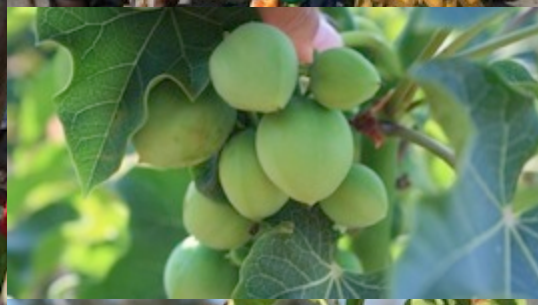
Nippon Biodiesel Fuel Co., Ltd.

Mozambique, Cabo Delgado



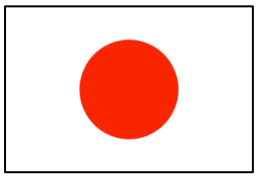
Local Production & Consumption model of

Energy, Food and Finance in Mozambique

Project Manager: Misaki Seki

1. General information of NBF / ADM

❖ NBF

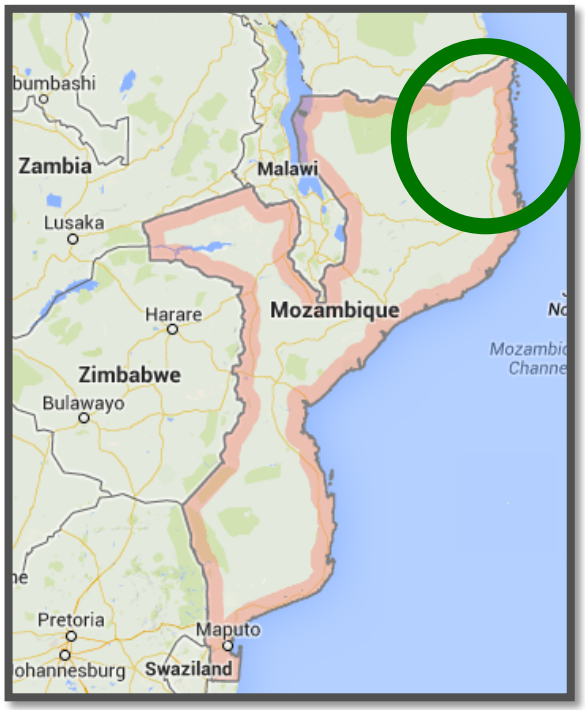


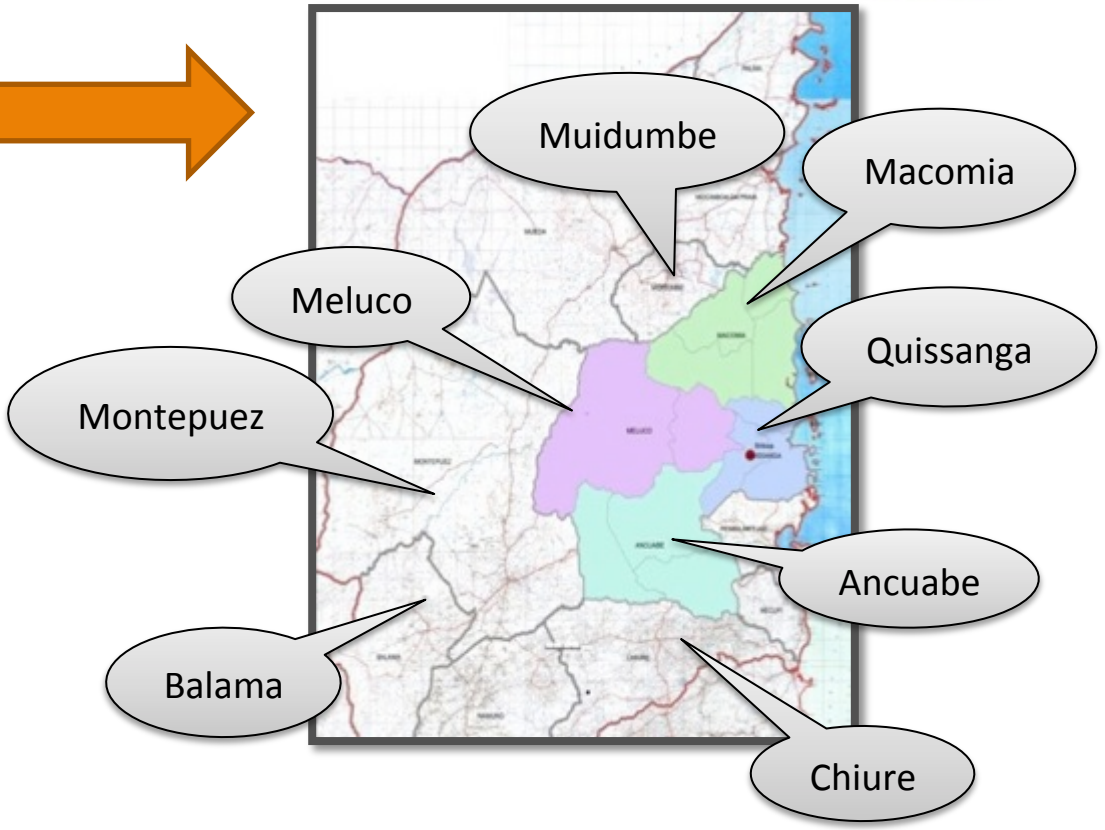
- ✓ **Name:**
  Nippon Biodiesel Fuel, Co., Ltd.
- ✓ **CEO:**
  Makoto Goda
- ✓ **Established date:**
  21 January 2000
- ✓ **Activities conducted in Mozambique:**
  Research on efficiency and sustainability of jatropha biofuel conducted with University of Tokyo and UEM funded by JICA - JST (2010 ~ 2017)

❖ ADM

- ✓ **Name:**
  Agro-Negócio para o Desenvolvimento de Moçambique, Lda
- ✓ **CEO:**
  Makoto Goda
- ✓ **Investor:**
  Nippon Biodiesel Fuel, Co., Ltd.
- ✓ **Established date :**
  12 March 2012
- ✓ **Capital:**
  45,500.00 USD
- ✓ **No. of local staff :**
  20 permanents & 15 temporaries (in April 2015)

2. Localization





- Cabo Delgado Province
- Operating in 8 districts (April 2015):

  Ancuabe, Balama, Chiure, Macomia, Meluco, Montepuez, Muidumbe e Quissanga

- Main site: Administrative post of Bilibiza

3. Three main activities of NBF

VISION	Working together with Mozambican people in order to improve their livelihood on their own and to establish a society which is able to develop sustainably.
Kew word	LOCAL PRODUCTION & LOCAL CONSUMPTION MODEL

Area	Energy	Food	Finance
Contents	● Supplying **biofuel made of Jatropha** for generators and maize mills in non-electrified villages.	● Supplying **organic fertilizer** made from Jatropha seed cake. ● Purchasing **rice** from rural farmers. ● Commercializing and Selling them locally.	● Installing **electric money system** to KIOSK shops in rural area. ● Using Electric money for **purchasing crops**. ● Recording **life log** of farmers.
Relation With Gov.	● F/S: **NEDO** (US$ 1.3million) ● Research: **JICA・JST** (US$ 4million) ● Pilot: **AECF** (US$ 1.5million)	● Participating G8 New Alliance for Food Security & Nutrition.	● Pilot: **JICA** (US$ 0.5million) with NEC in 2015

PART 1

ENERGY

ENERGY

NBF

4. Act.1: Formation of clubs and distribution of seedlings of Jatropha

ADM

NOT PLANTATION MODEL BUT CONTRACT FARMING MODEL

Mobilization of farmers → **Multiplication of seedlings** → **Distribution of seedlings**

Agrarian technical assistance

- Number of clubs: **75**
- Members : **6,000**
- Distributed seedlings: **801,000** (until 2015)

ENERGY

NBF

5. Act.2: Production and Sale of Jatropha Biofuel (JAT-DIESEL)

ADM

Purchase of seeds → **Processing crude oil** → **Production of JAT-DIESEL**

Sale of JAT-DIESEL in rural areas

1. Maize mill owners

2. Antennas of mobile companies & FUNAE's gas stations

ENERGY

NBF

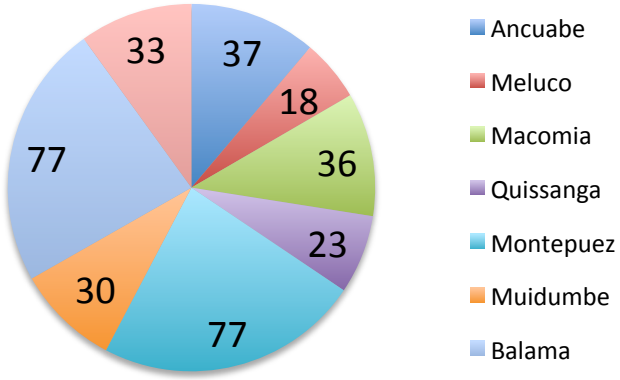
6. Cont.: Progress in 2014 & 2015

ADM

Research of maize mill and sales of JAT-DIESEL for maize mills in 8 districts in Cabo Delgado

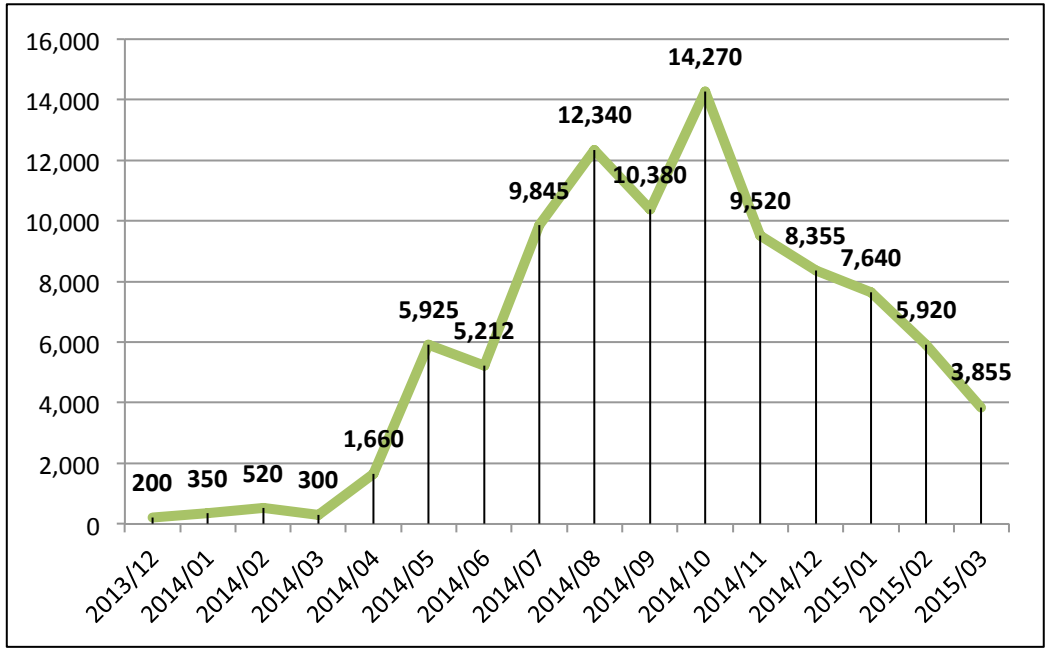
❶ Research of Maize mill: 330

*Still under research



❷ Sales results till February 2015

Total sales: **99,552 Liter**



❸ Price of diesel in rural areas including transport costs

Average: **41.51Mts**

38～38.99Mt	48
39～40.99Mt	138
41～42.99Mt	73
43～44.99Mt	41
45Mt～	30

*Diesel in Pemba: **36.81Mts**

Jat Diesel
Jatropha combustível

Part 2

FOOD

7. Act.1: Commercialization of seed cake of Jatropha

① Production of organic fertilizer made from Jatropha seed cake

We are in the experimental phase organic fertilizer production using Jatropha seed cake

	Jatropha seed cake	Rice bran	Cow manure	Chicken manure
1st type	250kg	70kg	20kg	-
2nd type	250kg	70kg	-	20kg
3rd type	250kg	70kg	-	-

② Market of organic fertilizer

- ✓ **Price of NPK fertilizer in Pemba**

  52Mts/kg (inc. transportation costs)

- ✓ **Price of fertilizer made from Jatropha**

  10Mts/kg

☞ **There is possibility of a market!**

Potential clients

1. Farmers
2. Agricultural company (cotton and cashew nuts)
3. Agricultural NGOs

8. Act.2: Commercialization of Local Rice

Technical assistance for farmers

Purchase of Local Rice

Processing and Branding

Sale in City (Pemba)

Challenges we faced

Huge Operating Cost

- Low education level in rural areas
- Problems related with MONEY especially in harvest time

Lack of basic information

- Basic information of each farmer
- Crop harvest cycle
- Yield data

Introduction of e-money system in rural areas

Establishment of Database

Financial Infrastructure in rural areas

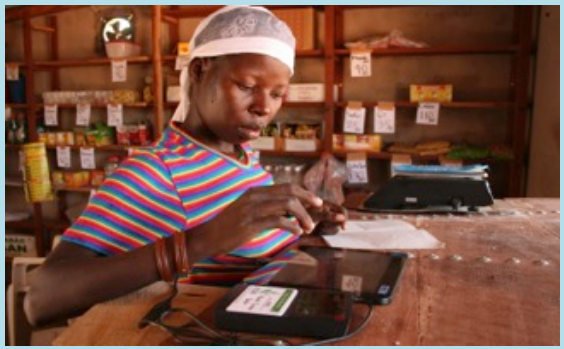
Part 3

FINANCE

FINANCE

9. Act.1: Pilot Implementation of E-money system in rural areas

DATABESE & FINANCIAL INFRAESTRACTURE in rural areas

Issuing IC cards for clients	E-money system (tablet, card reader)
	
Saleslady using E-money system at a Kiosk	**Local people purchasing goods by E-money**
	

FINANCE

10. Act.1: Pilot Implementation of E-money system in rural areas (cont.)

	❶ Charge & withdraw money	❷ Sell products	❸ Purchase crops
Functions			
Results	● Supplying a way to safely save cash in rural areas ● Avoiding wasting money in shops	● Reduction of operating losses ● Creating database of rural populations' consumption trend	● Reduction of handling costs on purchase of agricultural products ● Recording life-log of farmers
Next targets	● Saving ● Financial planning by themselves	● Marketing using the database	● Credit provision based on farmers' life-log

Next steps

1. **Constitution of a new company and to obtaining a micro bank license**
2. **Expand the E-money system to all over the province**
3. **Expand the system to another province**

11. Impacts

Area	Energy	Food	Finance
Social impacts	● Employment generation ● Conflict mitigation between people and wildlife by using Jatropha fence	● Employment generation ● Improvement of agricultural productivity by use of organic fertilizer ● Regional industry revitalization	● Employment generation ● Access to financial services for people in rural areas ● Improvement financial literacy
Economic impacts	● Cost reduction of fossil fuel in rural areas (41～42Mts/L → 38～40Mts/L) ● Developing local economy in rural areas	● Cost reduction of fertilizers in rural areas (52Mts/kg → 10Mts/kg) ● Secure local products' market	● Increase access to loans ● Saving transportation expenses for going to bank ● Creating favorable investment environment for foreign companies
Environmental impacts	● Improving CO2 balance in communities ● Reducing soil erosion due to water and winds	● Avoiding devastation of land because of chemical fertilizer	

12. Challenges

1. Transmission of new ideas and concepts to people in rural areas
   - Use of biofuel and organic fertilizer
   - New agricultural technics
   - Idea of saving, loan, etc.
2. Designing new policies and legislation with the government
   - License for production, storage, transportation and sale of biofuel

OBRIGADO!!!!!!