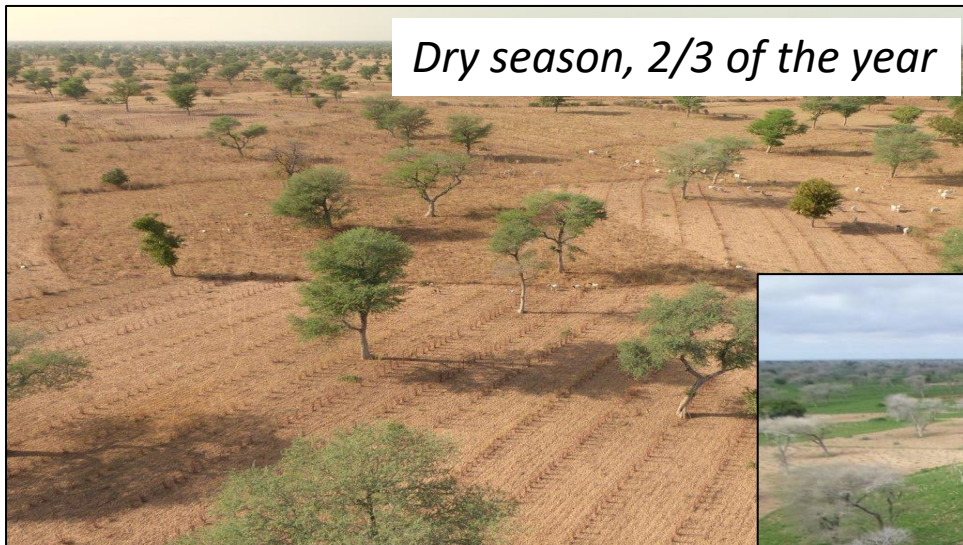
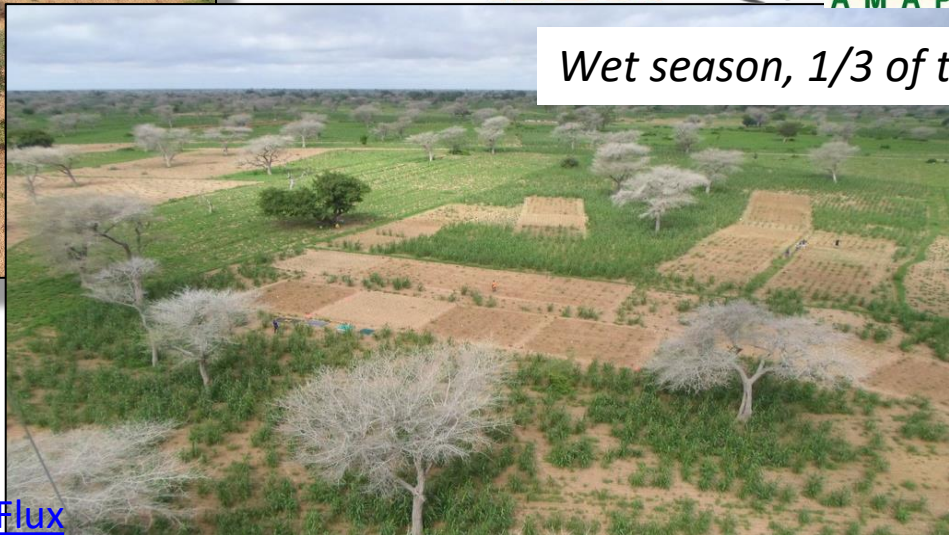


“Faidherbia-Flux”: A long-term Collaborative Observatory on food security, GHG fluxes, ecosystem services, mitigation and adaptation in a semi-arid agro-silvo-pastoral ecosystem (groundnut basin in Niakhar/Sob, Senegal)

Dry season, 2/3 of the year



Wet season, 1/3 of the year



“Faidherbia-Flux” Web site :

<https://lped.info/wikiObsSN/?Faidherbia-Flux>

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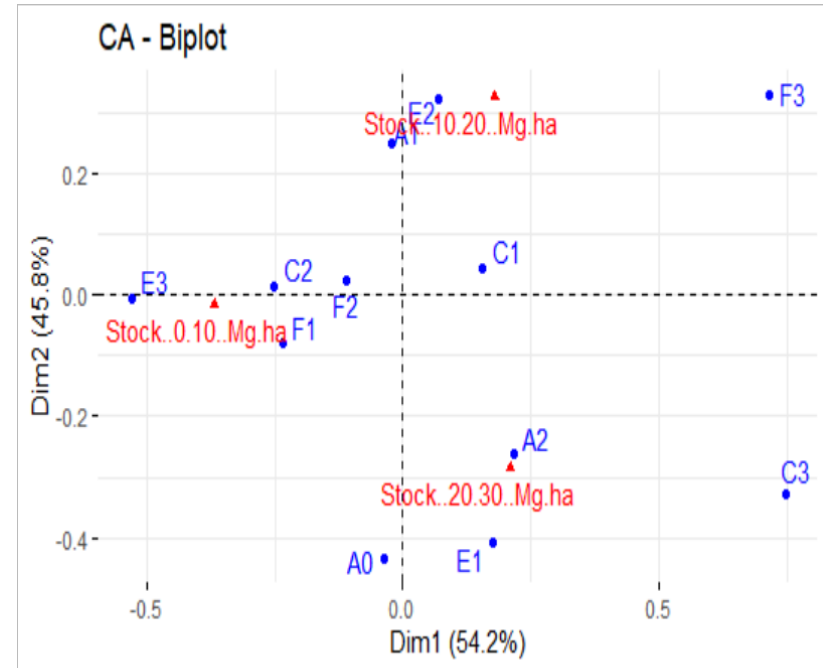
A survey on effects of the diverse farmers' manuring practices on millet yield and Soil carbon storage in a network of 33 fields in Niakar observatory in Senegal



Interview with a farmer

4 factors was used to categorize the manure management of the 5 last years

- **Type of applied manure (A) with three modalities**
A1= No M.O. input
A2= Horse manure + Small ruminant manure
A3= storing of cows
- **Crop succession (C) with three modalities**
C1= Continuous millet
C2= Millett/Peanuts
C3=Other (Millet-watermelon, Fallow)
- **Rate of chemical fertiliser application (E) with three modalities**
E1= 0-1 fertiliser applications in 5 years
E2= 2-3 fertilzer applications in 5 years
E3= 4-5 years fertilizer applications in 5 years
- **Rate of manure application (F) with three modalities**
F1 = 0-1 applications in 5 years
F2 = 2-3 applications in 5 years
F3 = 4-5 applications in 5 years

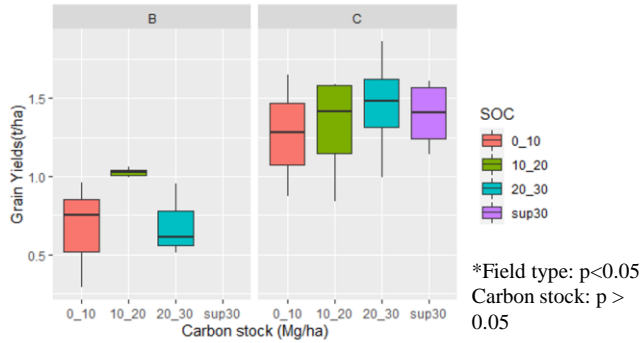


The highest Soil C stocks were associated with horse manure and lowest rates of chemical fertilzer application

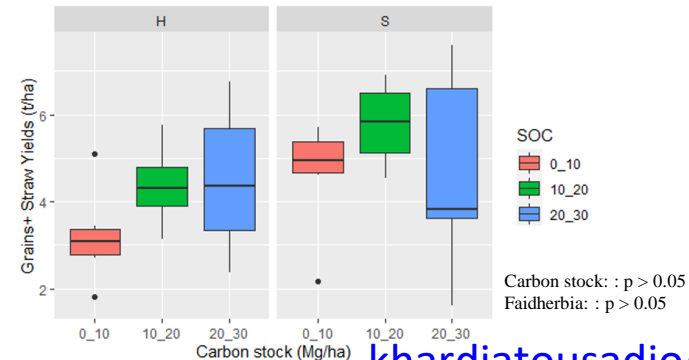
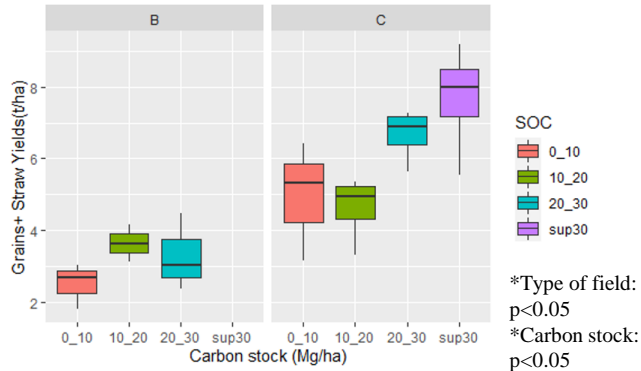
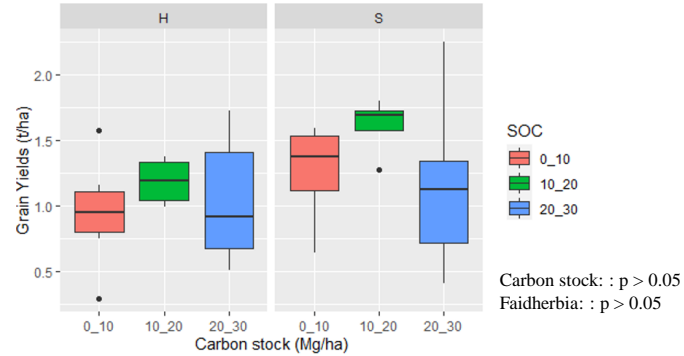
khardiatousadio@gmail.com

Millet yields as affected by Soil C storage in 0-10 cm layer of 33 farmers' fields

C=Home field; B= bush field



S=Under FA; H= Outside FA





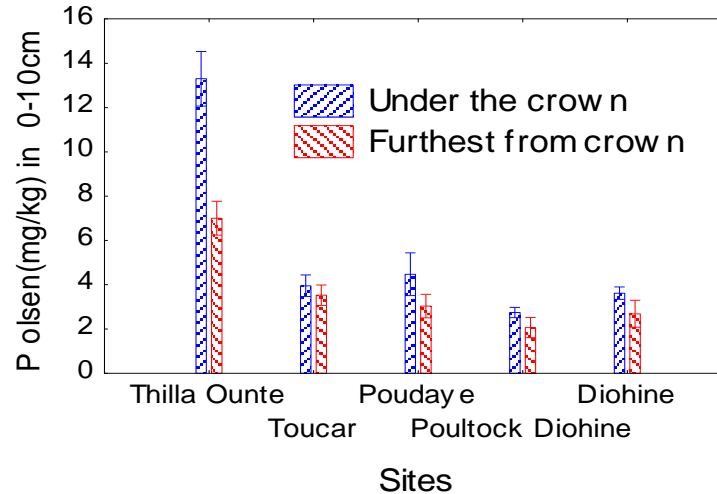
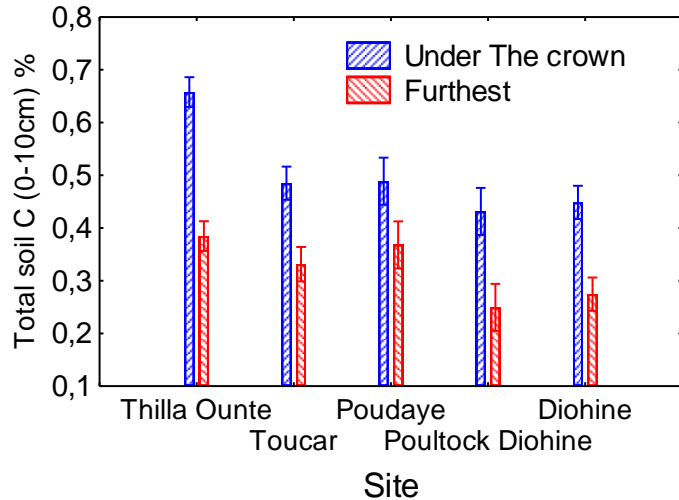
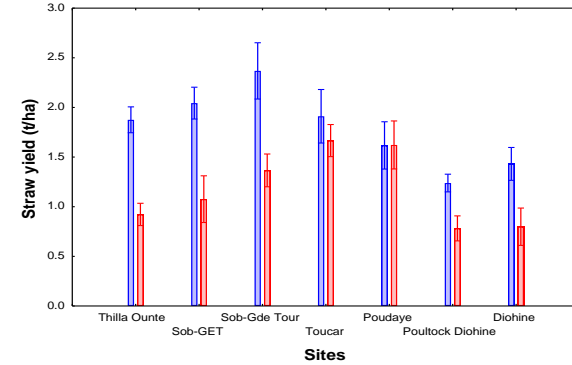
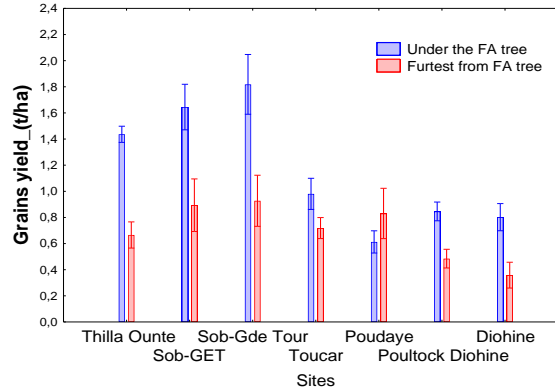
A survey of *F. albida* trees multiple ecological services for millet yield sustainability in smallholdings in Central Senegal

Sustain Sahel

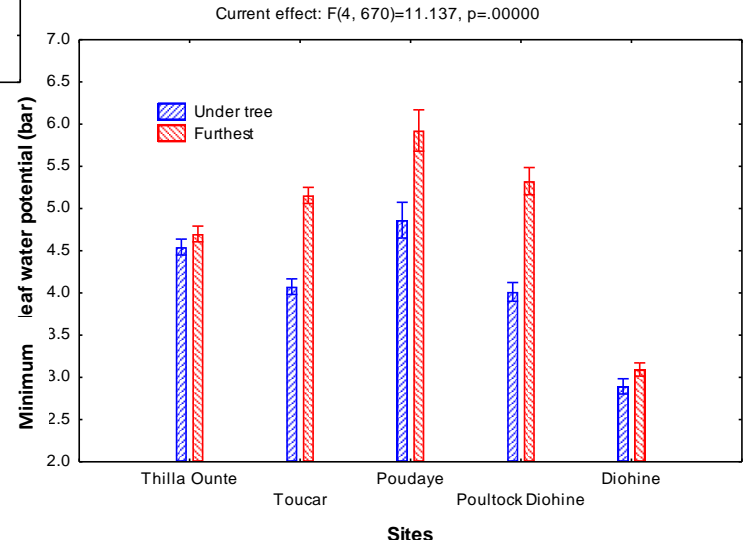
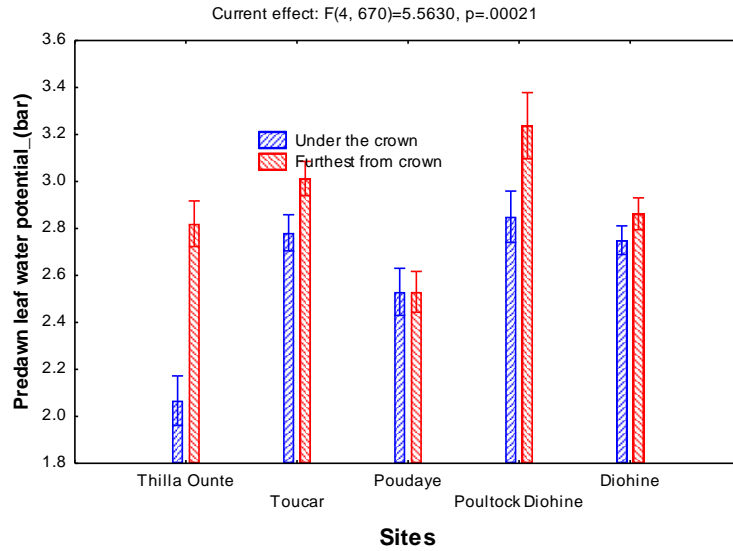
cathy.clermont@ird.fr



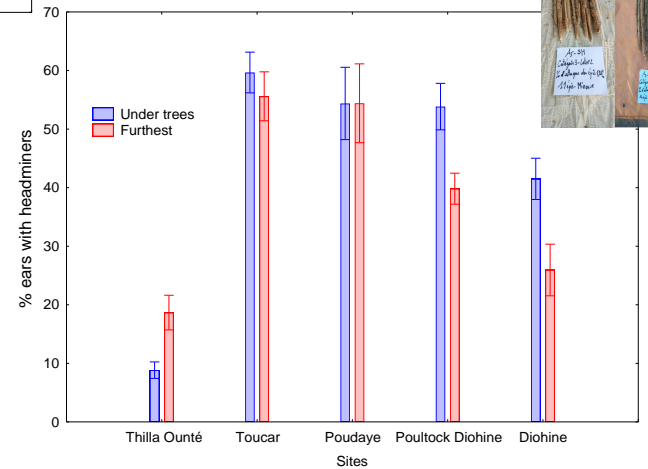
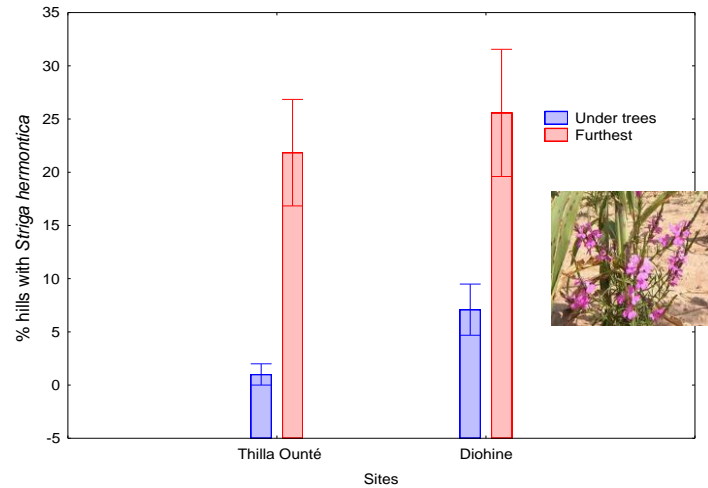
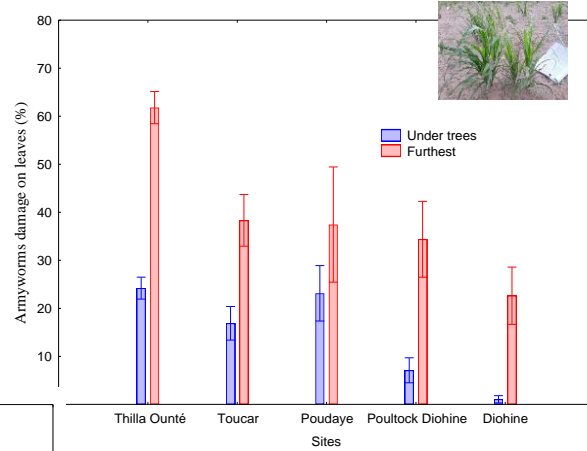
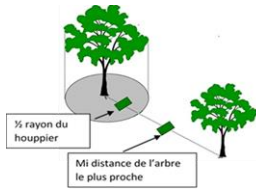
Effects of *F. Albida* tree proximity on soil fertility and millet yield over 5 villages of Niakhar Observatory (8 to 20 rep/village)



Effects of *F. Albida* tree proximity on millet water stress at two dates during a short drought at millet flowering period



Effects of *F. Albida* tree proximity on incidence of main millet pests over the network of parklands



Interactions of management of *F.albida* trees on the magnitude of their ecological services to millet production over the parklands of central Senegal



Millet plots under the trees
(*P values*)

<i>Tree management</i>	Millet yield	Soil Carbon	Soil Polsen	Predawn LWP	Midday LWP
Distance between trees	0.00	0.00	0.00	0.04	0.00
Trunk size	0.02	0.00	0.00	0.02	0.00
Pruning intensity	0.14	0.98	0.01	0.02	0.00

Millet plots at mid distance between two trees
(*P values*)

<i>Tree management</i>	Millet yield	Soil Carbon	Soil Polsen	Predawn LWP	Midday LWP
Mean distance between trees	0,01	0,00	0,04	0,98	0,04
Trunk size	0,80	0,58	0,01	0,35	0,42
Pruning intensity	0,50	0,89	0,20	0,58	0,06

- Higher tree density and size increased *F. albida* tree services
- Pruning did not affect the services of trees to millet sustainability.