GBEP BIOENERGY WEEK

BIOFUEL DEVELOPMENT IN VIETNAM

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THE CONTENTS

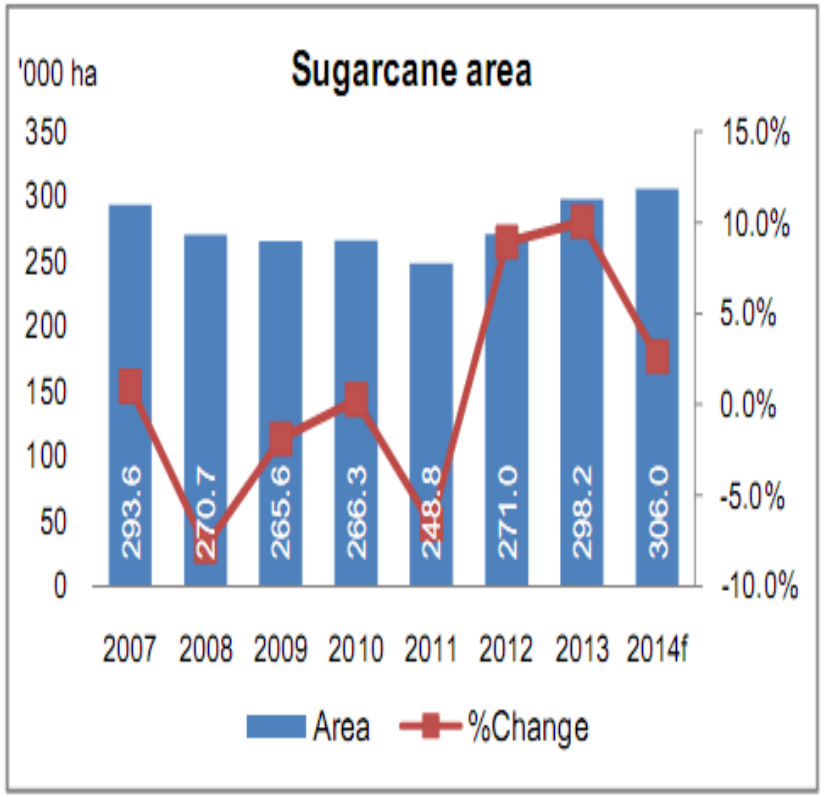
- **Biofuel Potential**
- **Biofuel Policy**
- **Biofuel Projects**
- **Experiences**

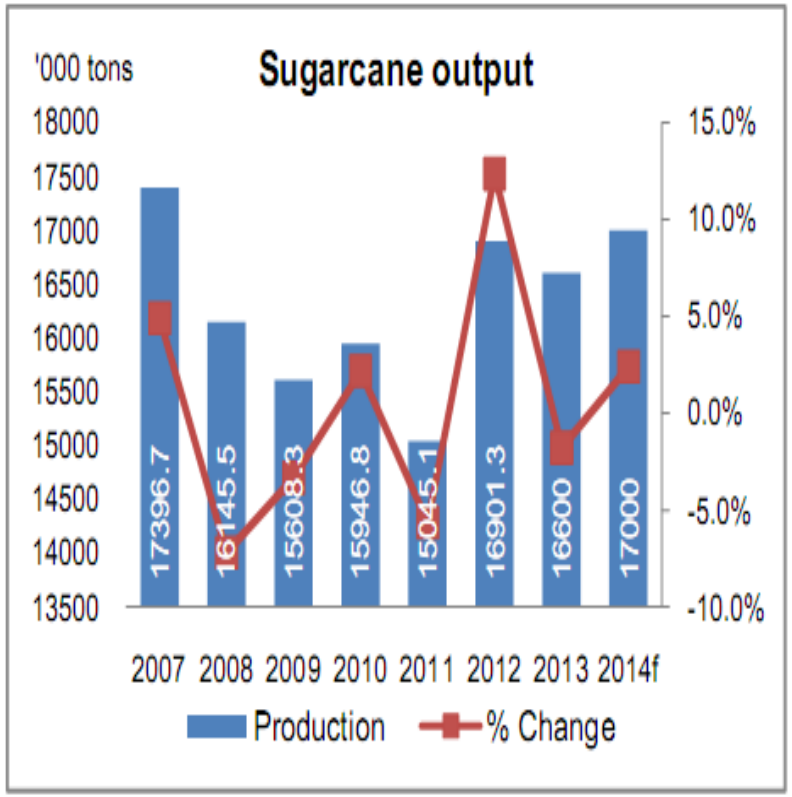
BIOFUEL POTENTIAL

- **Resources for bioethanol production:**
- Sugarcane
- Corn
- Cassava

BIOFUEL POTENTIAL…

- **Sugar cane production:**





Source: MARD, DCP 2013

BIOFUEL POTENTIAL…

Vietnam's Production, Supply and Demand for Corn

Corn Vietnam	2012/2013		2013/2014		2014/2015	
	Market Year Begin: May 2012		Market Year Begin: May 2013		Market Year Begin: May 2014	
	USDA Official	New Post	USDA Official	New Post	USDA Official	New Post
Area Harvested	1,118	1,157	1,120	1,173		1,200
Beginning Stocks	240	240	243	261		757
Production	4,803	4,801	4,900	5,196		5,340
MY Imports	1,500	1,720	2,000	2,200		2,200
TY Imports	1,600	1,650	2,000	2,400		2,200
TY Imp. from U.S.	0	0	0	190		200
Total Supply	6,543	6,761	7,143	7,657		8,297
MY Exports	0	0	0	200		400
TY Exports	0	0	0	400		400
Feed and Residual	5,200	5,400	5,500	5,500		5,600
FSI Consumption	1,100	1,100	1,200	1,200		1,300
Total Consumption	6,300	6,500	6,700	6,700		6,900
Ending Stocks	243	261	443	757		997
Total Distribution	6,543	6,761	7,143	7,657		8,297
1000 HA, 1000 MT, MT/HA						

BIOFUEL POTENTIAL…

- **Cassava production :**

  Cassava ranks the third in terms of production after rice and corn.

  Cassava area reached 560,000 ha

  Average yield of 17.63 ton/ha

  Production of 9.87 million tons

BIOFUEL POTENTIAL…

Resources for biodiesel production:

Fish farming: 6,000 hectares (most of them in the Southern part)

Fish processing companies: 70

Export value attained 1.74 billion USD

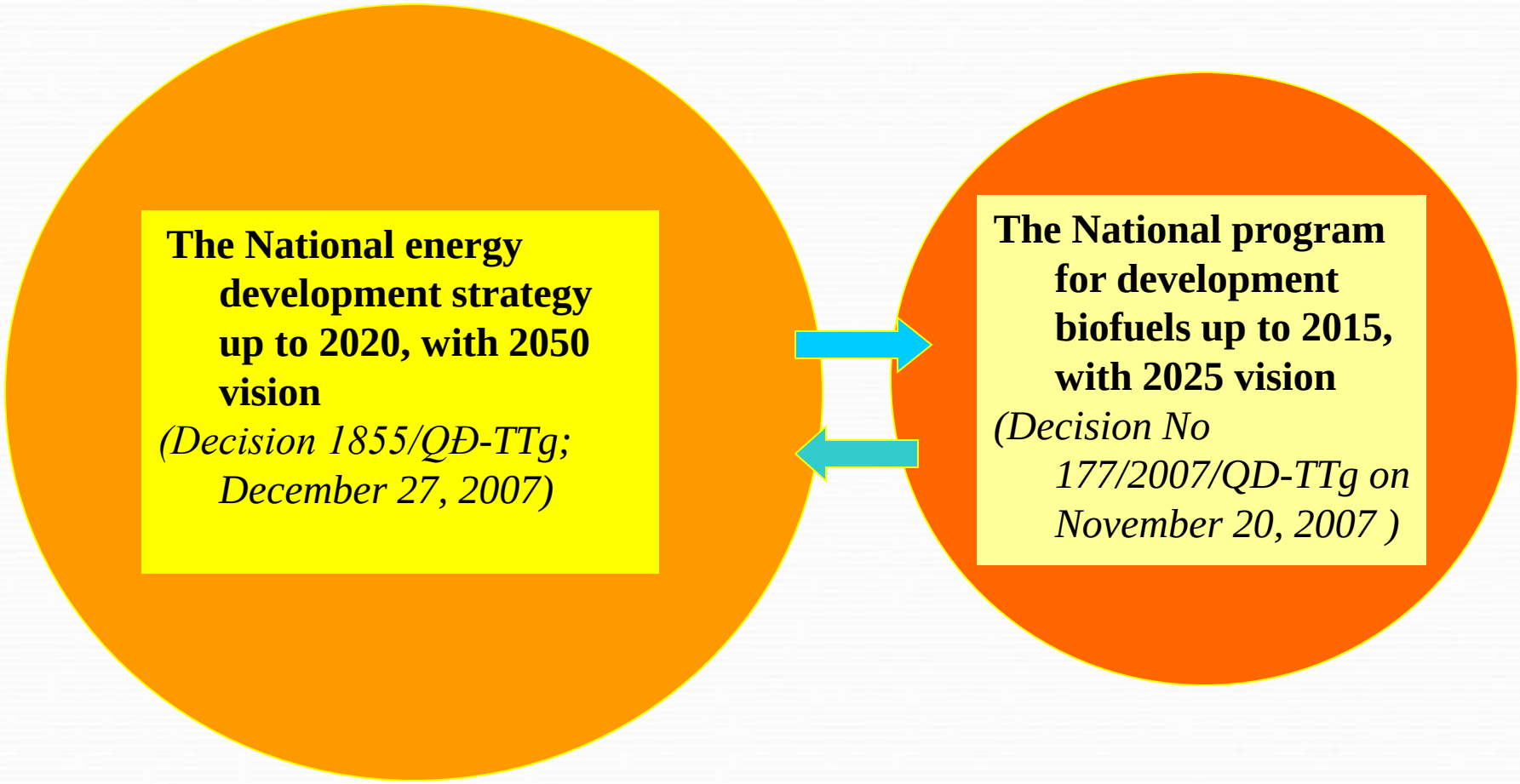
It is assume that the waste of catfish is 120.000MT/year and could be used as a feedstock for biodiesel production

The area for cultivation of soybean, groundnut is limited on the whole country and it mainly uses for food industries

The potential resource for biofuel production is coconut cause of large cultivating area. Cultivation for growing coconut is between 220,000-250,000 hectares, which theoretically can produce between 1.3 and 1.4 billion of coconuts a year

II. BIOFUEL POLICY OF VIETNAM

Structure of current biofuel policy of Vietnam:



II. BIOFUEL POLICY OF VIETNAM (cont,)

1. The National energy development strategy up to 2020, with 2050 vision *(Decision 1855/QĐ-TTg; December 27, 2007)*

Overall objectives: to boost the development of new and renewable energies, bio-energy in order to meet the requirements of socio-economic development;

II. BIOFUEL POLICY OF VIETNAM

(cont. Decision 1855/QD-TTg)

- Development orientations: Policy on investment in the development of new and renewable energy, renewable energy, sources, bio-energy and nuclear power;

- Solutions on development investment: To prioritize the allocation of concessional credits from the development support fund, ODA capital and other foreign bilateral loans for energy projects such as those on the exploration and development of new and renewable energies and bio-energy;

II. BIOFUEL POLICY OF VIETNAM

(cont. Decission 1855/QD-TTg)

- **Solutions on human resource development**: To concentrate efforts on training and raising professional qualifications of managers, technicians and skilled workers; to focus on training human resources for sectors in which human resources remain insufficient in quantity or poor in quality, especially the sub-sectors of new and renewable energy, bio-energy, oil refinery, petro chemistry and nuclear power

II. BIOFUEL POLICY OF VIETNAM (cont,..)

2. The National program for development bio-fuels up to 2015, with 2025 vision

(Decision No 177/2007/QD-TTg on November 20, 2007)

General objectives: To develop biofuel, a new and renewable energy, for use as an alternative to partially replace conventional fossil fuels, contributing to assuring energy security and environmental protection

II. BIOFUEL POLICY OF VIETNAM

(cont. Decission 177/2007/QD-TTg)

Specific objectives:

Items	Up to 2010	2011-2015	2025	Marks
Policies and legal documents	Setting up	Compete	Com.	(*)Yield of a plant per year; (**) Biofuel/ total fuels (***) total yield per year
E5 (Thousand tons)	100 (*)	250(***)	1.800	
B5 (Thousand tons)	50 (*)	250(***)	1.800	
Ratio (%)(**)	0.4	1	5	

II. BIOFUEL POLICY OF VIETNAM

(cont. Decission 177/2007/QD-TTg)

Main tasks:

- Conducting scientific research and technological development (R-D), deploying trial production of products to serve bio-fuel development;
- Founding and developing the bio-fuel production industry;
- Improve capacity for developing bio-fuel;
- International cooperation

II. BIOFUEL POLICY OF VIETNAM

(cont. Decission 177/2007/QD-TTg)

Solutions (1):

- Stepping up the application of research results to practical production, promoting technology transfer and creating an investment environment favorable for the development of biofuel production
- Increasing investment and diversifying funding sources for the effective implementation of the scheme

II. BIOFUEL POLICY OF VIETNAM

(cont. Decission 177/2007/QD-TTg)

Solutions (2):

- Intensifying the building of material and technical foundations and training of human resources to satisfy the biofuel development need;
- Perfecting the system of mechanisms, policies and legal documents for biofuel development

II. BIOFUEL POLICY OF VIETNAM

(cont. Decission 177/2007/QD-TTg)

Solutions(3):

- Expanding and promoting international cooperation on study of bio-fuel development experience
- Raising public awareness about biofuel development

III. BIOFUEL PROJECTS IN VIETNAM

Projects in ethanol

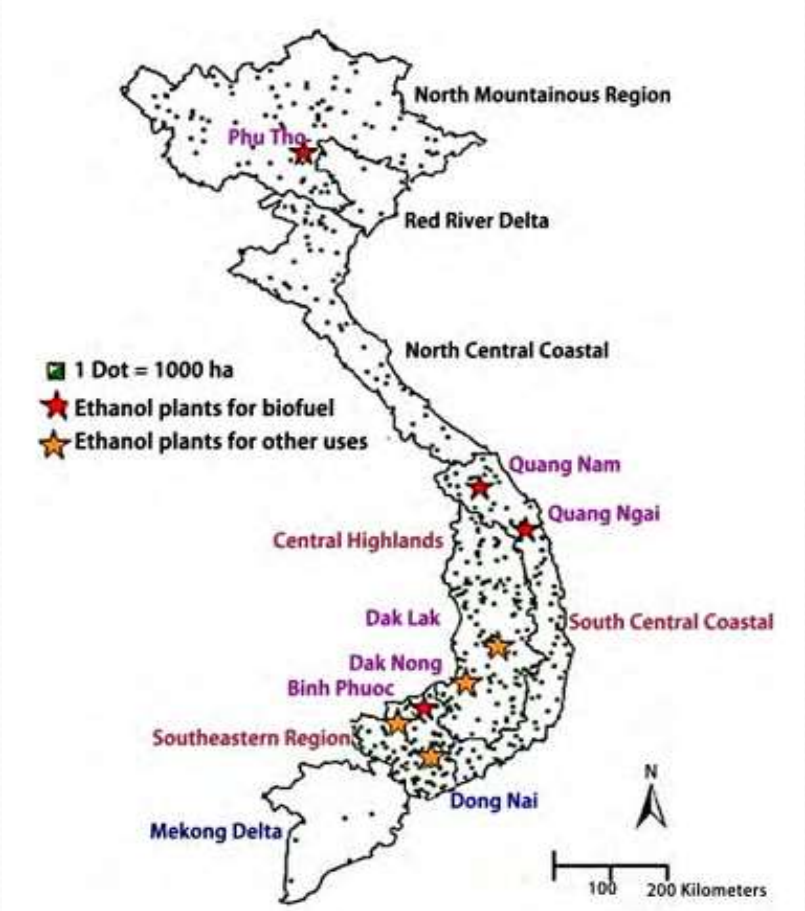


Figure 1. Cassava areas and ethanol plants
Source: GSO 2010.

Figure 2. Blending stations
Source: Survey (2011).

Projects in ethanol…

Company name	Province	Capacity ($Ml\ y^{-1}$)	Cassava chip ($t\ y^{-1}$)
1. Ethanol plants for biofuel			
1.1. Phu Tho Bio-energy Co.	Phu Tho	100	250,000
1.2. Dai Tan ethanol plant, Dong Xanh Co.	Quang Nam	120	300,000
1.3. Petroleum Centre Zone Ethanol Joint Stock Co. (PCB)	Quang Ngai	100	250,000
1.4. Orient Bio-Fuels Co.	Binh Phuoc	100	250,000
2. Ethanol plants for other products			
2.1 Ethanol DakLak Joint Stock Co.	DakLak	66	165,000
2.2 Dai Viet Co.	Dak Nong	68	170,000
2.3 Quy Nguyen Co.	Binh Phuoc	50	125,000
2.4 Tung Lam Co.	Dong Nai	76	190,000

Projects in biodiesel

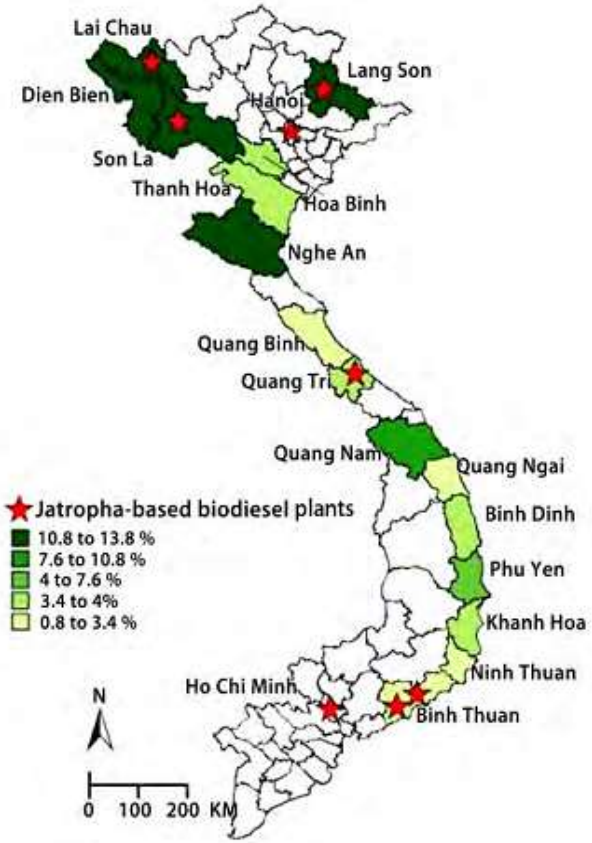


Figure 4. Projected jatropha area, biodiesel plants
Sources: MARD 2008; MARD 2010; Le 2011; Survey (2011).

Figure 5. Blending stations
Source: Survey (2011).

IV. Experiences in Vietnam

Challengces:

- Unstable source of raw materials
- Lack of knowledge and consumption behaviors
- The investment in distribution system (storages, transportations, Biofuel stations,…)
- Biofuel price

IV. Experiences in Vietnam…

1. **Policy and Solutions for production materials**

- Building and implementing the plan on development of raw materials areas for the biofuel industry.

2. Policies and Solutions on Market Development

- Support the consumption of biofuel:

- E 5 will be mandated in the whole country from 1st December 2015 and E 10 from 1st December 2017
- Fee for environment protection must be added to 7.5 cent/l for gasoline and 5 cent/l for E5 and E10.

- Protect the Domestic biofuel production: Import tax for ethanol was imposed 20% in 2014
- Require SOE to implement the Program of Government and invest in storage, transportation, and distribution of biofuel.

THANKS FOR YOUR ATTENTIONS!