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# SOLAR DRYERS FOR KAVA PROCESSING IN SAMOA



This factsheet draws on the PHAMA Plus business case for solar dryers and results from the Savai'i solar dryer pilot. It aims to provide farmers and small processors with a practical understanding of:

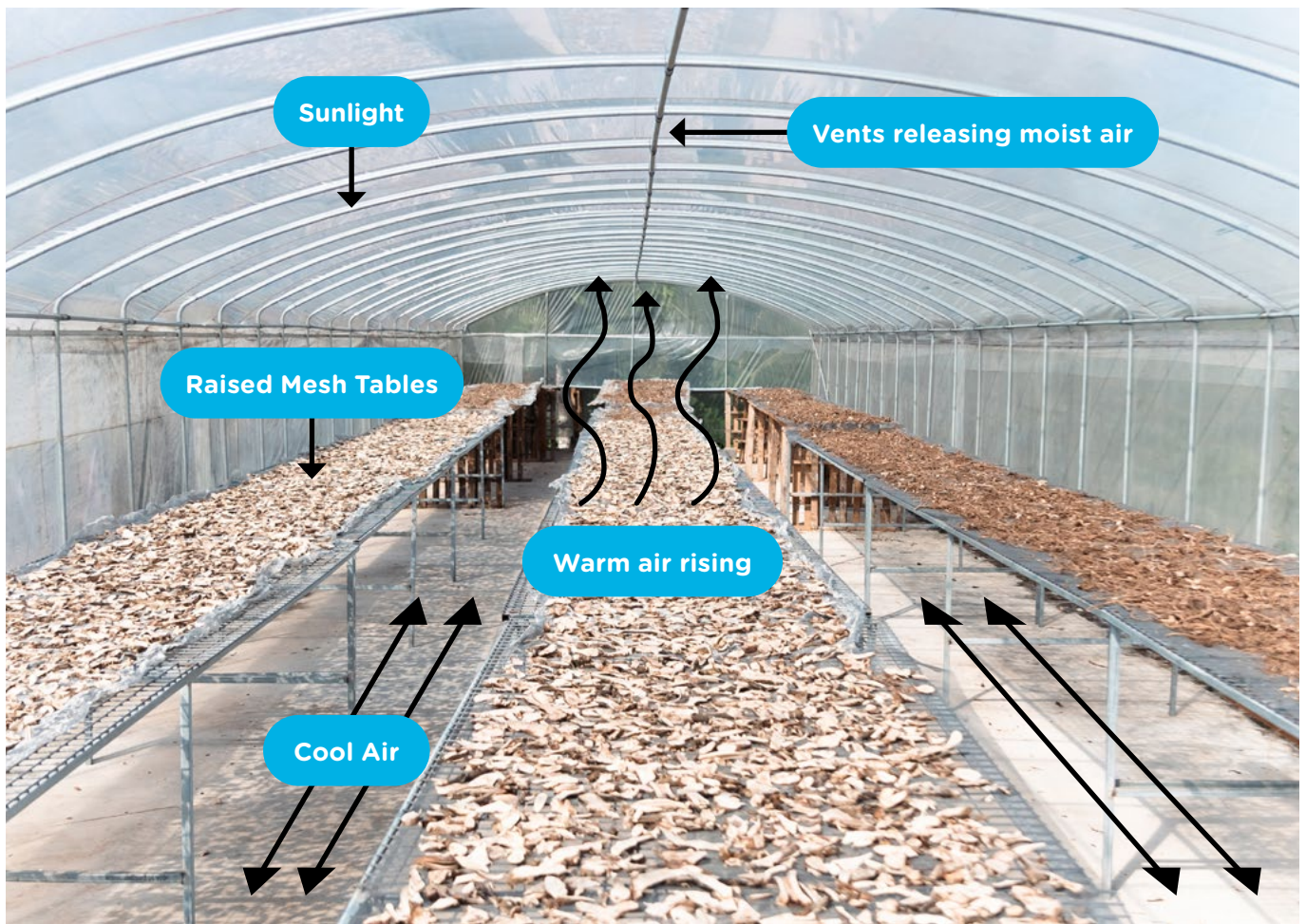
- what solar dryers can do
- how they perform
- what they cost, and
- the key risks to consider when investing.

While the pilot showed strong results, it was largely funded by PHAMA Plus, with partners providing contributions such as labour costs. Real-world performance under commercial loans still needs to be tested. **Farmers are therefore encouraged to consider their own situation carefully and seek advice before making decisions.**

## PHAMA Plus Solar Dryer Pilot on Savai'i

On Savai'i, PHAMA Plus installed tunnel-style solar dryers with five kava farmers to tackle long-standing challenges with traditional open-air drying. Farmers had struggled with slow drying, unpredictable rain, labour-intensive monitoring, contamination from dust and insects, and uneven quality. The pilot showed that a tunnel-style solar dryer can significantly improve the speed, cleanliness and reliability of drying.

Drying time dropped from 4–6 days (and up to 10 days during long wet spells) to just 2–3 days. This faster turnaround increased throughput on the same land area, and the enclosed structure kept the kava clean and protected throughout the drying cycle. Greater reliability also helped farmers meet buyer demand more consistently.



## What is a solar dryer – and how does it work?

A solar dryer is a covered, greenhouse-like structure fitted with raised mesh tables. Sunlight heats the inside of the structure, creating a warm, dry environment. Warm air rises and escapes through vents, pulling in cooler air from below, to remove moisture from the kava.

The enclosed design keeps the product safe from rain, dust, animals and insects, while the airflow helps to achieve even drying. The plastic cover typically lasts 3-5 years with simple upkeep, and the steel structure has a lifespan of 10-15 years with basic maintenance such as cleaning, tightening bolts and checking for wear.

## What difference can it make?

Based on the pilot and the business case:



2-3 days compared with 4-10 days



Quality: Consistent, clean kava



Around 60% less work



2-3 times more drying capacity



Income increases up to 300%



Multi-crop use – cocoa, copra, vanilla

## Farmer story: Tony Tuaiaufai, Neiafu



When kava farmer Tony Tuaiaufai received his solar dryer from PHAMA Plus in April 2024, he saw it as a way to ease the constant pressure of open-air drying. Before then, space was limited to “around the house and on the roof”, and unpredictable rain meant “someone had to stay behind to look after the kava”. He also recalls two accidents where workers slipped from the roof while collecting kava, which left a lasting concern for safety.

Within weeks of using the dryer, the change was clear. Drying time dropped from five days to around three, and the enclosed structure meant the family no longer needed to haul tarpaulins in and out each day. “The dryer has more than doubled my capacity,” Tony says. “Everyone is relieved. Now we just load the kava, close the dryer, and come back to collect.” Cleanliness also improved, with no mould and no risk of chickens or children stepping on the kava.

The new efficiency has reshaped his business. Tony has doubled the number of shops he supplies, and his overall earnings have increased by more than 150% since installing the dryer. The reliability of the system has allowed him to expand steadily, including improving housing on the property and upgrading transport for his operations. “The solar dryer made expansion possible,” he says. “It keeps the work going even when labour is short.”

“

**The dryer has more than doubled my capacity!**

*Tony Tuaiaufai*

”

For Tony, the new dryer has become essential, especially during wet spells when demand stays high but traditional drying slows. Looking ahead, he hopes to install a second dryer to continue growing. “It is the efficiency and the income,” he says. “That is why it has made such a difference for us.”

### Changes with solar dryer

● ● ● ● ● **Before** ● ● ● ● ●

Open-air drying, rain risk,  
safety issues

● ● ● ● ● **After** ● ● ● ● ●

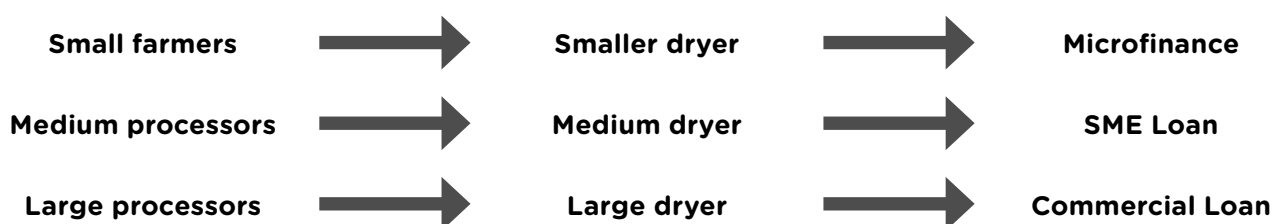
Enclosed dryer, faster drying,  
higher income

## Installed costs and estimated annual revenue (modelled example)

Dryer Size	Installed Cost <sup>*</sup>	Estimated Annual Revenue <sup>†</sup>	Suitable for	Financing Approach	Modelled Payback
5 × 6 m	WST14,300	WST52,000	Small farmers	Microfinance / blended	9 months
10 × 6 m	WST19,700	WST65,000	Small processors	SME credit facility	9 months
15 × 6 m	WST22,045	WST78,000	Medium processors	Commercial bank loan	8.5 months
30 × 6 m	WST34,342	WST130,000	Large processors / export scale	Commercial loan / equity	7.5 months

\* Installed cost prices as at May 2025, including installation, delivery, training, and drying tables.

† Estimated annual revenue figures are modelled projections using real pilot results. Actual earnings will depend on farmers' own supply, labour, management and market access. Farmers should review their own situation and seek independent advice before taking out a loan.



Based on the PHAMA Plus pilot and the business case, a solar dryer can generate reliable income when farmers have steady kava supply and good buyer relationships. The table above shows typical modelled annual revenue at 50% utilisation (half-capacity), which reflects the real conditions observed during the Savai'i pilot.

## Loan repayments

Under commercial loan conditions (14% interest, 3-year term), payback can range from 7 to 9 months depending on dryer size and throughput. These projections are based on grant-funded pilot data.

## Before you invest: key questions to think about:

- Do you have a reliable kava supply throughout the year?
- Can you manage simple maintenance (cleaning, tightening bolts, replacing plastic)?
- Are you comfortable taking a loan and managing cash flow?
- Do you have at least one additional worker?
- Are you prepared for weather risks such as cyclones?

## Risks farmers should know about

### Finance Risk

Not qualifying for a loan or struggling with repayments.

- Start small
- Build production records,
- Strengthen buyer relationships.

### Weather and cyclone risk

Cyclones may damage the structure or the plastic cover.

- Install proper ground anchors,
- Learn storm procedures
- Seek insurance options if available.



### Labour shortages

Many villages experience labour shortages.

- Plan operations around reliable labour
- Use the dryer's efficiency to reduce workload.

### Pests and disease

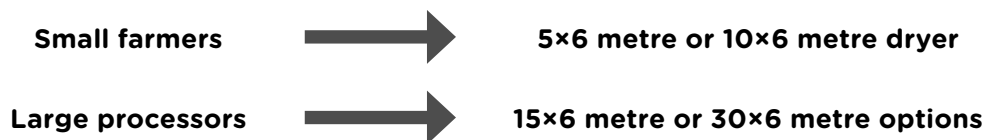
If kava crops are affected, the dryer may sit idle.

- Follow agricultural advice and diversify crops where possible.

## Recommendations for farmers and processors

### Choose the right solar dryer

All dryer sizes can make good returns, but the right one depends on how much kava you can supply and the markets you sell to.



You don't need everything at once. Following the step-by-step approach below helps manage loans and reduce cash-flow pressure.



## Focus on quality

Good, clean, evenly dried kava earns better prices and keeps buyers returning. Simple habits and practices can make a difference:



## Use the dryer for more than kava

You can dry koko, copra, vanilla and other crops when kava is slow. This helps keep income steady throughout the year and reduces reliance on one crop.

### Multi-Crop Use



Cocoa



Kava



Copra



Vanilla

One dryer, many crops, year-round income.

## Build strong buyer relationships

Consistent buyers make it easier to plan, earn and repay loans.



Stay in touch with buyers



Meet quality standards



Consistent buyers



Predictable sales and income



Easier loan repayment



Join farmer networks  
Learn and connect

For more information about financing options, contact:

Samoa Business Hub  
Sanalele Complex, Apia  
Tel +685 22770  
Email [info@samoabusinesshub.ws](mailto:info@samoabusinesshub.ws)  
Web [www.samoabusinesshub.ws](http://www.samoabusinesshub.ws)



# FALE E FA'AAOGĀ AI LE MALOSIAGA O LE LĀ E FA'AMAMAGOINA AI LE 'AVA I SAMOA



O le pepa o fa'amaumauga moni lenei o le polokalame a le PHAMA Plus e faatatau i faamatalaga e fa'apisinisi ai le fa'aogaina o fale e fa'amamago ai le ava, faatasi ai ma taunu'uga na maua mai e ala i fa'ataitaiga o le lelei ma le atoatoa o nei fale mo le fa'amamagoina o oloa tau fa'atoaga o lo o i Savaii. Ua iai le fa'amoemoe e faaogaina e le auaifaifa'atoaga ma tagata gaosi oloa ta'itoatasi uma ina ia malamalama lelei i vaega nei:

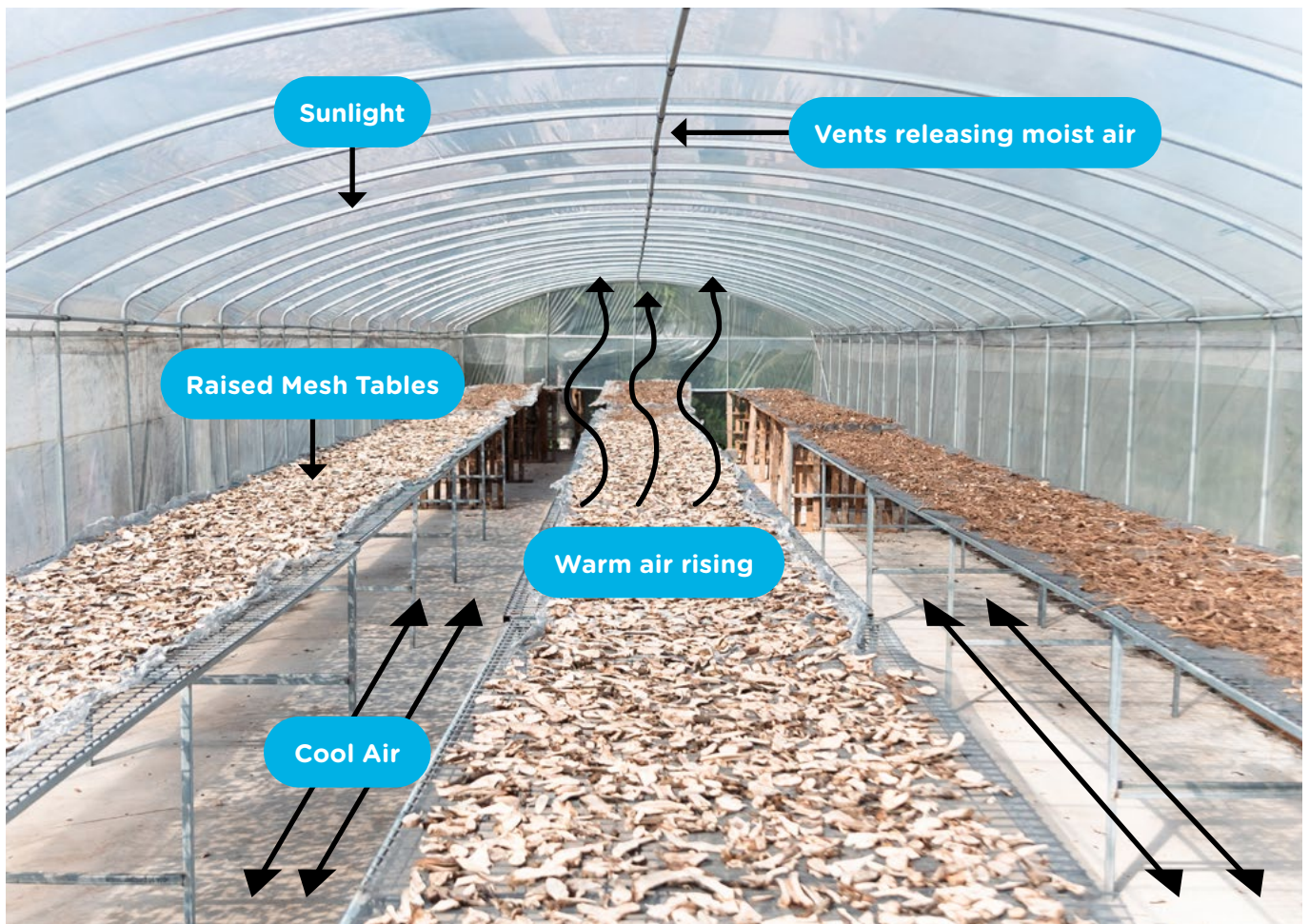
- i gaoioiga e mafai ona fa'aogaina ai fale faala nei
- o le latou fa'agaoioiga
- o tau e fa'atauina mai ai, ma
- tulaga tāua e ao ona silafia i luitau pe a fuafua e faatau se fale faala

E ui i taunu'uga lelei o lenei taumafaiga, ia manatua na fa'atupeina atoa e le PHAMA Plus le tau o le fale, ae gafa ana pa'aga sa lagolagosua ma le totogiina o tagata faigaluega. O le faaogaina ma le faagaioioiga o le fale faala pe a fa'atau mai i se nonoga tupe, e moomia ona iloilo lelei. **O le itu lenei e fa'amalosia ai le auaifaifa'atoaga ina ia toe silasila ma le toto'a i le tulaga o a latou pisinisi, ma fa'apea ona saili le tofā ma le faufautua a'o lei faatinoina se faaiuga e faatau se fale faala.**

## Fa'ata'ita'iga o Fale Fa'amamago a le PHAMA Plus mo le 'ava i Savai'i

Ua maea ona fa'apipi'iina e le Phama Plus i Savaii fale fa'amamago (tunnel-style solar dryers) mo nisi o le aufai fa'atoaga e to'alima e fesoasoani e foia luitau e feagai ma i latou e pei o le fa'alalāina i fafo e ala i faiga masani. O fa'afitauli masani o le tuai ona mamago, timuga fa'afuasei, alu le taimi o le au faigaluega e va'ava'aia i le taimi e faala ai, fa'aleagaina e le pefu ma iniseti fa'alāfuā, fa'apea foi ma le leaga o le tulaga lelei o ava. Na fa'aalia mai i lenei fa'ataitaiga le mafai e fale fa'amamago lea o le 'e fausia pei o se ana' ona si'itia ma fa'aleleia le vave, o le mamā ma le fa'atuatuaina o le fa'amamagoina o le ava.

Na fa'aitiitia mai le 6-4 aso e fa'amamagoina ai le ava (e o'o atu i le 10 aso o fa'auau pea i vaitaimi o timuga), i le na o le 2-3 aso. O le si'itia ai o le vave o le fa'atinoga o galuega i taimi pupu'u e fale faamago, na si'itia ai ma 'ava e mafai ona faala i le fasi fanua laititi, aemaise ai le puipuia lelei mai vaega e ono faalegaina ai le tulaga mama. O le fa'atuatuaina lelei o lenei fa'agaoioiga na fesoasoani tele i le aufai fa'atoaga e vave tali atu ai i manaoga faavavevave o pisinisi ma le au faatau.



## O le ā lea fale fa'amago — e fa'apefea ona fa'agaai?

O fale fa'amago, o ni fale e fausia i paipa u'amea ae ufiufi atoa i pepa iila, o fausaga o fale e fa'afaille ai la'au totō, fa'atasi ai ma laulau e tu'u i totonu aua le fa'amamagoina o fua o fa'aeleleaga. O le susulu o le la e mafai ona fa'amafanafana ma vevela ai totonu o le si'omaga atoa o lea nofoaga. E manu a'e i luga le ea ma sao atu i fafo e ala i avanoa pūiti, ma fa'apea ona mafai ai ona ofi mai i totonu le ea malū mai lalo ifo e ave'eseina ai le susū mai le ava ma fa'amamago ai.

O le puipuia atoa ai o lenei nofoaga o leā mafai ona saogalemū ai oloa gaosi mai le timu, o le pefu, meaola ma iniseti fa'alafuā, a'o fa'aaauai ai pea ona sao mai le ea i totonu ma fesoasoani ai i le fa'amamagoina. O pepa iila o lo'o ufiufi ai o le umi o le taimi e aogā ai e 3-5 tausaga, pe ā tausia lelei, ma o le fausaga u'amea foi o lona umi e 10-15 tausaga, peā tausia lelei e pei o le fa'amamāina, lokamau ma siaki ni fa'aletonu.

## O leā le Ese'esega pe a faaoga?

E fa'avae i luga o fa'aiuga o fa'ata'ita'iga sa faia:



2-3 days compared with 4-10 days



Quality: Consistent, clean kava



Around 60% less work



2-3 times more drying capacity



Income increases up to 300%



Multi-crop use – cocoa, copra, vanilla

## Farmer story: Tony Tuaiaufai, Neiafu



Ina ua taulimaina e Tony Tuaiaufa'i o se tasi o faifa'atoaga le fale e fa'amamago ai le ava mai le PHAMA Plus ia Aperila 2024, na ia molimauina ai le fa'amamā avega ma ua foia ai le tele o fa'afitauli sa masani ona feagai mai i latou i le fa'amamagoina o le ava i fafo. A'o le'i mauaina le fesoasoani, "e lē lava ma utiuti le avanoa i fafo o lona fale fa'apea ma le tualuga". E le gata i lea, e lē taupuleina e se tasi o taimi e timuga ai ma iai le manatu "e tatau ona iai le tagata e nofo e va'ava'aia le fa'alalāina o le ava". Sa ia toe tomanatu i se fa'alavelave na tula'i mai muamua na pauū ai ni tagata faigaluega mai le tualuga o lona fale a'o aoina le ava, ua mafua ai ona iai lona atugaluga ma ave le fa'amuumua i le tulaga saogalemū o le aufaigaluega.

I le fa'agasologa ai o vaiaso o fa'aaogāina nei fale fa'amamago, na manino le telē o le suiga. Ua fa'aititia le taimi e fa'amamago ai le ava mai le lima aso i le tolu, ma o le iai o le nofoaga ua puipuimalu mo ava o lona uiga, ua le toe mana'omia e le aiga ni tapoleni e fa'alalā ai i fafo ma toe aoina mai i totonu peā timu i aso ta'itasi. Na fa'aalia e Tony, "ua sili atu ma fa'aluaaina le fa'atinoga e le fale o galuega sa

masani ona ou tauaveina". Ua mapu ma malolō tagata uma. "O le taimi nei na'o le fu'e lava o le ava i totonu, tapuni le fale ma fa'atali le taimi e toe aumai ai i fafo." Ua fa'aleleia foi le tulaga o le mamā e aunoa ma le faafitauli o le pologā pe a susū, faapea foi moa e ta'aloa, po'o tamaiti e solia le ava.

O le fa'amamā avega fou leni ua toe fa'aleleia atili ai lona pisinisi. Ua faaluaina nei faleoloa ua fa'atau atu ai le ava a Tony ma ua fa'apea foi ona fa'atupulaia ana tupe maua e ova ma le 150%, talu ona fa'apipi'i ma fa'aaogā le fale fa'amamago. O le fa'atuatuaaina o le fa'aaogāina o nei fale ua mafai ai ona fa'atupulaia ma si'itia le tulaga o lona pisinisi, e aofia ai le fa'aleleia o fale mo lona aiga fa'atasi ai ma auala tau fela'uaiga mo ana galuega.

Na tā'ua e Tony, "o le fa'aaogāina ai o fale fa'amamago ua gafataulimaina ai le fa'atupula'ia ma telē atu lona pisinisi". "Ua fa'aaauu pea ona faatino le galuega e ui ina utiuti le aufaigaluega."

“

**The dryer has more than doubled my capacity!**

*Tony Tuaiaufai*

”

Mo Tony lava ia, o le ūmia ai o le fale fa'amamago e matuā taua ma mana'omia tele, aemaise lava i vaitaimi o timuga peā manaomia tele le ava. I le lumanai, e iai lona fa'amoemoe e toe fa'apipi'i ma maua se isi fale fa'amago fou e ūna'ia atili ai le pisinisi. E iai lona manatu e "Lelei fa'atino ai ma telē le tupe maua." "O le mafuaaga lena ua telē ai le suiga ma fa'amanuiga mo i matou."

### Changes with solar dryer

● ● ● ● ● **Before** ● ● ● ● ●

Open-air drying, rain risk,  
safety issues

● ● ● ● ● **After** ● ● ● ● ●

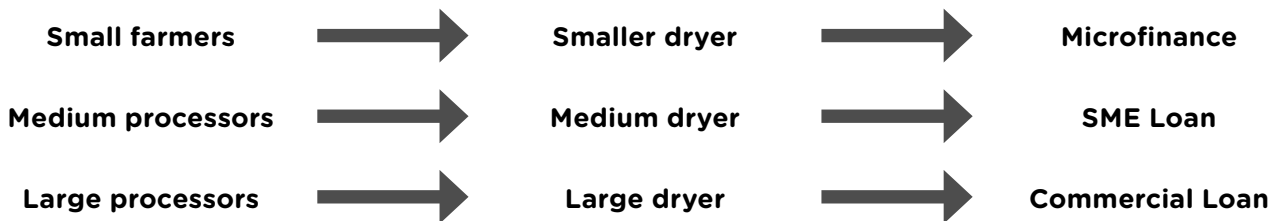
Enclosed dryer, faster drying,  
higher income

# Tau fa'atulaga ma le fua fa'atatau o tupe maua fa'ale-tausaga (fa'ata'ita'iga fa'atulagaina)

Telē o le Fale	Tau Fa'atulagaina *	Fua fa'atatau o Tupe maua Fa'ale-tausaga†	Talafeagai Mo	Fuafuaga Tau le Fa'atupeina	Fa'atulagaina o le Toe Totogiina
5 × 6 m	WST14,300	WST52,000	Aufai fa'atoaga tūmaoti	Nogatupe mo pisinisi laititi ma isi	9 masina
10 × 6 m	WST19,700	WST65,000	Faifaatoaga laiti	Nogatupe mo pisinisi laiti/ feololo	9 masina
15 × 6 m	WST22,045	WST78,000	Fai fa'atoaga fa'aleogalua	Fa'aunegatupe mai faletupe faa-pisinisi	8.5 masina
30 × 6 m	WST34,342	WST130,000	Fua fa'atatau o oloa auina atu i fafo/ a le aufai fa'atoaga e tele le ava	Fa'aunegatupe fa'apisinisi / tulaga tutusa	7.5 masina

\* Tau o oloa fa'atulagaina ia Me 2025, e aofia ai le fa'apipi'iina, fa'ao'oina atu, a'oa'oga ma laulau e fa'amamago ai.

† Aofai o Tupe Maua Fa'atatauina Faale-tausaga ua fuafuaina e ala i le fa'aaogāina o taunuuga moni mai faataitaiga. O tupe Maua moni o lea fa'alagolago i oloa faatau mai a le faifa'atoaga lava ia, leipa, fa'afoega ma avanoa i maketi. E tatau i le aufaifaatoaga ona lloilo le tulaga o iai lana pisinisi ma talosaga ni fautuaga tutoatasi a'o le'i faia se nogatupe.



E fa'avae i luga o le fa'ata'ita'iga sa faatupe e le PHAMA Plus ma fuafuaga tau pisinisi, e mafai e le fale faamamago ona maua ai tupe mamā peā sologa lelei le ava fa'atasi ma le iai o so'otaga lelei ma le aufaipisinisi e fa'atauina le ava. O lo'o fa'ailoa i le fua fa'asolo ua tā'ua i luga se fa'ata'ita'iga o tupe maua i le tausaga, tusa pe na o le 50% o le fale e fa'aoga (e afa le mauuluga o le tulaga gafataulimaina), o le tulaga moni na matauina a'o fa'agasolo le fa'ata'ita'iga i Savaii.

## Totogiina o Nōgatupe

I lalo o aiaiga o nōgatupe fa'apisinisi, (e 14% le tului i vaitaimi tai 3-tausaga), o le toe totogiina e mafai ona fa'atulaga mai le 7 i le 9 masina e fa'alagolago i le telē o le fale fa'amamago ma ava e ofi ma tu'uina i totonu.

## A'o le'i faia se faaiuga e faatau se fale faamago: o fesili taua nei e ao ona e mafaufau loloto iai:

- E lava le toga ava mo le tausaga atoa?
- E mafai ona e tausia i le tulaga e pei ona masani ai (faamamā, toe suia ma fa'afou le pepa iila o loo ufiufi ai pe a moomia)?
- E te mana'o e fai sau nogatupe ma agavaa e fa'afoe le fa'asoasoina lelei o tupe o le pisinisi?
- E iai se isi tagata e fesoasoani ia te oe?
- O saunia oe mo lamatiaga tau le suiga o le tau e pei o matagi malolosi ma afā?

# O tulaga e tatau ona nofouta iai le aufaifa'atoaga Fautuaga mo

## Lamatiaga Tau Tupe

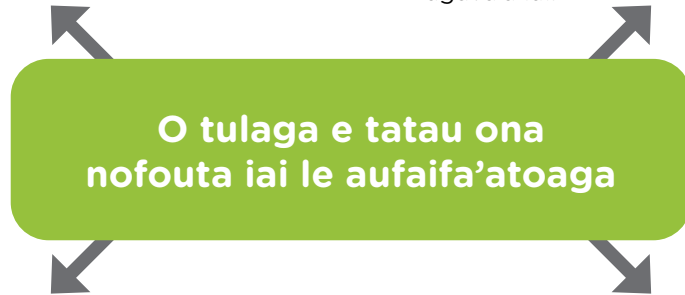
E lē o agava'a mo se nogatupe pe o lo'o mafatia foi i le tau totogiina o le nogatupe.

- Tau amata malie i se pisinisi laitiiti
- la tapena fa'amaumauga i le gaosiga o le oloa,
- la ūnaia ma fa'amalosi so'otaga ma le aufaipisinisi.

## Lamatiaga o Suiga o le Tau ma Matagi Malolosi

E ono mafai ona fa'atamaia e matagi malolosi le nofoaga ua saunia po'o le pepa iila o lo'o ufiufi ai.

- la fa'apipi'i ni taofi mautū
- la iloa lelei mea e tulai mai peā afā
- la saili ma filifili le faia o inisiua peā o avanoa ma agava'a iai.



## Utiuti o le Aufaigaluega

O lo'o feagai le tele o afio'aga ma le fa'afitauli o le utiuti o le aufaigaluega.

- la fuafua tatau galuega i tagata faigaluega fa'atuatuaina
- la fa'aaogā le masini e fa'atinoina le tele o le galuega.

## Manu Fa'alafuā ma Fa'amai

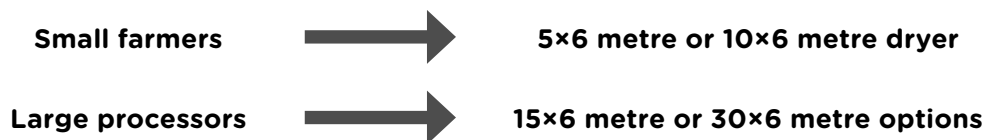
Afai ae a'afia le ava, o lea fa'apea foi ona le fa'aaogāina ma fa'agaoioia masini.

- la mulimulitaia fautuaga tau fa'atoaga ma galue'ina isi fua o faaeleeleaga, pei o le koko ma le popo.

# le Aufaifa'atoaga ma tagata gaosi oloa

## Ia filifili lelei le telē o le fale fa'amago sa'o

E tele tupe e maua pea fa'aaogā so'o se ituaiga o fale fa'amago tusa lava po'o leā le telē, peitai o le fale aupito leleli e fa'alagolago i le tele o ava e mafai ona e fa'atauina atu aemaise o maketi e fa'atau atu iai.



E te lē manaomia mea uma nei i le taimi lava lea. O le mulimulita'ia o la'asaga taitasi ua taua i lalo o leā fesoasoani malosia e fa'afoe nogatupe ma fa'aitiitia ai to'atuga tau tupe fetafea'i.



## la faamautinoa le tulaga lelei ato'a toa

E tele atu tupe maua mai ava ua mamago lelei atoatoa ma mamā, e atili faamausali ai le mo'omia e tagata faipsinisi ma toe fo'i mai. O gaoiga laiti e mafai ona faia ni suiga tetele ma lelei.



## la fa'aaogā le fale faamago mo isi fua o fa'aeleeleaga

E mafai foi ona fa'amamago ai koko, popo, vanilla ma isi fua o fa'atoaga peā tuai ona matua le ava. O lenei faiga o leā fesoasoani malosi mo tupe maua a'o fa'agasolo le tausaga ma tu'uititia ai le fa'alagolago malosi i le na'o le tasi le fua o fa'atoaga.

### Multi-Crop Use



Cocoa



Kava



Copra



Vanilla

One dryer, many crops, year-round income.

## la fa'aleleia so'otaga ma Tagata e Fa'atauina le Ava

A mautinoa tagata faatau, e faigofie ona faataatitia fuafuaga aua tupe maua, ma toe totogi ai nogatupe.



Stay in touch with buyers



Meet quality standards



Consistent buyers



Predictable sales and income



Easier loan repayment



Join farmer networks  
Learn and connect

Mo ni isi fa'amatalaga e uiga i lau filifiliga mo le fa'atupeina, ia fa'afesota'i le:

Samoa Business Hub  
Sanalele Complex, Apia  
Tel +685 22770  
Email [info@samoabusinesshub.ws](mailto:info@samoabusinesshub.ws)  
Web [www.samoabusinesshub.ws](http://www.samoabusinesshub.ws)

# SOLAR DRYERS FOR KAVA PROCESSING IN SAMOA

This factsheet summarises the financial and operational performance of tunnel-style solar dryers for kava processing in Samoa. It is designed to inform banks, microfinance institutions and development partners considering lending products, guarantee schemes, or investment support for agricultural processing equipment.

The analysis draws on the PHAMA Plus business case and the Savai'i solar dryer pilot. The pilot was 100% grant-funded. All financial performance, cash flow and debt-service figures are modelled projections and require validation through real-world financed deployments. Lenders and development partners should treat these as indicative.

A full business case report is available on the Samoa Business Hub and PHAMA Plus websites.

**PHAMA PLUS:** <https://shorturl.at/232Gr>

## Background: A proven technology under grant conditions

PHAMA Plus introduced tunnel-style solar dryers to five kava farmers on Savai'i to address long-standing bottlenecks in drying and product quality. The dryers reduced drying time from 4–6 days (up to 10 in wet season) to 2–3 days, lowered labour requirements by around 60%, improved product cleanliness, and increased throughput by 2–3 times. It has demonstrated significant socio-economic benefit for participating farmers, and uptake of the technology is encouraged for other farmers.

## Financial performance—modelled under commercial lending conditions

Dryer Size	Installed Cost*	Estimated Annual Revenue†	Suitable for	Recommended Financing Approach	Modelled Payback
5 × 6 m	WST14,300	WST52,000 (41% EBITDA margin <sup>1</sup> )	Small farmers	Microfinance/ blended	9 months
10 × 6 m	WST19,700	WST65,000 (43% EBITDA margin)	Small processors	SME credit facility	9 months
15 × 6 m	WST22,045	WST78,000 (46% EBITDA margin)	Medium processors	Commercial bank loan	8.5 months
30 × 6 m	WST34,342	WST130,000 (51% EBITDA margin)	Large processors/ export scale	Commercial loan/ equity	7.5 months

\* Installed cost prices as at May 2025, including installation, delivery, training and drying tables.

† Estimated annual revenue figures are modelled projections using real pilot results. Actual earnings will depend on supply, labour, management and market access.

<sup>1</sup> EBITDA (earnings before interest, taxes, depreciation and amortisation) margin is a measure of operating profit as a percentage of revenue; it is a useful way of comparing the operational efficiency of different companies or options.

Based on the PHAMA Plus pilot and the business case, a solar dryer can generate reliable income when you have steady kava supply and good buyer relationships. The table above shows typical modelled annual revenue at 50% utilisation (half-capacity), which reflects the real conditions observed during the Savai'i pilot. Drying of other crops such as cocoa, copra and vanilla can be considered for when supply of kava is lower, reducing reliance on one crop, keeping income steady throughout the year and strengthening return on investment.

## Loan repayments

Under commercial loan conditions (14% interest, 3-year term), payback can range from 7 to 9 months depending on dryer size and throughput. These projections are based on grant-funded pilot data. Key findings:

- Debt service coverage ratios: 1.98x–2.52x
- Payback: 7.5–9 months
- Internal rates of return: 28–36%

## Recommendations for lenders and development partners

Solar dryers show strong modelled financial performance, but actual borrower repayment behaviour under debt remains untested. These projections need real-world testing under actual loan conditions. Lenders should interpret findings as evidence of potential, and support sequenced, de-risked commercial trials.

Lenders are encouraged to develop tailored loan products in the WST14,000–35,000 range, with 3–5 year terms, seasonal repayment flexibility, appropriate collateral requirements, and short grace periods for installation and ramp-up.

A phased portfolio approach is recommended: begin with 10–20 loans to experienced operators, diversify across locations and dryer sizes, and monitor performance closely in the first year. Risk can be reduced through guarantee schemes such as Samoa Business Hub and concessional facilities from the Development Bank of Samoa.

Borrower capacity building is essential. Pre-loan training, business planning templates, seasonal cash flow tools, and ongoing technical support help strengthen financial management and reduce the risk of default.

