Barriers and enablers to the adoption of practices to improve crop production in the semi-arid Omusati Region, Namibia

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Namibia is almost entirely semi-arid or arid. With evaporation rates being higher than precipitation rates, farming conditions are extremely adverse. This is exacerbated by the impacts of climate change, namely increased temperature, decreased rainfall and higher rainfall variability. Despite this, more than half of the population is reliant on rain-fed subsistence agriculture for their source of food. This research focused on three villages, Oshihau, Okahitukeengombe and Omaenene, and used interviews and a systematic literature review to:

1) Understand crop farmers perceptions of climate change vulnerability
2) Identify interventions that cold reduce vulnerability to loss of crop yields
3) Asses the barriers and enablers to adopting new practices in the study villages

1 Perceptions (n=31 participants)

29 participants stated that the quality of their land and yields had decreased over time.

"The weather has changed, it has become hotter and drier."

24 people were worried about their future food supply.

"I am very worried, in the past we could predict rainfall, we can’t predict it anymore."

30 participants were not planning to change their farming practices.

"We will keep farming in the same way because in the Oshiwambo culture we don’t like to change tradition."

Many people believed their yields will decrease in the future.

"I think there will be low rainfall in the future and crop yields will be low. If there is low rainfall, hunger will come."

2 Relevant interventions to reduce vulnerability to loss of crop yields

<table>
<thead>
<tr>
<th>Equipment</th>
<th>Labour</th>
<th>Water</th>
<th>Soil</th>
<th>Other information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spades and hoes</td>
<td>Labour is limited</td>
<td>400 mm mean rainfall per annum</td>
<td>Mostly sandy, fragile, porous, low fertility (Interviewees explained that rain washes nutrients out of the soil)</td>
<td>Sorghum, millet and maize are the predominant crops grown. Terrain is mostly flat with some gentle slopes.</td>
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<tr>
<td>Bunds</td>
<td>Labour and hoes</td>
<td>Labour intensive in the first year: marginal maintenance. No specific skills required.</td>
<td>Slow and catches water to increase infiltration</td>
<td>Prevents erosion of the fragile soil and helps to retain nutrients in the soil</td>
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<tr>
<td>Compost</td>
<td>Minimal labour and no specific skills required.</td>
<td>Household wastewater can be used on compost.</td>
<td>Enhances soil fertility (reducing the need for fertilizers) Increases water holding capacity of the soil Increases stability of the soil making it less susceptible to erosion</td>
<td>Can be implemented by a few households as a community compost pile Utilizes agricultural and domestic waste as a free resource</td>
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