



Agric Insurance - Transcaucasia & Pula: Introduction



August 2021

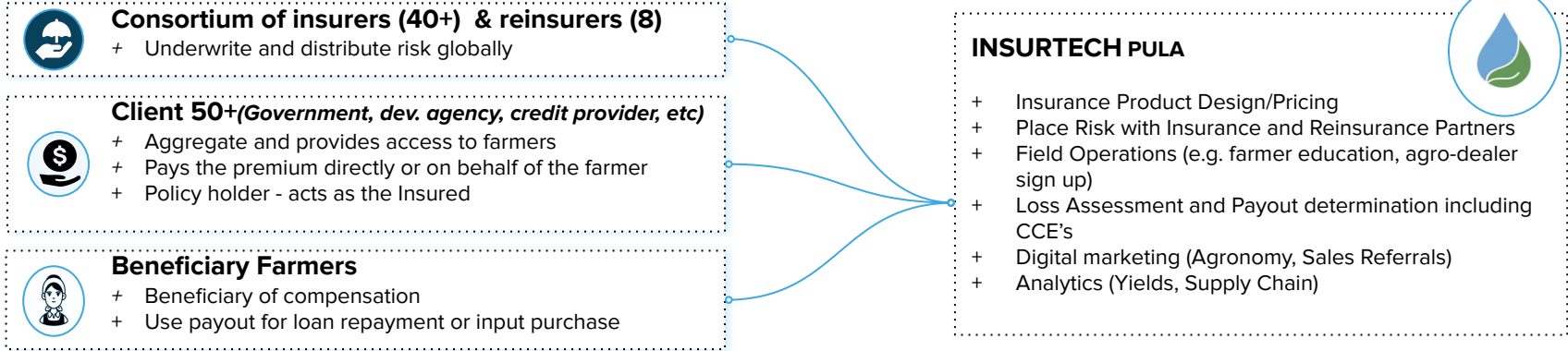


Who is Pula?



PULA: Building financial resilience of farmers through agriculture insurance by giving them tools to deal with systemic shocks arising from climate change

1 Pula builds end-to-end partnerships, bridging critical demand-side and supply-side gaps. Governments and the private sector play a key role in the partnerships.



2 Products are designed to cover all the main risks farmers are exposed to, with yield-index being the most popular

Yield Index covers all perils including locust, floods, hurricane, drought, FAW, pests and diseases

Weather Index germination failure, drought

Livestock Insurance covers drought, disease, theft

Multi-Peril Crop Insurance covers all named risks

3 The model works at scale and has been deployed across 14 countries in Africa and Asia since 2015. \$10M capital raised through Seed and Series A that is fueling global commercial replication





We have teams on 4 continents, handling projects in 17 countries



OUR INVESTORS AND PHILANTHROPIC PARTNERS

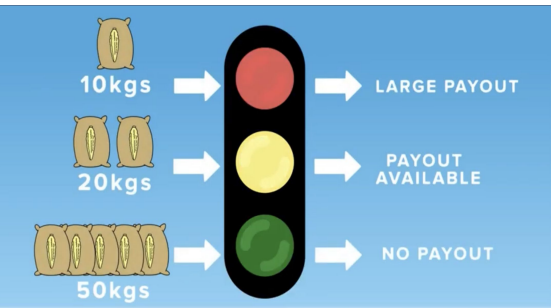




**How do we
get it done?**



We pitch an insurance product that covers all risks, and is simple to understand



- + So far most development agencies have pitched weather index insurance that covers drought only to stakeholders, **but farmers face many risks, drought is only one of many.** Offering an insurance that only covers drought means farmers are not covered from floods, locusts and new diseases (FAW, MLND), while making them pay high rates for one cover.
- + Weather Indices were not suitable but people **thought Yield Indices were “too labor intensive”** prone to fraud since they would require a large field force to visit a sample of farmers per region and measure harvest with the farmers through crop cutting experiments. We deployed a digitized field force.
- + The cover needed to be simple to explain to large groups of farmers. **The Yield Index allowed for intuitive rules around potential yield** rather than complex formulas counting millimeters of rainfall for weather index insurance.



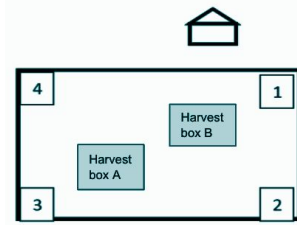
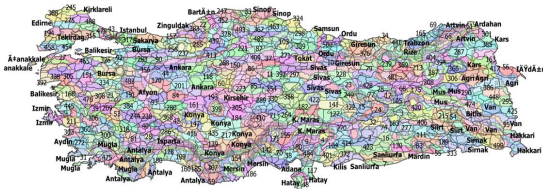
Pula's Area Yield Index Insurance (AYII) covers farmers growing 12 crops against all risks that systematically affect yield, including: Drought, frost, excess rain, hurricane, flood, plant diseases & pests including FAW and locusts.

1. We divide the country into **agro-ecological zones (AEZ)** based on **historical rainfall and yield data**

2. At the end of the season, **loss adjusters sample farmers** per agro-ecological zone and to **harvest measurements on the selected sample farms.**

3. Based on the crop cut data, we establish an **average expected yield per agro-ecological zone.**

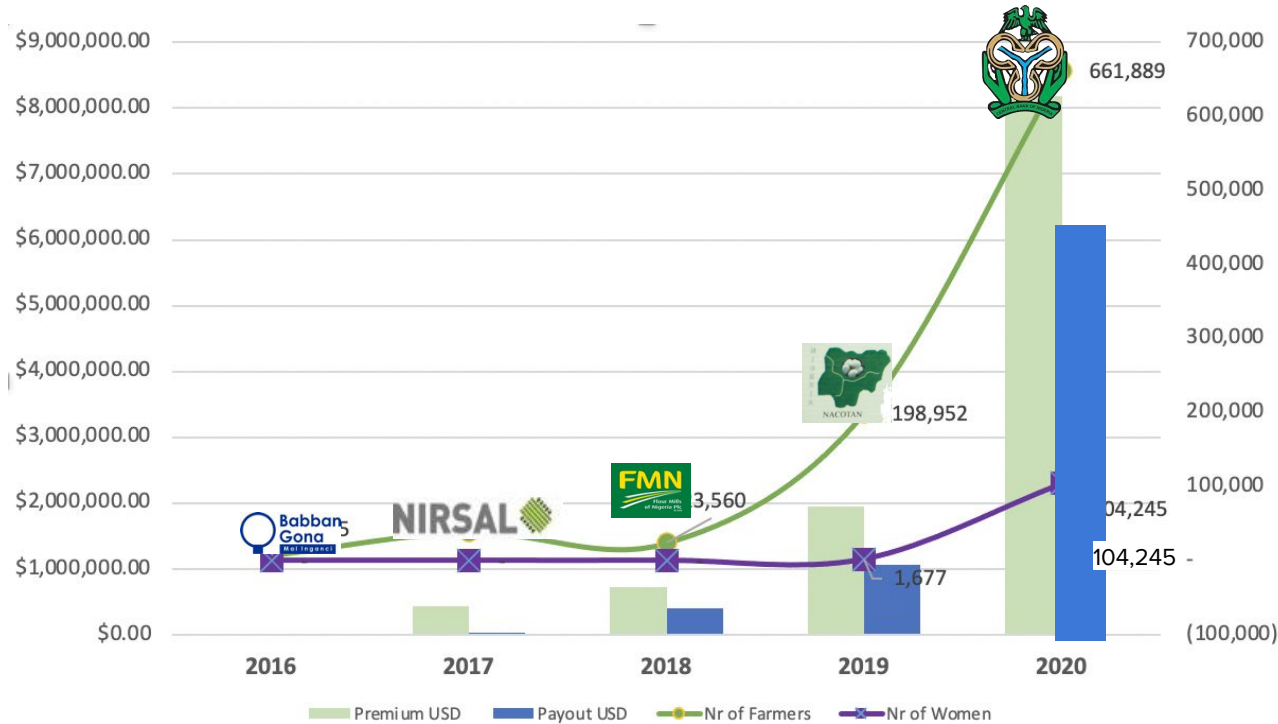
4. If yields are **lower than a determined trigger level** in their ecology, all farmers receive a discount on next season purchase of fertilizer or a cash payout **within 2 weeks of harvest date completion.**



PRE-SEASON

POST -SEASON

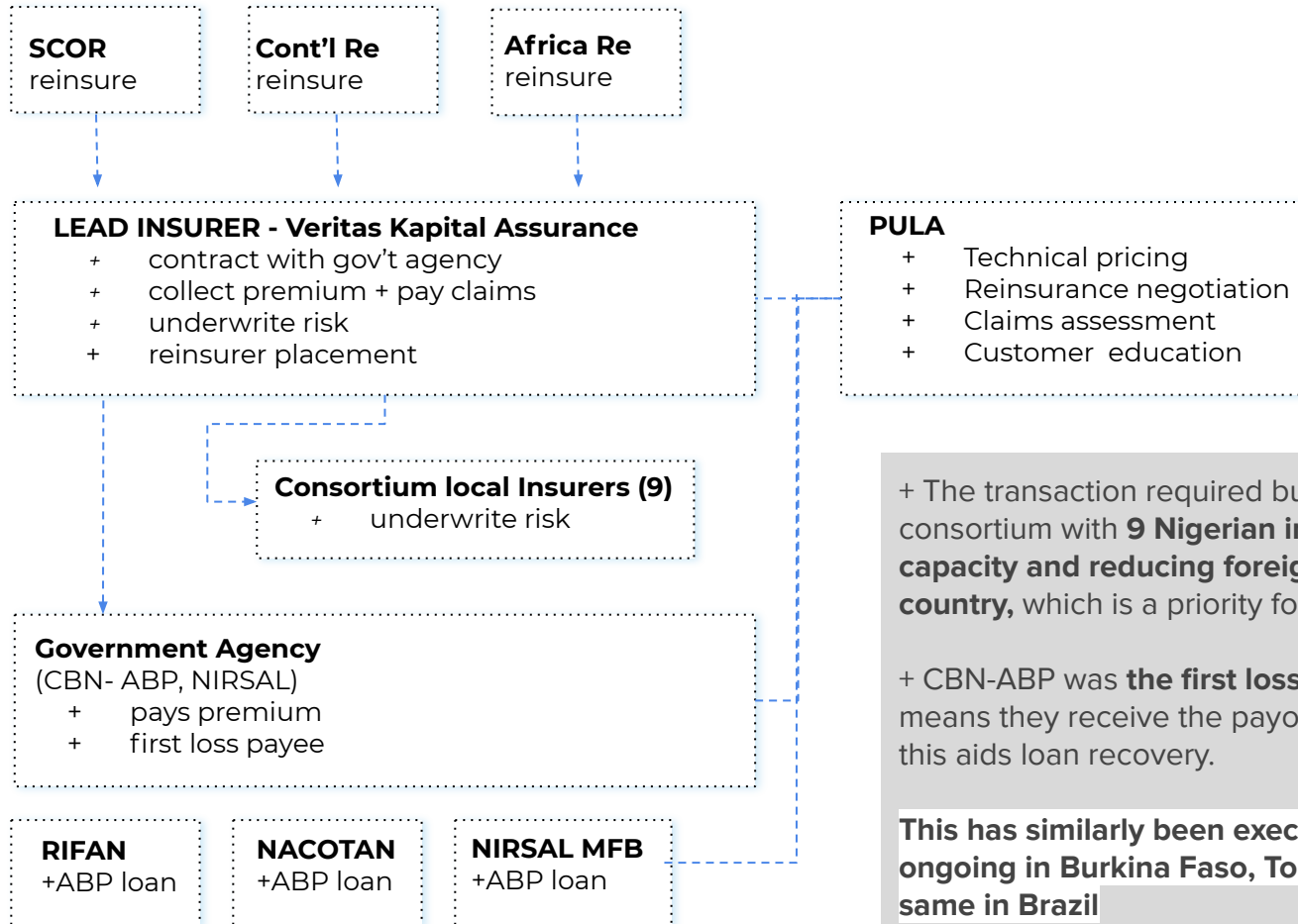
Our speciality is building sustainable agriculture insurance systems, that build local insurance capacity.



Key to growth in for example Nigeria has been our partnerships with both public and private partners in parallel, driving product innovation and build local insurance retention



We build ecosystems that enable local ownership (and a viable business-model for Pula)- ie. Nigeria



+ The transaction required building of an insurance consortium with **9 Nigerian insurers, building local capacity and reducing foreign currency leaving the country**, which is a priority for government.

+ CBN-ABP was **the first loss payee/ insured**- which means they receive the payout and garnish the loans - this aids loan recovery.

This has similarly been executed in Kenya & Zambia, ongoing in Burkina Faso, Togo and we are doing the same in Brazil



Case Study: Central Bank of Nigeria

We brought together many partners across insurance in Nigeria & Internationally

Key statistics

543,000 farmers loans with Central Bank insured

511,437 Ha's & 37 states

18,000 CCE's in 5 months cotton, rice, cassava, maize



Handled Nigeria's largest ever agric insurance payout - 7mln USD

EXTERNAL REPORT ONLY OF COMPLETE LOCATIONS	TOTAL	Average payout	No of LGA PAID	Payout per farmer
RIFAN	₦922,009,876	₦76,907	39	₦6,922 - ₦140,717
MAAN	₦585,947,855	₦87,101	60	₦1,637 - ₦141,055
NACOTAN	₦487,529,277	₦90,157	27	₦10,671 - ₦210,040
TOTAL	₦ 1,995,487,009		126	





Key to sustainable growth is reliable and fair actuarial pricing: Pula Insurance Engine - PIE

Objective: A tech platform whose functionality covers **quote calculation** (replacing the current spreadsheets used by insurers) and **workflow** (replacing the long email chains between insurers and reinsurers).

Currently used by 21 insurers and 8 reinsurers. Enables quote generation from sales agent to reinsurer approval to policy insurance.

Yield Data Options

Start year: 2015 (4 / 4)
End year: 2019 (4 / 4)
Weighted Burn Rate Mode: Straight average with crop rate

Pricing Parameters

Trigger: 70.00 (5 / 6)
Exit: 30.00 (5 / 6)
TSt at Exit: 70.00 (5 / 6)

Per Crop Per UAI Data Table Show Data Sources

ADM1	Crop	AEZ Number	Yield 2015	Yield 2016	Yield 2017	Yield 2018	Yield 2019	Historical LTA	Final LTA	Adjustment Factor	Burn 2015	Burn 2016
Migori	Maize	10	3.50	2.78	3.68	3.41	3.39	3.02	2.11	70	0.00	0.00
Meru	Maize	11	1.16	1.12	0.75	2.41	2.45	1.58	1.58	100	0.00	0.00
Meru	Maize	15	1.16	1.12	0.75	1.39	5.54	2.06	2.06	100	0.00	0.00
Meru	Maize	69	1.16	1.12	0.75	2.48	4.46	2.00	2.00	100	0.00	0.00
Busia	Maize	89	3.71	3.34	3.56	3.04	3.17	3.17	3.17	100	0.00	0.00
Migori	Maize	96	3.75	3.07	3.82	3.81	2.99	3.49	3.49	100	0.00	0.00
Bomet	Maize	105	4.30	3.09	4.42	3.39	3.38	3.49	3.49	100	0.00	0.00

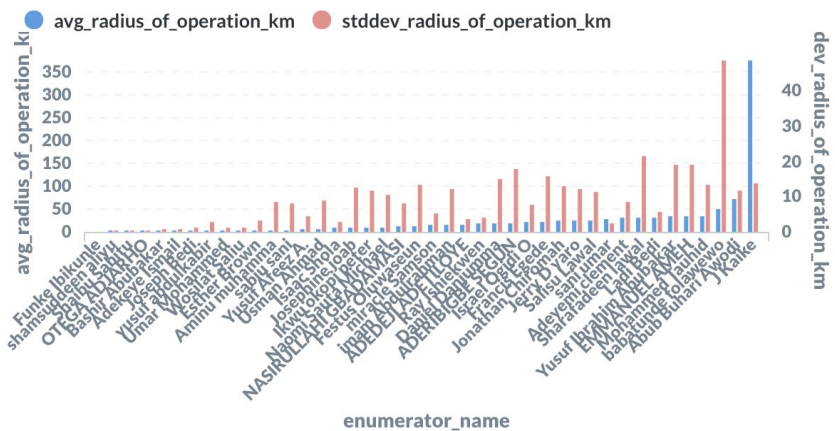
PIE 1.0.3 © 2021 Pula Advisors GMBH



Our secret to success and scale: Loss Assessments enabled by technology, built for scale

- + Field agents are hired through standardized tests and are equipped with tools (digital scales) and applications to execute standardized surveys;
- + Agents are monitored through business Intelligence platform to see live data and where problems occur, and can be corrected in real-time.
- + All systems built for remote -covid compliant- execution.
- + We collect 40,000 farmer yields per year, approximately

NGA - Enumerator Area of Operation Summaries



Data Quality Checks

NGA - Compliance Summary



NGA - Box Dimensions Summary



NGA - Non Compliant Samples

Partner	District	farmer_phone	boxes_case_id	date
CBN-ABP	Cross River	08134107236	ef022593-c1ef-4ca2-ae62-94a7ac53932e	202
CBN-ABP	Adamawa	07067724709	66e1f9b9-fbb5-4ebe-bdeb-395dd816d8b3	202
CBN-ABP	Niger	08058041071	ffdcd5f3-5eda-4903-a7b5-c5f3b7935a2c	202

Rows 1-3 of 205





**Agriculture
Insurance in
Transcaucasia**

Caucasus





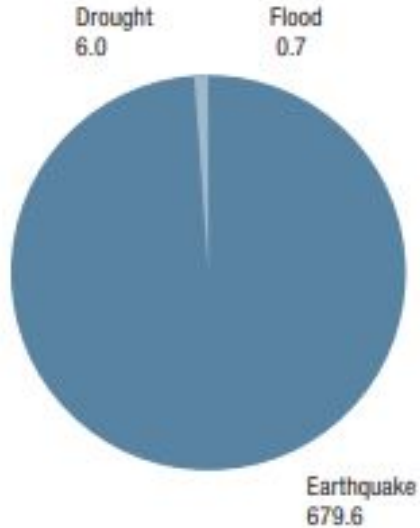
Transcaucasia Agriculture

- **Countries - Georgia, Armenia & Azerbaijan**
- **Key crops:** Tea, Citrus fruits, Tobacco, Corn, Grapes and various fruits, Maize, Cotton, Rice, Peanut, Wheat, Barley, Potatoes, and Alfalfa (Lucerne). In the higher elevations of the Caucasus, the primary activity is livestock raising (mainly sheep and cattle), although the people there also grow some mountain crops and pursue domestic crafts.
- **Key risks:** Hail, Drought, Floods, Earthquake, Frost, Fire, Land & Mud Slides
- **Estimated Current market size of agric insurance in premium USD:**
 - 2018: Georgia: USD 5.7 mln (70% subsidized by the government)
 - 2018: Armenia: USD 24 mln (50% subsidized by the government)
 - 2020: Azerbaijan: USD 6 mln (50% paid by state)
- **Key crops currently insured:** Corn, Cotton, Soybeans, Wheat, Apricots, Grapes, Peaches, Apples, Barley and Sugar Beet.



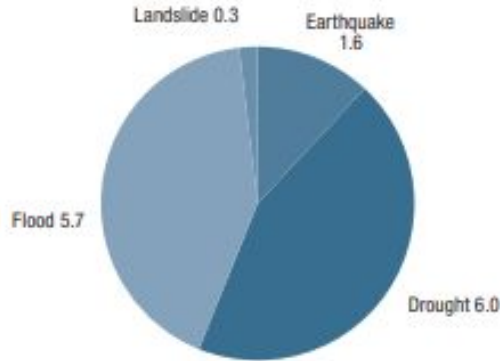
Impact of Natural Disasters in Transcaucasia

Armenia



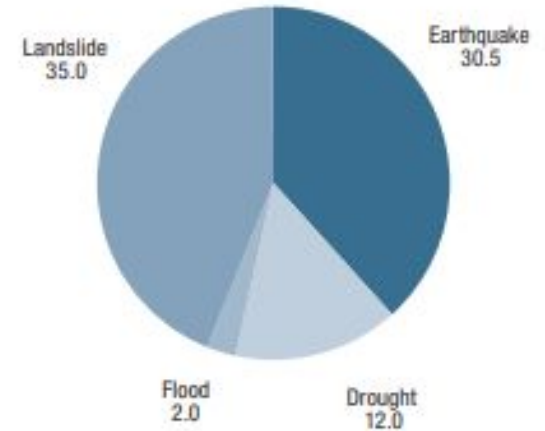
Earthquakes are the dominant risk in Armenia. The most devastating, the 7 December 1988 Spitak earthquake, had a direct economic loss estimated at \$14.2 billion. Droughts and floods are other risk the country is exposed to.

Azerbaijan



Azerbaijan is susceptible to heavy flooding because of its topography and the water-related fluctuations in the Caspian Sea. For example, the April 2003 flood in the Ismayilli Gobustan region alone caused an economic loss of \$55 million.

Georgia



Landslides and earthquakes are the dominant risks in Georgia, with an economic average annual loss of \$35 million and \$31 million, respectively.



Agricultural Insurance Overview



In 2020, Agriculture contributed 7.4% GDP in Georgia, 11.7% in Armenia, and 7% in Azerbaijan.



Only 3.6% of the potential insurable land in Georgia is currently insured.



Azerbaijan only introduced an Agriculture Insurance Law in 2019/2020.



Under the Georgia Agro Insurance program of 2014-2018, **81,453 insurance policies were issued** country-wide; 71,413 hectares (cumulative) of land were insured with insurance around \$209 mln, and the Agency's subsidies was greater than \$11 mln.

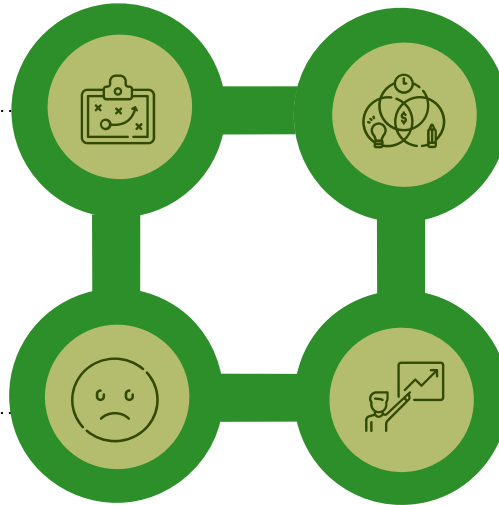


Under the InsuResilience initiative, Armenia launched Agricultural Insurance in 2019.



Agricultural Insurance Penetration Challenges

Lack of granular Yield & Agrometeorology data



Lack of structure, infrastructure, and governmental policies

Low willingness to subscribe due to high cost of insurance

Lack of qualified loss assessors in the insurance sector



PULA RECOMMENDATIONS



Technology is the key to success of Crop Insurance in **any** country.



Pula's AYII / Hybrid Product has already penetrated and reached more than **17 Countries**.



AYII has been **proven** to be **most efficient and scientific solution** to the Agriculture Insurance Challenges globally, of which India is one of the example.



Pula has now covered more than **5 million farmers** working with Governments, International Development Agencies and Private Organisations including Offtakers.



Farmers expect faster claim settlements and **Pula does it within 5 to 7 weeks** compared to other countries where settlements take more than a year.



AYII is the **cheapest and fastest** solution to farmers in Crop Insurance and a need of the hour.

Thank you!
Questions?

rose@pula.io