FinAccess deep-dives

Can digital finance help vulnerable populations address climate risk?

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Outline

1. Introduction
2. Stylized Facts
3. Research question and Methodology
4. Findings
5. Conclusion and policy recommendations

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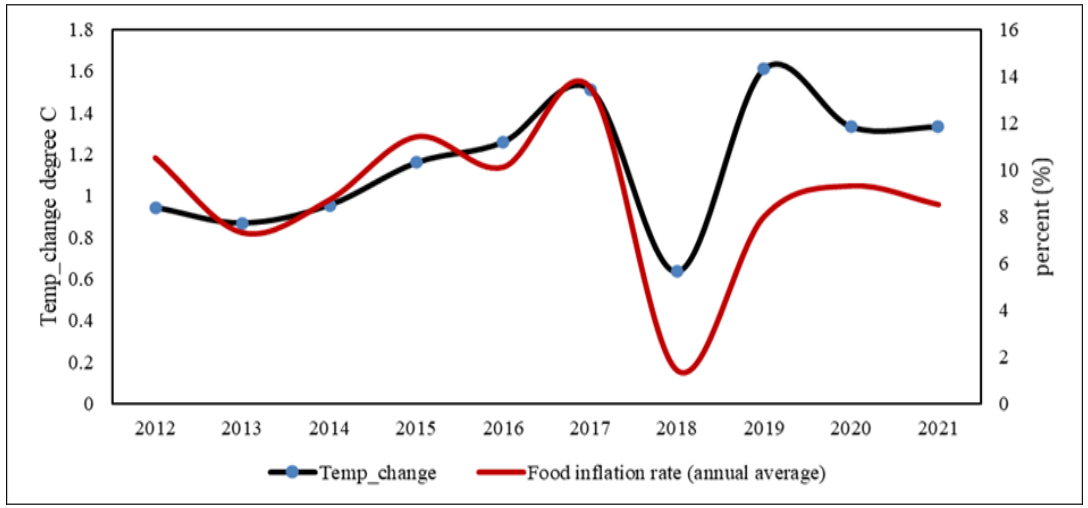
1. Kenya's vulnerability to Climate Risk is rising

Country	CRI, 2019 (Rank)	CRI, 2000-2019 (Rank)	CRI score	Fatalities in 2019 (Rank)	Fatalities per 100000 inhabitants, (Rank)	Losses in million US$ PPP (Rank)	Losses per unit GDP in % (Rank)
Kenya	25	34	33	15	16	49	51
Uganda	31	66	42.17	21	19	68	63
Tanzania	67	122	66.5	27	47	88	95
Rwanda	42	117	53.33	45	21	99	67
Burundi	57	74	61.83	26	10	121	102

Source: Germanwatch, Climate Risk Index



- Kenya susceptible to climate shocks has been worsening over the time.
- Kenya ranked highest amongst EAC countries CRI 33 out of 180 countries analyzed.
- Kenya lost 8% of GDP in past 5 years due to drought; 2-2.8% annually due to floods (KNBS, 2018)
- Temperature and rainfall variability lowers agricultural productivity, pushing up food prices.
- Food prices have been a key driver of inflation both globally and domestically.

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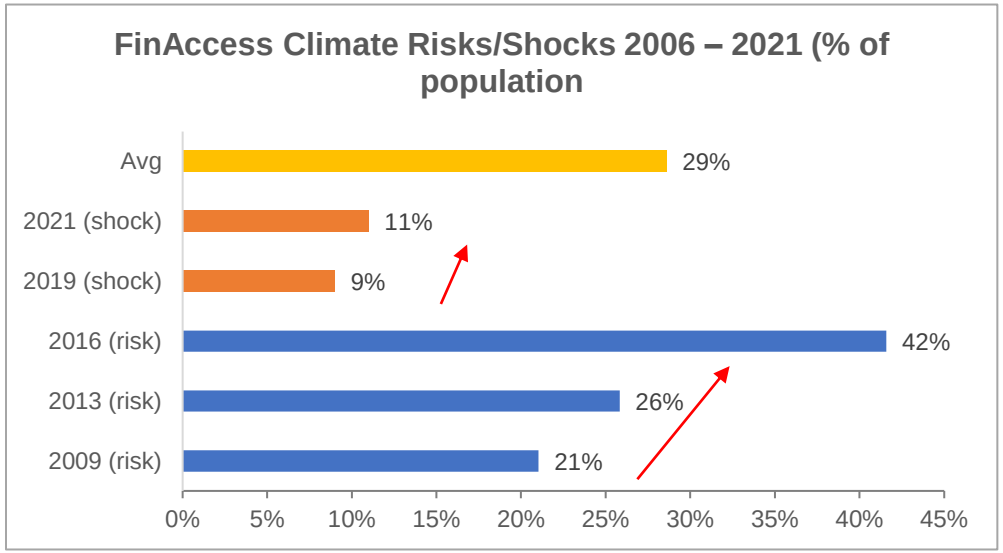
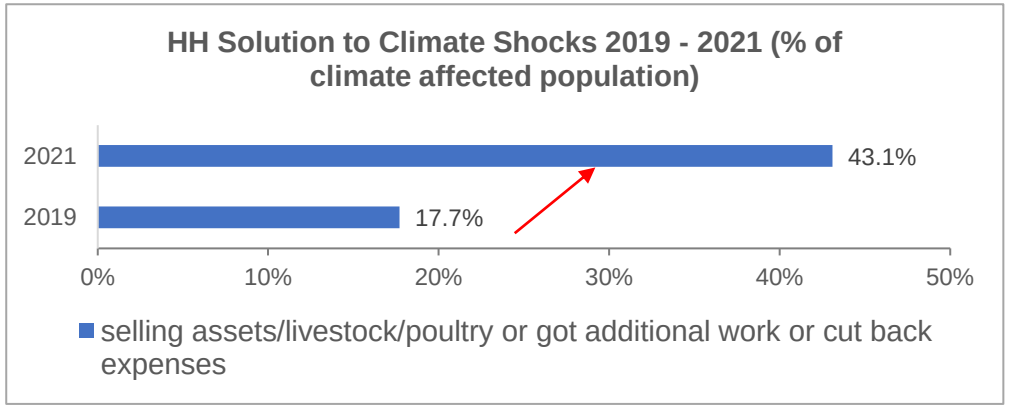
2. Increased incidences and impact of climate shocks



Source: FinAccess Surveys 2006-2021



Source: FinAccess Survey 2021

- FinAccess data for 2019 and 2021 report rising incidences direct and indirect climate related shocks
- FinAccess data reveals that as climate shock incidences rise, the most vulnerable bear the burden
- The proportion of hh who experienced climate related shocks rose by 2 percent between 2019 and 2021, but a quarter of them incurred asset losses to manage these shocks
- Vulnerable populations therefore manage climate shocks though solutions that are welfare reducing

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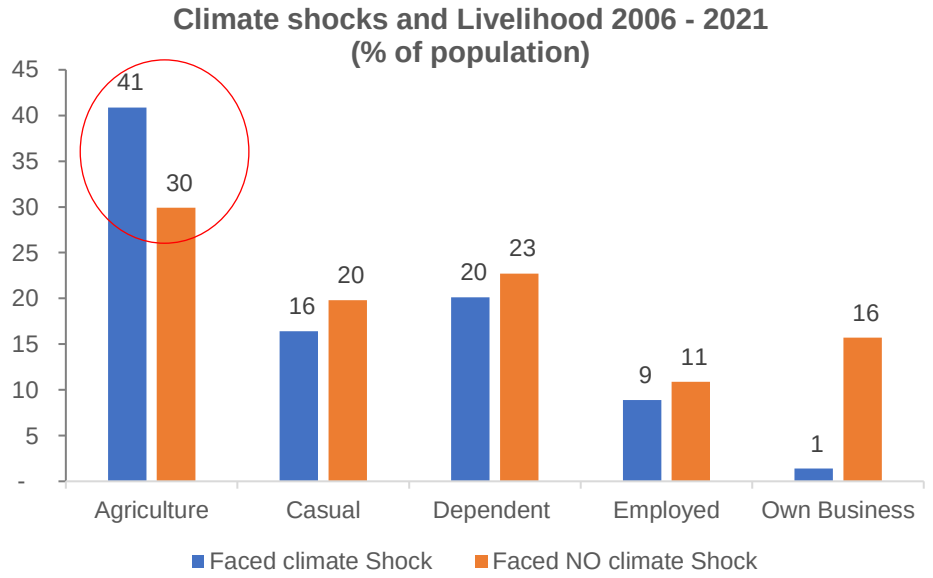
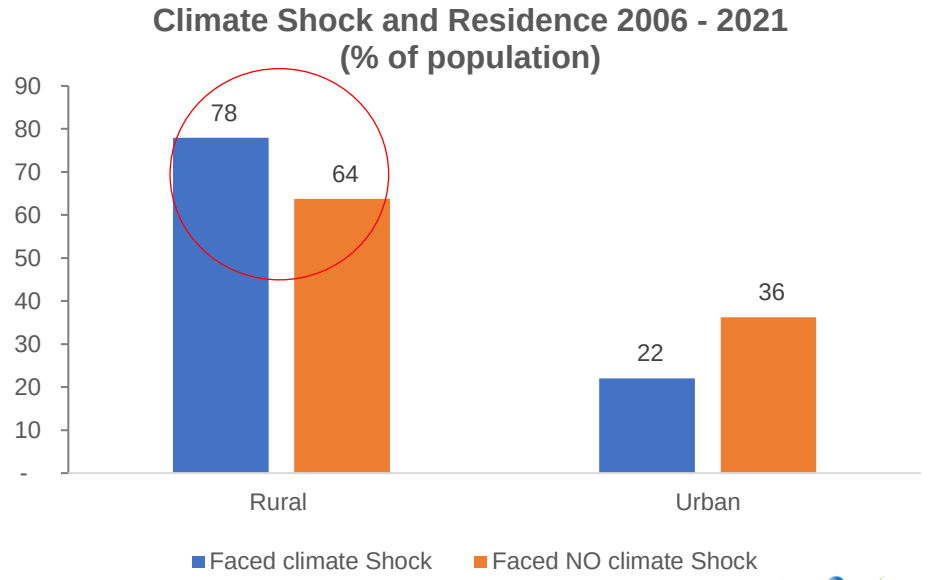
2. Vulnerable population are more affected by climate shocks: Rural and Agrarian

- Farmers are increasingly susceptible to climate shocks than other livelihood sources.
- Between 2006 – 2021, 52% of respondents who rely on agriculture faced a climate risk/shock relative to their counterparts who did not face a climate risk/shock (30%)



- Rural residents are the more susceptible to climate shocks relative to urban dwellers
- Between 2006 – 2021, 81% of rural respondents faced climate shock relative to 64% of their counterparts in the rural area who did not face a climate shock



Source: FinAccess Data 2006 - 2021

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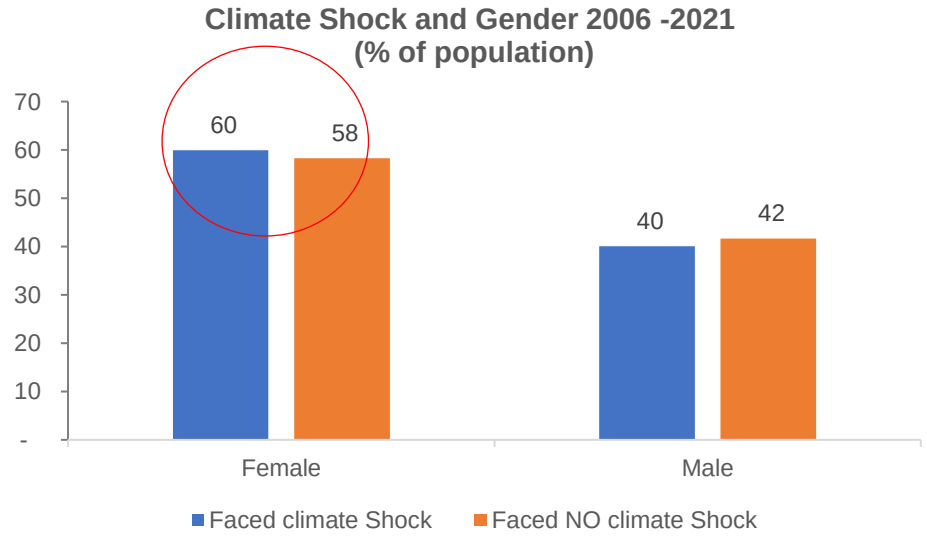
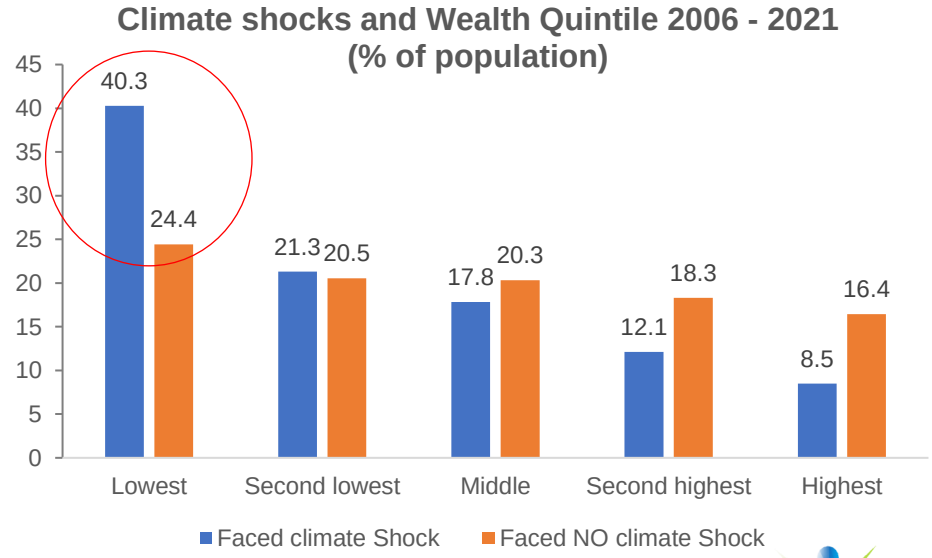
2. Vulnerable population are more affected by climate shocks: Women and Low Income

- Women are more susceptible to climate shocks than men.
- Between 2006 -2021, more women relative to men faced climate risk/shock due to intersectionality
- Between 2006 – 2021, 57% of women compared to 42% of men rely on agriculture as a livelihood
- The poor (lowest quintile) are more susceptible to compared to middle class and rich
- Between 2006 – 2021, about a third of the poor faced climate shock compared with the rest of the respondents who did not face a climate risk/shock





Source: FinAccess Data 2006 - 2021

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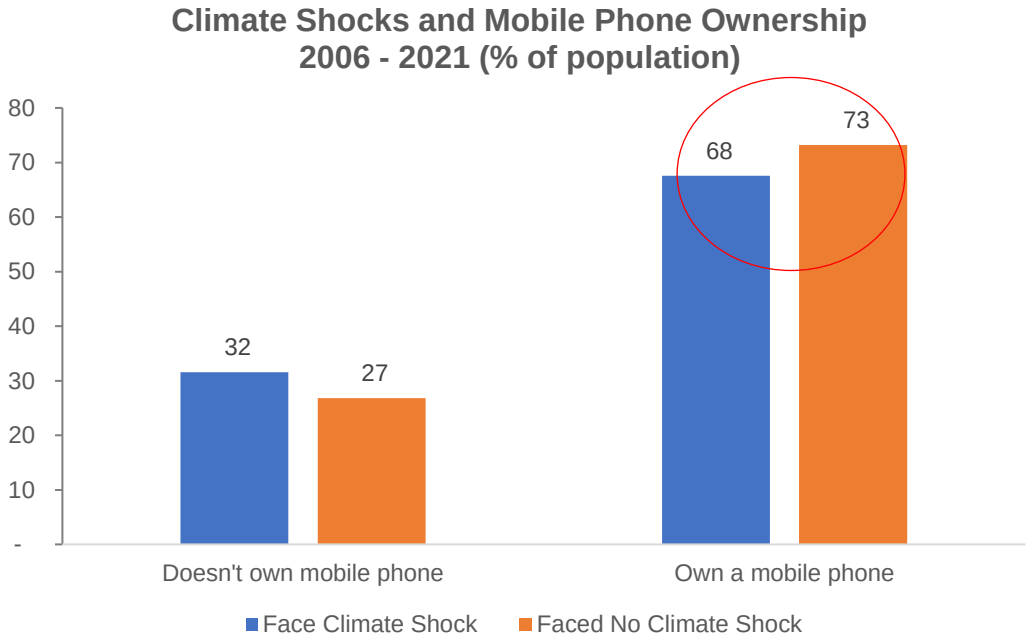
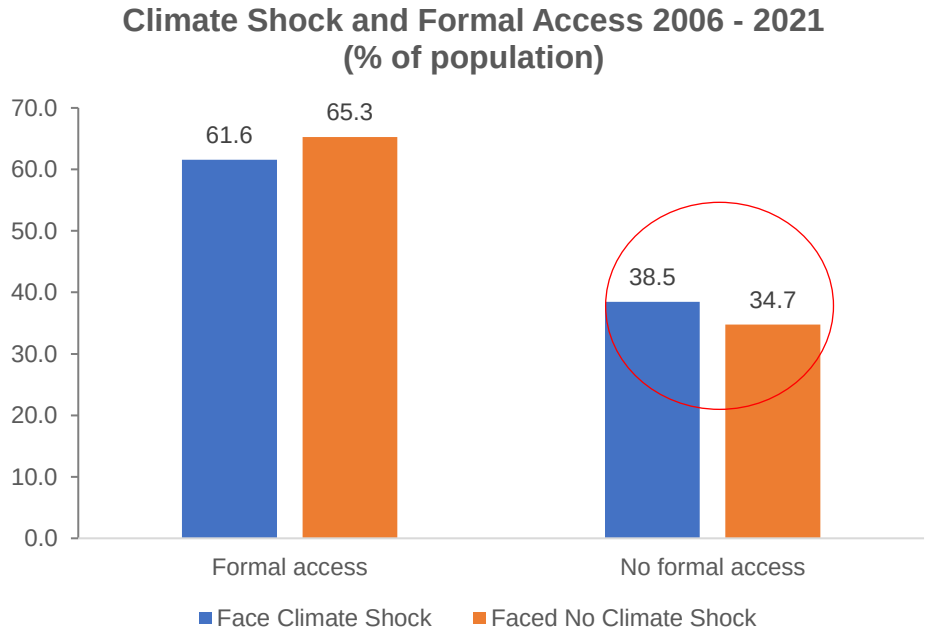
2. Climate affected populations are more excluded

- Mobile phone ownership, an access point to DFS, is 18% lower for respondents who are susceptible to climate risk/shocks compared to the rest of the population

- Between 2006 – 2021, formal access for the climate affected respondents has remained low (20% lower), compared to formal access for the rest of the population





Source: FinAccess Data 2006 - 2021

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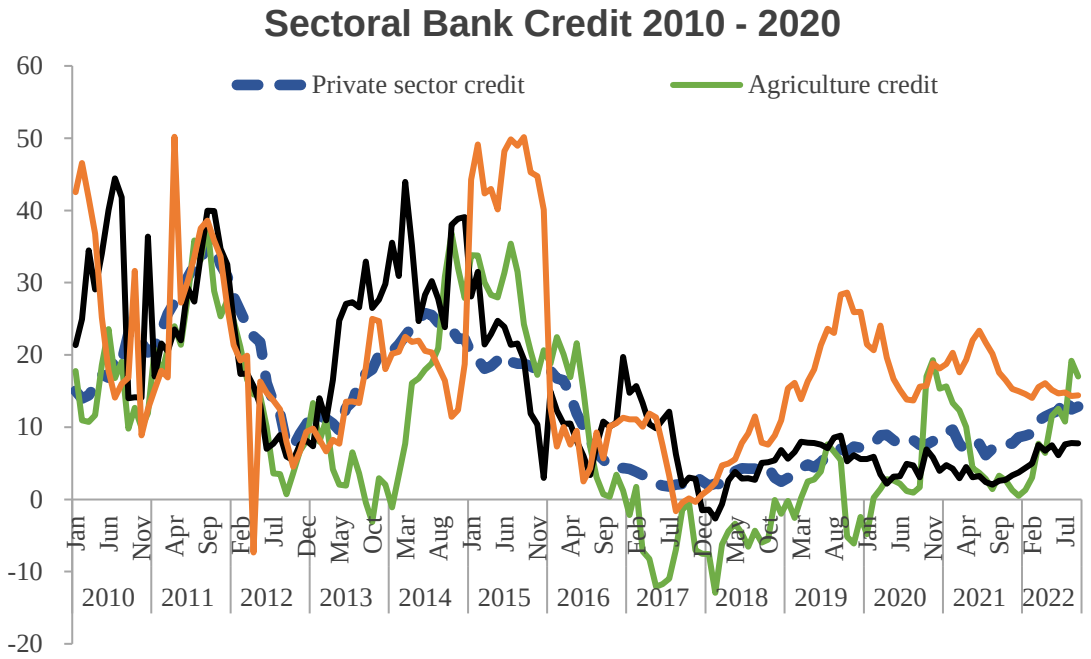
2. Penetration of traditional Finance to manage climate shocks is low

Supply-side Crop & Livestock Insurance Data 2014 -2020

	Gross Premiums, KSh million			Claims Incurred, KSh million			Loss Ratio (%)		
	Crops	livestock	Total	Crops	livestock	Total	Crops	livestock	Total
2014	227.0	43.4	270.4	146.1	29.7	175.8	64.4	68.4	65.0
2015	214.4	148.2	362.6	62.6	56.2	118.8	29.2	37.9	32.8
2016	167.8	380.3	548.1	124.8	103.7	228.5	74.4	27.3	41.7
2017	303.3	519.4	822.8	621.2	198.8	820.0	204.8	38.3	99.7
2018	271.8	444.4	716.2	328.0	366.9	694.9	120.7	82.5	97.0
2019	300.5	355.4	655.9	176.1	409.7	585.8	58.6	115.3	89.3
2020	635.9	454.1	1090.0	96.0	103.4	199.4	15.1	22.8	18.3



- Agricultural insurance is important way of building resilience to climate change
- Insurance penetration remains low (0.8% of gross premiums in 2021); Insurance claims rose during climatic shocks as well as payouts
- Underinvestment in agriculture as the share of credit to the sector has remained low below 10 percent
- Limited financial solutions available to households to mitigate climate shocks

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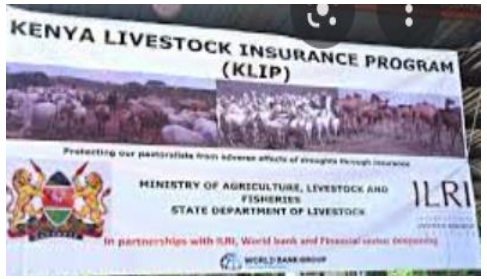
2. Innovative DFS climate solutions emerge, but uptake is low

-Improved access to solar energy to the previously underserved off grid poor persons.
-Over 1 million solar home systems sold.
-**$600 million** of credit unlocked for our customers.
-**4.5 million lives improved**



-Introduced in 2015 in pastoralists based counties, and enlisted 5,000 pastoralists.
-Program benefited over **20,000 households with over $ 1.3 million paid to pastora**lists to ease burdens of drought

-Index-based Agriculture Insurance.
-First to use mobile phone technology to speed access and payouts to rural farmers.
-To date Kilimo Salama has insured **73,000 farmers in Kenya and Rwanda**

-In Partnership with insurance firm (APA), **payout of $ 85.1 million to 13,523 insured farmers** in Kenya coast region for losses incurred during the March-May 2021 season.

- Financial solutions are emerging to help households mitigate their climate risks, leveraging on mobile phone ownership and mobile money usage
- 55% of households affected by climate shocks between 2006-2021 own mobile phones
- Products such as M-Kopa, KLIP, Kilimo Salama and PULA leverage on mobile phone ownership and mobile money usage

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3. Research problem and Methodology

- **Research question:** Is there scope for digital finance in assisting vulnerable households to mitigate against exposure to climate shocks?

Using both qualitative and quantitative approaches on FinAccess Household survey data the study - over the six cycles available (2006, 2009, 2013, 2016, 2019, 2021).

- The study applied a **probit model** to predict households' uptake of DFS and other financial products in mitigating climate risks.
  - The probit model $\mathbf{Pr(}Si\mathbf{=1|}Si\mathbf{=0)=}\varphi(\alpha 0+\beta 1Xi+\beta 2Zi+\beta 3Qi\varepsilon i)$
  - The ordered probit model $\mathbf{Pr(}Si\mathbf{=j\ |Xi)=}\varphi(\alpha 0+\beta 1Xi+\beta 2Zi+\beta 3Qi\varepsilon i)$

- Qualitative assessment of the climate risk trends, demographics and DFS landscape is applied to draw insights on climate risks and DFS dynamics

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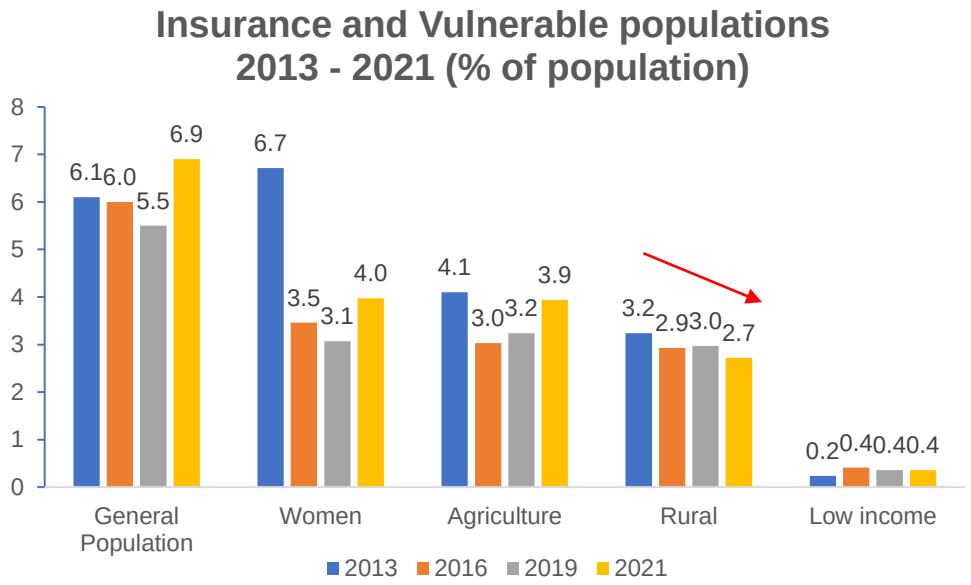
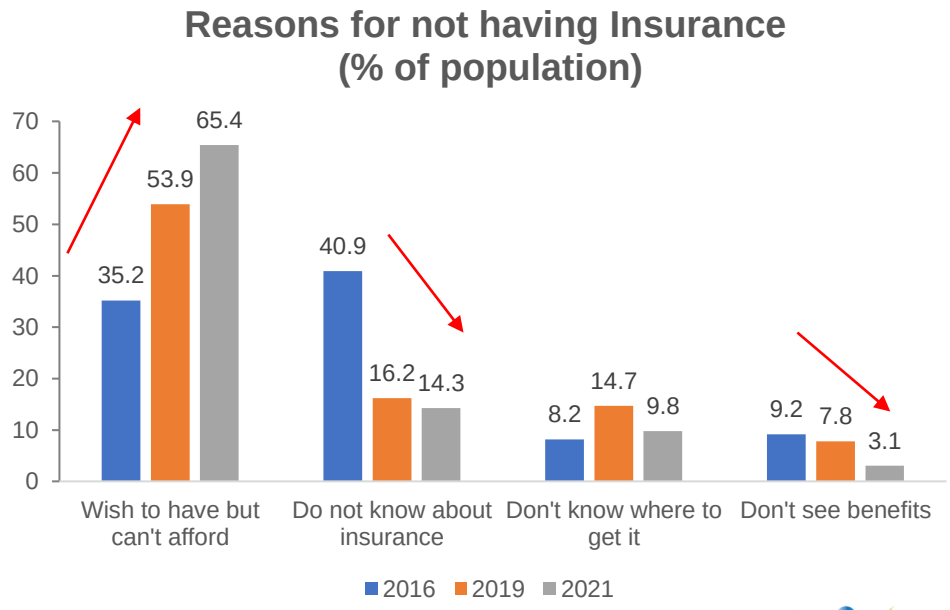
4. Insurance uptake remains low compared to the population

- More than half of farmers account for insurance usage
- Insurance is lowest and has been constant or declining for vulnerable populations (rural residents & low income)
- Between 2006 to 2021, the insurance usage has been below 7% of the adult population
- The main reason for not taking insurance is high cost of premiums.
- Over 65% of respondents who do not have insurance state their willingness to get insurance if it was affordable.





Source: FinAccess Report 2021

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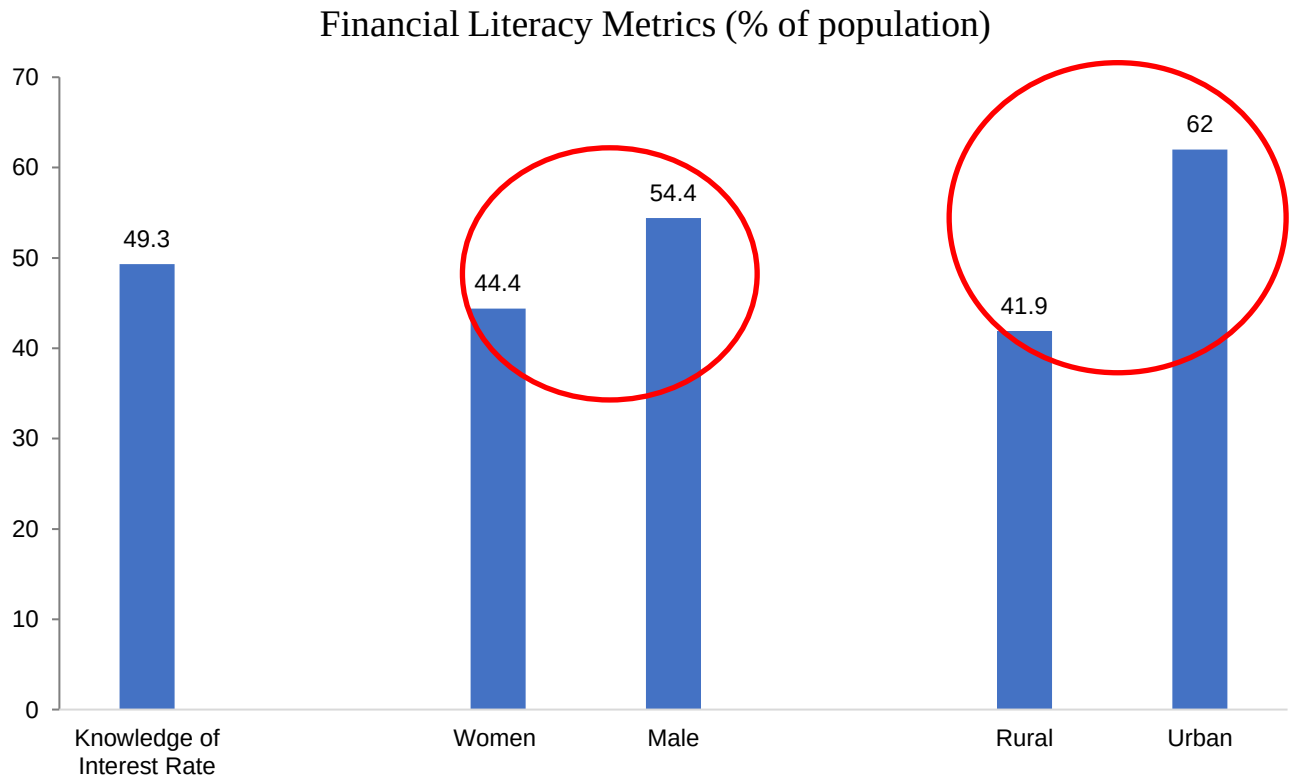
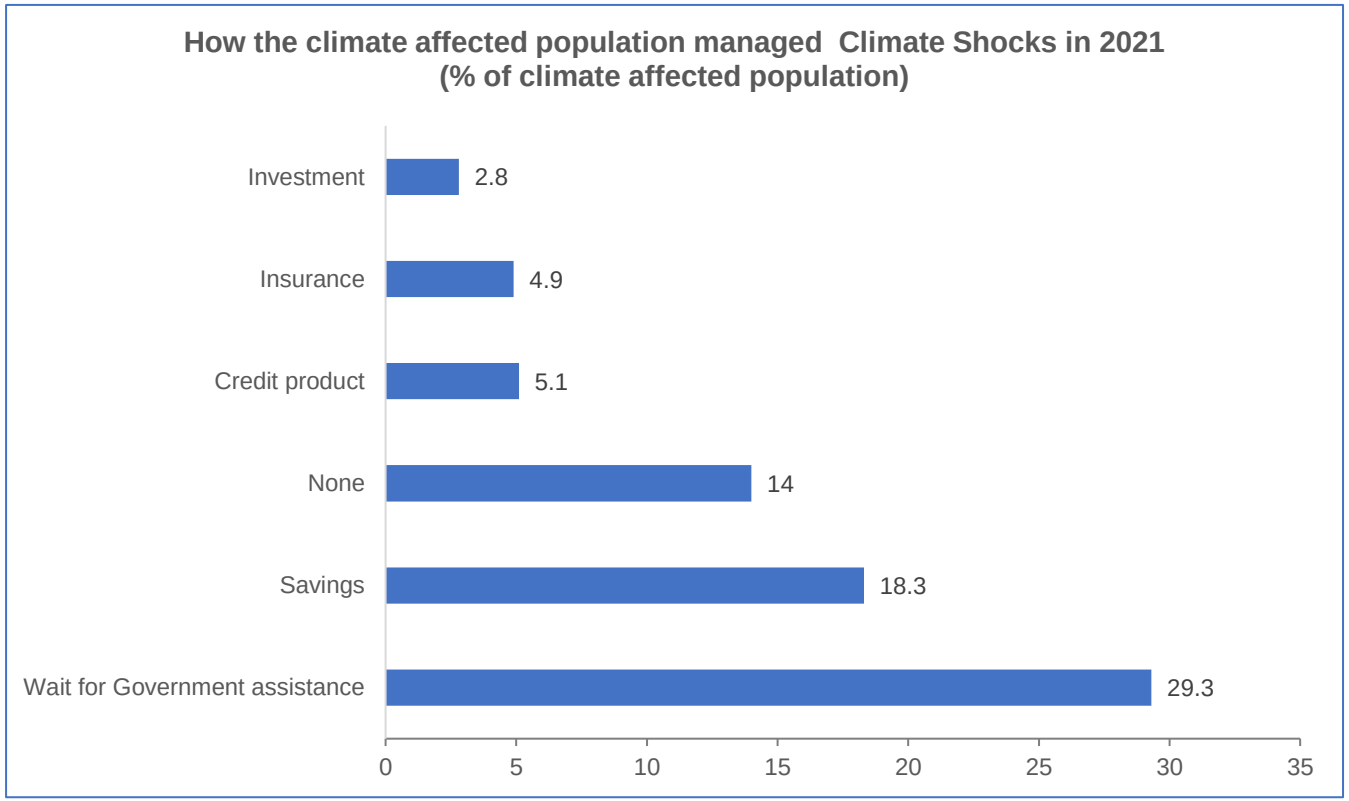
4. Limited Financial Literacy May limit uptake of key climate financial solutions



- Knowledge of cost of financial services of women and rural residents' lags behind their counterparts and the general population
- Lower literacy in these segments may limit uptake of key financial solutions to manage climate shocks.

Source: FinAccess Report 2021

4. A gap in climate shock solutions exists thus an opportunity for financial instruments to mitigate climate-related shocks



- 61% of climate affected population did not have a way to manage climate shocks.
- 31.1% relied on financial solution of which 13% was digitally obtained indicating DFS is already an important climate shock to those affected.

Source: FinAccess Report 2021

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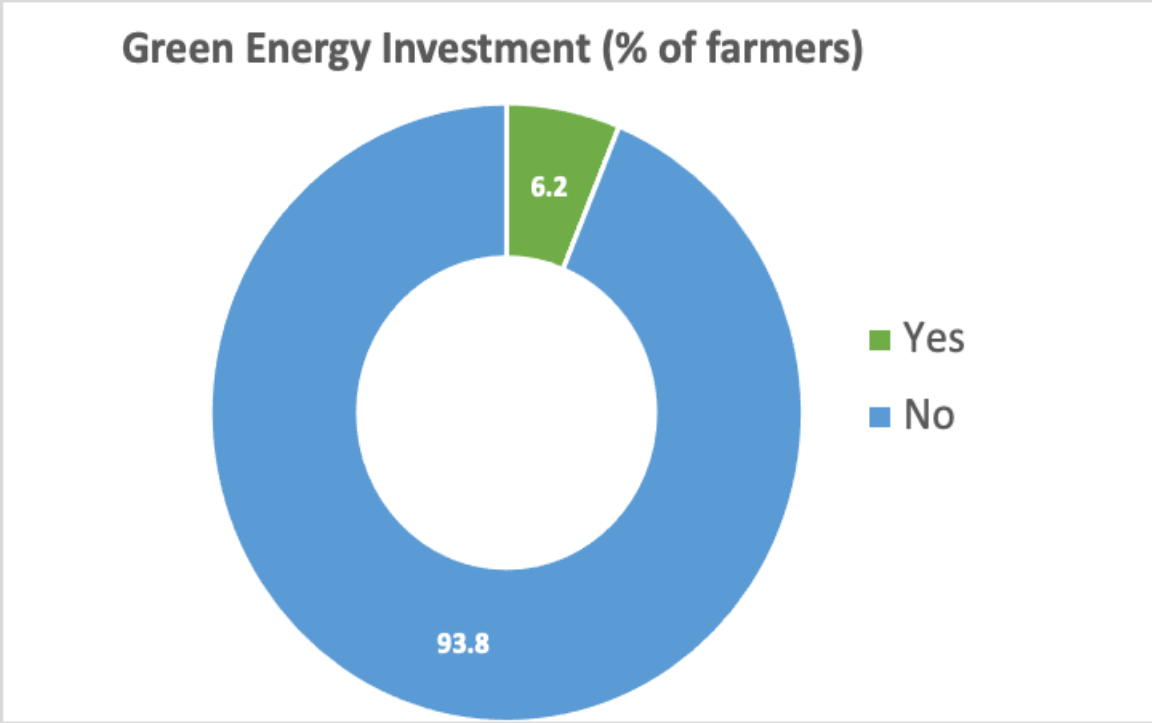
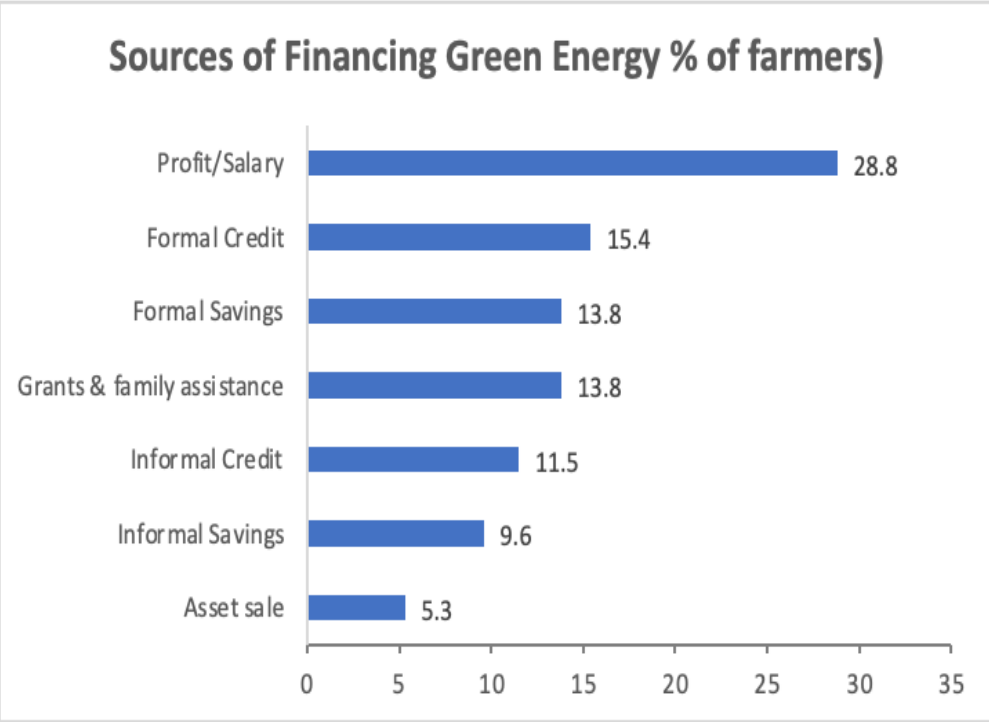
4. Green Energy investment is low, while sources of Green Energy Finance in 2021 is limited





Source: FinAccess Report 2021

- Only 6% of farmers invested in green farming technology conserve energy and resources
- Farmers who invested in green farming technology, majority relied on income, and formal credit, savings and grants

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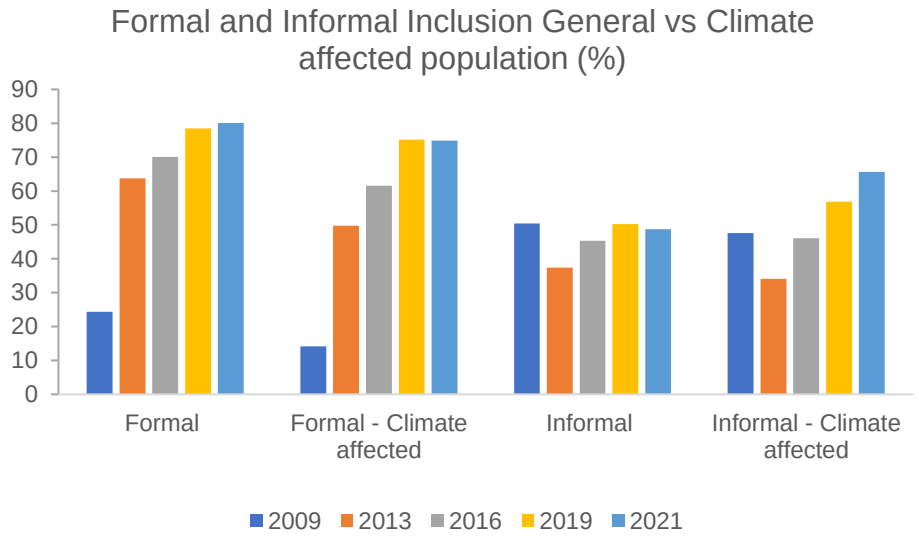
4. Probit model confirms rise in insurance uptake for those affected by climate shocks

	Predicted Conditional Probabilities with climate shock (%)	Predicted Conditional Probabilities no climate shock (%)	Δ in predicted probabilities climate shock vs no climate shock
Formal	97.1	95.4	1.7
Informal	62.3	59.6	2.7
Bank Usage	31.9	32.5	-0.6
Insurance Usage	11.9	9.9	2
Mobile Money Usage	93.5	93.7	-0.2



- Quantitative findings show that facing a shock marginally increases financial inclusion for climate affected populations relative to their counterparts.
- Over time climate affected population uptake of informal inclusion is higher relative to the rest of the population, thus finaccess data supports the quantitative findings of the probit model

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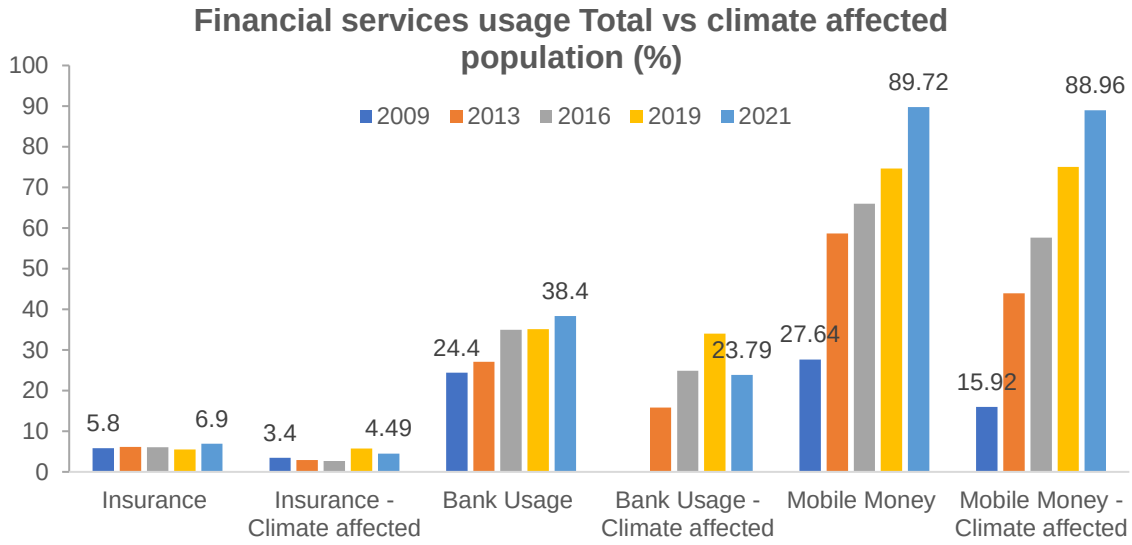
4. Probit model confirms positive DFS impact on increasing financial inclusion for climate affected populations

	DFS effect with climate shock (%)	DFS effect no climate shock (%)	
Formal	11.6	4.8	6.8
Informal	1.2	1.1	0.1
Bank usage	1.5	1.4	0.1
Insurance usage	0.5	0.5	(0.0)



- Quantitative findings reveals that DFS increases financial inclusion particularly for households who face a climate shock than their counterparts who do not.
- FinAccess data confirms faster rise in mobile money uptake in climate affected population, supporting the positive effect of DFS on inclusion for climate affected populations

5. Conclusion

Qualitative assessment reveals important trends

1. Vulnerable households are increasingly facing negative impacts from climate change shocks compared to less vulnerable populations
    - Women, poor, whose dwelling is mainly rural and whose main livelihood is agriculture based/farming
2. Uptake and penetration of financial climate solutions is low, constrained by cost, suitability of the products, literacy and availability of services
3. Capacity of the vulnerable to adopt financial solutions is limited by the low mobile phone ownership, limited formal and DFS access and usage

Quantitative assessment confirms

1. Households facing a climate shock, are likely to be formally financially included
2. HH are more likely to use insurance and DFS such as mobile money when faced with a shock if they have never used insurance or mobile money before.

Concluding that **facing a climate change risk is an impetus for increasing financial inclusion** specifically through **adoption of DFS** and as households seek to mitigate the effects of climate change risks in future.

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5. Policy Recommendations

DFS provides an avenue for the vulnerable HH to build climate change resilience and policy should be directed as follows:

1. Supply side: Financial Service providers encouraged and facilitated to develop targeted and suitable products for the vulnerable population

- Affordable, accessible and usable financial products
- Create awareness of financial services and their benefits
- Implement tailored financial education initiatives

2. Demand side: The interventions targeted to the vulnerable HH including expanding mobile phones and implementing financial capability interventions to the vulnerable population

3. Financial solutions may be backed with other solutions that include creating awareness for other ways of combating climate related shocks

4. Financial service providers to finance climate adaption targeted at vulnerable populations to help these segments take preemptive actions to mitigate climate risks

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THANK YOU

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