

Seed System Security Assessment (SSSA)

Madagascar: South and East
May 2013

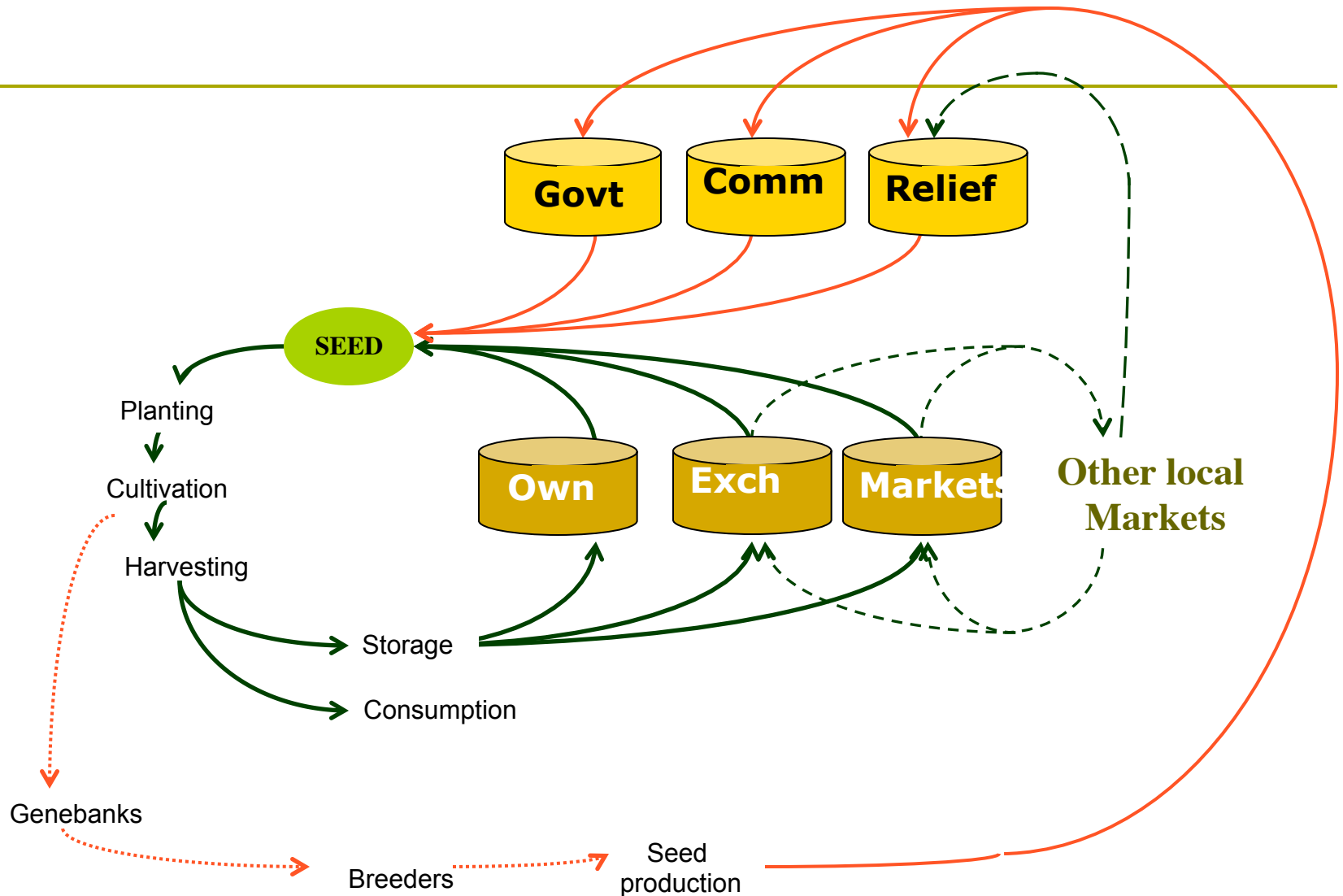


Contribute to vision of Sustainable Seed System Development

Sharpen strategies for :

- Emergency aid
- Chronic stress (most vulnerable)
- Developmental/commercial opportunities

Channels through which Farmers Source Seed



Repeated Seed Aid Delivery in Many Countries

Site	Extent of Seed Aid
Burundi	28 seasons: since 1995
Eastern Kenya	92-93; 95-97; 2000-2002, 2004, 2006, 2009, 2010, 2011
Zimbabwe	Near continuous since 1991 (food aid, seed aid or both)
Malawi	15 seasons –or more, since 1992
Ethiopia	Since 1974 : 34 years
Madagascar	... 2005 (10 years?)

Seed Security :
matching responses to specific problems

Seed Security Framework

Parameter	Seed security
Availability	Sufficient quantity of seed of appropriate crops available within reasonable proximity, and in time for planting
Access	People have adequate income or other resources to purchase or barter for seed
Quality	Seed is of acceptable quality <ul style="list-style-type: none">• 'healthy' (physiological, analytical, +sanitary quality)• adapted and farmer-acceptable varieties

Seed System Problems– and appropriate responses

Parameter	Acute	..Chronic/ Dev
Unavailability of seed	Direct distribution of seed	rare (for new varieties)
Farmers do not have access to seed	Vouchers Cash /seed fairs	Income generation activity; Agro-enterprise development (social welfare)

FAO background paper, 2003

Seed System Problems– and appropriate responses

Parameter	Acute	...Chronic/Dev
Seed of poor quality	<p>Seed fairs with quality controls</p> <p>Direct distribution of test samples of quality seed</p>	<p>Programs to improve seed quality</p> <ul style="list-style-type: none"> •Seed companies •on-farm •in local markets
Lack of appropriate varieties/crops	<p>Limited introductions new varieties</p>	<p>Introduce existing new varieties</p> <p>Participatory variety selection/breeding</p>

SSSA in the South + East of Madagascar
May 2013

SITES



Site 1 District **Vavatenina**
(Commune Ampasimazava)

Site 2 District **Ambovombe**
(Sihanamaro Commune)

Vavatenina



Ambovombe



**In both sites:
horticultural crops are increasingly important**



In both sites: diversification of activity, especially small livestock



Guide: Seed System Security Assessment



- ❑ 7-step guide
- ❑ Chronic + acute stress
- ❑ Development opportunities

Focus on key crops and supply channels: Hypothetical example, East Africa.

Crop	Home saved (%)	Social networks (%)	Local markets (%)	Formal sector (%)	Seed aid (%)	Total (%)
Beans	40	5	45		10	100
Sorghum	95	5				100
Maize	50		10	20	20	100
Cassava	50	50	?			

Madagascar: 2013 Assessment Methods

Type of Investigation	Commentary
Background information collection	Commissioning of specific documents on: formal sector breeding + sector seed supply trends Decentralized seed production inventories
Database utilization	agricultural production figures vulnerability data
Key informant interviews	MaL /project personnel Agro-enterprise groups
Focus group discussions Community-based Women's groups	Separate community and women- only FGD agricultural and variety use and trends seed source strategies, by crop community seed security assessment women's crop/seed constraints/opportunities
Farmer interview s (N=145)	Agricultural trends seed source patterns/fertilizer use Effects of earthquake/ Livelihood/
Seed/grain market analysis (N=21 traders)	<ul style="list-style-type: none"> • crops and varieties supplies on market • pricing patterns/ sourcing areas • seed quality management procedures
Agro-dealer/formal sector analysis	<ul style="list-style-type: none"> • (esp in east)

Household sample (N=145)

1) Sexe du chef de ménage

Chef de ménage	N	%
Male	96	66.2%
Femelle	49	33.8%
total	145	100.0%

2) Est-ce que le chef est adulte ('normale'), enfant, ou grand-parent (avec des enfants dépendants)



Chef de ménage	N	%
Adulte	133	91.7%
Enfant	0	0.0%
Grand-parent	12	8.3%
total	145	100.0%

3) Surface cultivée par le ménage



Surface cultivée	N	%
< 0.5 ha	36	25.4%
0.5 - 1.0 ha	36	25.4%
>1.0-2.0 ha	37	26.1%
> 2.0 -3.0 ha	20	14.1%
>3.0 ha	13	9.2%
total	142	100.0%

Good and bad seasons

EAST

Major crops	2012- 2013	2011-2012	2010-2011
Rice	++	++	
Cassava	+++	+++	+++
Chinese cabbage	+++		+++

SOUTH

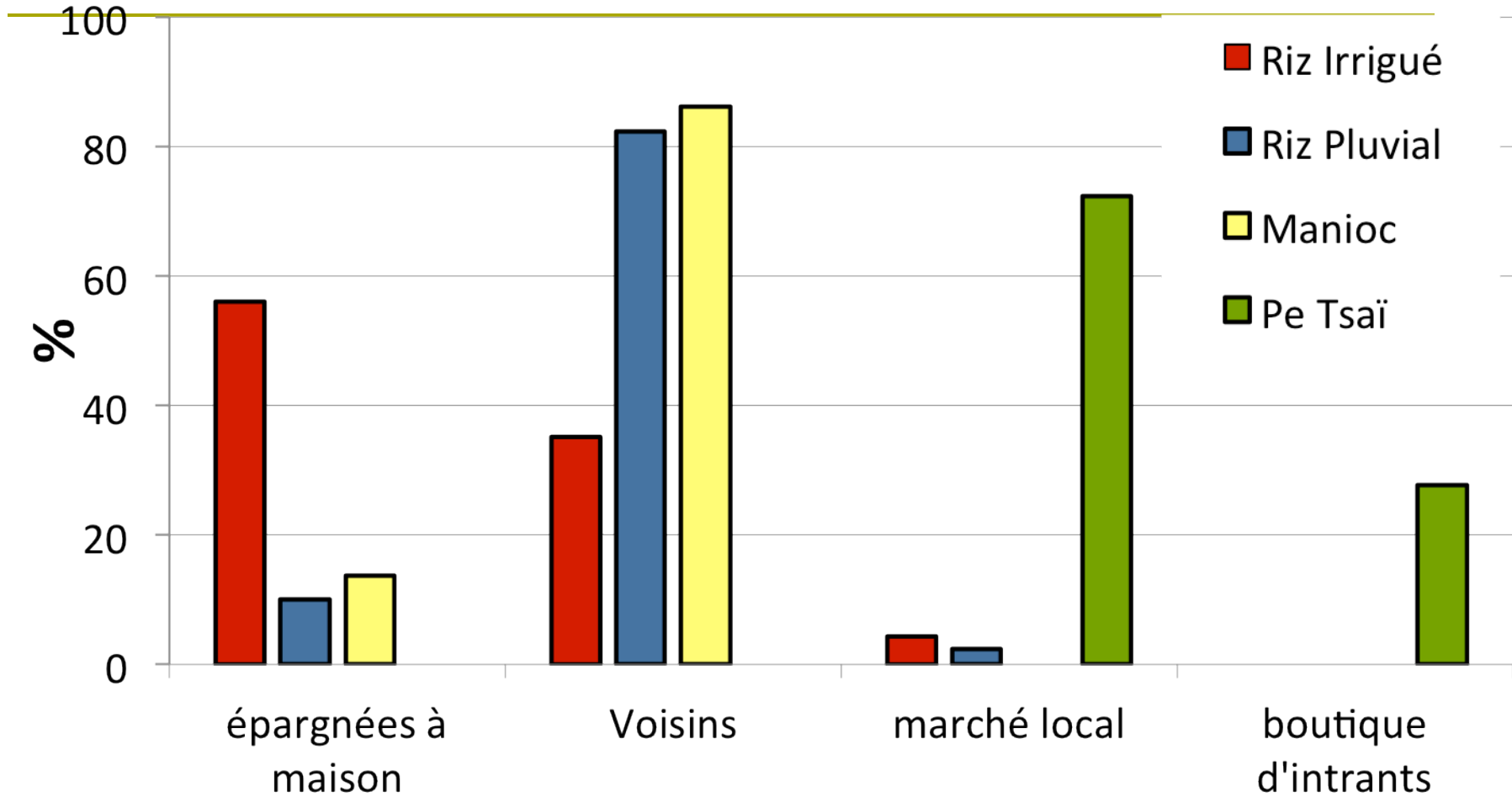
Major crops	2012- 2013	2011-2012	2010-2011
Cassava	++	+++	+++
Maize		+++	+++
Cowpea		+++	+++

SELECT FINDINGS

- Acute stress- 2013-2014
- Chronic stresses + developmental opportunities

Seed sources – MAIN SEASON 2012-13

Vavatenina



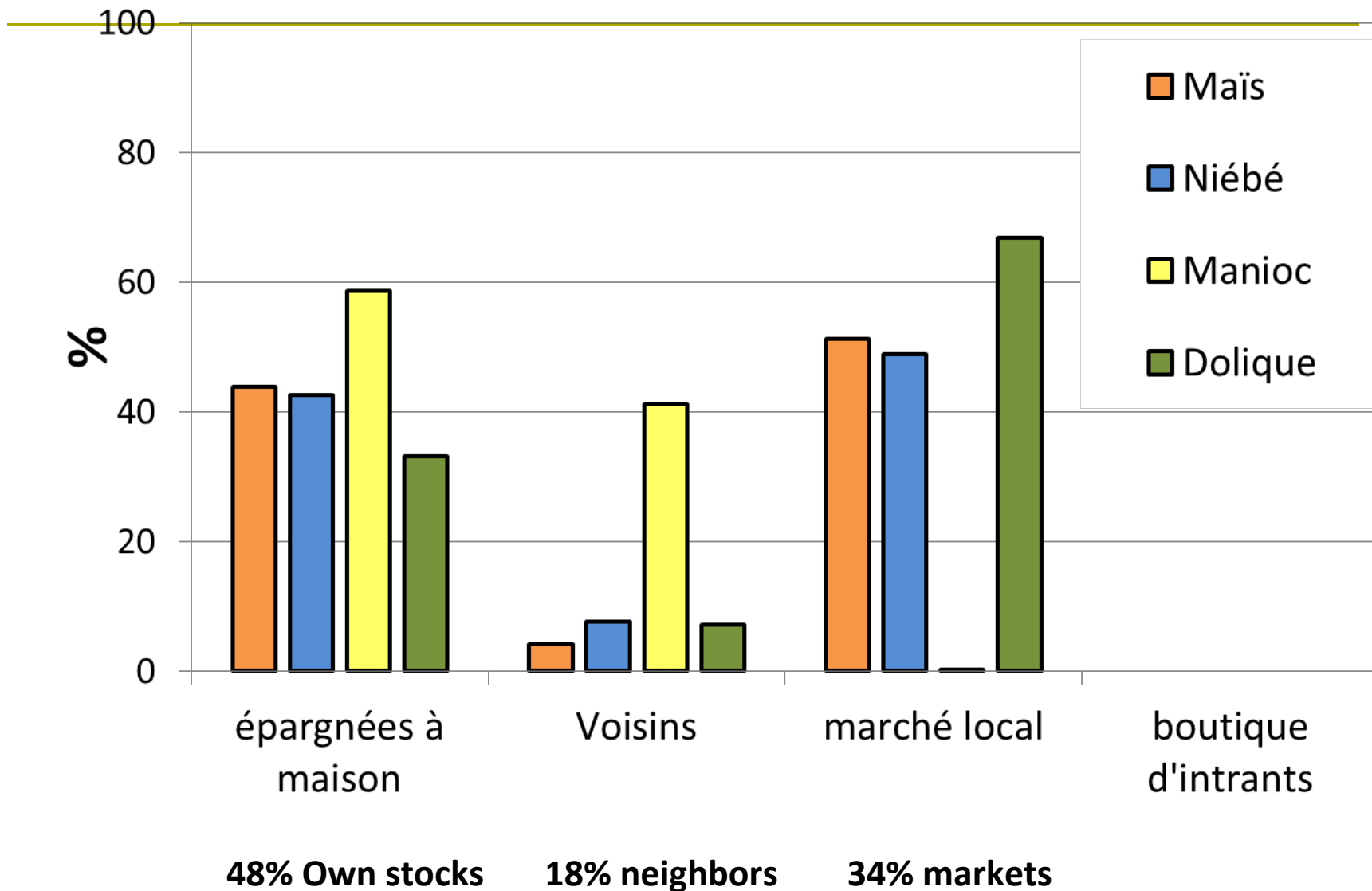
45% Own stocks

47% neighbors

4% markets

Seed Sources – MAIN SEASON 2012-13

Ambovombe



Quantity of seed sown, Main Season 2012-2013: more/ same/ less than normal

Culture	N	% de ménages			Changement moyen
		PLUS	AUTANT	MOINS	%
Maïs	10	10	50	40	14.5
Riz pluvial	20	10	25	65	-24.1
Manioc	58	38	33	29	7.0
Patates douces	9	33	44	22	3.6
Riz irrigué	76	32	33	36	15.9
Pe tsai	8	13	75	13	-1.7
TOUTES	188	30	36	35	14.4

Vavatenina : + 14.4 %

Culture	N	% de ménages			Changement moyen
		PLUS	AUTANT	MOINS	%
Maïs	57	19	26	54	2.9
Dolique	13	31	23	38	-2.8
Manioc	52	21	46	33	58.1
Niebe	54	30	37	33	20.7
TOUTES	188	28	37	42	34.8

Ambovombe: + 34.8 %

Reasons for planting LESS than normal: 2012-13	Vava %	Ambo %
SEED- RELATED		
<i>Seed availability</i>		
No seed available in market	0	1.3
No seed/cuttings available from neighbors	1.5	3.8
<i>Seed access</i>		
No money to buy seed/poor finances or seed too high	9.2	21.5
<i>Seed quality</i>		
Seed available is not good quality or the variety is not liked	1.5	1.3
Sub-total: Seed-related	12.3	27.8
NON-SEED FACTORS OF PRODUCTION (Limits)		
No/insufficient labor	16.9	3.8
Illness/health problems	13.8	19.0
No/insufficient land or land not appropriate/sufficiently fertile	20.0	7.6
Lack of tools/tractor/ other machinery to farm	0	3.8
Plant pests/diseases make production not possible	0	0
Animals/predator make production not possible	0	0
Lack of other inputs: controlled water supply/irrigation or fertilizer	0	0
Poor weather/rainfall	6.2	34.2
Insecurity	0	0.5%
Sub-total: factors of production-related	56.9	68.4
OTHER PRIORITIES/STRATEGIES		
Markets for crop or crop products not well-developed	0	0.0%
Other priorities than agriculture (e.g. have shop)	1.5	0.0%
Changed crop profiles or priorities	6.2	1.3
New agronomic technique	15.4	1.3
Other	7.7	1.3
TOTAL	84.6	98.7%

Reasons for planting MORE than normal 2012-13:	Vava. %	Ambo. %
SEED RELATED		
<i>Seed availability</i>		
More seed available due to good harvest	7.1	9.4
More seed available due to free seed	1.8	0
<i>Seed access</i>		
More money to buy seed or seed price low	3.6	0.
<i>Seed quality</i>		
Have especially good seed or good variety	0	0.

Sub-total: SEED RELATED	12.5	17.0
NON-SEED FACTORS OF PRODUCTION (opportunities)		
Good/increased labor	7.1	43.8
Feeling strong/healthy	10.7	1.9
Have more land/more fertile land	32.1	18.9
Have tools/tractor, other machinery to help farm	0	0.0%
Have access to irrigation, fertilizer or other inputs (e.g., stakes)	0	0
Good weather/rainfall	1.8	32.1
Good security (peace has arrived)	0	0

Sub-total: factors of production-related	51.8	19.8%
OTHER PRIORITIES/STRATEGIES		
Well-developed /new markets for crop or crop products	3.6	3.8
Have decided to give more priority to agriculture	16.1	1.9
Changed crop profiles or priorities	8.9	18.9
Other	7.1	1.9
TOTAL	100	100

Sources of seed for the 'off season' 2013 et quantities to be sown

SOURCES : same trends as Main Season 2012-13

QUANTITIES

Vavatenina : + 6.6 %

Ambovombe : + 29.7 %

Hence, a stable situation.

Can seed markets deliver 2013-2014?

1. Is there acceptable supply ?

- Agro dealers
- Local markets

2. Can farmers afford needed purchases:
(What are the cash needs?)

Agro-dealers-is there acceptable supply ? Small amounts– and ONLY for horticultural crops



**Fenerive est= 2 Agro-dealers
13.000 packets/year**

**Ambovombe= ½ (veterinary)
500 packets/year**

Local markets : is there acceptable supply?



Horticultural seeds are available in local markets



Seed Flows : is the supply acceptable ?

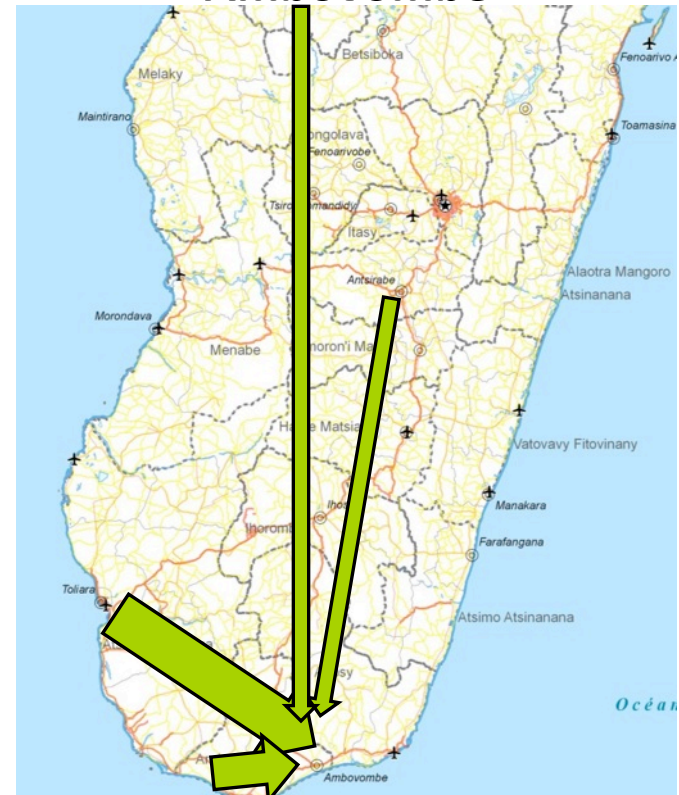
Vavatenina



Maïze – Fenerive Est, Vavatenina

Beans – Miandrivazo, Morondava,
Ambatodrazaka

Ambovombe



Cowpea, Beans - Ambovombe, Tuléar

Maïze – Tuléar,
(In crisis: Antsirabe, Majunga)

Can Farmers meet cash needs for seed purchase ?

Expenses for the Main Season, 2012-13

Crop	Nb qui cultivent	Average Expenses (Ar)			Total par culture	% de total
		marché local	voisins	négociant d'intrants		
riz irrigué	76	821	2784	0	3605	40.4%
riz pluvial	20	375	3875	0	4250	47.7%
Pe Tsaï	8	688	0	375	1063	11.9%
total (des 3)		1884	6659	375	8918	100.0%

Vavatenina

Off-season:
15 300 Ar.

Crop	Nb qui cultivent	Average Expenses (Ar)			Total par culture	% de total
		marché local	voisins	négociant d'intrants		
maïs	57	3855	0	0	3855	56.1%
manioc	54	12	463	0	475	6.9%
Niébé	52	2538	0	0	2538	37.0%
total (des 3)		6405	463	0	6868	100.0%

Ambovombe

Off season:
6 200 Ar.

Community assessment of seed security: 2013

CROP	% SEED SECURE
<u>Vavatenina</u>	
Rice	100
Cassava	100
Cucumber	100
<u>Ambovombe</u>	
Cassava	100
Cowpea	100
Maize	100

Select Summary : 2012-2014

- 2012- 2013 bad season-select areas (south), but generally good production
-
- Seed use is generally increasing :
 - ↑ Main season + **14-35%** Off-season + **7-80%**
 - Why some planting less: East: land, labor constraints
South: time, health money
(in neither site is seed availability an issue)
 - Local seed market supply is 'okay'
 - Agro-dealers seed supply functions at very small scale (horticultural crops)
 - Seed expenses- 'affordable'

STABLE SEED SECURITY SITUATION IN THE SHORT-TERM

Broader trends

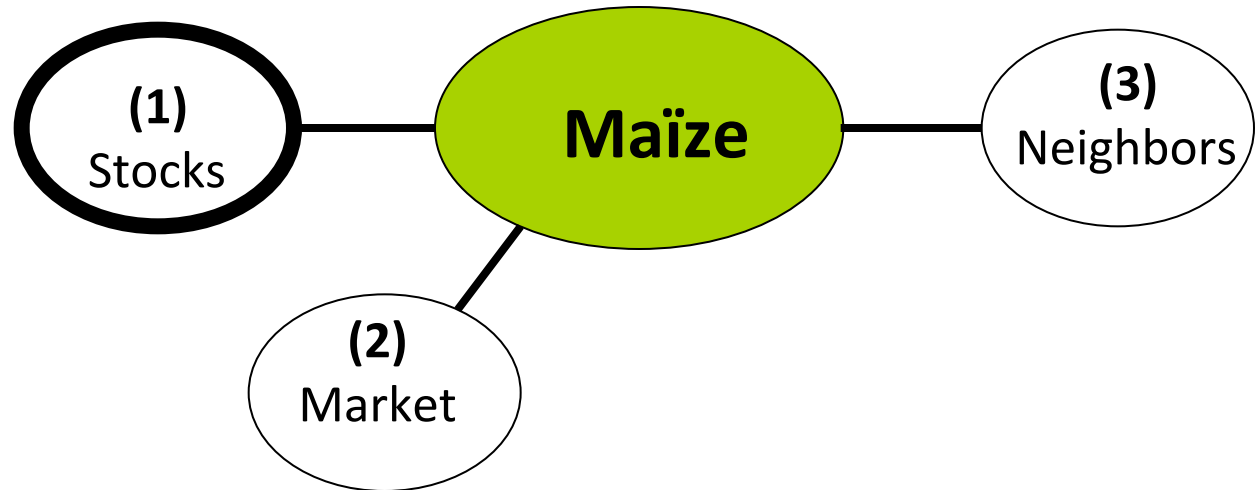
- **Chronic stresses**
- **Developmental opportunities**

Ambovombe: Diversity of crops -- but no transformation!

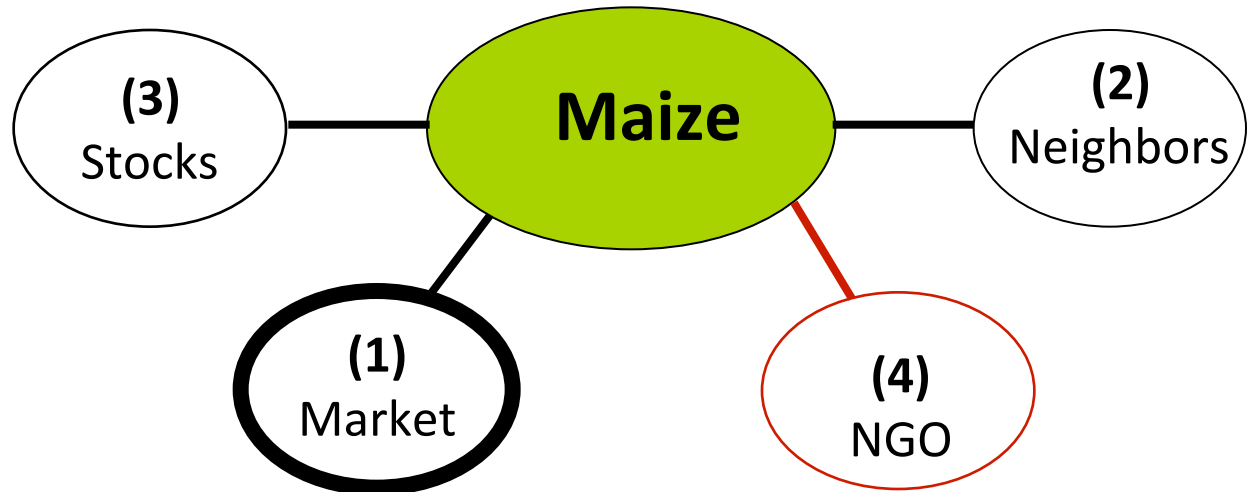
Crop	Importance for food	Importance for income	Transformation?
Cassava	+++	++	-----
Lablab	++	+	-----
Sweet Potato	+++	++	-----
Cowpea	+++	++	-----
Maize	+++	+++	-----
Groundnuts	++	+++	-----
Bambara	++	+++	-----
Squash	+++	++	-----
Melons	++		-----
Watermelon	+++	+	-----
Horticultural		++	-----

Seed sources – Maize in AMBOVOMBE

2013

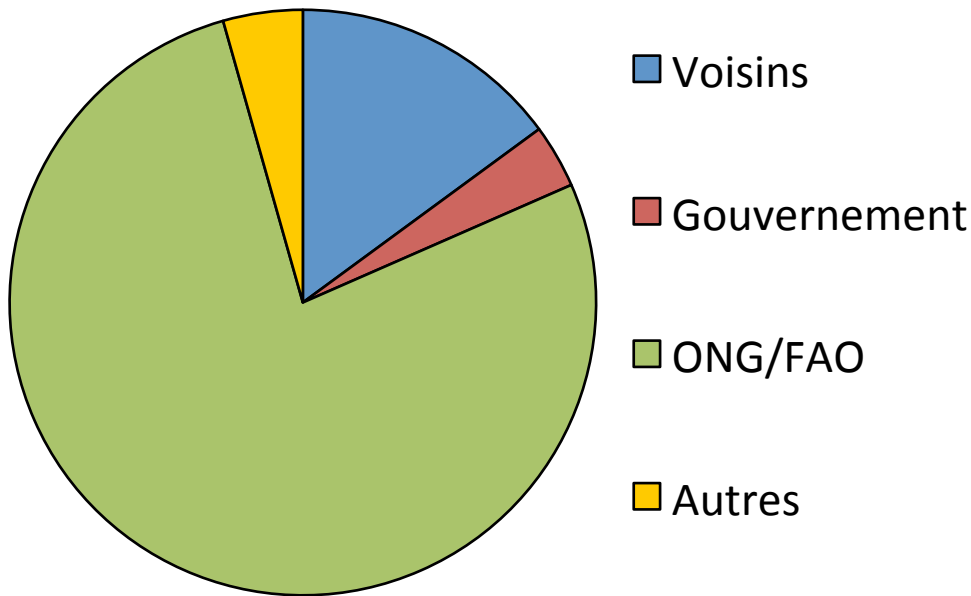


2008



Access to new varieties: last 5 years

Source



51% obtained a new variety

Crop	New variety (#)	
	Vavatenina	Ambovombe
Maïze	4	14 (25%)
Sorghum	0	17 (31%)
Irrigated rice	41 (79%)	0
Cassava	0	5
<i>Cajanus</i>	0	7
Sweet potato	1	3
Cowpea	1	3
Other	5	6

General Lack of use of new legume varieties

- Groundnuts
- Cowpea
- beans
- Lentils
- Lablab (dolichos)



Special problems with sorghum +cassava

Cassava (South + East)

- CMD (Mosaic): scale of loss:
- 40%...
- Limited availability of clean material
- No sustainable multiplication plans

Sorghum

- 95% of those receiving seed reject variety/seed
- Quality of seed declining

Seed Bulking: which models?

- ❑ KOVI- pour FAO
2x prix normal
- ❑ CARE/AROPA- 'P4P'
marche garanti.
- ❑ PMS- GRET
/coupons

All subsidized !



Value addition? Agro-entreprise?

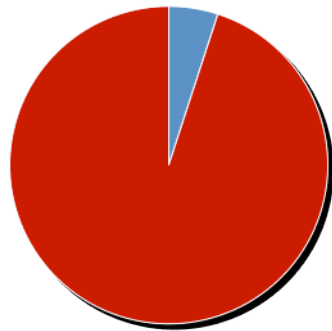


Almost none !

Hulling of rice

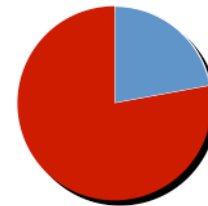
Use of inputs (non-seed)

Mineral fertilizer ?

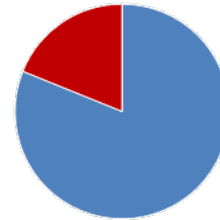


■ Oui
■ Non

Manure / compost ?

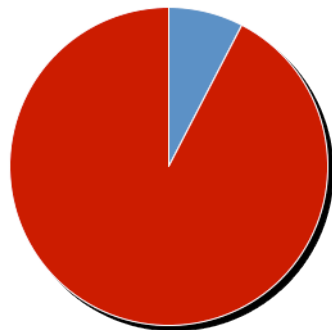


Ambovombe



Vavatenina

Storage products ?



■ Oui
■ Non

Storage losses : 20-50 %


+ Maize

+ Rice

+ Cowpea

+ Groundnuts

Summary : chronic seed stress/ developmental opportunities

- ❑ Static seed system channels (little dynamism-)
-
- ❑ Some good variety use (51%) , **but mostly through NGO**
 - ❑ Seed multiplication models : few and 'not run as business'
 - ❑ Very little 'added value' (transformation)
 - ❑ Little/No use of inputs
 - ❑ Heavy storage losses; 20 to 50%
 - ❑  Special problems : cassava, sorghum and legumes

MAJOR STRESSES ARE CHRONIC: LITTLE INNOVATION

Gender differences

Male + Female-headed households

Question	Differences?
# new varieties	No
Field sizes	No
Input use	No
Quantities sown	YES -Female headed HH static/stable Male headed more dynamic -'Granny-headed' sow less

Select Recommendations

- Short-term: 'urgent'

NO EMERGENCY INTERVENTIONS NEEDED

Select Recommendations

**Focus: Developmental
short to medium-term**

BIG PUSH: Confirmation of new varieties



Creation of decentralized variety testing network under guidance of FOFIFA

e.g.. Potential partners in Androy : GRET, CRS, AROPA, FAO, Ampela Mitraoka

- Tests on real farmer conditions before multiplication (for acceptance and adaptation)
- Same/standard protocole
- Ensure farmer feedback
- Training in PVS (participatory varietal selection)

2. BiG PUSH: Decentralized seed multiplication

- ◆ Programs to be tied to new sources of germplasm
- ◆ All models- contain explicit marketing + delivery component
- ◆ Programs oriented to smallholder farmers (not only institutional clients: FAP, WFP, SOS
- ◆ No free seed !!!

3. Regional Workshop in d'ANDROY: on seed multiplication and delivery strategy

- ❑ Currently, few decentralized multiplication and marketing programs in place;
- ❑ Few means for introducing new varieties on sustainable basis;
- ❑ Little seed management expertise on regional scale



Create links between formal + informal sectors

4. Special initiatives for Cassava + Sorghum

Cassava

- Verify if resistant varieties exist
- Tester varieties on farmer for acceptability and adaptation
- Train farmers in production of clean planting material
- **Work with policy makers/leaders to develop regional strategic for CMV containment and management**

Sorghum

- Better understand why sorghum promotion has not been successful in the South.

5. Reduce Storage Losses

Test diverse storage methods

- seed silos
- triple bags
- storage chemicals
- local treatments



6. Make new varieties accessible !

Multiple innovative channels

- Leader Farmers (de GRET)
- Traders on open markets
- Farmer organizations
- Women's groups
- Local shops/groceries
- Churches
- Village committees
- Tranoben'ny Tantsaha...



Petit sachets

•

7. Link seed security with nutritional strategies

~~Fairs: Diversity and Nutrition fairs for Environmental Resilience ('DiNER')~~

- ❑ Put in place a series of innovative options at the community level
 - ❑ New and local varieties, especially legumes
 - ❑ Access to range of horticultural crops
 - ❑ Fruits/melons
 - ❑ Poultry: chickens, turkeys, guinea fowl

- ❑ Purchase- with cash or coupons

7. NON- SEED Issues drive seed sector savings, loans, credit..

Scaling up of village savings and loans



VSL to increase



IMF (not to be in competition with VSL)



FRDA - en développement

