CLIMATE SMART AGRICULTURE ENSURING FOOD SECURITY AND FACING CLIMATE CHANGE

NGUYEN VAN BO – VIETNAM

G7 International Symposium on Food Security and Nutrition
October 25-26 2016
United Nations University, Tokyo

REASONS FOR CSA

- Vietnam is an Agriculture-based economy, contributing 17.4% of GDP
- Agriculture employs 44.3% country's workforce
- Labor working in rural area: 68,8%
- Trained labor in rural area: 13,9%

REASONS FOR CSA (2)

- Vietnam ranking globally:
  - 14th by population (95.7mil. By Oct.2016);
  - 65th by natural area;
  - 42th by GDP and
  - 129th by GDP per capita (2,109USD)
- Agricultural land/capita: 0.104ha, 8.7% of world average

REASONS FOR CSA (3)

- Poverty rate: 10% and pro-poor: 5%
- Poor households in rural: 92.3%
- Poor households of ethnic minority: 46.7% of total poverty households
- Labor productivity: 9,138.6 USD (PPP) - 6.41% of Singapore, 13,56% of S.Korea and 55,58% of the Philippines

FOOD SECURITY SITUATION

- Vietnam is the 2nd largest rice exporter

But:

- Vietnam is in food security at national level only; not at household level
- Ranking in food security index: 65th globally and 5th among 10 ASEAN countries

Global Food Security Index 2015

Country	Score/100	Rank
United States	89.0	1
Singapore	88.2	2
Japan	77.4	21
South Korea	74.8	26
Malaysia	69.0	34
China	64.2	42
Thailand	60.0	52
Vietnam	**53.4**	**65**

Global Food Security Index 2015

Security index score/5

Country	Food	Water	Energy
Singapore	4.0	3.4	4.5
Brunei	3.5	3.0	4.0
Malaysia	3.2	3.4	4.0
Thailand	3.0	2.2	4.0
Vietnam	**2.4**	**1.8**	**1.5**
Indonesia	2.3	2.6	2.5
Phillipines	2.3	2.2	1.5
Myanmar	2.0	2.2	3.0
Laos	1.8	2.6	2.0
Cambodia	1.6	1.6	3.0

Source: Richard Silberglitt. Symposium on Integrated Foresight for Sustainable Economic Development and Eco-Resilience in ASEAN Countries. Thailand, 1– 2 October 2013

NUTRITION SECURITY SITUATION

- Great improvement in daily calorie intake per capita, reaches the world's average (2,780 kcal/day)

But:

- Imbalance in nutrition ratio: Too big share of carbohydrate and less of protein and fat compare to that of developed countries

Daily Calorie Intake per Capita

Country	1990-92	2000-02	2005-07
	kcal/day		
USA	3,510	3,720	3,770
Japan	2,920	2,860	2,810
S.Korea	2,970	3,050	3,070
China	2,580	2,920	2,970
Thailand	2,250	2,450	2,530
Vietnam	2,090	2,310	2,770
World			2,780

FAO Statistics 2010

Dietary Energy Consumption per Capita, 2010

Coun-try	DEC, kcal/day	Unit	Carbohy drate	Protein	Fats
USA	3,770	%	49	12	38
		Ratio	1	0.24	0.78
Japan	2,810	%	58	13	29
		Ratio	1	0.22	0.50
Vietnam	2,770	%	70	10	19
		Ratio	**1**	**0.14**	**0.27**

FAO Statistics 2010

CLIMATE CHANGE

- Temperature increase 0.26^{o}C since 1971, twice the global average (WB-VN 2035)
- Sea level raise 1993 – 2014: 3,34 mm/year.
- GHG emission (2010) from agriculture accounting for 88.3 mil.ton CO_2 eq. (35.78% of total); out of that 55.5% from rice prod.
- GHG emission from enteric fermentation and manure management: 20.2% of total in agriculture

Vietnam Emission by Sectors in 2010

Sectors	CO_2 eq, mil.tons	%
Energy	141.1	57.21
Industry	21.2	8.59
Agriculture	88.3	35.78
Forestry & changes in Land using	-19.2	-7.78
Waste	15.3	6.20
Total	246.8	100.00

Source: The initial biennial updated report of Vietnam to the United Nations framework convention on climate change (BUR1), 2014

VN: 2010 GHG emissions in agriculture

Unit: thousand tons of CO2e

Sub-Sectors	CH4	N2O	CO_2 -e	%
Enteric Fermentation	9,467.51	00	9,467.51	10.72
Manure Management	2,319.51	6,240.49	8,560.00	9.69
Rice Cultivation	44,614.22	00	44,614.22	50.49
Agricultural soils	00	23,812.02	23,812.02	26.95
Burning of Residues	1,506.29	393.04	1,899.33	2.15
Total Agriculture	57,908.95	30,445.82	88,354.77	100.0

Source: The initial biennial updated report of Vietnam to the UNFCCC (BUR1), 2014

CLIMATE CHANGE AND ITS IMPACT TO AGRICULTURE

- 2015-2016: Agr. GDP growth rate is negative for the first time during last 30 years (-0.18%) due to severe drought and salinity.
- Damaged 249,620 ha of rice; 37,369 ha of fruits trees,163,768 ha of perennial industrial crops; 6,942 ha of aquaculture... With total value of 7 billion USD (3% GDP)

VN: CLIMATE CHANGE SCENARIO 2016

- Average T increase by 2050: 1,3 ÷1,7°C with RCP4.5 and 1,8÷2,3°C with RCP8.5.
- With 100cm SLR: Area to be flooded: Mekong Delta: 38.9%, Red river Delta: 16.8%, some provinces up to 70-80%
- Food may reduce: 30-35%.
- Saline water instruction: up to 60 km.

IHEM, 2016

CSA MEASURES

Measures promoting production systems that sustainably increase:

A. Productivity/Farmers income (Food Security)

B. Resilience (Adaptation),

C. Reduces GHGs (mitigation),

A. PRODUCTIVITY AND FARMERS INCOME IMPROVEMENT

1. Varieties improvement
2. Technologies for getting more from less;
3. Reducing post-harvest loses;
4. Adding value
5. Disaster early warning and
6. Supporting policies

A. PRODUCTIVITY AND FARMERS INCOME IMPROVEMENT

1. Varieties improvement:
   a) Priorities to indigenous special species
   b) New varieties, meeting market requirement
   c) Purification of popular varieties

A. PRODUCTIVITY IMPROVEMENT (2)

2. Technologies for getting more from less:

   a) Less: Labor, water, fertilizers, pesticides and fuel

   b) More: Productivity, quality/nutrition, food safety, economic efficiency and farmers' income

A. PRODUCTIVITY IMPROVEMENT (3)

3. Technology for reducing post-harvest loses

a) Improving mechanization in planting, cultivation, harvesting

b) Increasing % of drying

c) Advance storage technology for preventing physical and quality losses

d) Processing with conserving nutrition and flavors

A. PRODUCTIVITY IMPROVEMENT (4)

4. Technology for adding value

a) Higher quality varieties, functional foods

b) Diversifying products and deep processing

c) Branding for agricultural commodities

d) Maximizing recycling waste (crops residues, manure/bio-slurry…)

A. PRODUCTIVITY IMPROVEMENT (5)

5. Technology for disaster early warning:

a) Natural disaster: Typhoon, flash floods, drought, salinity instruction, extreme climatic phenomenon (too cold, too hot, heavy rain, severe drought)

b) Disease: Appearance of existing and new biotypes; cross border transmigration..

A. PRODUCTIVITY IMPROVEMENT (6)

6. Supporting policies:

a) Agricultural restructuring, converting ineffective paddy land to others crops, fishery

b) Land accumulation

c) 4 stakeholders linkages, PPP

d) Increasing support for research, technology transfer, farmer field school and training

e) Temporary storage, Credit, Assurance

B. RESILIENCE (Adaptation)

1) Varieties resistant to biotic and abiotic stresses
2) Cropping pattern changes
3) Eco-villages
4) Training, raising public awareness in: Response capacity, Adaptive capacity and Agricultural production reorganization

C. REDUCE GHG EMISSION (Mitigation),

1) Crop residues recycling
2) Water saving technology
3) SSNM, Balanced fertilization and use of Slow/controlled release N-fertilizers
4) 1 Must do, 6 Reductions program
5) Reforestation
6) Livestock waste/bio-slurry management

RECOMMENDATIONS

1) Integrate food/nutrition security and sustainable agriculture into global and national policies

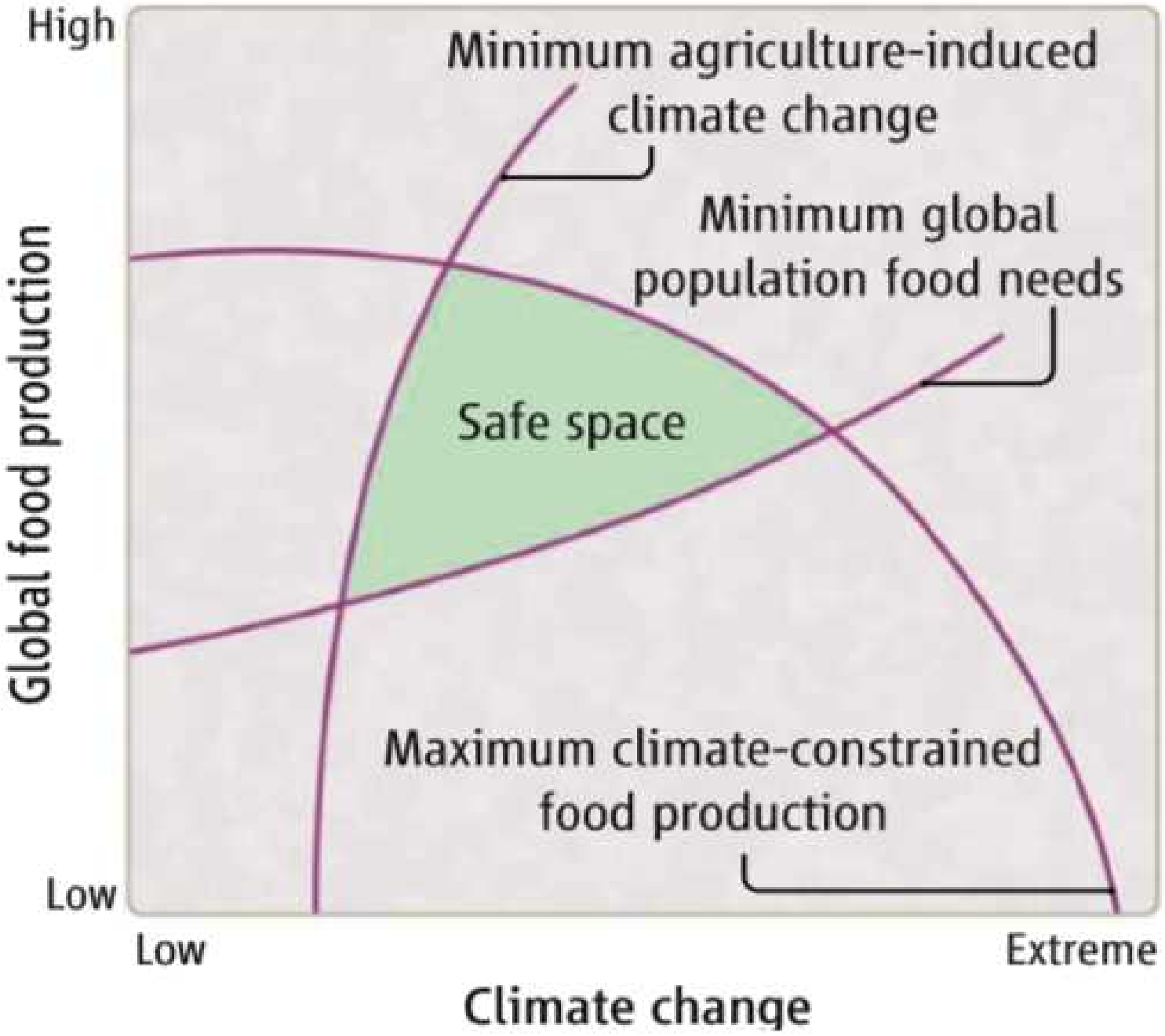
2) Significantly raise the level of investment in science and technology development

3) Sustainably intensify agr. production while reducing GHG emissions and other negative environmental impacts of agriculture

RECOMMENDATIONS (2)

4) GACSA to develop specific programmes to assist rice exporting countries, contributing to global food security but are most vulnerable to Climate change
5) Reduce food loss and waste
6) Create comprehensive information sharing systems

CSA in Brief



CCAFS

KEY MESSAGES

1) No ‘one size fits all’ solutions
2) Farms are fundamental
3) Invest in agriculture for long-term economic development and environmental sustainability
4) We can no longer look at food security, poverty and climate change and environmental sustainability separately, all they should be integrated


Arigatou gozaimasu
有難う 御座います