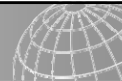


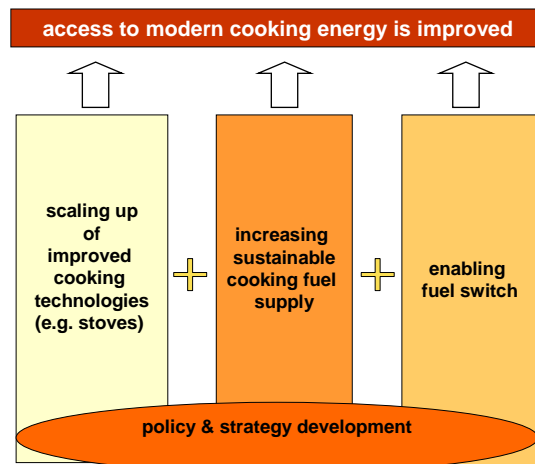
GTZ Household Energy module - experience and results of impact monitoring

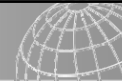
GVEP Monitoring and Evaluation
in Sustainable Energy Projects
Tuesday 8th May 2007

Dr. Marlis Kees
GTZ Household Energy Programme HERA

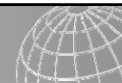
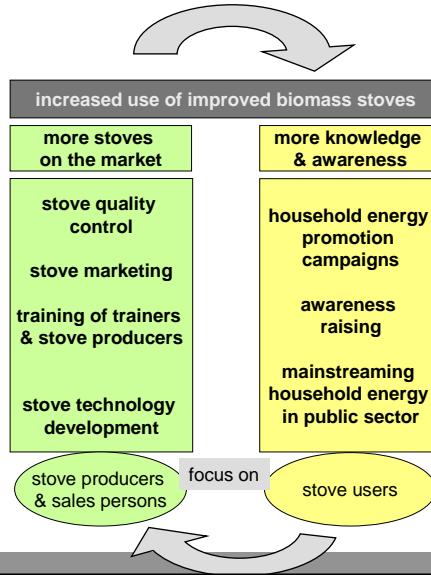


Sustainable Scaling up Modern Cooking Energy

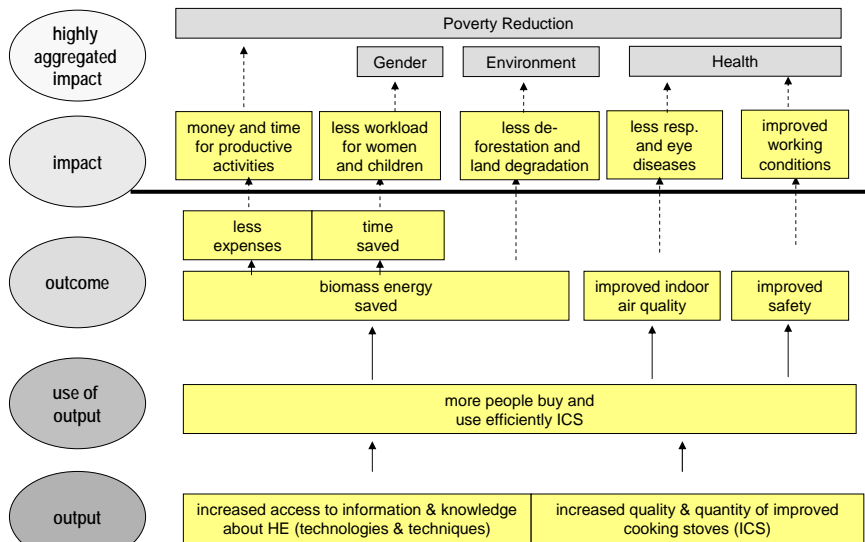


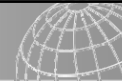


Scaling up of Improved Cooking Technologies

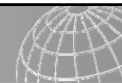
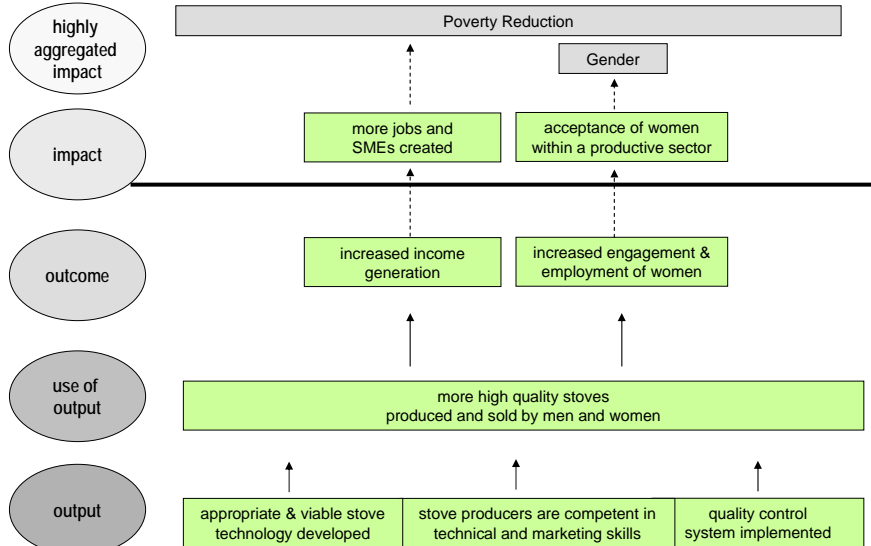


Results chain scaling up stoves (TG households)

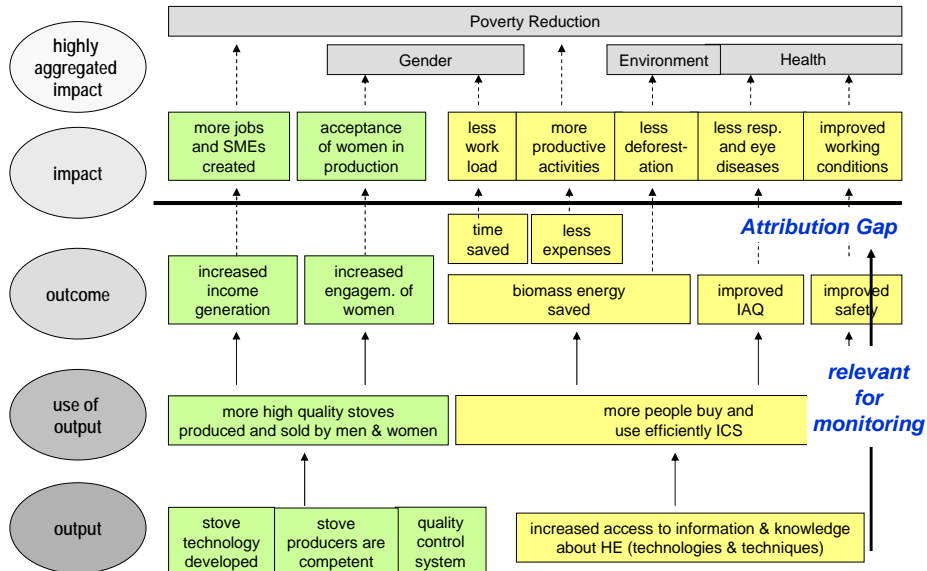


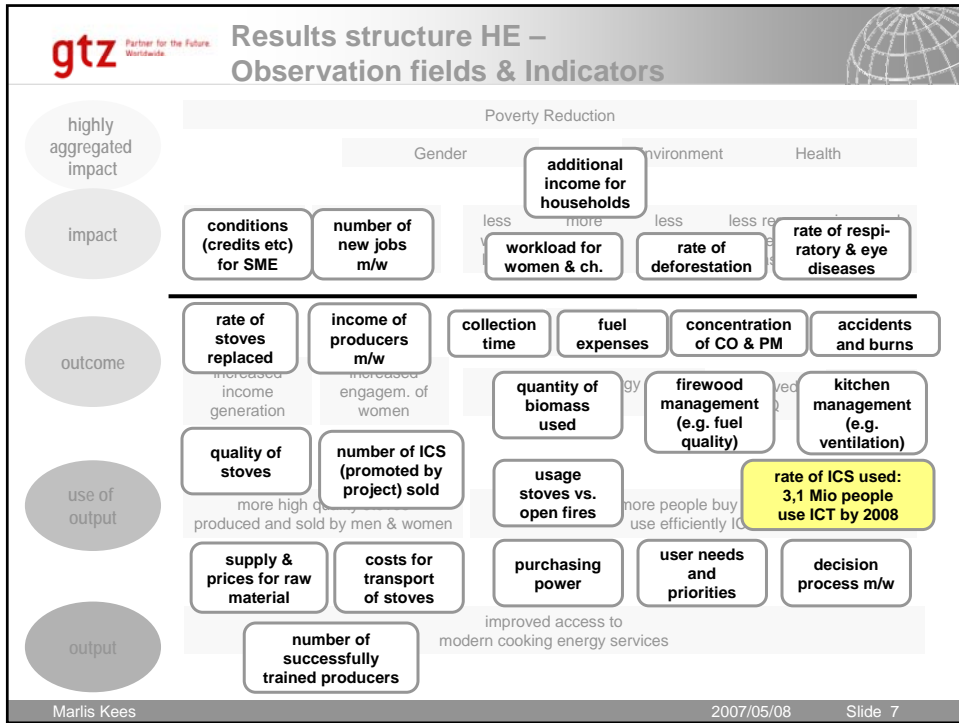


Results chain scaling up stoves (TG producers)



Results structure scaling up stoves



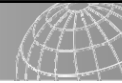


gtz Partner for the Future Worldwide

Economic Analysis

	B	C	D	E	F	G	H	I	J	K	
1	4. HEALTH IMPACTS										
2	number			Quantification of Results							
3	result indicators			variables to be considered in the calculation					result indicators	reference unit of quantified result	
4	concentration of smoke in the kitchen		specific reduction of CO when using ICS		specific reduction of PM2.5 when using ICS		specific reduction of PM10 when using ICS		reduction of cooking time (using ICS) [hrs/day]	?	not get specified
5	unit		[%]		[%]		[%]		[%]		
6	amount		70		?		?		182		
7	accidents: I. burns caused by cooking p.a. 2.		number of burns caused by using the trad.stove p.a.		number of burns caused by using the ICS		% of HH with members suffering from acute respiratory diseases (using ICS)		% of HH with members suffering from acute respiratory diseases (using ICS)	90%	reduction in burns [%] in HH using the ICS
8	unit		[number]		[number]		[%]		[%]		
9	amount		100		10		90%		53%		
10	households with acute respiratory diseases (for cough)		% of HH with members suffering from acute respiratory diseases (using the traditional stove)		% of HH with members suffering from acute respiratory diseases (using ICS)					21%	percentage of HH using the ICS suffering no longer from acute
11	unit		[%]		[%]						
12	amount		60%		39%						
13	households with eye diseases (conjunctivitis)		% of HH with members suffering from eye diseases (using the traditional stove)		% of HH with members suffering from eye diseases (using ICS)					36%	percentage of HH using the ICS suffering no longer from eye diseases
14	unit		[%]		[%]						
15	amount		60%		24%						
16	time saved due to better health on household level		hours lost due to burns per HH		hours lost due to acute respiratory diseases per HH		hours lost due to eye diseases per HH		number of households using ICS	5.374.451	hours saved p.a. on household level
17	unit		[hrs/year]		[hrs/year]		[hrs/year]		[number]		
18	amount		0		30		15		100.032		
19	aversion costs for respiratory and other diseases on household level		EURO spent on health per HH and year (using the traditional stove)		EU spent on health per household and year (using ICS)		% of HH not able to pay for health care			361.186	EURO saved on health p.a. on household level
20	unit		[EURO]		[EURO]		[%]				
21	amount		12		8		50%				
22	avoided costs for the public health system		EURO spent by the health system per HH and year (using the traditional stove)		EURO spent by the health system per HH and year (using ICS)		% of HH treated by public health system			140.863	EURO saved in the public health system p.a.
23	unit		[EURO]		[EURO]		[%]				
24	amount		4,67		3,11		95%				
25	time saved due to better health valued with shadow wages		Shadow wage for labour per hour		percentage of saved time valued at shadow wage					268.723	EURO generated in time saved through better health p.a. (th total avoided costs due to better health
26	unit		[EURO]		[%]						
27	amount		0,1		30%						
28	total avoided costs due to better health									502.043	total avoided costs due to benefit from better health p.a.
29	including avoided costs and time									770.771	

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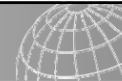
Economic Value of the Intervention in Uganda

- **200,000 stoves** used in **190,000 households**.
- **220,000 tonnes** of firewood saved per year.
- Economic benefits at household level:
 - **5.4 Mio EUR** annual value of fuel savings
 - **1.5 Mio EUR** annual value of reduced cooking time
- Annual value of better health conditions:
 - **630,000 EUR** at household level
 - **141,000 EUR** in public health systems
- Annual value of environmental benefits:
 - **781,801 EUR** value of preserved forest cover (10%)
 - **1.7 Mio EUR** value of avoided greenhouse gas emission
- The Investment of
 - **1 EUR yields a return of 25 EUR**
 - (considering 10 years and a 10% discount rate)



Slide 9

Household Energy & MDGs

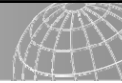


MDGs	Contribution HE projects
Goal 1: Eradicating extreme poverty and hunger	<ul style="list-style-type: none"> ▪ income generation for stove producers ▪ energy savings on household budget up to 80% - more money and time ▪ production and food processing - more attractive with efficient devices
Goal 3: Promoting gender equality and empowering women	<ul style="list-style-type: none"> ▪ improvement of status and living quality for families (part. women & children) ▪ less workload and improved working condition (better health) ▪ less time spent on fuel collection and cooking = more time for income generation, opportunity for education and family ▪ women involved as producers & users; taking part in economic development
Goal 4, 5, 6: - Red. child mortality - Improve maternal health - Combat HIV/Aids, malaria & o. diseases	<ul style="list-style-type: none"> ▪ improved indoor air & reduced respiratory diseases of mothers and infants ▪ decrease in child mortality ▪ improvement of maternal health ▪ improved safety & decrease of accidental burns ▪ improved quality of drinking water, if cooked ▪ improved nutrition improves physical condition of people with chronic diseases
Goal 7: Ensuring environmental sustainability	<ul style="list-style-type: none"> ▪ reduced pressure on the forest resources ▪ more organic fertilizer to the farms ▪ less erosion of soil and land degradation ▪ improved environmental awareness

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2007/05/08

Slide 10



Thank you very much for your attention !



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