



The Democratic Republic of Timor-Leste
Ministry of Agriculture and Fisheries



Timor-Leste National Seed System

Providing the farming families of Timor-Leste with secure access to quality seed

Contents

Summary	1
About the National Seed System	4
Yield advantages of varieties	5
Varieties released in 2016.....	6
Objective of the National Seed System.....	7
Components of the seed system	8
Crop identification and development	10
Source seed and quality control	12
Commercial seed	14
Community seed	18
National Seed System management	20

Cover image: Members of the all-women contract grower group in Natarbora with packets of their certified Noi Mutin maize seed (Photo: Jessy Betty). Below: Francisca in her Ai-Luka 2 production plots in Maliana (Photo: Felixberto Ximenes).

***“The good yield from
MAF released varieties
provided enough
food for my family
and contributed to my
family’s income”***

*Francisca Magdalena Pinto,
member of CSP Unidade
Sameklot in Maliana*



Summary

The National Seed System provides the farming families of Timor-Leste with secure access to quality seed of productive varieties of food crops

Quality planting materials of proven food crop varieties are available to farming families at *suco* and *aldeia* level at planting time

Farming families avoid poor quality seed and varieties not suited to growing conditions in Timor-Leste

The Timor-Leste Government saves money by not having to buy, store and distribute costly imported seed

Secure access to local quality seeds of more productive varieties enables Timor-Leste's farming families to grow enough to eat and extra to sell

The Ministry of Agriculture and Fisheries (MAF) through the Seeds of Life (SoL) program worked for more than 15 years to increase food production in Timor-Leste by researching and releasing improved varieties of staple crops (maize, rice, cassava, sweet potato and peanut) and legumes (kidney beans and mung beans).

Up to the end of SoL mid-2016 the 19 varieties released had 24-131% higher yields than commonly used local food crop varieties. These varieties are adapted to local conditions and can be saved for replanting the next season to again produce more food. These varieties not only produce more, they give farmers more choice over the types of crops they grow to eat or sell and help increase biodiversity in Timor-Leste.

To ensure farmers can readily access good planting materials of these varieties MAF and its development partners established the National Seed System (NSS) so that sufficient quantities of high quality planting materials are produced each year by each Municipal Seed System (MSS) and made available to farming families in every municipality, *suco* and *aldeia* so they have reliable access to good seed at planting time.

The objective of the NSS and each MSS is to ensure enough seed of improved varieties is locally produced each year to meet about one-third of total national seed requirement, therein enabling the Government of Timor-Leste to achieve its objectives of national seed security and national seed sovereignty.

Above: Martinha da Costa Boavida, chief of *Moris Foun* community seed production group in Baucau shows some of her group's Hohrae 1 sweet potato cuttings (Photo: Alexia Skok)

Servicing farmers with secure access to good seed of improved varieties is the result of all components of the National Seed System working together

- 1 Crop identification & development**
MAF Research Department identifies, selects and develops superior food crop varieties for official release after extensive testing on research stations and in on-farm demonstration trials with farmers.
- 2 Source seed and quality control**
MAF contract seed growers (CSG) use foundation seed from Research to produce seed under strict supervision by MAF Seed Department which buys and processes as high quality certified seed.
- 3 Commercial and community seed**
Commercial seed producers (CSP) use MAF certified seed to produce quantities of commercial seed under strict Guidelines and MAF supervision. Community seed production groups (CSPG) produce community seed for their own and neighbours to use.
- 4 Seed system management**
The National Seed Council (NSC) assists the Ministry, its Seed Department and each MAF Municipal Office to implement the National Seed Policy (NSP), monitor annual seed demand/supply and set annual certified and commercial seed production targets.

Productive varieties = more food for farmers

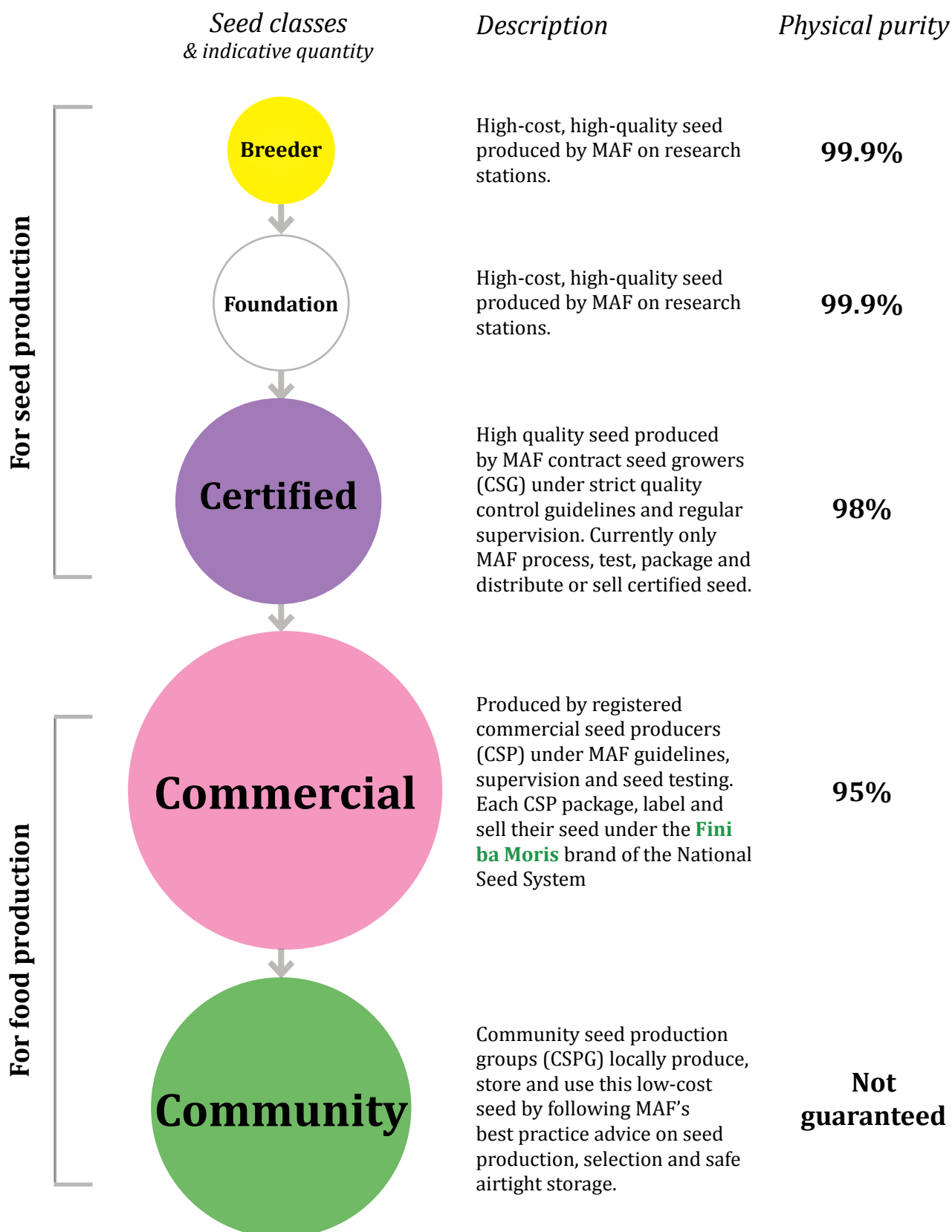
The improved varieties are:

- 1. Superior** in some way, be it higher-yielding, more nutritious, tasty or more resistant to wind, drought or disease
- 2. Public domain** so farmers will never have to pay for using them
- 3. Rigorously tested** for at least five cropping seasons on research stations and farmers' fields to ensure they are adapted to local conditions and traditional farming practices
- 4. Productive in and of themselves.** No extra inputs such as fertilizer or other expensive inputs are required to get good results
- 5. Pure line or open-pollinated varieties,** none of which are hybrid or genetically modified. Farmers can save and replant seeds each year.

Right: A farmer displays some of their Utamua peanut harvest. Utamua has a 47% yield advantage over other peanut varieties (Photo: Conor Ashleigh)



For the benefits of the improved varieties to reach farmers, enough seed must be produced for commercial and community spread. The figure below shows how this is done by multiplying seed from class to class. The circles represent the quantity of seed for each class.



About the National Seed System

The National Seed System has been established to provide the farming families of Timor-Leste with secure access to good, locally-produced seed and planting materials. These are available in *sucos* and *aldeias** at planting time, thereby improving local seed security and food security.



The National Seed System (NSS) operates according to the National Seed Policy and was collaboratively developed by the Ministry of Agriculture & Fisheries and NSS stakeholders.

Nineteen varieties of maize, rice, sweet potato, cassava, peanut, mung bean and kidney bean have been released to date, all after rigorous testing. These high-yielding varieties produce substantial on-farm benefits and help increase biodiversity in Timor-Leste. Research continues on stations and farms to identify new and/or preferred local varieties for future release.

By improving access to these improved varieties at aldeia and suco-level, farming families can avoid having to use poor quality seed or varieties less suited to growing conditions in Timor-Leste. Instead, they benefit from using varieties that are higher yielding, more nutritious and better adapted to local conditions, thereby reducing their risk of suffering serious food shortage.

To meet this seed demand, MAF works with Timorese farmers to produce good seed locally. By purchasing local commercial seed the Timor-Leste Government can save money by not having to buy,

store and distribute imported seed. Local seed purchases by MAF and local commercial input suppliers returns much-needed cash to Timorese farmers and provides new business opportunities for the emerging commercial agriculture sector.

A National Seed Council (NSC) composed of stakeholder representatives advises and assists the Ministry to oversee implementation of the NSP and NSS, the development of Seed Regulations and a relevant and comprehensive Timor-Leste National Seed Law.

Ultimately, the National Seed System will help the Timor-Leste Government achieve national seed security and seed sovereignty and enable farmers to grow more food and move beyond subsistence into commercial agriculture.

* In the Tetum language *suco* means village and *aldeia* means hamlet

Above: These farming family members from Maliana, Bobonaro district, are happy to be growing Sele maize (Photo: Alexia Skok)

Yield advantages of varieties

The 12 varieties initially released by the Ministry following extensive testing have the yield advantages over other varieties listed below.

On average farmers estimate a 57% yield increase using improved varieties compared to other varieties

Utamua
peanut

47%

Large peanuts, stable growing capabilities, tolerant to late leaf blight



Nakroma
rice

24%

Excellent eating rice, semi-fragrant

Hohrae 1
sweet potato

102%

White flesh, moist texture, can be grown at all elevations, sells for a good price



Hohrae 2
sweet potato

91%

Cream flesh, crumbly texture, a good breakfast sweet potato, tasty young leaves

Hohrae 3
sweet potato

131%

Orange flesh, moist texture, very high in vitamin A, sells for a good price



Ai-Luka 1
cassava

43%

Non-fibrous tasty roots, bitter variety, good for industrial use

Ai-Luka 2
cassava

46%

Non-fibrous tasty roots, excellent eating variety



Ai-Luka 4
cassava

15%

Non-fibrous tasty roots, slightly bitter

Sele
maize

50%

Yellow maize, sweet when picked early, resistant to strong winds and drought, requires airtight storage



Noi Mutin
maize

46%

White maize, suitable for all areas, good cooking & eating qualities, requires airtight storage

Suwan 5
maize

54%

Yellow maize, requires airtight storage



Nai
maize

50%

Yellow maize, requires airtight storage

Varieties released in 2016

Fleixa - RW
kidney bean

54%

Purple seed, adds good colour to rice when cooked together



Ululefa - RW
kidney bean

73%

Pink seed, can harvest more than three times



Darasula - CIP
sweet potato

119%

Red skin, orange flesh, very high in Vitamin A, four months to harvest



Sia - LT
sweet potato

110%

Purple skin, purple flesh, contains antioxidants, four months to harvest



Kiukae - AV
mung bean

30%

Shiny green seed coat, harvest once



Lakateu - AV
mung bean

29%

Dull green seed coat, potential for second harvest



Nakroma 1
rice

27%

White, aromatic, earlier to mature than the other Nakroma



Below: Minister Estanislau Aleixo da Silva introducing a new variety of rice with Australian Ambassador Peter Doyle (Photo: Felixberto Ximenes)



Objective of the National Seed System



The objective of the National Seed System is to ensure sufficient good seed of improved varieties is produced each year to meet 33% of total national seed requirement.

This 'one-third rule' for the amount of improved varieties in a seed system ensures seed supply and crop biodiversity is maintained across all agro-ecological zones. The balance (60-70%) of the seed farmers sow each year comes from the traditional seed system including farmers' own stocks, the village market or barter and exchange with friends and relatives. The NSS exist alongside the traditional seed system which is also being strengthened by selected pilot communities being assisted to identify preferred local food crops varieties and establish community seed banks so farm families have additional seed options and more diversified diets.

Research on new varieties will continue to enable more marketable introduced and local varieties to be evaluated and included in the NSS so farmers have secure access to a diverse range of quality seeds and crop biodiversity is maintained in Timor-Leste.

Farmers across the country can access good planting materials and seeds of improved varieties from capable and well-trained community seed production groups (CSPG) and competent, registered commercial seed producers (CSP) as well as commercial seed distributors in the form of agriculture lojas and kiosks. Seed production in each municipality is coordinated by the municipal seed team in each of MAF's 13 municipal offices to ensure there is a seed balance at the municipal level and equitable distribution of seed to farmers.

ANAPROFIKO, a national association representing all CSP, collaborates with MAF to ensure its members produce more than sufficient commercial seed to meet MAF's annual seed requirements with the balance available for sale to agriculture lojas in municipal towns, to NGOs and to other development partners for use in their various projects.

As MAF increasingly reduces its handouts of free seed the commercial sector is being encouraged to expand commercial seed distribution.

Above: Members of the *Lacabasi* commercial seed producer group at work in Meligo, Bobonaro district (Photo: Alexia Skok)

Components of the seed system

1

Crop identification and development

Maize, rice, peanut, sweet potato, kidney bean, mung bean and cassava

Research continues to identify productive varieties of new legume and staple crops. These activities are undertaken at:

6 research sites representing all the agro-ecological zones of Timor-Leste (Betano in Manufahi, Loes in Liquica, Darasula in Baucau, Quintal Portugal in Aileu, Urulefa in Maubisse and in Manatuto).

Over 500 farms where farmers grow improved varieties in on-farm demonstration trials (OFDTs) to see how the crops perform under local farmer practices and the range of soils, weather conditions, slopes and aspects that occur in Timor-Leste.

Below: A farmer in Maliana shows some of his Utamua peanut harvest (Photo: Alexia Skok)

2

Source seed and quality control

Small amounts of high-cost breeder, foundation and certified seed are produced under highly- controlled conditions to ensure the physical purity of each variety is maintained by:

Pure Seed Officers producing high quality foundation and breeder seed at MAF research centres.

MAF contract seed growers producing quality certified seed under very close supervision by staff of MAF Seed Department who process (dry, clean, test, package) and safely store the certified seed.

6 seed warehouses located in Aileu, Baucau, Betano, Loes, Maliana and Viqueque, including 3 well-equipped purpose-built facilities (in Baucau, Betano and Maliana) used by MAF Seed Department for processing and storing certified seed.

Seed Analysts using two regional seed laboratories at Betano and Triloka and a national seed laboratory at MAF Comoro to maintain quality assurance of all breeder, foundation, certified and commercial seed produced under the NSS.



3

Community & commercial seed production

Seed of maize, rice, peanut and other food crops

Large quantities of low-cost good quality commercial and community seed are produced locally in all municipalities for use by farming families. This is achieved by the activities of:

69 registered commercial seed producers.

In the 2015-16 cropping season these 69 commercial seed producers (CSP) were authorized to produce 300 metric ton (Mt) of commercial seed. Composed of 1,840 members (35% women) all CSP across the country are coordinated by ANAPROFIKO, the national association of commercial seed producers.

All commercial seed must be produced, processed and packaged in accordance with strict guidelines set by the National Seed Council. These include MAF Seed Department sampling the seed and laboratory testing it for physical purity, germination and moisture content before it can be packaged, labelled and sold as commercial seed under **Fini ba Moris** brand of quality-assurance.

>1,200 community seed production groups.

These CSPG (about 3/suco) involve about 14,000 members (30% women). They produced about 200 Mt of community seed in the 2014-15 season.

Sweet potato and cassava

23 sweet potato cuttings production centres.

Run by local farmer groups these have been established in all municipalities to enable farmers to locally-access quality cuttings of improved varieties.

11 cassava cuttings production centres

of improved cassava varieties have been established in 8 municipalities.

4

Seed system management

The National Seed Council (NSC) assists MAF to manage and implement the National Seed System (NSS) and the National Seed Policy (NSP).

The NSC is composed of representatives of all NSS stakeholders including seed users/CSPG/ farmers, CSP (through the national association, ANAPROFIKO), NGOs working in agriculture, *loja agricultura* (through the national association, ANSA), commercial foods & feeds processors, the academe and religious sectors. The NSC has three committees responsible for (i) approving variety release, (ii) coordinating seed planning and production, and (iii) ensuring that all NSS seed is of high quality.

In coordination with the NSC and MAF national directorates, each of MAF's 13 municipal offices manages the seed production and distribution activities that comprise its particular municipal seed system (MSS) through its annual MSS work plan & budget. Each MAF municipal office also maintains a municipal seed database of all their CSPG, CSP and MSS activities that are necessary to achieve municipal seed balance and municipal seed security - their contribution to the overall maintenance of the national seed system.

Crop identification and development

Research is the “engine room” of the National Seed System. Through controlled on-station trials and multiple small on-farm trials the suitability of promising varieties is assessed under various climate, soils and farmers’ practice. Their acceptability as food is also tested by farming families before being submitted to the National Seed Council’s Variety Approval, Release and Registration Committee for official release.

The Ministry of Agriculture and Fisheries conducts extensive on-station and on-farm research to identify improved varieties of staple crops that are:

- High yielding
- Tolerant to disease and insects
- Nutritious and tasty
- Adapted to local soil and weather conditions
- Adapted to traditional farming practices (ie. low input farming)
- Valued by consumers (i.e. can sell for a good price)
- Suited to traditional gender roles
- Storage considerations

1

Testing varieties on research stations

The Ministry grows varieties sourced from local farmers and international research centres at six research stations across Timor-Leste. Ten to 20 varieties are grown at each station in replicated 5 x 5m plots using traditional farming practices. Research staff observe the crops during growth and at harvest, and invite farmers to visit to also observe and taste the top varieties.

Location	Municipality	Elevation
Betano	Manufahi	3m
Loes	Liquica	10m
Manatuto	Manatuto	20m
Darasula	Baucau	400m
Quintal Portugal	Aileu	900m
Urulefa	Ainaro	1,200m

Background: Noi Mutin maize kernels (Photo: unknown)

How does it work?
Here's the timeline for the testing and release of Noi Mutin maize

Many varieties, few locations

Noi Mutin is a white maize variety from Central Mindanao University in the southern Philippines. In 2006 it was one of 17 maize varieties (3 local, 14 introduced) being grown and tested on four research stations across Timor-Leste. In 2009, after three years of testing, Noi Mutin proved to be the best-performing variety with its high yield. It was also preferred by farmers for its taste and white colour. On-station testing of Noi Mutin continued from 2009-2011 to confirm its superiority.

Although released varieties typically come from overseas, they are tested and grown in Timor for at least five seasons before being released

2

Testing varieties with farmers

Varieties that perform well on-station over a few years are then given to farmers to grow on 5 x 5m plots on their land. Research staff regularly visit the farmers to establish the trial plots and to observe the crop during growth and at harvest. There are currently around 500 farmers across Timor-Leste growing 2-3 varieties on their farms for research purposes.

As with all cultures, taste preferences (sweetness, texture, dryness and flavour) play a critical role in the successful uptake of new crop varieties. Because of this, farming families (both men and women) participate in regular 'taste test' events on research stations and in a percentage of the on-farm demonstration trials.

3

Evaluating varieties for release

Varieties that perform well on research centres, on farms and across various locations over five years are considered for official release. They are assessed against a broad number of criteria, not only for superior yield, agronomic adaptability and taste but also for their social, environment and gender impacts.

Once deemed suitable the NSC's Variety Approval, Release and Registration Committee recommend the variety to the MAF Minister for official release.

Few varieties, many locations

Noi Mutin was given to different farmers each year from **2009-2011** to grow on their own fields alongside Sele maize and their own seed for comparison.

2009: 100 farmers

2010: 188 farmers

2011: 102 farmers

Official release

In **2012** Noi Mutin was officially released after performing well in on-station tests for six years and on almost 400 farms over three years.




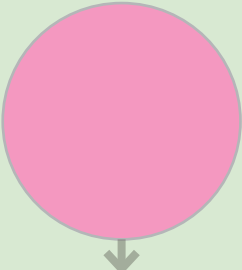
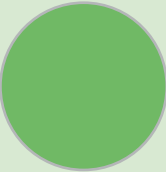


Source seed and quality control

Maize, rice, peanut, kidney bean and mung bean seed

To make the improved varieties accessible to farmers, large quantities of quality seed must be produced for distribution and commercial sale.

This is achieved by multiplying a limited quantity of high-cost, genetically-pure seed across various seed classes to produce large quantities of lower-cost, locally-produced commercial (and community) seed. Robust quality assurance processes ensure genetic purity remains high at every stage and genetic deterioration is low. The seed classes are as follows.

	<i>Seed class</i>	<i>Quantity</i>	<i>Produced by</i>	<i>Physical purity</i>	<i>Purpose</i>
Not for public use	Breeder seed		Ministry of Agriculture and Fisheries	99.9%	Seed production
	Foundation seed		Ministry of Agriculture and Fisheries / contract seed grower	99.9%	Seed production
For public use	Certified seed		Contract seed growers (CSG)	98%	Seed production
	Commercial seed		Registered commercial seed producers (CSP)	95%	Seed for food production
	Community seed		Community seed production groups (CSPG)	Not guaranteed	Seed for food production

All released varieties are public domain and can be used by Timorese family families, forever. They will never need to pay a royalty or any other fee for using these varieties.

<i>Quality control</i>	<i>Cost to produce</i>	<i>Amount produced each year</i>	<i>Label colour</i>
Controlled by MAF Grown on MAF research centres under highly controlled conditions managed by the Breeder or Pure Seed Officer.	High	Limited	Yellow
Controlled by MAF Production is highly controlled and supervised by a MAF Seed Officer.	High	Small	White
Controlled by MAF Seed is produced on contract seed growers' fields under close supervision of a Seed Officer. Seed is processed in MAF seed warehouses and tested in seed laboratories for moisture content, physical purity and germination before being packaged by MAF and made available as certified seed	Medium-high	Medium	Purple
Supervised by MAF MAF Seed Department supervise that CSP accord with the Guidelines and sample and test seed for physical purity, germination & moisture content. The results are recorded on pink label in each bag that also carry the Fini ba Moris brand. Seed is also subject to spot checks by MAF Seed Department	Medium	Large	Pink
Self regulated CSPGs follow best-practice advice from MAF for producing and storing good quality seed of more productive varieties.	Low	Large	Unlabelled

Commercial seed

Commercial seed producers (CSP) multiply certified seed to produce commercial seed. All CSP are registered and also issued an annual permit to produce and sell seed in accordance with MAF quality assurance guidelines.

Commercial seed must be packaged with a pink 'truthful label', each CSP's unique brand name and the NSS **Fini ba Moris** brand of quality. It can be sold directly to other farmers, commercial seed traders, NGOs, MAF or other Government agencies (or exported). Commercial seed is normally used for food production and is subject to spot checks by MAF Seed Department to ensure it meets set quality standards for commercial seed.

Below: Commercial seed producers from Baucau, Lautem and Viqueque receive their registration certificates at an event in Baucau in December 2013 (Photo: Jessy Betty)

CSP interested in growing & selling commercial seed must complete three steps:

- 1** Apply and be registered with MAF Seed Department as a commercial seed producer (valid for 5 years) and then join ANAPROFIKO.
- 2** Each year apply and obtain from MAF a Commercial Seed Production Permit to produce a specific variety and quantity of commercial seed.
- 3** Purchase sufficient certified seed from MAF to plant the permitted area and produce, process, test and package all seed according to the CSP Guidelines.

MAF Suco Extension Officers (SEO), Municipal Seed Coordinators (MSC) and Seed Officers (SO) provide each CSP with the supervision, advice and assistance required to complete these steps.

"I really like the system established by the ministry so we can produce good seed for other farmers and help stop the seed imported from overseas"

Arthur Xavier, Tane Fini Commercial Seed Producer, Viqueque



Who can become a commercial seed producer (CSP)?

Farmers' associations and individual farmers experienced in seed production can become commercial seed producers if they meet the criteria set out in the Ministry's registration guidelines.

Why is registration important?

Registration as a commercial seed producer is important for the following reasons:

- to provide a legal basis for quality seed production
- to assure existing and potential seed buyers that the seed produced is quality seed
- to differentiate the registered producer from the many non-registered community seed production groups (CSPG) that produce community seed. Community seed cannot be sold as commercial seed because its quality cannot be assured.

What if a producer breaches the code of conduct?

A CSP registration certificate is normally valid for 5 years. However, should a registered CSP breach the code of conduct of commercial seed production including any quality control procedures set out in the guidelines, the MAF Seed Department can at any time cancel their registration as a commercial seed producer.

If a CSP is registered, why do they also need a permit?

The annual permit allows a registered CSP to produce a specific variety of seed in an agreed location and area. This annual permit is necessary to ensure:

- sufficient certified seed is produced by MAF to meet all CSP certified seed requirements
- annual commercial seed production is able to meet total commercial seed demand
- the quality of commercial seed is maintained.



Above: Lino Rui de Andrade is chief of the commercial seed producer group *Buras Hamutuk* that grows Sele maize in Lospalos (Photo: Alexia Skok)

By CSP and local commercial seed traders selling seeds of improved varieties at local markets, farming families can access a reliable supply of quality seed of the variety they want at the time they need it.

*Ensuring the quality
of commercial seed
is key to maintaining
people's trust in the
seed system*

How is the quality of commercial seed guaranteed?

There are a number of quality assurance steps a commercial seed producer (CSP) must follow as part of MAF Guidelines under the National Seed Policy (NSP).

Phase	Quality assurance
Before planting	<p>Each producer must have an annual production permit Once registered as a CSP, the producer must apply for an annual CSP permit. The MAF Seed Department reviews the application, conducts a field inspection and, if approved, issues an annual permit along with an annual quality control form.</p> <p>The CSP purchases high-quality certified seed The commercial seed producer buys certified seed from MAF Seed Department in accordance with the quantity authorised on the annual production permit.</p>
Mid-season	<p>MAF seed officer inspects the producer's crop The CSP requests a field inspection from the MAF Seed Officer. If the producer fails in a certain criteria but shows potential to solve the problem, the inspection form will note the improvements necessary to pass future inspections.</p>
Post-harvest	<p>Seed is processed then sampled and tested by MAF Seed Department The CSP processes (dries, grades and cleans) their commercial seed and request MAF Seed Department to visit to sample and test that its commercial seed meets the minimum quality standards of physical purity, germination and moisture content. Only then can the seed be packaged, truthfully labelled with the seed test results, branded with the CSP's own unique brand name (showing its location and contacts) and with the Fini ba Moris brand of the National Seed System.</p>
Sale of seed	<p>Fini ba Moris brand of quality assurance To ensure farmers are receiving or buying only good quality seeds, each bag of commercial seed must not only be truthfully labelled with the pink label showing the results of MAF seed test, but each bag of commercial seed offered for sale must also carry the Fini ba Moris brand of quality assurance.</p> <p>MAF spot-checks commercial seed The actual quality of any commercial seed can also be spot-checked at any time by MAF Seed Department. Municipal Seed Officers may take a seed sample for testing at any MAF seed testing laboratory. Significant quality differences between actual results and those on the pink label can result in the offending CSP suffering a reduced authority to produce commercial seed next year, or even de-registration.</p>

Pink label seed is good quality seed

All commercial seed packets have a pink label, to show that it has been produced by a CSP and the seed quality has been checked by the MAF Seed Department. They also all carry the NSS **Fini ba Moris** brand of quality assurance.



“Sele is good. The cobs and seeds are big and the results are impressive. We will continue to plant it.”

Urbano do Carmo dos Reis, Chief of a CSPG in Natarbora

Community seed

Community seed production groups (CSPG) locally produce un-labelled, low-cost community seed from certified, commercial or community seed. This seed is dried, cleaned and properly stored in airtight containers and made available for farming families to use the following season for their food production.

About 70% of the seed farmers sow comes from traditional sources, including from farmers' own stocks, the local market or through social networks of neighbours, friends and relatives

What is a community seed production group (CSPG)?

A CSPG is formed by farmers to produce seed for group members and their local community. Their objective is to ensure farmers have sufficient good quality seed to plant next season so they do not have to rely on seed from MAF or NGOs. CSPGs are formed at the *aldeia* or *suco* level and usually comprise around 10-15 members, with each member representing a household.

How does a community seed production group maintain the quality of their seed?

Maize CSPG should replace their planting seed with new certified or commercial seeds every 3 years. Rice and peanut CSPG should obtain new planting seed from MAF or CSP every 5 years. New seeds should be sourced from the Suco Extension Officer (SEO) or Municipal Seed Coordinator (MSC) in each MAF Municipal Office or purchased from any registered CSP.

Below: Francisco Jose Martinez tends to the corn crop planted by his 10-member CSPG outside Maubisse, Ainaro district (Photo: Conor Ashleigh)





How does a community seed production group work?

Time

Activity

The group:

Planting

- The CSPG receives seeds on credit from Suco Extension Officer (SEO).
- Receives orientation, training and mentoring support on community seed production from SEO.
- Grows seeds in one good seed plot as a collective group activity.
- Follows SEO's technical advice for seed production, e.g. isolation, roguing, seed selection.

Harvest

- CSPG harvests the seed plot at the right stage and separates seed from food grain.

Post-harvest

- Stores the clean, well-dried seeds in appropriate airtight containers.
- Shares the agreed quantity of seeds with all members for food production on their private land.
- Shares, barter or sells surplus seeds to neighbours in their suco community.
- Returns the same quantity of seeds to the SEO at planting time to support other groups in the same *suco* to improve their food production.

Ongoing

- Maintains a 'group book', with support from the SEO for recording its members, group decisions, activities, agri-tools, results and visitors' list and comments.
- Continues the seed production as a collective activity every year.

Above: Women members of a peanut CSPG in Natabora (Photo: Jessy Betty)

National Seed System management

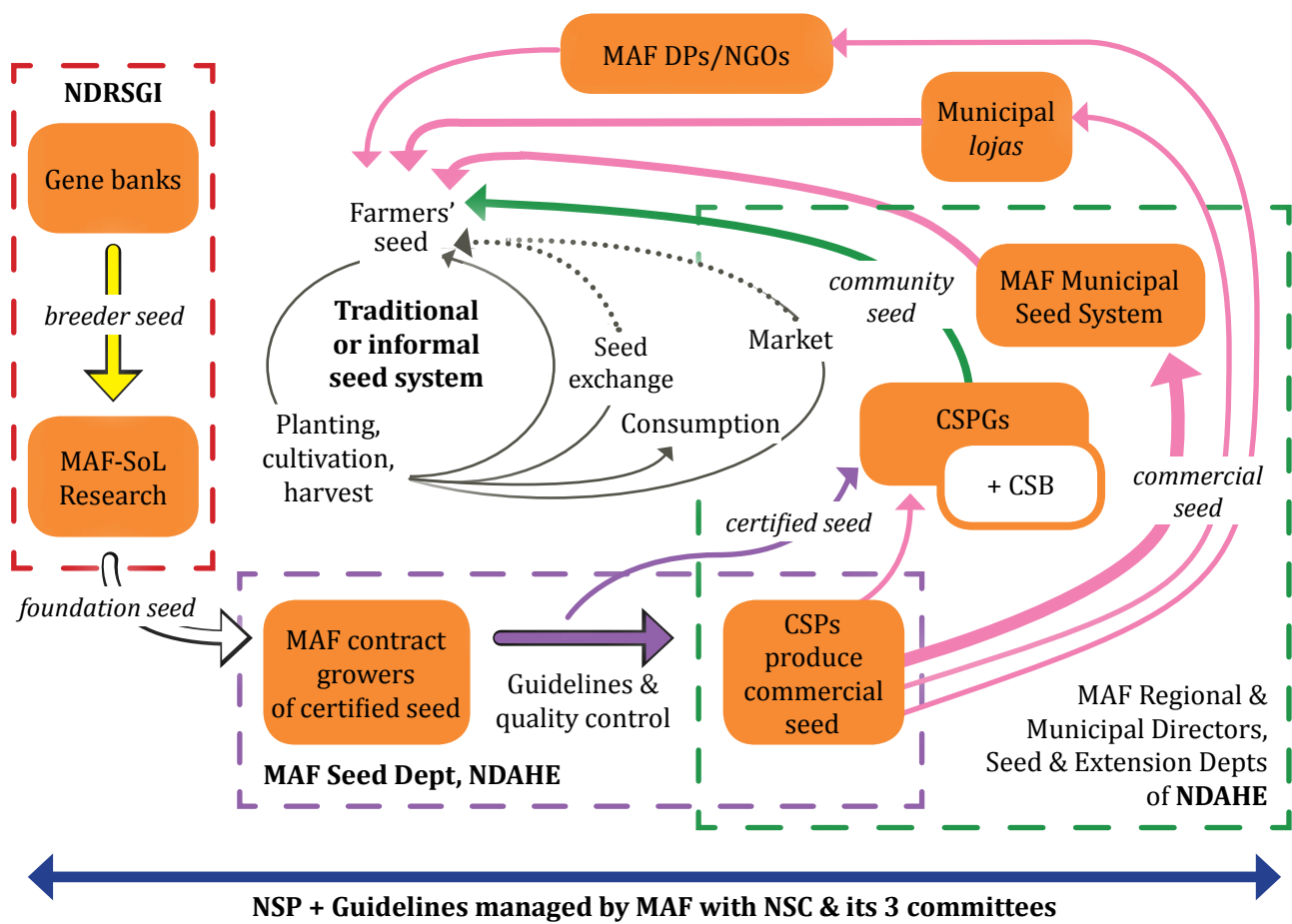
Early in 2012 MAF-SoL studies found it cost \$3.50/kg for MAF Seed Department to produce certified seed of improved varieties and the cost of imported seed was about \$7.00/kg. Therefore being dependent on certified seed and imported seed was not meeting either:

- timely access of farming families to quality seed of improved varieties at a reasonable price, or
- the Government's objectives of national seed security and national seed sovereignty.

A study visit to investigate Nepal's experience in developing its national seed system lead to the establishment of Timor-Leste's National Seed Policy (NSP), National Seed Council (NSC) and development of local commercial seed production. These enabled registered farmer groups (CSP) in each municipality to produce large quantities of quality-assured commercial seed of improved varieties for use by farming families across the country. It also enabled money previously spent on costly seed imports to be redirected to buying locally produced good quality commercial seed of improved varieties from local CSP, the promotion of commercial agriculture and attainment of national seed security and national seed sovereignty.

- 1** MAF National Directorate for Research, Statistics & Geographic Information (NDRSGI), particularly its Research Department, manages **Crop Identification & Development** component of NSS. For further explanation see pages 8, 10 & 11.
- 2** MAF National Directorate for Agriculture, Horticulture & Extension (DNAHE), particularly its Seed Department, manages the **Source Seed & Quality Control** component of the NSS. It uses foundation seed of released varieties from research to supervise specialised contract seed growers (CSG) to produce certified seed which MAF provides to registered commercial seed producers (CSP). CSP produce large quantities of commercial seed in accordance with MAF Guidelines and quality controls (permits, inspections and seed testing) for distribution to farmers. For further explanation see pages 12 & 13.
- 3** MAF Regional and Municipal Directors their staff and DNAHE Seed Department manage the **Commercial and Community Seed** component of the NSS. Each MAF municipal seed team works with its CSP and CSPG to plan and implement commercial and community seed production and to distribute commercial seed to meet the seed requirements of the municipality's farming families. Some commercial seed is purchased from CSP by MAF Seed Department for distribution by each MAF municipal office according to its municipal seed distribution plan. Others are purchased by agricultural input suppliers (loja agricultura) for sale to farmers or by MAF development partners and NGOs for distribution to farmers. An ongoing project is progressively establishing **community seed banking** (+ CSB) in each municipality wherein a selected CSPG and their suco community identify, describe, multiply and save local food crop varieties to be registered by MAF municipal office for possible inclusion in variety research and in the municipal and/or national seed system. For further explanation see pages 14, 15, 16, 17, 18 & 19.
- 4** The **National Seed System** integrates the formal seed system and the informal or traditional seed system (also known as the *community seed system*). Farming families will continue to rely on local varieties to supply at least two-thirds (66%) of their annual seed requirement, including local varieties in their community seed bank. The commercial and community seed of improved varieties produced by CSP and CSPG will provide the other 33%, thereby enabling one third of all farmers to access them each year.

In each cropping season CSP and CSPG across the country can produce approx. 300 metric tons (Mt) of quality *commercial seed* and 200 Mt of *community seed* of improved varieties: a total 500 Mt of good seeds sufficient to supply about one-third of the country's annual total seed requirement. This seed replacement rate (SRR) of 33% is about optimal for Timor-Leste's approx. 130,000 farming families.
- 5** Overseeing the implementation of the NSS is the National Seed Council (NSC). Chaired by the MAF Minister, the NSC is composed of all MAF directorates involved in crop research, seed production, quality control and seed distribution and representatives of all sectors and interest groups with a stake in ensuring the NSS continues to function and achieve its objective.



Left: Members of a peanut CSP prepare certified utamua seed for planting (Photo: Buddhi Kunwar). Right: Seed warehouses, known as *uma rai fini*, are a key part of commercial seed production (Photo: Buddhi Kunwar).



Above: Labourers pick young rice seedlings on Jose Dos Santos's farm outside Maliana, Bobonaro district (Photo: Conor Ashleigh)

Produced by Seeds of Life, June 2016

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