

# ***Viet Nam Central Committee for Flood and Storm Control***

## **VIET NAM COUNTRY REPORT**

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**DEPARTMENT OF DYKE MANAGEMENT AND FLOOD AND STORM CONTROL**

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In 1998, Viet Nam suffered a number of severe disasters. Most notable were the serious summer drought and the severe flooding in Central Viet Nam which resulted from Tropical Storms Babs, Chip, Dawn, Faith, and Elvis, causing tremendous loss of life and property damage. In this report we will concentrate on the flood disaster that occurred in the Central and Central Highlands Provinces of Viet Nam.

### **1. Flood and Typhoon Situation**

From November to December 1998, Storms Nos. 4, 5, 6, 7 and 8 struck the Central and Central Highlands Provinces of Vietnam in succession. The storms combined with a cold front from the North and high tides to cause heavy rain in coastal provinces from Quang Binh to Binh Thuan and in the Central Highlands. Average rainfall was measured at about 200 to 600 mm, while at A Luoi (in Thua Thien Hue), as well as at Tra My, Xuan Binh, and Tien Phuoc (in Quang Nam-Da Nang) rainfall averaged 800 to 1,200 mm. Rain over a large area raised the water levels on rivers from Quang Tri Province to Khanh Hoa Province above Alarm Level III (the highest Vietnamese flood-disaster Alarm Level designation). On the Thu Bon, Vu Gia, Tra Khuc, and Cai Ninh Hoa rivers, water levels rose 0.8 to 2.8 m above Alarm Level III.

This flood is the greatest since 1975, and similar to the record flood of 1964.

In 1998, the Central Provinces paid great attention to flood and typhoon preparedness. Early in 1998, the Prime Minister issued a Directive to the provinces instructing them to develop preparedness plans for controlling the effects of floods and storms, for protecting transportation infrastructure and hydraulic structures, and for protecting agriculture from floods and storms. In June 1998, the Government also assisted local authorities to put in place strategies for drought prevention and flood and storm control. However, due to abnormal weather conditions, to the unique topography of the area, and to the rapid succession of storms No. 4, No. 5, No.6, No.7 and No.8, there was heavy rain and extensive flooding throughout the Centre of the country.

### **2. Damage caused by the storms and flood (up to 31 December 1998)**

- People killed: 397
- People missing: 26
- People injured: 121
- Houses collapsed, swept away: 11,151
- Houses flooded, damaged: 533,786
- Schools collapsed, swept away: 167
- Schools flooded, damaged: 1,862
- Paddy flooded, damaged: 132,227ha
- Other crops flooded, damaged: 42,296 ha
- Hydraulic structures:
  - Earth eroded: 5,459,263 m<sup>3</sup>
  - Stone eroded: 51,464 m<sup>3</sup>

Transportation:

- Earth eroded: 3,460,785 m<sup>3</sup>
- Stone eroded: 41,331 m<sup>3</sup>

Fishery:

- Boats and ships sunk: 309

*Total Estimated Economic Loss: 1,632 billion VND (approximately US\$ 118 million)*

Starting on 19 November 1998, floods rendered many transport roads in Central Vietnam impassable. Many segments of Highway 1A were flooded, some with as much as 2 m of water. There was flooding along many sections of the main North-South railway, resulting in the erosion, in many places, of earth from railway embankments. In provinces from Quang Binh to Quang Ngai, inter-provincial and inter-district roads were deeply submerged under floodwaters; thousands of transport trucks were left stuck or stranded as a result. Transport in this area was rendered impossible.

Human losses were mainly a result of capsized fishing-boats and houses swept away by floodwaters.

The provinces that suffered the greatest loss of human life include Quang Nam Province (51 persons killed), Quang Ngai Province (86 persons killed) and Binh Dinh (57 persons killed).

Provinces where many houses were damaged include Quang Nam Province (204,678 houses), Thua Thien Hue Province (147,608 houses) and Quang Tri Province (26,505 houses).

Almost all areas planted with spring-winter rice, all mature rice paddy ready for harvest, and areas planted with other crops, were flooded for many days. This flooding caused massive economic damage, and will seriously affect the living conditions of local residents in 1999.

Serious damage to infrastructure ? which affected the transportation system, schools, aqua-culture ponds, boats, and stocks, etc. ? will have a direct affect on the lives of people in these provinces over the coming year.

Private property, particularly that of people living near rivers and lagoons or in coastal zones, was severely damaged. Famine and homelessness threaten many families; many schools remain closed; and many ill people need medicine and treatment.

### **3. Actions taken to Guide, to Respond to, and to Combat the Effects of the Floods and Storms**

1. Further to the Prime Minister's Directives and to the Political Bureau's announcement on 1998 activities for flood and storm control, given the high level of awareness of flood and storm hazards in the Central Provinces, and based on experience gained from Typhoon Linda in 1997 and from the severe drought in early 1998,

- The Provinces have actively developed plans for flood and storm prevention, for limiting the number of people, boats and ships, and the amount of infrastructure vulnerable to disaster.

- Before and during storms, provincial leaders monitored and expedited flood and storm response measures. Local authorities oversaw the evacuation of people living in low-lying areas, areas near river-mouths, and coastal areas, such as those in Phu Yen Province, Da Nang Province, and Thua Thien Hue Province.

- Provincial leaders reviewed plans for the protection of reservoirs and hydraulic structures, in such provinces as Binh Dinh, Quang Nam, and Quang Binh.

- Teams of Guards were assigned to flooded areas to direct passers-by; school children were excused from school when flood water levels were high.

- The Provinces and the Police force guaranteed safety and security in affected areas, and ensured that prices remained stable.

- The Provinces mobilised all available means to help each other: food, medicine and clothing from the population of Da Nang City were distributed in flooded areas, principally the districts Duy Xuyen, Dai Loc, Dien Bai, Que Son in Quang Nam Province.

However, the simultaneous occurrence of the flood and storms cut off many areas and hindered response activities. In many districts and communes, insufficient capacities and facilities for responding to the disaster hindered both delivery of relief aid and efforts to combat the effects of the floods and storms.

2. During the flood season, the CCFSC monitored the flood situation closely, and sent frequent official telegrams to the provinces to direct provincial responses to tropical depressions, storms, heavy rain, and floods. The CCFSC also reported flood conditions to the Government so that directives could be issued promptly.

The CCFSC also dispatched officials to the provinces of Quang Nam, Da Nang, Quang Tri and Thua Thien Hue to direct these provinces in responding to and combating the effects of the flood and storms.

The Central Committee for Flood and Storm Control (CCFSC) co-operated with Provincial People's Committees, and Army Headquarters for Zones IV and V and in the provinces, in implementing flood control measures, evacuating people, mobilising rescue ships and helicopters, and supplying food and essential commodities to areas heavily hit by the flooding.

The National Centre for Hydro-Meteorological Forecasting monitored and reported promptly on the location of tropical depressions and storms, and flood trends on rivers.

Viet Nam Television, the Voice of Viet Nam, and other communication agencies issued regular announcements on flood and storm conditions to help provinces implement storm and flood response measures.

3. On 21 November 1998, the Primer Minister sent an official telegram to request the People's Committees of provinces from Quang Binh to Binh Thuan, and all relevant Ministries, to monitor closely the flood and storm situation, to warn people promptly, to mobilise

all forces for flood and storm preparedness and prevention, and to prepare plans for overcoming the effects of floods and storms.

On 22 November 1998, Mr. Nguyen Tan Dung, Vice Prime Minister, inspected the flood and storm situation in person. He visited people affected by floods and storms in Quang Ngai Province and Binh Dinh Province. He directed the Ministries and provinces to respond to and overcome the effects of the floods and storms.

The Government of Viet Nam has decided to allocate 20 billion VND to the affected provinces: 4 billion VND to Quang Nam Province, and 1 to 2 billion VND to each province from Quang Tri to Binh Thuan. The Government will also steer supplies of food, seeds, fertiliser and medical help to local people. The Ministry of Health has already sent a huge amount of medicine to the affected provinces and continues to direct other relevant organisations in supporting local people.

The Ministries of Planning and Investment; Finance; Transportation and Communications; Agriculture and Rural Development; Fisheries; Labour, War Invalids and Social Affairs; Health; Defence; Police; and related organisations inspected conditions on-site, to assist provinces and local people in combating difficulties caused by the flooding, in reviving production and in returning to normal living conditions.

Mr. Le Kha Phieu, Secretary General of the Communist Party, Mr. Tran Duc Luong, President of Viet Nam, and Mr. Phan Van Khai, Prime Minister, issued official telegrams expressing their sympathy for local people affected by the flood, and requested all relevant organisations to help the Central Provinces in overcoming the effects of the storms and flood.

Numerous organisations, unions, provinces and people across the country gave their help to people in the Central Provinces.

Due to the severe effects of the storms and flood in the Central Provinces, as reported by the CCFSC and related Ministries, the Prime Minister has decreed the following response measures:

#### 1. Emergency Relief Aid:

- People killed: 1 million VND/person
- People seriously injured: 500,000 VND/person
- Houses destroyed: 1 million VND/person
- Households dispossessed of all or nearly all property: 1 million VND/household
- Supply vaccines against infectious disease
- Supply water treatment and sanitation chemicals
- Supply 8 kg of rice per person per month within 2 months for households threatened by famine

Total emergency relief funds for the above items are approximately 28 billion VND. The Government made the Chairmen of the People's Committees of the affected provinces responsible for distributing these funds.

#### 2. Funds for rehabilitating production and the living conditions of local people

- Reconstruction of medical facilities destroyed: 20 million VND per facility;
- Repair of medical facilities heavily damaged: 10 million VND per facility;
- Reconstruction of classrooms destroyed: 10 million VND per classroom;
- Repair classrooms heavily damaged: 5 million VND per classroom;
- Repairs to roads to re-establish traffic on national roads and railways;
- Reconstruction of damaged hydraulic structures;
- Reconstruction of sea dykes damaged and broken;
- Provision of rice seeds for the worst-affected poor households: 3 to 5 kg/sao [3 to 5kg/ 360m<sup>2</sup>]

Total funds are estimated at 150 to 200 billion VND.

The Government directed the Ministry of Finance to review the National budget and report on it to the Government for its decision on support for the Central Provinces

#### 3. Low-interest loans for reviving production:

Funds in the amount of 400 to 500 billion VND (equivalent to the allocation for Typhoon Linda) have been allocated for low-interest loans for reviving production.

- Loans for purchasing seeds and fertiliser;
- Loans for repairing boats and ships;
- Loans for restoring fish and shrimp ponds;
- Loans for restoring salt farms;
- The repayment period for loans has been extended to allow people in debt to re-establish production; debtors will be given access to loans.

#### 4. Implementation of Relief Aid

- The Government has assigned the Chairmen of the People's Committees of the affected provinces the responsibility for distributing donations, based on local damage conditions and the directives of the Ministry of Finance, the Ministry of Labour, War Invalid and Social Affairs, to the proper parties and where appropriate.
- The Government requests the Viet Nam Fatherland Front Committee (Viet Nam FFC) to call for the help and support of people across the country, and of internal and external organisations, for victims of the flood in the Central Provinces. Cash donations are the most effective. Donations will be collected by Viet Nam Fatherland Front Committee, which is responsible for distribution of the donations to the proper parties and where appropriate.
- The Government commends all individuals and organisations that have contributed donations or responded to the effects of the storms and flood in the Central Province over the last month.

5. The Government directs the CCFSC and other related Ministries and organisations to develop a strategy for flood, storm and drought control; to solve problems of transportation, hydraulics, housing planning; to time and adjust crop cultivation patterns in

accordance with the topography and disaster hazards common to Central Viet Nam, and to minimise damage caused by drought, floods and storms.

## Summary Damage by Province caused by Floods and Storms in Central Viet Nam in 1998

as of 31 December 1998

According to the official report by the CCFSC to DMU on 31 December 1998

Damage Category	Damage Item	Unit	Quang Binh	Quang Tri	T.T.Hue	Da Nang	Quang Nam	Quang Ngai	Binh Dinh	Phu Yen	Khanh Hoa	Hinh Thuan	Binh Thuan	Kon Tum	Gia Lai	Dac Lac	Lam Dong	TOTAL	
<b>People</b>	People killed	No.	10	13	25	32	51	86	57	24	43	24	12	0	5	14	1	<b>397</b>	
	People injured	No.	4	8	4	27	27	9	10	14	5	3	3	4	0	3	0	<b>121</b>	
	People missing	No.	0	4	2	0	8	0	0	0	2	0	0	0	1	9	0	<b>26</b>	
<b>Housing</b>	House destroyed	No.	0	235	918	160	6,606	746	710	116	671	683	113	21	43	129	0	<b>11,151</b>	
	House damaged	No.	28,592	26,505	147,608	19,082	204,678	49,119	31,043	1,791	2,551	10,017	7,725	72	300	3,423	1,280	<b>533,786</b>	
<b>Education</b>	School destroyed	No.	1	0	0	23	91	25	14	0	0	0	0	4	9	0	0	<b>167</b>	
	School damaged	No.	490	325	125	182	134	260	182	11	52	20	14	3	32	28	4	<b>1,862</b>	
<b>Health</b>	Medicine facilities destroyed	Room	0	0	0	0	3	0	1	0	0	0	0	0	0	0	0	<b>4</b>	
	Medicine facilities damaged	Room	21	29	6	20	10	8	19	8	0	1	2	0	0	0	2	<b>126</b>	
<b>Agriculture</b>	Paddy area inundated	Ha	559	5,106	0	0	13,608	13,773	25,578	20,891	12,693	18,410	15,254	5	3,236	1,952	1,162	<b>132,227</b>	
	Paddy damaged	Ha	0	437	0	0	9,427	0	0	7,100	1,429	0	7,127	0	0	0	774	<b>26,294</b>	
	Paddy destroyed	Ha	279	1,300	0	0	2,020	825	7,961	384	5,042	2,570	4,442	5	0	990	388	<b>26,206</b>	
	Other crop inundated	Ha	7,367	3,241	2,150	1,300	5,699	3,760	6,096	2,170	1,115	3,369	609	0	1,689	2,751	980	<b>42,296</b>	
	Other crop damaged	Ha	0	0	0	0	0	0	1,420	0	0	0	0	0	0	0	0	<b>1,420</b>	
	Other crop destroyed	Ha	435	2,602	0	1,300	1,221	90	567	0	0	0	609	0	0	0	202	<b>7,026</b>	
	Seeding rice field inundated	Ha	0	0	5	0	0	70	0	0	0	0	0	0	0	0	0	<b>75</b>	
	Seeding rice field damaged	Ha	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
	Food stocks damaged	Ton	48	120	1,000	9,000	1,786	7,162	0	150	302	20	19,653	437	0	100	0	0	<b>39,778</b>
	Seeds damaged	Ton	28	0	500	530	4,846	1,226	2,633	0	0	10	0	0	0	0	0	0	<b>9,773</b>
	Industrial crop destroyed	Ha	0	300	0	0	0	0	107	0	0	1,600	912	0	0	130	51	<b>3,100</b>	
	Industrial crop damaged	Ha	0	0	29	0	0	2,495	2,526	525	18	7,417	0	0	3,393	593	59	<b>17,055</b>	
	<b>Water Resource</b>	Earth eroded	m3	105,614	228,265	47,940	504,000	2,629,900	1,041,518	266,440	312,200	61,783	128,320	76,320	35,000	10,963	11,000	0	<b>5,459,263</b>
Stone eroded		m3	2,999	2,850	0	2,500	5,055	22,125	0	3,700	0	6,785	4,010	0	1,440	0	0	<b>51,464</b>	
<b>Transport</b>	Dyke damaged	m	5,565	0	112,000	100	0	45,687	0	827	490	0	0	0	0	0	0	<b>164,669</b>	
	Canal damaged	m	0	0	35,000	0	0	112,867	30,170	15,100	7,000	18,114	0	5,000	109,125	22,000	0	<b>354,376</b>	
	Small hydraulic work destroyed	No.	0	0	0	0	0	10	0	12	2	0	4	0	0	0	0	<b>28</b>	
	Small hydraulic work damaged	No.	1	1	120	14	265	678	61	9	11	8	72	0	40	2	5	<b>1,287</b>	
	Earth eroded	m3	73,760	175,260	38,800	0	865,397	1,508,334	200,172	334,000	94,524	58,168	37,810	69,760	4,800	0	0	<b>3,460,785</b>	
<b>Fishery</b>	Stone eroded	m3	0	0	0	0	1,240	39,296	0	0	0	415	0	0	380	0	0	<b>41,331</b>	
	Bridge destroyed	No.	1	1	0	0	0	4	110	2	0	1	183	0	4	0	0	<b>306</b>	
	Bridge damaged	No.	18	24	27	0	733	564	316	9	66	9	2	4	5	86	3	<b>1,866</b>	
	Fish pond destroyed	No.	106	150	250	750	300	457	2,210	1,300	812	384	31	0	41	11	0	<b>6,802</b>	
<b>Telecom</b>	Fish and shrimp destroyed	Ton	0	0	25	0	0	10	0	70	70	45	0	0	0	0	0	<b>220</b>	
	Boat and ship sunk	No.	8	1	8	4	44	29	3	84	79	10	25	0	14	0	0	<b>309</b>	
	Boat and ship damaged	No.	7	0	35	38	55	4	0	5	0	39	0	0	0	0	0	<b>183</b>	
<b>Energy</b>	Telephone poles destroyed	No.	0	0	0	0	2,368	1,125	0	0	0	0	0	0	0	0	0	<b>3,493</b>	
	Telephone wire destroyed	m	0	0	0	0	81,600	66,530	0	0	0	0	0	0	0	0	0	<b>148,130</b>	
	Telephone switchboards damaged	No.	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	<b>0</b>	
<b>Energy</b>	High tension poles destroyed	No.	0	0	0	0	0	0	0	18	4	0	0	0	0	0	0	<b>22</b>	
	Distribution poles destroyed	No.	1	0	0	0	255	0	7	0	107	0	46	2	0	0	0	<b>418</b>	
	Wire destroyed	m	0	2,000	30	0	122,000	0	0	0	146	0	100	800	0	0	0	<b>125,076</b>	
	<b>Total Economic loss</b>	<b>Mil. VND</b>	<b>20,122</b>	<b>22,715</b>	<b>72,768</b>	<b>182,403</b>	<b>387,200</b>	<b>230,162</b>	<b>191,473</b>	<b>103,800</b>	<b>145,200</b>	<b>133,396</b>	<b>55,406</b>	<b>3,901</b>	<b>26,669</b>	<b>45,000</b>	<b>11,800</b>	<b>1,632,015</b>	