

**The Role of Dynamic Learning Games in Improving Survey Information from Subsistence
Farmers: Evidence from Malawi**

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Objective:

To evaluate the quality of information provided by an experiential dynamic games-based education protocol compared to a traditional seminar based protocol. Both protocols were administered to farmers from low income households in central Malawi.

Problem and relevance for agricultural development

Poor agricultural land management remains a major problem in Malawi. Some policy incentives such as subsidies, weather indexed insurance and cash payments have been proposed to motivate better land management among farmers. There is need for research on their relative preferences from individual farmers' perspective.

Methodology

We use choice elicitation (CE) to elicit farmer preferences for fertilizer subsidy, indemnity insurance (with and without basis risk) and direct cash payments as incentives to adopt labor intensive improved land management. The CE and household surveys sessions were preceded by either two educational programs: a seminar format "Chalk and Talk (C&T)" or an experiential learning game (ELG) program.

Process

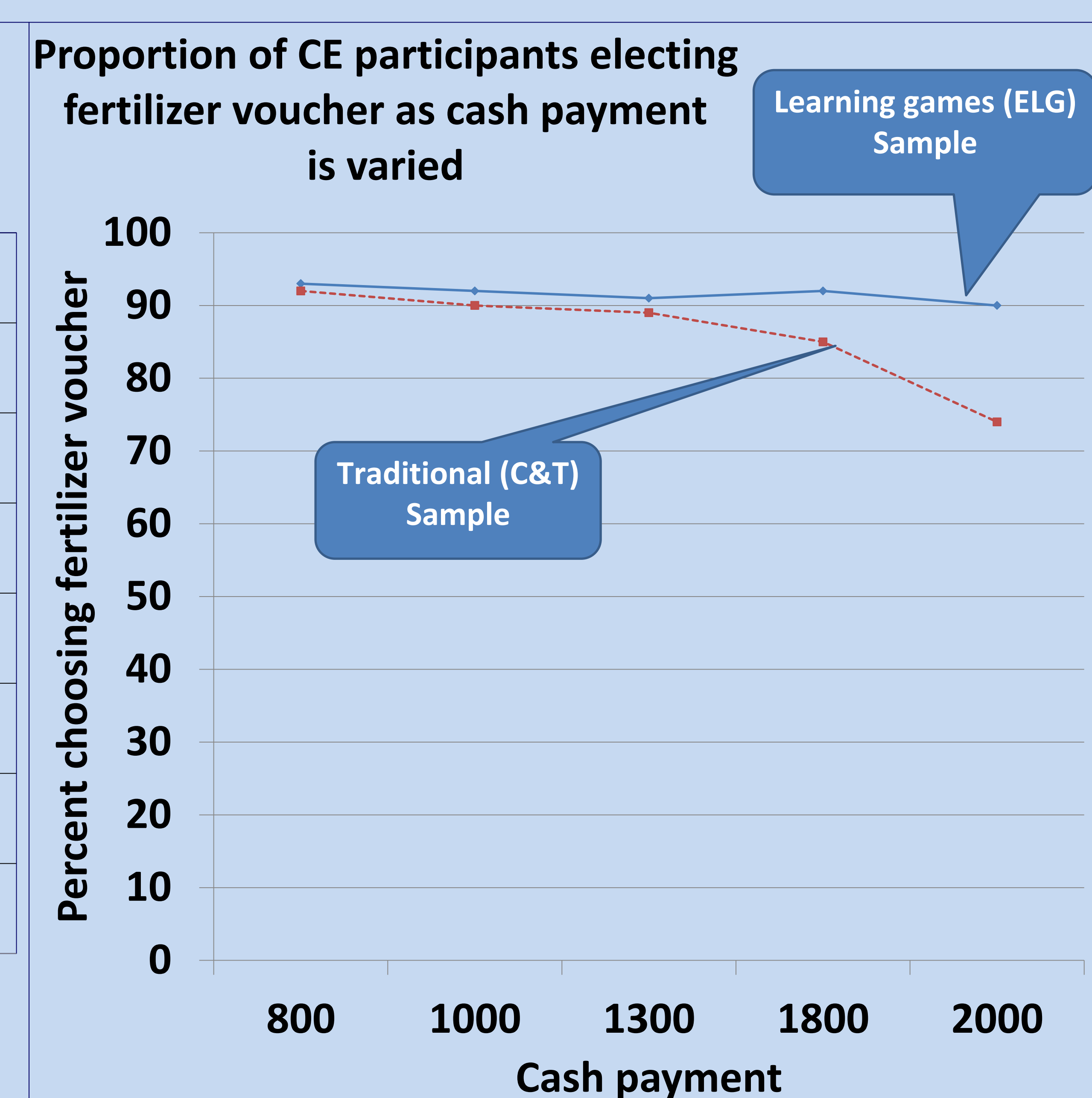
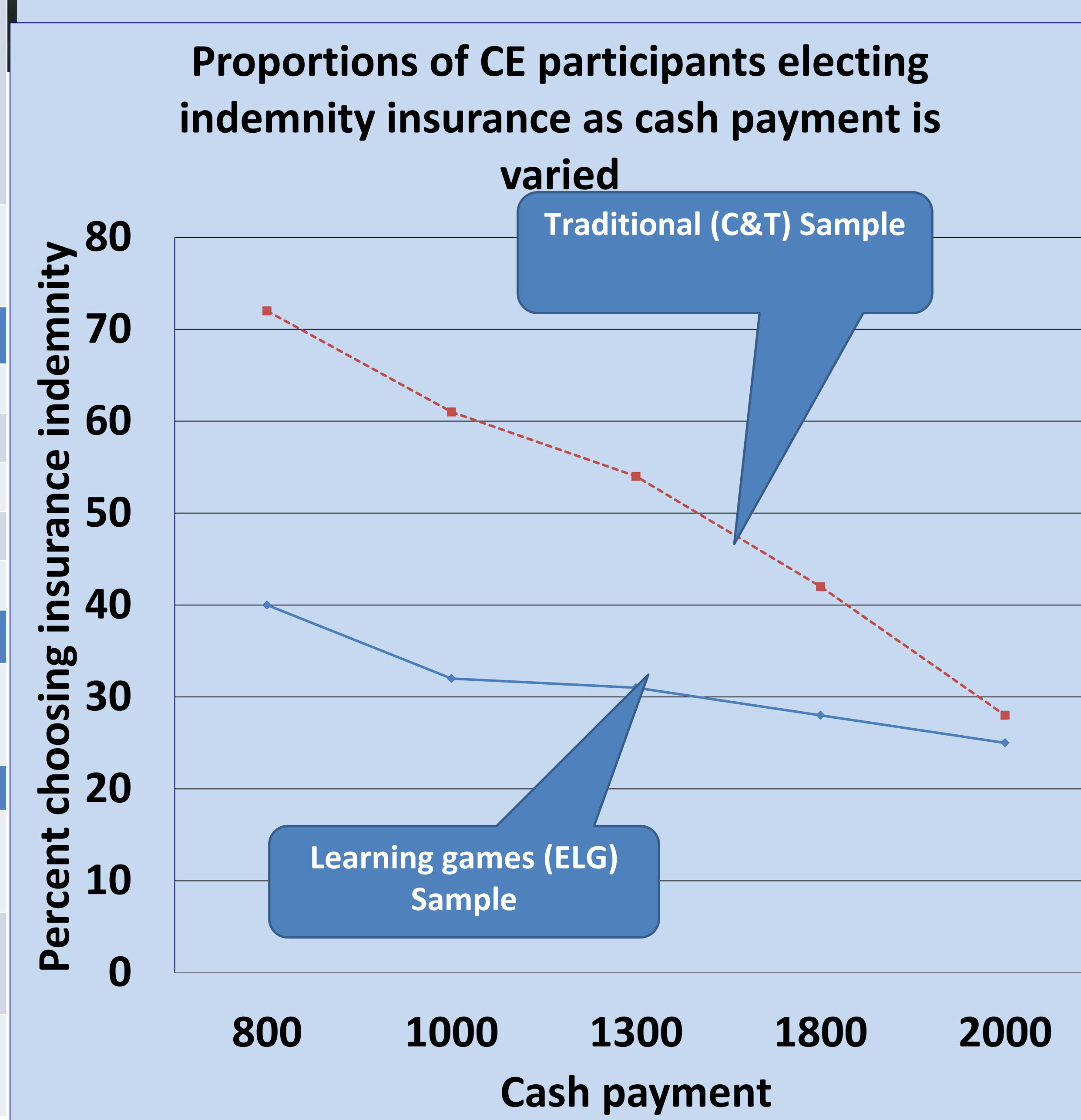
The ELG involved enacting probabilistic games featuring such activities as drawing from a bag of green + red balls to depict good rainfall (green ball drawn) or poor rainfall (red ball drawn) or a bag of orange + blue balls to depict "basis risk": orange ball drawn: indemnity insurance pays out or blue ball drawn: indemnity does not pay out.



Payoff Structure for Choice Set Alternatives

Incentive Program	Poor Rains Yield (tons)	Good Rains Yield (tons)	Poor Rain Payoff (MK)	Good Rain Payoff (MK)	Expected Value of Program (MK)
Traditional Farming	0.5	1	10,000	20,000	18,000
Cash Payment (and CA)					
MK 800	1	2	20,800	40,800	36,800
MK 1000	1	2	21,000	41,000	37,000
MK 1300	1	2	21,300	41,300	37,300
MK 1800	1	2	21,800	41,800	37,800
MK 2000	1	2	22,000	42,000	38,000
Indemnity insurance					
Indemnity of MK 5000	1	2	25,000	40,000	37,000
Fertilizer Subsidy (MK per 50kg bag)					
MK 1500	1.25	2.5	22,500	47,500	42,500
MK 2000	1.25	2.5	23,000	48,000	43,000
MK 2500	1.25	2.5	23,500	48,500	43,500

Some Results



Conclusions: Relative to traditional education protocols, experiential dynamic learning games improve the ability of farmers with generally low levels of literacy and numeracy to understand the functions and complex dynamic implications of financial instruments and economic policies with which they have had little or no practical experience