



Universiteit Utrecht

Jatropha
Stakeholder
Workshop

Connecting People's Capacities

Jatropha Stakeholder Workshop

Arusha, Tanzania

City Link Hotel

07 May 2008

Prepared by

Lode Messemaker & Lauren Parker

SNV Interns / MSc Students Utrecht University

Agenda

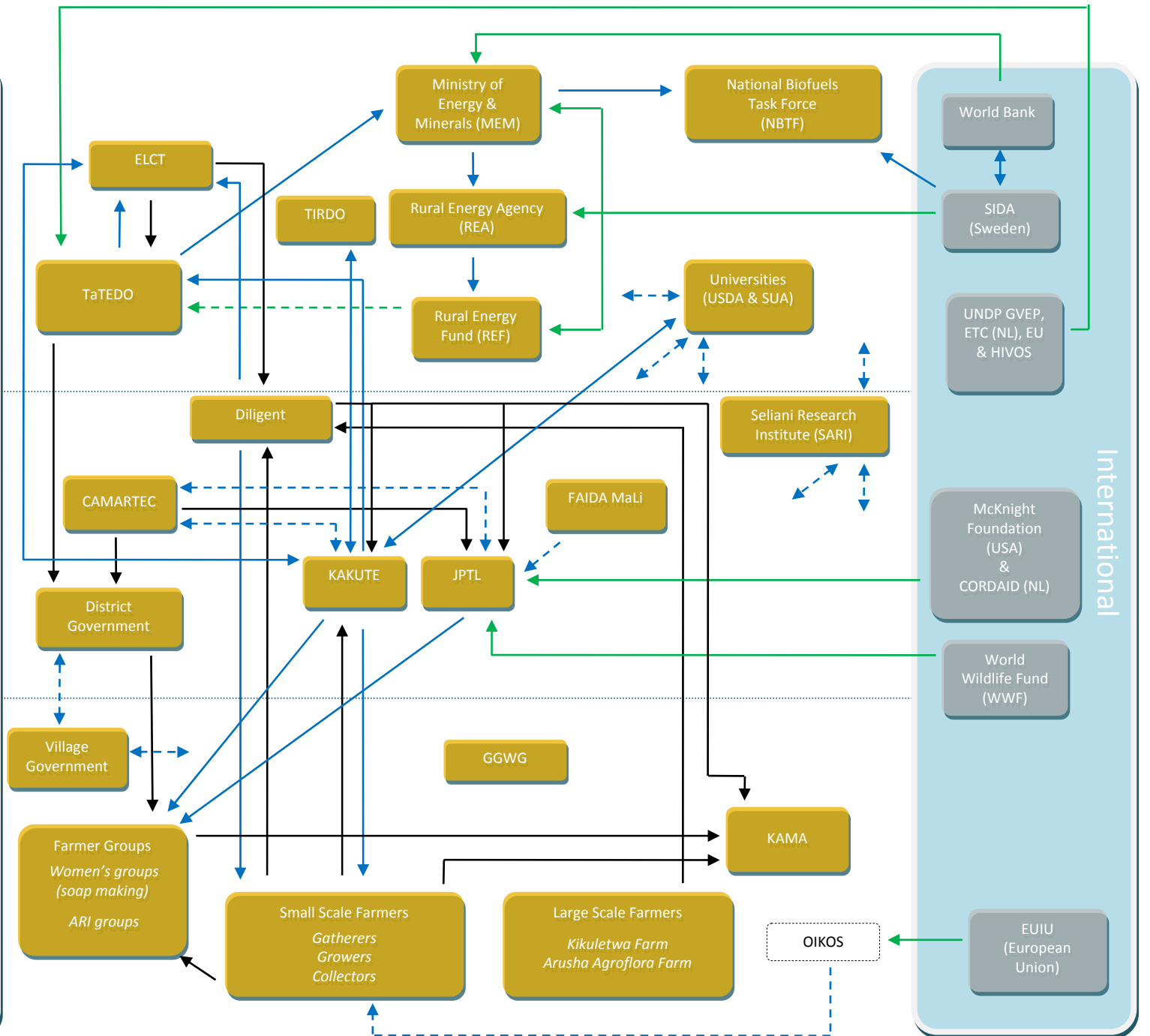
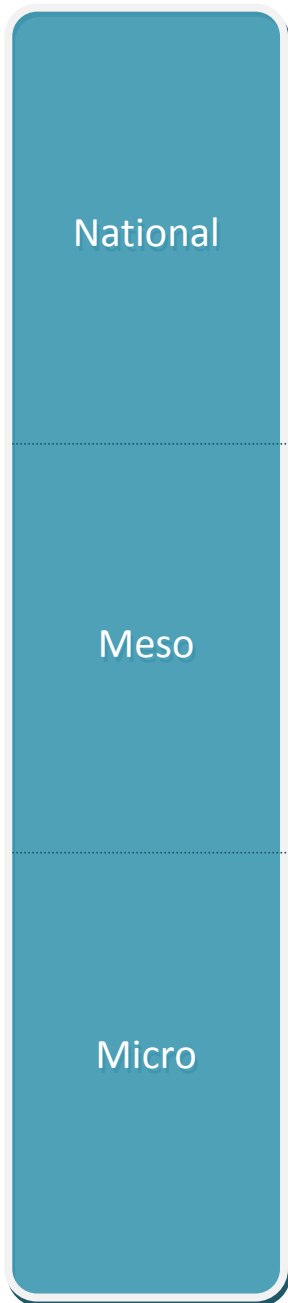
- 09:00 Opening - *Peter Bos, SNV Advisor*
- 09:15 Round of Introductions
- 09:30 Stakeholder Presentations - *Enil Kiwia, Diligent; Mr. Livinus Manyanga, KAKUTE; Mr. Ismael Manang, Farmer/Diligent; Mr. Ramadhani S. Kidunda, Kikuletwa Farm*
- 10:30 Coffee Break
- 10:45 Presentation/Validation SNV Feasibility Study - *Lode & Lauren*
- 11:15 Plenary Discussion
- 13:00 Lunch
- 14:00 Group Work Sessions
- 15:00 Group Work Presentations & Discussion
- 15:30 Way Forward
- 16:00 Closing Remarks - *Joel Kalagho, SNV Portfolio Coordinator*

Stakeholder Presentations

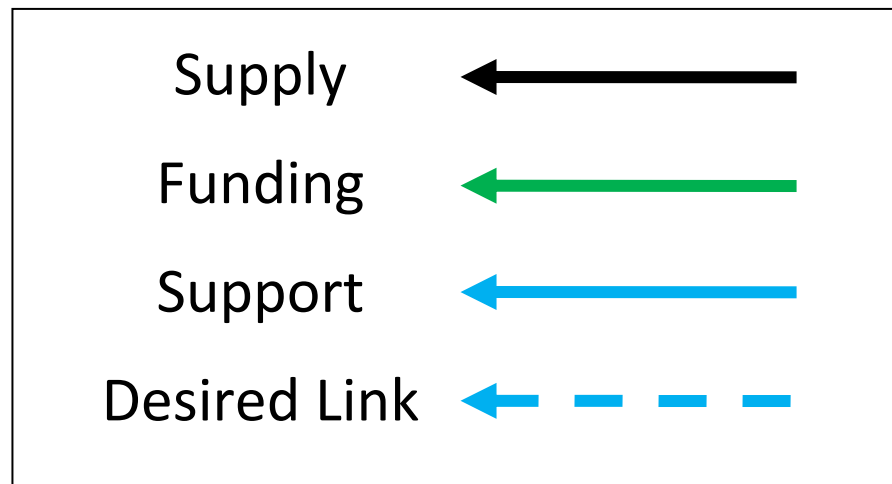
- Ms. Enil Kiwia
*Public Relations, **Diligent***
- Mr. Livinus Manyanga
*Managing Director, **KAKUTE***
- Mr. Ismael Manang
*Farm Manager, **Arusha Agroflora Farm/Diligent***
- Mr. Ramadhani S. Kidunda
*Farm Manager, **Kikuletwa Farm***

Presentation of SNV Feasibility Study

- Stakeholder Mapping & Actor Constellation
- Main Findings
 - Livelihood Analysis
 - Value Chain Analysis
- Conclusions & Recommendation



Key: Stakeholder Mapping



Stakeholder Mapping Conclusions

- More vertical linkages than horizontal
- Contract limitations
- Faida MaLi and JPTL Link
- CARMATEC, JPTL, KAKUTE link
- NGO market interference
- Missing link with government
- Research institution and stakeholder link

Main Findings: Livelihoods

- I. Household Jatropha Activity Classification
- II. Livelihood Portfolios
- III. Obstacles
- IV. Opportunities
- V. Snap Shots – Added Income
- VI. Livelihoods – General Trends

I. Household Jatropha Activity Classification

- Gatherers
- Growers
- Collectors
- Soap Makers / Oil Sellers (*2 cases*)

II. *Livelihood Portfolios - GATHERERS*

- Most frequent Jatropha activity amongst rural
- Widest household distribution type
- Many intend to plant plots if they have not already done so
- Some interviewed are also collectors
- Variation in gathering activities
- Collector encouragement
- Gathering done by women and children

II. *Livelihood Portfolios - GROWERS*

- Current growers generally have more access to agricultural land
- 3 or more sources of income
- Plots range from .25 acre up to 4 acres
- Link between current growers and women's groups
- Most farmers have not harvested yet from their plots
- New generation of growers
- Intercropping vs. mono-cropping varies between farmers
- Generally not using inputs to increase yields: Some irrigation and/or fertilization usually due to intercropping
- Future Increased Growing Plans
 - Growers keeping current amount or slightly expanding plots w/ increases from .25 acre to 1.5 acres

II. *Livelihood Portfolios - COLLECTORS*

Individual Collectors

- 10 collectors in Engaruka
- Emayan Women's Group
- Village business(es)
- Unclear Price Setting
- Between 10-20 Customers Weekly
 - Most sell between 5 - 10kg/day
- Rainy Season Busiest
- Customer Incentives
- Limited Knowledge Sharing

Group Collectors

- Women's Groups
- Buyer Scarcity
- Political Market Interference

II. *Livelihood Portfolios - SOAP MAKERS/OIL SELLERS*

Emayan Women's Group, Engaruka

- Group Formation & Training
 - 2004 -2007 / Organized by KAKUTE / 30 women /
- Harvest = 20 bags of seed & 12 bags of seedcake
- 2007 Disbanded
 - Embezzlement by village leader
 - Lack of assets

Imara Women's Groups, King'Ori

- Switch from soap making to selling oil
- Problems with soap market
 - Low local market demand
 - Local soap = TZS 100 per bar
 - Jatropha soap = TZS 300 and TZS 500 per bar
- Labor Intensive

III. *Obstacles*

- Knowledge Dissemination
 - Harvesting Information, cultivation techniques, market information
e.g. Soap making groups do not know how much oil is needed to make one bar of soap
- Local Processes
 - Cultural acceptance of embezzlement
- Market Limitations
 - Village government controls
 - Transportation
 - Uncertain Market / Only 1 steady buyer
- Vulnerability Context
 - Trends: Biofuel market, population increases (land access/stresses)
 - Shocks: Drought is the most mentioned problem
 - Seasonality: Wet/dry seasons, insects/pests

IV. *Opportunities*

- Dry season income generation (selling seeds)
- Potential advantages of local oil pressing
- Local Processes
 - Land sharing agreements
- Non-farm income generation for poorest households
 - Risk of losing income generation potential if hedge sharing is limited/stopped
- Potential job creation
 - Harvesting jobs (more time to harvest Jatropha than other crops)
- Self sufficiency

e.g. Engaruka Juu Primary has planted cuttings around its perimeter as part of their goal at self sufficiency

V. *Snap Shots: Added Income*

DIFFICULTIES IN DETERMINING ADDED INCOME

Gatherers

- Combined harvesting - personal hedges, neighboring hedges or combination
- Erratic harvesting times and duration
- Yields can range anywhere from a few sugar cups to 120kg

Growers

- Combined with harvests from hedges and/or collecting
- Many have not yet harvested / just planted
- Lode will cover potential yields in his value chain analysis

V. *Snap Shots: Added Income*

Collectors (Net profit)

- 10 -20 customers with visits randomly throughout the week
- Rainy season is busiest averaging between 1 - 3 bags per week / 60-180kg/week
- Engaruka price = TZS 300+/kg
- Weekly income (rainy season) = TZS 18,000 – 54,000

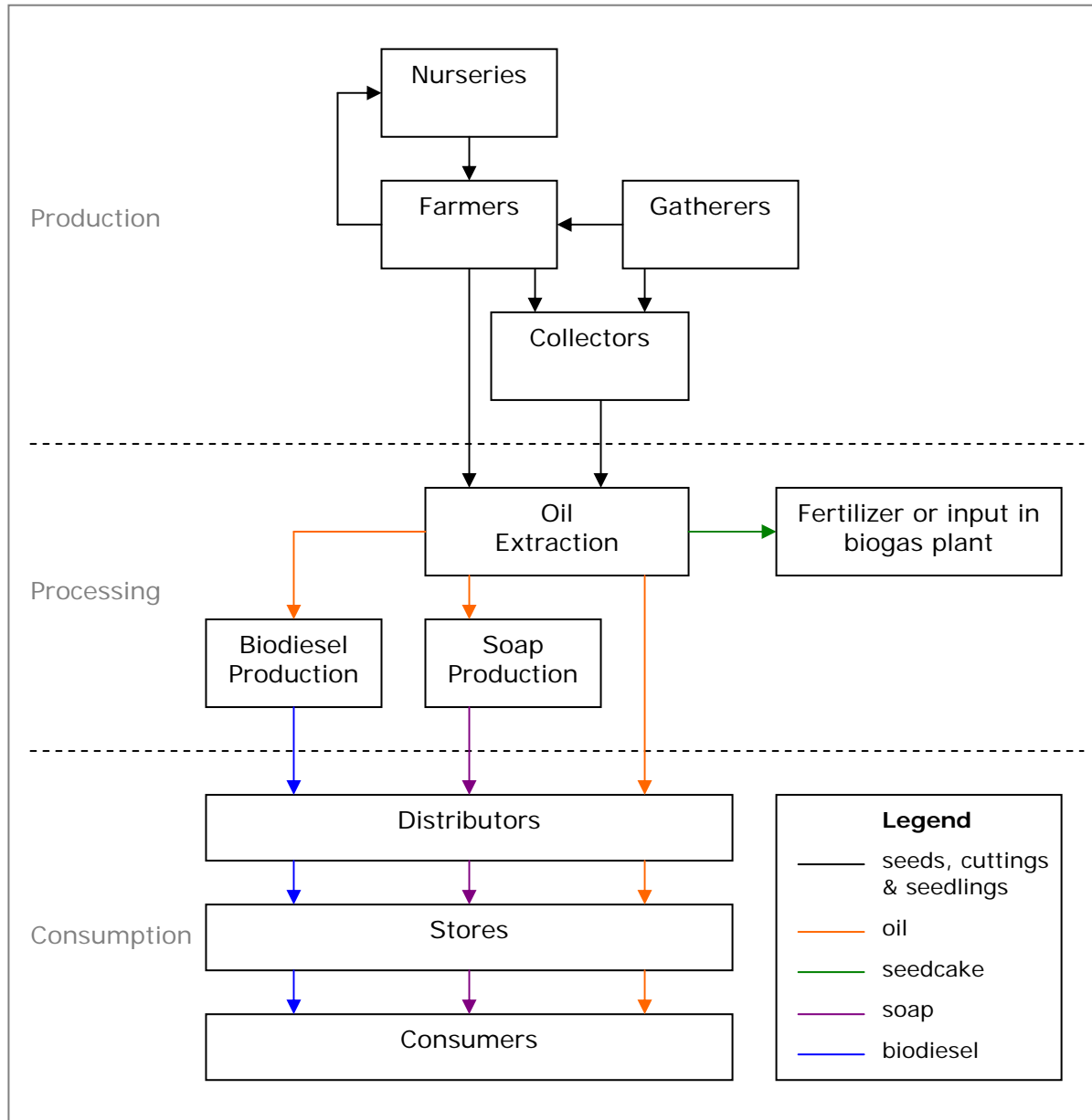
Oil Sellers (Gross profit)

- Imara Women's Group pressed 600l of oil and sold to KAMA Herbal Soap for TSH 2000/l in 2007
- They are pressing 5-10l a day
- 4 -6 months pressing
3000kg/seed = 600l/oil
- Income = TZS 1,200,000

VI. *Livelihoods – General Trends*

- Gathering from hedges most common activity
- Harvesting is a side activity mostly done by women and children
- Indiscriminant hedge gathering has been norm however this is changing
- Current shift towards planting
- Gathering and growing income used for small domestic items
- Households now starting to grow based decision on income generation from gathering (*case of Engaruka Juu*)

Jatropha Value Chain



Gatherers

- Collecting from existing hedges
- Competition over public hedges
- Seeds are harvested too early (green)
- Bad quality and take long to shell

Strengths Only labor requirements	Weaknesses Not scalable Small scale side activity
Opportunities	Threats Limitation to own hedges or pay fee

Gatherers, collecting 10 kg per day

	LOW	MED	HIGH
<i>Cost</i>			
Labor (days)	1	1	1
Cost per manday	2.500	2.500	2.500
Total cost	2.500	2.500	2.500
<i>Revenue</i>			
Harvested seeds (kg)	10	10	10
Revenue per kg of seeds	100	200	300
Total revenue	1.000	2.000	3.000
Gross margin	-150,00%	-25,00%	16,67%
Net benefit	-1.500	-500	500

Farmers (intercropping)

- Observed intercropping distances too small
- Intercropping only during first 2-3 years
- Shade limits other crops

<p>Strengths Spread of risks during first 2-3 years Low fixed costs Low technology requirements</p>	<p>Weaknesses Lack of scalability Intercropping only during first 2-3 years After that low yield because of distance No use of (in)organic fertilizers observed High opportunity costs (3 year investment)</p>
<p>Opportunities Application of fertilizers for higher yields</p>	<p>Threats Lack of knowledge</p>

Intercropping (3 x 5) per acre, 3 years after planting

	LOW	MED	HIGH
<i>Cost</i>			
Irrigating	3	3	3
Weeding	6	6	6
Harvesting	22	22	22
Cost per manday	2.500	2.500	2.500
Total cost	77.500	77.500	77.500
<i>Revenue</i>			
Harvested seeds (kg)	556	556	556
Revenue per kg	100	200	300
Total revenue	55.556	111.111	166.667
Gross margin	-39,50%	30,25%	53,50%
Net benefit	-21.944	33.611	89.167

Farmers (monocropping)

- Kikuletwa farm reaches break-even point when selling seeds for TZS 1,300 / kg
- Manual harvesting is labor intensive

Strengths Use of fertilizers and spraying	Weaknesses Lack of scalability Low fixed costs, so no scale advantage High opportunity costs (3 year investment) Manual harvesting is labor intensive
Opportunities Technologies etc. > higher yield Oil extraction at farm to add value	Threats

Monocropping (3 x 3) per acre, 3 years after planting

	LOW	MED	HIGH
<i>Cost</i>			
Irrigating	3	3	3
Weeding	6	6	6
Harvesting	37	37	37
Cost per manday	2.500	2.500	2.500
Total cost	115.000	115.000	115.000
<i>Revenue</i>			
Harvested seeds (kg)	926	926	926
Revenue per kg	100	200	300
Total revenue	92.593	185.185	277.778
Gross margin	-24,20%	37,90%	58,60%
Net benefit	-22.407	70.185	162.778

Manual oil extraction

- Using Ram Press
- Low tech, low investment
- Labor intensive, low yield

Strengths Low investment Low tech Some scalability	Weaknesses Labor intensive Low oil yield Good technique required
Opportunities Lower seed prices Using or selling the seedcake	Threats

Manual oil extraction per day using the Ram Press

	LOW	MED	HIGH	LEGURUKI
<i>Cost</i>				
Seeds (kg)	30	30	30	30
Cost per kg	100	200	300	150
Labor for pressing	1	1	1	1
Cost per manday	2.500	2.500	2.500	2.500
Depreciation of press	153	153	153	153
Total cost	5.653	8.653	11.653	7.153
<i>Revenue</i>				
Extracted oil (l)	6	6	6	6
Revenue per l	2000	2000	2000	2000
Total revenue	12.000	12.000	12.000	12.000
Gross margin	52,89%	27,89%	2,89%	40,39%
Net benefit	6.347	3.347	347	4.847

Mechanical oil extraction

- Using Sayari oil expeller
- High tech, high investment
- High yield

Strengths Economies of scale High oil yield Scalability	Weaknesses High investment High tech requires qualified personnel
Opportunities Using or selling the seedcake	Threats Unknown maintenance data / figures

Soap making

- Limited local and national market for Jatropha soap
- Some groups stopped producing soap
- Pressing oil instead

Strengths Scalability Low tech	Weaknesses High soap price Small local and national market
Opportunities International pharmaceutical market	Threats

Biodiesel production

- Diligent has the technology but is not producing
- For infEnergy Tanzania the break-even point lies at a seedprice of TZS 30 / kg
- High costs and uncertain market developments

Strengths Scalability Low labor inputs	Weaknesses High input costs (oil + methanol) High capital inputs (equipment)
Opportunities National & international blending targets	Threats Development of 2 nd generation biofuels

Value Chain Conclusions

- More national than international or global
- Seed prices range from TZS 120 to TZS 9,445
- Disturbed market
- Little or no governance
- More cooperation between actors possible
- Lack of information and technology

Gaps

- Lacking data on costs of inputs and outputs of soap making
- Lacking data on costs of inputs of nurseries
- Figures on (total) active production in region
- What do Diligent and soap making groups do with the seedcake?
- Why such low yields on Kikuletwa farm?
- What is the effect of Nitrogen on growth/yield?
- Uncertainty of KAKUTE, JPTL, KAMA triangle
- Hedge yields

Plenary Discussion

Topics Raised

- CONVINCING FARMERS
- WHO DETERMINES THE MARKET?
- MARKET DISTORTION
- PRICES
- PRODUCTION COST (IN) VS. PROFIT (OUT)
- YIELDS
- SPACING
- PRUNING
- TECHNICAL CAPACITIES OF RURAL ENTREPRENEURS
- 3 YEAR WAITING TIME
- ENVIRONMENTAL IMPACT
- LOCAL GOVERNMENT INVOLVEMENT
- NON-EXISTENT GOVERNMENT POLICY
- LAND USE
- FOOD SHORTAGE
- JATROPHA AS A FUEL CROP

Group work sessions

2 groups

Within each group:

- Discuss the issues and the way forward
- Come up with activities / interventions
- If possible, mention by whom and when
- Prepare short (max. 10 minutes) presentation

Group Work Session Presentations

Group 1:

Market & Prices

Group 2:

*Government Policy, Local Government Involvement &
Environmental Impact*

Group 1 - Presentation

Market & Prices

WHO: Whoever is promoting should first help them calculate

- Farmers need to be assisted in calculating their production costs
- Transporting oil instead of seeds. Encourage farmers to press, e.g. in farmer groups
- Create awareness with existing and incoming farmers about highly instability of the market so they are aware of the risks

Group 2 - Presentation

Government Policy/Local Government Involvement

- Create/start round-table discussions with the objective: Joint ideas **KAKUTE [1 month time frame]**
- Invite local government at district level:
 - Meru
 - Monduli
 - Siha
 - Hai

Group 2 - Presentation

Environmental Impact

- It is a large scale issue
- Educate extension officers to better inform farmers on environmental pros/cons concerning jatropha
- There is a role for NGOs & CBOs to advocate land rights & use regarding large-scale plantations **[Job will approach them]**

Closing Remarks

Joel Kalagho, SNV Portfolio Coordinator

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