



FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative



Photo: Mulugeta Ayene/WLE

Best of both worlds: Irrigation for food and feed

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RESEARCH/PROJECT

The Africa RISING Project- West Africa

- The Africa RISING program is a USAID- Feed the Future initiative. Through action research and development partnerships, Africa RISING is creating opportunities for smallholder farm households to move out of hunger and poverty through sustainably intensified farming systems that improve food, nutrition, and income security, particularly for women and children, and conserve or enhance the natural resource base.
- Research on the associated benefits of combining irrigated Pigeon pea and Napier grass were conducted in the Guinea Savanna Zone of Northern Ghana- Duko Community.
- Pigeon pea (*Cajanus cajan* (L) Millsp.) is used both as a fodder for feed and food for humans
- This study evaluated the effect of different irrigation regimes (100%, 80%, 60% and 30% of crop water requirement) on biomass yield of both Pigeon Pea and Napier grass.



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KEY LESSONS FOR SMALL SCALE IRRIGATION AND CLIMATE CHANGE

- The provision of irrigation for a Pigeon pea-Napier intercrop reduced the risk of crop failure by 25% and increased yields by 40% compared to average yields under rain-fed conditions (prone to dry spells)
- Both Pigeon pea and Napier grass are complementary crops and are well adapted to the Guinea savannah zone and offer good yields and nutrient values during the dry season as fodder and food (for Pigeon pea) hence have great adoption potential.
- There was no added benefit (biomass, grain yield) associated with providing more than 60% of the Pigeon pea crop water requirements. Irrigation was most beneficial for the first two growing months, however, irrigating during the flowering to harvest period increased incidence of pests and diseases by 70%.





KNOWLEDGE GAPS

What information is needed going forward, to improve project and program design and implementation for irrigation

- The economics of irrigated fodder production for both Pigeon pea and Napier grass in relation to returns on investment versus other feed resources needs further investigation
- Options for enhancing women involvement within the value chain to access land for irrigated fodder is a missing link
- Investing in farmer capacity development through climate information, improved agronomic practices, fodder seed production, fodder storage and conservation and market linkages will be critical for enhancing the value of irrigation for climate resilience and adaptation.

