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Promoting Growth in Small Scale Irrigation in Malawi

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Outline

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- Irrigation as the privileged solution
- Research focus
- Approach and methodology
- Key messages for discussion

Irrigation as a Privileged Solution

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- Questionable success of irrigation in past
- Low rate of development of irrigation in Africa
- Irrigation as adaptation to climate change
- Improving rural livelihoods and food security
- How do we make it work?

Focus of our research project

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- Access and entitlement to land and water
- Innovation and knowledge exchange
- External actors and building resilience in agriculture
- Governance of agricultural water in the context of climate change

Approach and Methodology

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- Ethnographic research covering Muona and Chitsukwa Irrigation Schemes (2013-2014)
- 152 household questionnaires
- Key informant interviews
- 12 focus groups
- Participant observation
- Photo-elicitation
- Literature review

Location of the Study Areas

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- Lower Shire
- Droughts and flooding
- Siltation from uplands
- Malaria
- High evaporation losses
- High land scarcity
- Land pressure and degradation high
- High irrigation potential

Muona Irrigation Scheme

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- Large scheme 450ha
- Rice and maize
- 2260 plot holders, 4000 families supported
- Derives water from Tangadzi River
- Fell into disrepair, recently rehabilitated

Chitsukwa Irrigation Scheme

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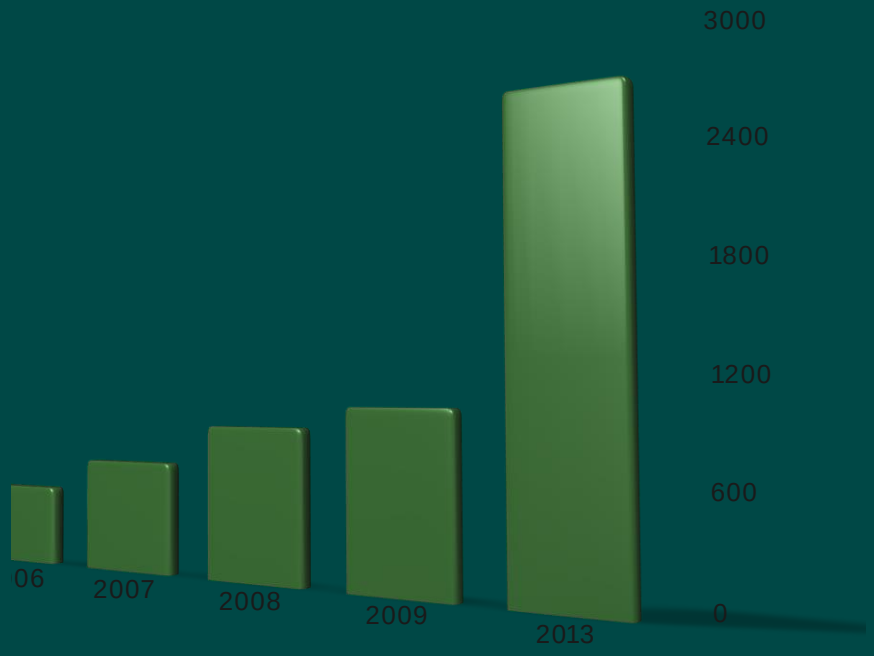
- Community initiated, government and NGO supported
- Water from Elephant Marsh, shallow wells
- Rapid growth in last ten years
- Maize scheme
- Treadle pump based



Local Problems

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“The water was such a problem so much that I bet you couldn't’ fill a bucket”

Impact of Irrigation on Livelihoods

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"Last year I harvested 80 bags of rice. This year I am targeting 120 bags. Irrigation has really changed our lives here. We don't eat much rice, but we have enough to exchange for maize and feed our families all year round. This cow and that solar panel you see was bought with money from selling rice"

Male farmer, Muona Irrigation Scheme

"Before we started irrigating we used to harvest six bags from an acre of land in the dry land. With the treadle pump we are getting ten bags from 0.1hectares, that's an area more than twice as small as an acre! Initially no one believed it would work; we had never seen it before. Now everyone is using it".

Male respondent and pioneer treadle pump farmer, Chitsukwa Irrigation Scheme

Focus on Irrigation is at Cost to Livestock Development

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- Concerns of livestock security not dealt with
- Fewer extension officers for livestock production
- Irrigators appear more organized
- Encroachment into livestock grazing areas by irrigators
- Livestock farming a preferred livelihood

"Crop farmers are lucky, they have the support from agriculture. There is nothing for livestock farmers"

Interview with famer in Chitsukwa

Crop-livestock tensions

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Labour shortages constrain effective scheme management

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- Release of land for communal grazing
- Adoption of SRI for rice production
- Maintenance of canals
- Water access for poorest
- Conflicts

Challenges with achieving uniformity

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Transferring knowledge via lead farmers may result in resistance

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- Limited extension services
- Demand driven extension??
- Extension bias towards funded projects
- Strong bias against farmer knowhow
- Belief that lead farmers are paid
- Lead farmers as volunteers
- Majority of lead farmers male
- Training attended by landowner
- Ganyu for knowledge sharing
- Elitist model not showing evidence of cascade

"No…I did not take up SRI. I am a lead farmer in the dry land".

Interview with Lead Farmer in Muona

"I was told, 'What can babies like you tell us about farming? We have been farming even before you were born!'"

Interview with lady lead farmer, Chitsukwa

Success of irrigation will depend on addressing general issues

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- Access to information and knowledge
- Reasonable credit
- Markets and commodity pricing
- Transport networks
- Input supply

Typical Gross Margin Budget for 0.1ha maize plot

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Gross Margin Budget for Treadle Pump Irrigation for 0.1ha			
	Price per Unit	Units	Total in Kwacha
OUTPUTS			
10*50kg maize harvested per 0.1ha	4500	10	45000
INPUT COSTS			
Renting land	3500	1	3500
Land preparation (tilling)	5000	1	5000
Land preparation (ridging)	4000	1	4000
Seed (2kg)	700	2	1400
Basal fertiliser 25kg	7000	1	7000
Top dressing fertiliser 25kg	7000	1	7000
Labour planting	2500	1	2500
Labour weeding	5500	1	5500
Treadling (food)	350	10	3500
Treadling (charge)	1500	10	15000
Harvesting	3500	1	3500
Transport (oxcart)	1500	1	1500
Total Input Costs			**59400**
PROFIT			-14400

Building resilience through irrigation may be at expense of others

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- Concentrating on “our scheme”
- Insufficient coordination at the catchment level
- Whose resilience matters?

Impact outside Project Area

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"They told us to talk to our donor to put a bund for us".

"The new scheme in Makhapa has made us poor even before it has started working"

Local targets, catchment impacts

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"We thought we were increasing land under production, but now we realize that we actually reduced it by letting them farm along rivers"

Extension Officer, Nsanje

Rehabilitation of Scheme raises hopes but lead in disappointment

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- Competing priorities
- Changing context
- New intake structure
- No to levelling
- Some canals cleared
- Some blocks still producing maize only
- Canals cleared too early in Chitsukwa

Investment in hard versus soft technologies

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- Contestation around land and water rights which influence management practices
- Short tenancies limit crop choices, fertility management
- Fear of land takeover, illegal land transactions
- Farmers outside scheme have diminished rights to water
- Protection bund reinforces this in Muona

Proportionality as a basis of sharing water may disadvantage some farmers

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- Scheme is unlevelled
- Water use efficiency not considered
- Water sharing when water levels drop
- Regulations enforced
- Scheme design creates opportunity for conflict
- Sharing treadle pump as basis for proportional access to water
- Weak cooperation over canal maintenance

Farmer Innovation

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- Costs and benefits considered
- Labour requirements and risks
- Rigidly designed technologies constrain innovation
- Limited support from technical institutions

Gender dimensions

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- Entitlement and access to land
- Labour allocation on gender basis, economic implications
- Farming knowledge and decision making
- Role of men and women in scheme management
- More work needed on concept of gender equality

"It is through stories that we are able to reconstruct the past...it is these stories that have shaped Africa." Credo Mutwa 1966

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UKaid from the British people

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