

# 17. Trends, Natural Disasters and Potential Impact of Climate Change, and Experience of An Giang

**PRESENTATION**

**Trends, natural disasters and potential impact of Climate Change, and experience of An Giang**

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**1. Key Socio-Economic Indicators**

**a. Key indicators of the province (Statistical Yearbook 2008)**

- Population: 2.250.573 people
- Grain production: 3,605,071 tons
- Total GDP: 34,532 VND
- Total GDP per capita: 15,344,000 VND/person

*Of which:*

- + Agri and Fishery: 37.1%
- + Industry and construction: 11.5%
- + Service: 51.4%

**b. Key socio-economic indicators of the Agri Sector**

Value added	Value (billion VND)								Growthrate		Average 2011 - 2015
	2008	1/0c 2009	KH 2010	2011	2012	2013	2014	2015	2009 /2008	2010 /2009	
Agri Sector	4.207.945	4.114.554	4.354.258	4.458.09	4.568.98	4.687.62	4.814.73	4.951.14	-2.22%	5.83%	2.60%
1. Agriculture	3.530.498	3.483.189	3.622.52	3.658.74	3.695.33	3.732.28	3.769.61	3.807.30	-1.3%	4.0%	1.0%
2. Forestry	60.680	61.287	61.90	62.52	63.14	63.78	64.41	65.06	1.0%	1.0%	1.0%
3. Fishery	616.767	570.078	669.84	736.83	810.51	891.56	980.71	1.078.79	-7.6%	17.5%	8.0%

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**c. Importance of Agri Sector in the Socio-economic development of the province**

- 72% of the population rely on agriculture
- Rice production in 2008: 3.5 tons, highest in the country
- Fishery production in 2008: 315,000 tons; also highest in the country
- Agri, forestry, and fishery account for 37.1% of GDP

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## d. Factors affecting the Agri Sector

- Natural disasters
- Topography
- Poor infrastructures
- Slow in shifting production structure
- Unreliable market prices
- Epidemics

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## Damage caused by flood in past years

	Item	Unit	1994	1995	1996	1997	1999	2000	2001
	<b>Tổng thiệt hại</b>	Bil.	417,0	67,0	388,6	67,497	5,230	842,190	176,338
<b>1</b>	<b>Death (children)</b>	Person	166/134	71/67	44/40	7	4/4	134/94	135/104
<b>2</b>	<b>House</b>								
	- Inundation	House	86350	39907	119.610	4.493	68	151.867	32.951
	- Collapse	House	229	240	659	47	95	966	350
<b>3</b>	<b>Agri</b>								
	- Loss of crops	ha	15810	1795	2.757	3.232	266	4.947	972
	- Loss of aquaculture crops	ton				93	10	2.478	387
<b>4</b>	<b>Infra</b>								
	- Inundated schools	school	206	101	2	60	3	461	171
	- Inundated clinics	clinics	103	41	90	7	2	53	43
	- inun. national road	km			12			31	1
	- inun. Provincial road	km			422	13	0,3	162	74
	- Damaged bridge, water gates	unit			419	69	14	273	98

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## 2. Typical types of disasters in An Giang

- Flood
- Erosion
- Cyclone, lightning
- Drought
- Inundation
- Sulphate Acidity
- Storm
- Forest fire
- Flood is the most serious one

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## Bảng thiệt hại do lũ lụt qua một số năm (tt)

No	Item	Unit	2002	2003	2004	2005	2006	2007	2008
	<b>Total damage</b>	Bil	68,955	4,002	10,31	38,468	11,352	5,541	59,778
<b>1</b>	<b>Death (children)</b>	Person	77/69	6/6	16/15	33/30	22/22	14/14	10/10
<b>2</b>	<b>House</b>								
	- Inundation	House	20.743		1.989	797	5		
	- Collapse	House	378		46	58	2		
<b>3</b>	<b>Agri</b>								
	- Loss of crops	Ha	327		121	17			582
	- Loss of aquaculture crops	Tons	23		7	1			
<b>4</b>	<b>Infra</b>								
	- Inundated schools	School	64		16	3			
	- Inundated clinics	Clinic	3		3				
	- inun. national road	Km							
	- inun. Provincial road	Km	44		6	11			
	- Damaged bridge, water gates	Unit	110		54	27	1	4	

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## 3. Activities undertaken and plans for coping with natural disasters

1. **Activities undertaken:** Constructing residential clusters and lines; measures to protect lives; 04 foreign projects; constructing and repairing structures to protect Summer-Autumn and Third rice crops; embankment against erosion.
2. **Plans for coping with natural disasters:**
  - Action Plan for implementing national strategy for prevention and combating natural disasters to 2020 (Decision 2278/QĐ-UBND dated Oct 30, 2008)
  - Plan for implementing the action plan for 2009, 2010, 2011-2015, 2016-2020 with total budget of 10,564 billion VND
  - Plan for implementing the project on “Improving community awareness and community-based disaster management” issued by the Government in attachment to the Decision 1002/QĐ-TTg dated July 13, 2009 with total budget of 53.5 billion VND
  - Annual disaster prevention and combating plans

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## 5. Development orientations-Key tasks of the Agri Sector

- Shifting structure, increase annual value of agri and fishery by 3-3.5%/year.
- Forming specialized commercial production areas with processing facilities for advantaged agri products.
- Pushing advanced husbandry, enhancing veterinary service, ensuring food safety.
- Controlling area for aquaculture, effective exploitation of wild fishery resources according to law.
- Comprehensive development of forestry including management, protection, forest planting.
- Multi-objective irrigation/water resource development

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## 4. Development objectives of the Agri Sector to 2015

- To develop a comprehensively developed agri sector with a growth rate of 2.5-3.0% in 2011-2015.
- Shifting structure of the sector: reduce agri share from 83.18% (2010) to 76.9% (2015) and increase fishery from 15.38% (2010) to 21.79% (2015);
- Increase total value of cultivation products from 75 mill VND (2010) to 90 mill (2015);
- Clean water supply reaches 60% rural population;
- Forest cover from 18.78% (2010) to 22.40% (2015)

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## Key indicators of the Agri Sector

No	Indicator	Unit	2008	2009	Plan 2010	2011	2012	2013	2014	2015
<i>Value of agri, forestry, fishery</i>										
1	Fixed prices	Bil VND	11.218	10.985	11.581	11.915	12.297	12.671	13.100	13.463
	- Agri	Bil	8.422	8.462	8.758	8.859	8.968	9.071	9.189	9.241
	- Forestry	Bil	81	82	83	84	85	86	86	87
	- Fishery	Bil	2.715	2.442	2.739	2.972	3.244	3.515	3.824	4.134
2	Key Agri products									
	- rice	1000 ton	3.520	3.419	3.507	3.516	3.525	3.534	3.542	3.543
	- Maize	Ton	88.358	78.791	84.700	88.920	92.630	96.380	100.170	104.000
	- Green bean	ton	4.123	2.573	2.826	3.160	3.476	3.816	4.134	4.480
	- Soy bean	ton	1.968	2.668	2.900	3.212	3.528	3.848	4.172	4.500
	- Vegetables	ton	770.887	777.225	780.000	798.600	817.400	836.400	855.600	875.000
3	Key plants									
	- Year round rice	1000 ton	564.425	562.927	571.600	571.100	570.600	570.100	569.600	569.600
	- Maize	Ton	11.535	10.286	11.000	11.400	11.800	12.200	12.600	13.000
	- Green Bean	ton	2.626	1.639	1.800	2.000	2.200	2.400	2.600	2.800
	- Soy Bean	ton	713	953	1.000	1.100	1.200	1.300	1.400	1.500
	- Vegetables	ton	31.987	32.250	32.500	33.000	33.500	34.000	34.500	35.000

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## Một số chỉ tiêu chủ yếu của ngành nông nghiệp (tt)

No	Indicator	Unit	2008	2009	Plan 2010	2011	2012	2013	2014	2015
4	<b>Forestry</b>									
	- New forest planting	ha	1,095	1,530	2,000	2,000	2,000	2,000	2,000	2,000
	- Forest protection	ha	2,287	2,266	2,656	3,507	2,650	3,070	3,270	3,270
	- Forest care	ha	1,668	1,268	1,770	2,400	2,500	2,000	1,500	1,500
	- Regeneration	ha								
	- Forest cover	%	17.33	18.05	18.78	19.50	20.23	20.95	21.68	22.40
5	<b>Husbandry</b>									
	- Total # of buffalo	Buffalo	5,435	5,200	4,900	4,760	4,760	4,760	4,760	4,760
	- Cow	Cow	71,124	71,000	72,000	73,600	75,200	76,800	78,400	80,000
	- Pig	Pig	169,261	174,000	179,000	185,000	193,000	201,000	209,000	218,000
	- Meats (including poultry)	Ton	32,228	33,175	34,306	35,602	37,309	38,872	40,722	42,564
	- Total # of chickens & ducks	1000	4,297	4,500	4,800	5,100	5,500	5,800	6,300	6,700
6	<b>Wild fishery and aquaculture</b>									
	Area for freshwater aquaculture and sea products	Ha	2,069	1,900	2,100	2,543	2,790	3,036	3,302	3,566
	- Yield of fishery (wild and aquaculture)	1000 ton								
	+ Aquaculture production	1000	315,036	283,000	320,000	350,000	385,000	420,000	460,000	500,000
	+ Sea product exploitation	1000	48	46	45	44	43	42	41	40
7	<b># of rural population accessing clean water</b>	%	44.22	45.83	48.38	52.10	54.60	56.75	58.00	60.00

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## 7. Action Plan for Coping with Climate Change of the Agri Sector

- Establishing a Steering Committee
- Implementing projects/programs
  - + Development of infrastructures to protect production
  - + Application of science and technology
  - + Implementing MARD's Climate Change Program
  - + Implementing MARD's Action Plan
  - + Receiving and implementing CC projects.

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## 6. Potential impacts of Climate Change in An Giang Biến đổi khí hậu đối với tỉnh An Giang

- Increased intensity, fluctuation, and extremity of natural disasters and other weather phenomena
- Water resources: Serious droughts and floods.
- For agriculture, main impacts are on growth of plants and animals.
- Adverse impacts on forestry, increased forest fire
- Increased risk of flood and erosion of land and water transportation infrastructures.
- Increased risk of flood, shortage of water, treatment of wastewater in urban and industrial areas.
- Human health; increased death toll of flood; increased poverty
- Adverse socio-economic impacts.

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## 8. Recommendations

- National Gov to provide trainings and workshops on CC for local officials.
- Allocate foreign and national projects relating to CC to the province.
- International cooperation for addressing water resource exploitation issues of the Mekong River.
- Make investment to the projects/ programs of An Giang under the provincial Action Plan.

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**Pictures**



Flood from Cambodia coming to Long Xuyen Quadrangle



Erosion in Tan Chau town



Boat service for pupils in flood season



Meeting on plan for disaster prevention (online)

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**Thank You !**

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Swimming class funded by ADPC



Propaganda for child protection in flood season



Child day care center funded by CRND project



Embankment to protect banks from erosion, funded by UNDP