



Commercial Agriculture for Smallholders and Agribusiness



# A Climate Finance Ready Model for Climate Resilience and Sustainability in Nepal:

## A Case Study of Paicho Pasa

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## INTRODUCTION

Nepal is among the most climate-vulnerable nations, experiencing accelerated warming, erratic monsoon patterns, glacial retreat and an increase in climate-induced disasters such as landslides, floods, and droughts<sup>1</sup>. The annual maximum temperature trend is increasing by 0.056°C/yr<sup>2</sup>. This is threatening water resources, biodiversity and agriculture, which contribute roughly 33% to the national GDP<sup>3,4</sup>. Further, climate variability has disrupted the crop calendar and led to the emergence of new pests, increasing risks to food security<sup>5</sup>.

The Climate Risk Index has ranked Nepal at 69th position (1993-2022)<sup>6</sup>. Although Nepal contributes less than 0.1% of global greenhouse gas emissions, its high exposure and low adaptive capacity make it eligible for international climate finance under mechanisms like the Paris Agreement and the Sendai Framework<sup>7</sup>. As a Least Developed Country (LDC), Nepal's strategic climate actions through its National Adaptation Plan (NAP) and Nationally Determined Contributions (NDC) emphasize climate-resilient agriculture, water management and community preparedness<sup>8</sup>.

Despite international commitments, accessing climate finance remains fraught with delays, complex procedures and rigid eligibility criteria, impeding urgent adaptation<sup>9</sup>. Consequently, Nepal is increasingly pivoting toward Locally Led Adaptation (LLA), a bottom-up approach that empowers communities to co-design solutions tailored to their specific vulnerabilities. However, less than 10% of global climate finance currently reaches local actors, necessitating improved financing pathways. Learning from these challenges, a locally led initiative from Gulmi, a rural part of Nepal, is steadily charting its own course toward climate resilience and

sustainability through homegrown, inclusive, and locally embedded adaptation strategies<sup>10</sup>.

## CLIMATE RESILIENCY THROUGH LOCALLY LED ADAPTATION

Centuries before “circular economy” became a buzzword, Nepali villagers practiced “Aaincho-Paicho”, an informal system of sharing seeds, tools, goods, and human resources during farming season. Paicho Pasal, a concept that emerged from Gulmi, took this ethos and formalized it into a cooperative supply system. Instead of debt or cash, the model works on give-and-take, trust-based credits, and collective benefit where over 17,000 smallholder farmers have access to agricultural inputs (e.g., seeds, fertilizers, pesticides, farming tools) at their door, and in return they sell homegrown fresh seasonal vegetables to Paicho Pasal. This locally led adaptation practice has benefited farmers as they:

- Build climate resilience at local level by distributing



Paicho Pasal headquarters located at Baletaksar, Gulmi

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climate-resilient seeds, tools, and organic fertilizers

- Link smallholder farmers to markets, technology, and finance
- Reduce emissions across the agri-value chain
- Deliver tangible outcomes for climate finance investment
- Reduce farmer vulnerability by providing daily goods and agri-inputs through a trust-based exchange system, and
- Enable efficient, low-carbon logistics via local hubs.



Climate Smart Agriculture demonstration plot

This concept of Paicho Pasal has been technically supported by the CASA Programme, implemented by Swisscontact and Niras, to make it climate-resilient and tech-friendly. With this support, Paicho Pasal has become successful in running four Climate Smart Agriculture (CSA) demonstration plots where farmers learn by doing, strengthening their climate readiness.

The plot demonstrates:

- Drought-tolerant crops practice
- Mulching and compost techniques
- Rainwater harvesting systems
- Drip irrigation, and
- Integrated Pest Management Practice.

The tech-friendly, digital billing system has been instrumental in improving transaction transparency and tracking. The system allows farmers to monitor demand trends in real time and digitize financial records, enhancing overall efficiency and transparency. This innovation has led to a 23% reduction in input waste, highlighting the potential of technology in promoting more sustainable agricultural practices. Further, the Paicho Pasal model works with the same farmer network to collect fresh produce daily and then sells 50% of it through urban retail outlets from Bhirahawa, Palpa and Gulmi itself. Of the surplus, 40% is processed into high quality products (e.g., jams, pickles, ketchup, and dried vegetables) in its food processing factory located in Ruru 1, Gulmi. Ultimately, 10% of the residual is turned into compost or animal feed which is a real example of resource use and sustainability. Not limited to this, their products are also exported to Australia, Europe, Japan and the United States, primarily targeting the Nepali diaspora.

This is the perfect blend of locally led practice (Paicho Pasal) into modern need (sustainability), one where ancestral wisdom meets tech, where barter becomes blockchain, and where smallholder farmers lead the largest transformation. Paicho Pasal and sustainability, two interlinked models, are not just adapting to climate change, they are thriving within it, building a circular, tech-enabled and climate-resilient agri-economy. This model demonstrates how blended capital, circular economies, and digital systems can work together to unlock transformative adaptation for local communities.

In the present context, Paicho Pasal is not a charity; it is a climate finance-ready and market-competitive model that supports:

- Carbon credits for zero-waste operations, compost use, and low-emission farming
- Eligibility for Global Climate Fund financing and Voluntary Carbon Markets, and
- Digital traceability with ESG (Environmental, Social and Governance) compliance and MRV (Monitoring, Reporting and Verification).

#### Paicho processed products





Women buying vegetables from Paicho outlet

Paicho Pasal and “sustainability” are not pilot projects; they are a living, growing, and evolving ecosystem whose success is not accidental because it is locally led and culturally rooted, digitally enabled and climate smart, market connected and globally relevant.

In a region where over 70% of agriculture is rain-fed and smallholder-led, this model is a replicable, scalable pathway to climate justice, food security, and financial independence. In the face of climate change, the future of resilience lies not in global boardrooms but in the hands of smallholder farmers in places like Gulmi, in compost heaps and mobile apps, in barter systems reborn as circular economies. With vision, velocity, and values at its core, Paicho Pasal is more than a business model; it is a movement and it is just getting started. Paicho Pasal creates a direct investment entry point for LLA funds, aligning with UNFCCC’s eight principles and ensuring transparency, inclusion, and cost-efficiency.



Smallholder farmers of Paicho



Vegetable ecosystem of Paicho smallholder farmer

## WHY IT MATTERS: A LANGUAGE FOR CLIMATE FINANCE

In a sector where climate finance often fails to reach the ground, Paicho Pasal speaks a new, grounded language of climate finance, one that translates global capital into local resilience, measurable outcomes, and regenerative economies (see table). In partnership with True North Associates, the CASA Programme has helped Paicho Pasal to get ready for an Initial Public Offering that will ensure its sustainable financing. Paicho is now set to grow even more while supporting its smallholder farmers in agribusiness. This could be a replicable model for LDCs and mountainous regions facing resource volatility and governments scaling LLA within NDCs and NAPs. Paicho Pasal has successfully demonstrated what climate finance should look like in action, trusted by communities, tracked by tech, and scaled by markets. With the right investment, this is not just Nepal’s rural future, it is a global playbook for locally led adaptive, circular, and equitable climate economies.

METRIC	VALUE
Farmers Reached	17,000+
Waste Reduction	35%
Smallholder Farmer Income Increase	Average 14%
Input Cost Savings	22%
Carbon Offset Potential	3,800+ tCO <sub>2</sub> e/year (projected)



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