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SOME MAIN FEATURES OF FLOOD CONTROLING PLAN IN CUU LONG (LOWER MEKONG) RIVER BASIN IN VIETNAM

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1. TYPE OF NATURAL DESATER IN CUULONG RIVER DELTA

1. TENDENCY OF FLOOD DAMAGE IN RECENT YEARS

- Lower Mekong Delta plays an important role in social economic development in the country.
- Total natural areas approximately of 3,96 mil.ha (accounts for 5% of MeKong river basin area
- The population is of 17 mil. people.
-Contribute more than 50% of total national food production,
-60% of aquaculture production
- 70% of fruit production.

1. TENDENCY OF FLOOD DAMAGE IN RECENT YEARS

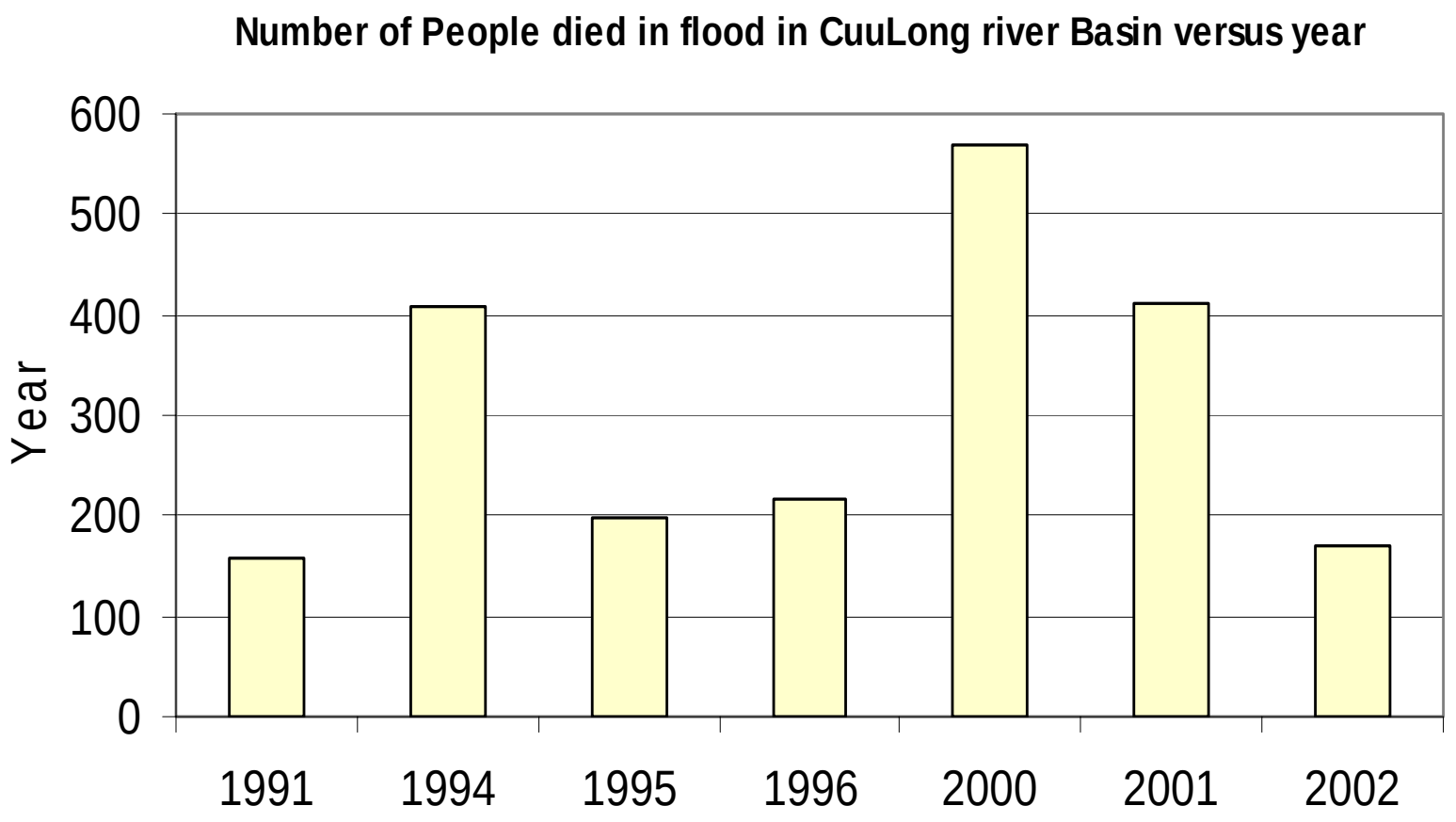
- Due to changes on natural condition in the past years, especially historical flood in 1996, 2000, 2001 and together with changes on large scale on rural development and agriculture crop pattern (from *2001, especially aquaculture*) had been raised a lots of works for water development, especially ***flood protection*** in Cuu Long river basin in Vietnam.

1. TENDENCY OF FLOOD DAMAGE IN RECENT YEARS

The record on damages cause by flood in the basin is mentioned in the following table:

TT	Year	Unit	1994	1996	2000	2001	2002
I	People died	*People*	407	217	568	412	170
II	Loss in Agriculture	Bil. VND	1,326.37	1,036.02	1,450.43	373	
III	Loss in properties	Bil. VND	255.21	391.66	2.311.22		
IV	Loss on transportation	Bil. VND	327.07	398.23	671		
V	Loss on hydraulic works	Bil. VND	97.6	208.45	150		
VI	Loss in education	Bil. VND	59.76	52.39	41		1,403.00
VII	Loss in Health	Bil. VND	19.61	21.31	16.12	105	51
VIII	Loss in Aquaculture	Bil. VND			83.46	13.494	2,446.10
IX	Loss in other infrastructure foundation	Bil. VND	209.95	74.23	40.89		

1. TENDENCY OF FLOOD DAMAGE IN RECENT YEARS



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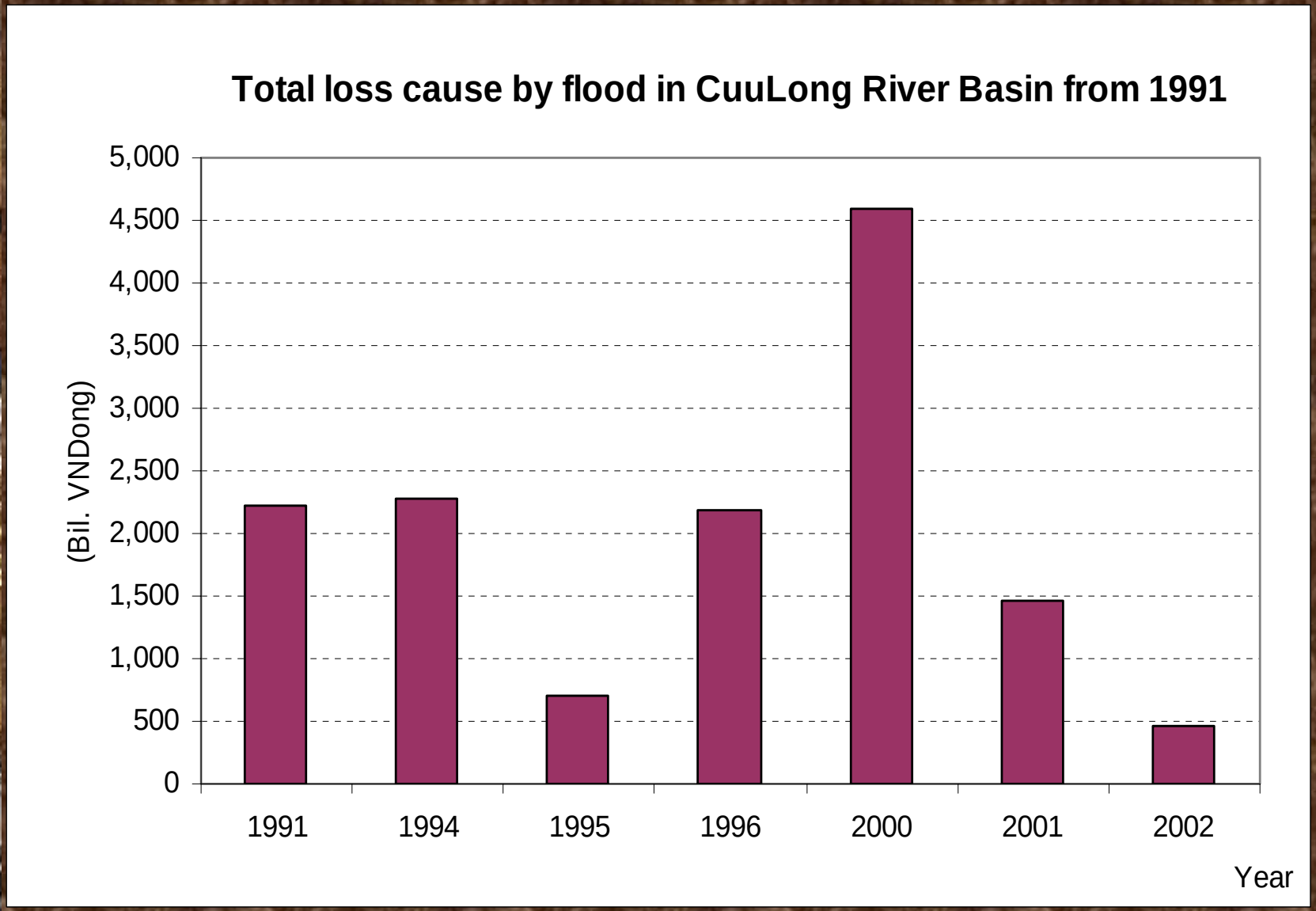

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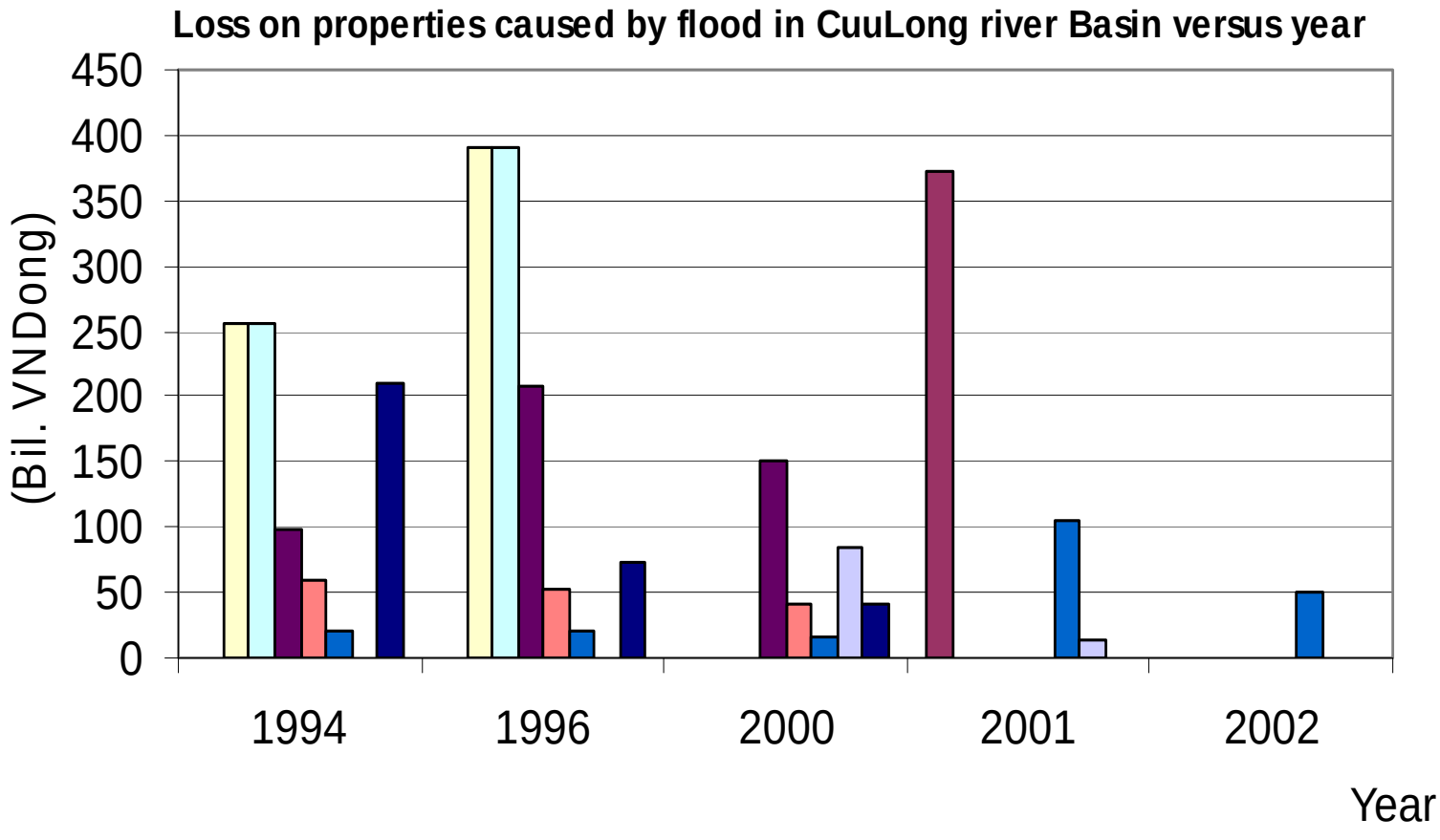


2. THE RESPONSIBILITIES OF DEPARTMENT OF WATER RESOURCES IN FLOOD PROTECTION AND MANAGEMENT:

The water resources Department is assigned by the Minister to perform the State management over the water resources profession on:

-Exploitation, utilization, protection of water resources facilities, rural water drainage and supply system;

- River basin management; tapping, use and general development of rivers;

- Management of flood, drought control and prevention in the whole nation under the state management of the Ministry.

2. THE RESPONSIBILITIES OF DEPARTMENT OF WATER RESOURCES IN FLOOD PROTECTION AND MANAGEMENT:

Related to the plan on flood protection and management in CuuLong Delta, the Department of Water Resources will help the Ministry to give the official decision to implement and monitor; Preside the appraisal of this planning projects and plans after being approved and manage the implementation of planning projects and plans after being approved.

3. EXPERIENCE FOR COUNTERMEASURE OF FLOOD:

1. Living together with flood and controlling floods to some extent are quite a sound policy

2. Decision 173-TTg, which relate to 129 multipurpose structures to be implemented during 2004-2008, say, 2,000 billion VND will be invested in the construction annually.

3. The flood controlling measure concerns 4 main structural groups: (1) the structure along the coast of west sea (2) structures *controlling border overwhelming flood* (3) on-farm canals to drain flood water into west sea and (4) structures controlling flood from Hau river to Long Xuyen Quadrangle.

3. EXPERIENCE FOR COUNTERMEASURE OF FLOOD:

4. Policy for floodplain: The government emphases on socio-economic development.

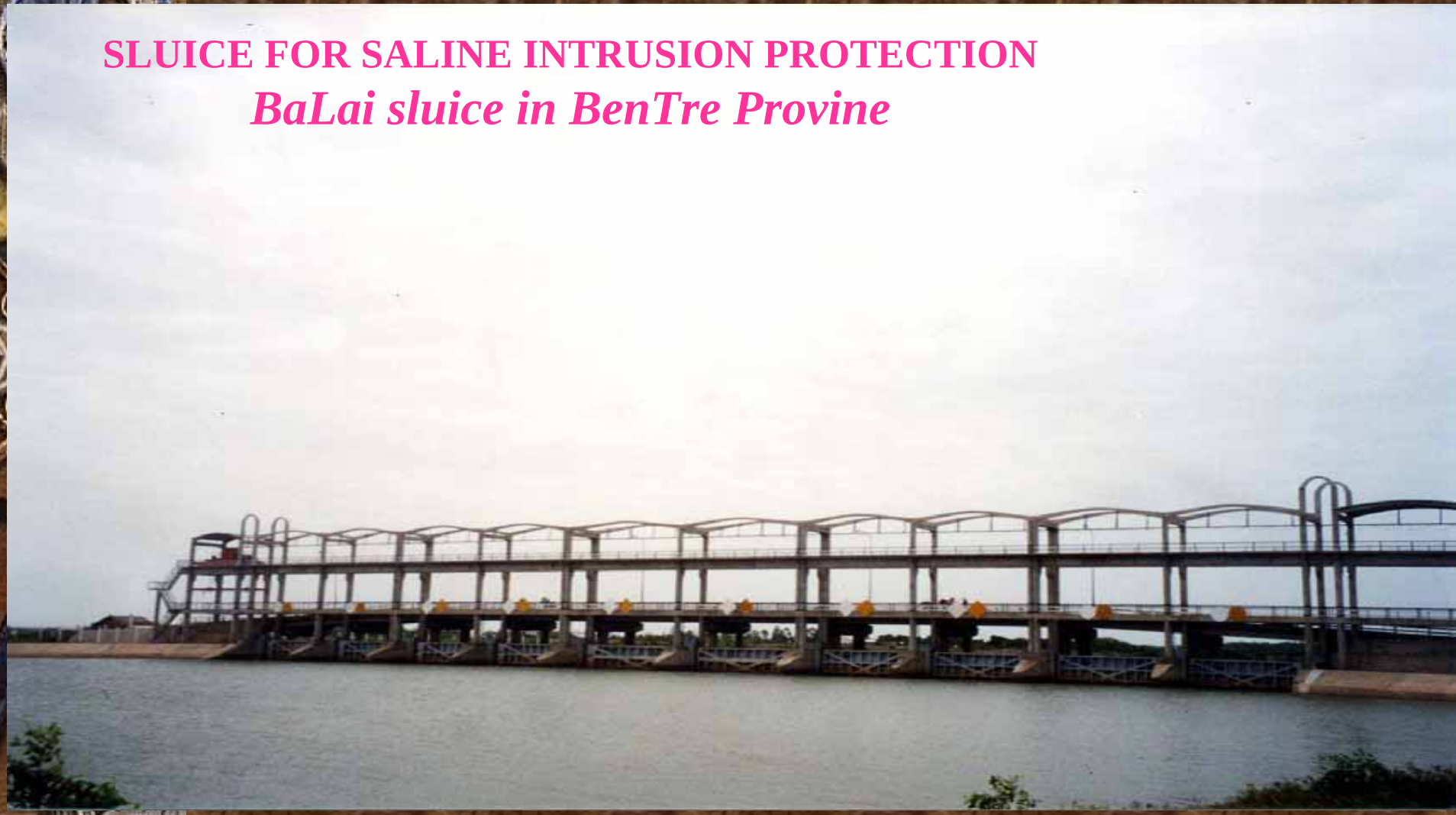
-Decision No. 01/1998/QĐ-TTg, 99/QĐ-TTg and 173/QĐ-TTg relating to the development program for Cuu Long River Delta by 2010.

At the same time, in line with the economic shifting policy, the government also focuses on the development of all economic sector in order to improve the living standards of people, especially ones of ethnic people, so that they can be equal to others in the whole country.

3. EXPERIENCE FOR COUNTERMEASURE OF FLOOD:

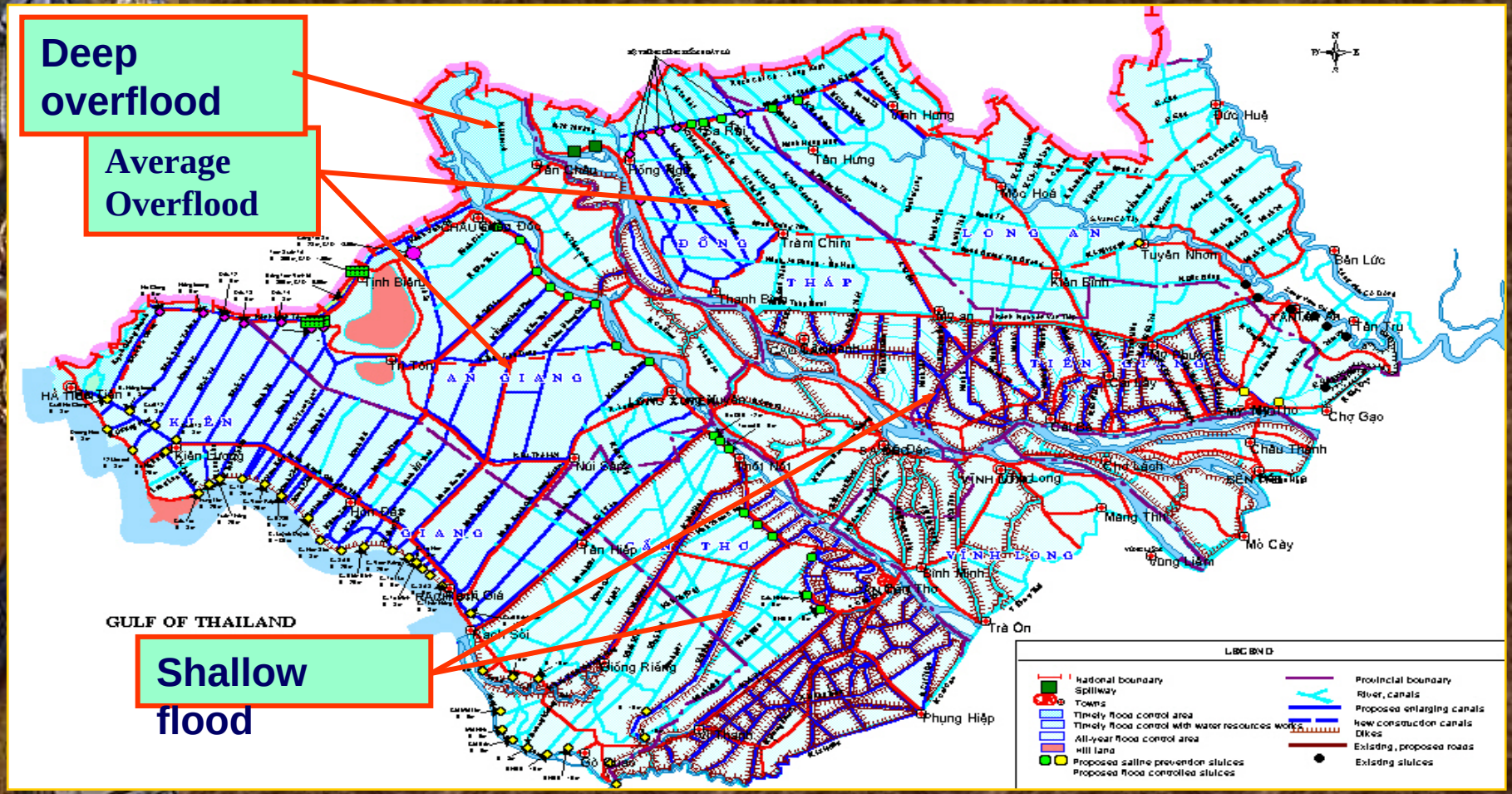
SLUICE FOR SALINE INTRUSION PROTECTION

BaLai sluice in BenTre Provine

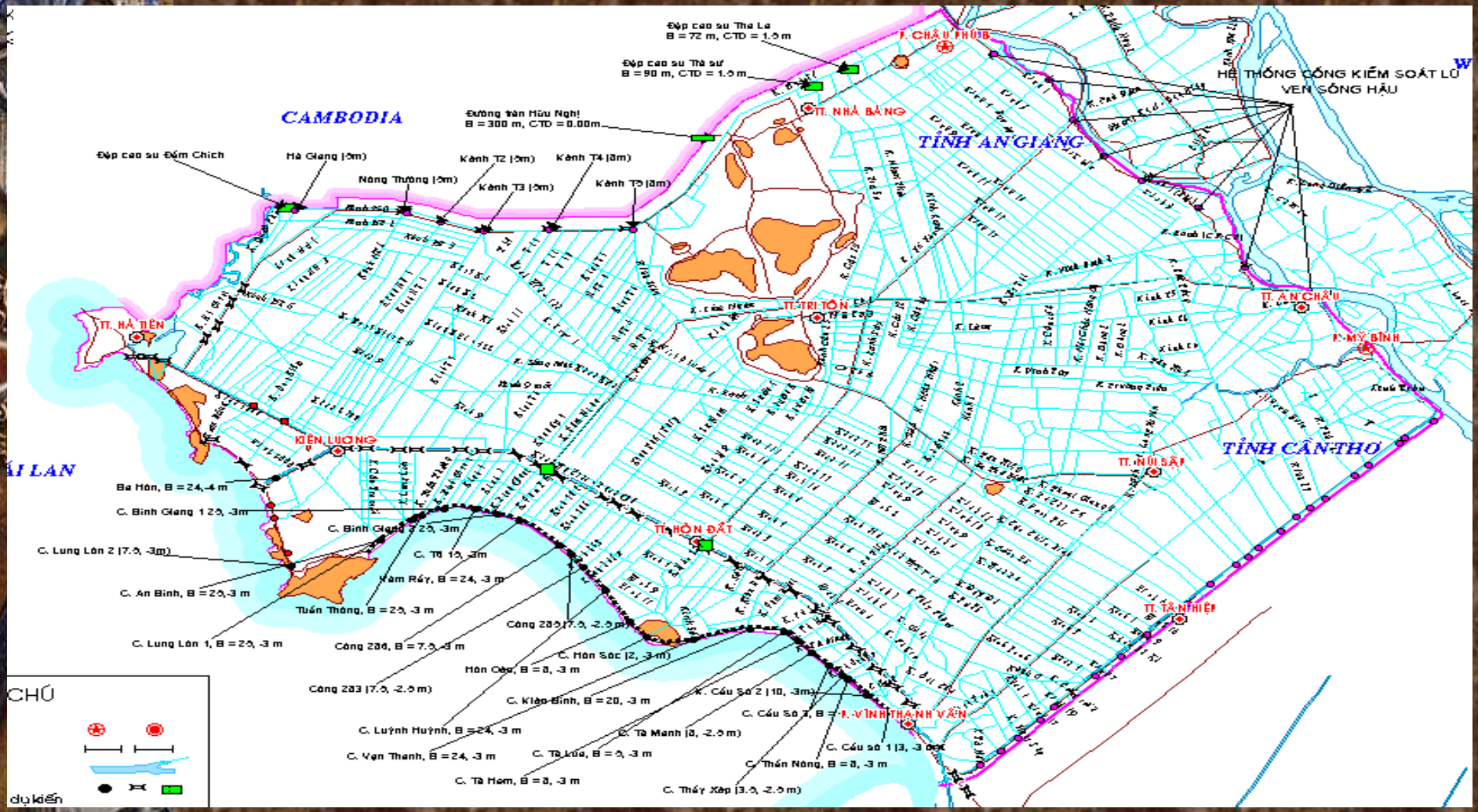


3. EXPERIENCE FOR COUNTERMEASURE OF FLOOD:

Map on Flood Protection base on “Living with Flood” policy



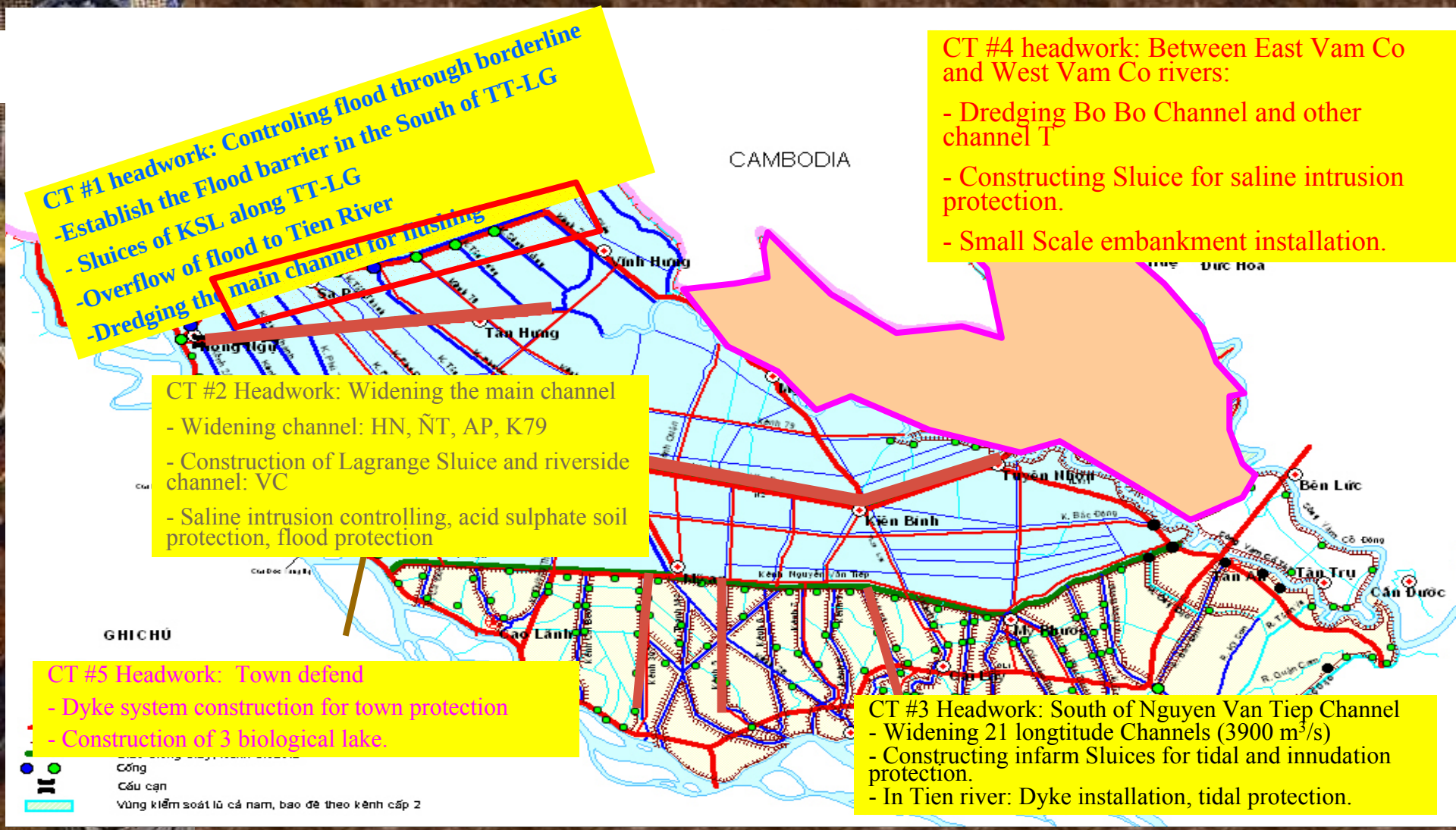
FLOOD CONTROLING ORIENTATION IN TU GIAC LONG XUYEN



FLOOD CONTROLING ORIENTATION IN DONG THAP MUOI

CT #1 headwork: Controling flood through borderline
-Establish the Flood barrier in the South of TT-LG
- Sluices of KSL along TT-LG
-Overflow of flood to Tien River
-Dredging the main channel for flushing

CT #4 headwork: Between East Vam Co and West Vam Co rivers:
- Dredging Bo Bo Channel and other channel T
- Constructing Sluice for saline intrusion protection.
- Small Scale embankment installation.



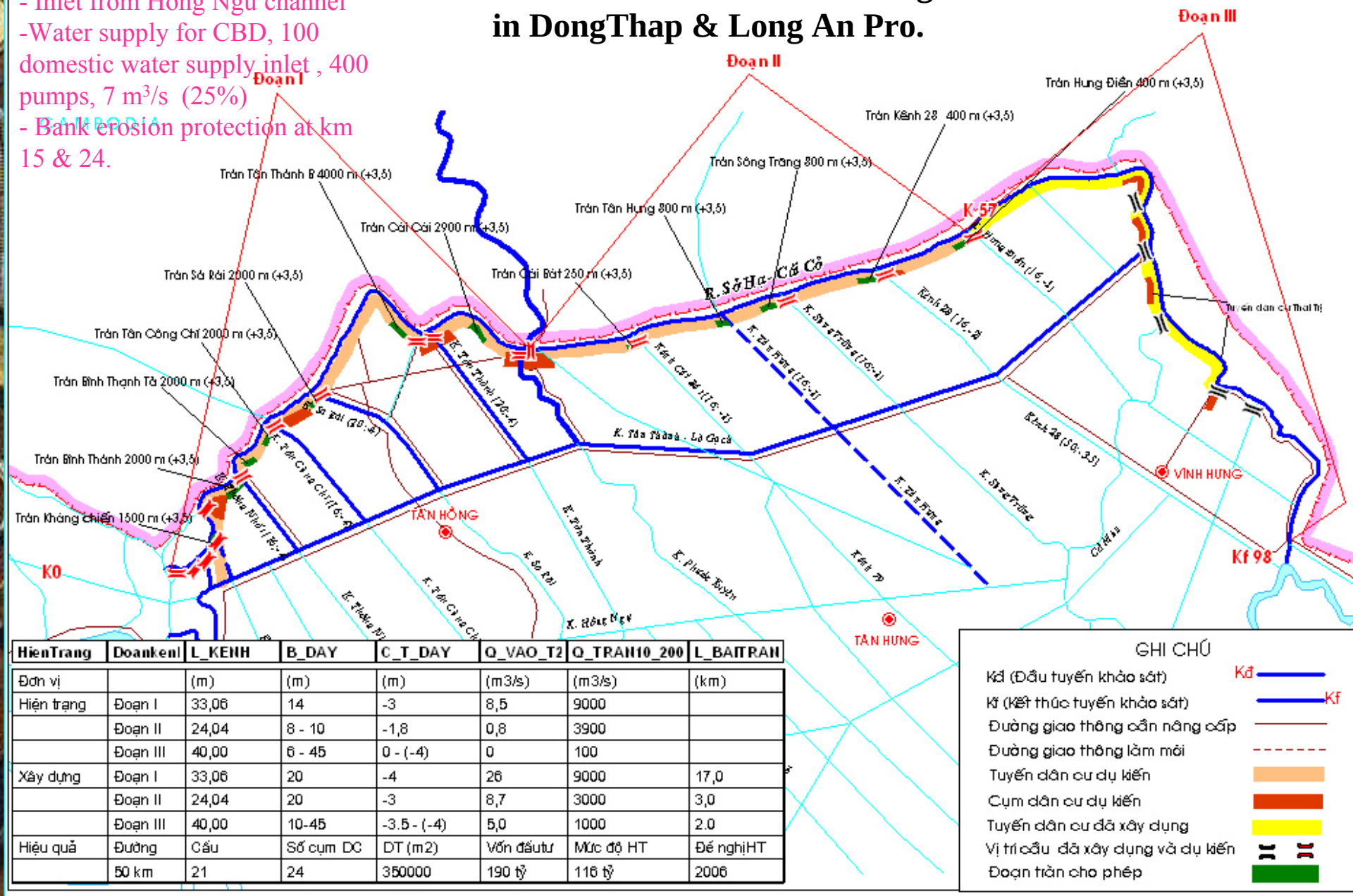
CT #2 Headwork: Widening the main channel
- Widening channel: HN, ÑT, AP, K79
- Construction of Lagrange Sluice and riverside channel: VC
- Saline intrusion controlling, acid sulphate soil protection, flood protection

CT #5 Headwork: Town defend
- Dyke system construction for town protection
- Construction of 3 biological lake.

CT #3 Headwork: South of Nguyen Van Tiep Channel
- Widening 21 longtitude Channels (3900 m^3/s)
- Constructing infarm Sluices for tidal and innudation protection.
- In Tien river: Dyke installation, tidal protection.

The routine of SoHa – Cai Co- LongKhot in DongThap & Long An Pro.

- Inlet from Hong Ngu channel
-Water supply for CBD, 100 domestic water supply inlet , 400 pumps, 7 m^3/s (25%)
- Bank erosion protection at km 15 & 24.



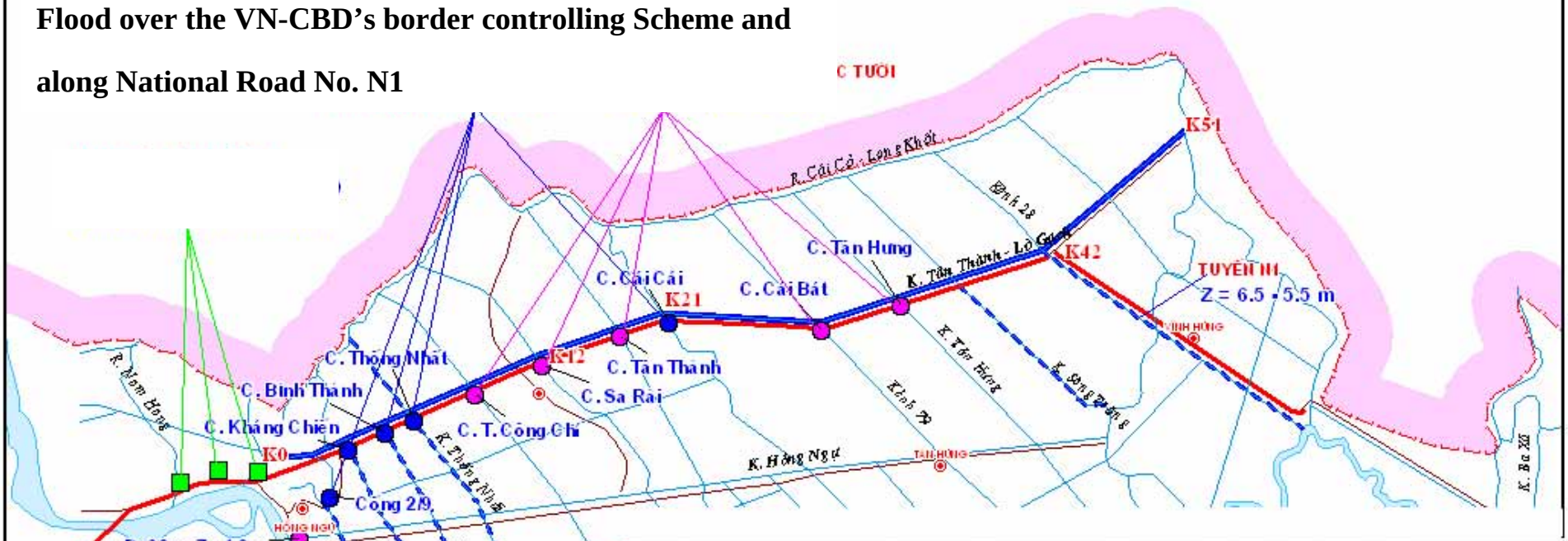
HienTrang	Doankenl	L_KENH	B_DAY	C_T_DAY	Q_VAO_T2	Q_TRAN10_200	L_BAITRAN
Đơn vị		(m)	(m)	(m)	(m3/s)	(m3/s)	(km)
Hiện trạng	Đoạn I	33,06	14	-3	8,5	9000	
	Đoạn II	24,04	8 - 10	-1,8	0,8	3900	
	Đoạn III	40,00	6 - 45	0 - (-4)	0	100	
Xây dựng	Đoạn I	33,06	20	-4	26	9000	17,0
	Đoạn II	24,04	20	-3	8,7	3000	3,0
	Đoạn III	40,00	10-45	-3.5 - (-4)	5,0	1000	2.0
Hiệu quả	Đường	Cầu	Số cụm DC	DT (m2)	Vốn đầu tư	Mức độ HT	Đề nghị HT
	50 km	21	24	350000	190 tỷ	116 tỷ	2006

GHI CHÚ

- Kđ (Đầu tuyến khảo sát)
- Kf (Kết thúc tuyến khảo sát)
- Đường giao thông cần nâng cấp
- Đường giao thông làm mới
- Tuyến dân cư dự kiến
- Cụm dân cư dự kiến
- Tuyến dân cư đã xây dựng
- Vị trí cầu đã xây dựng và dự kiến
- Đoạn tràn cho phép

Flood over the VN-CBD's border controlling Scheme and

along National Road No. N1



TT	Hạng mục	L (km)	Htrạng	Htrạng	T.kế	T.kế	Tình hình xây dựng
			B(m)	CT(m)	B(m)	CT(m)	
1	Kênh TTLG	51					
	- K0-K12	12	24	-3	40	-4	Chưa hoàn thành
	- K12- K21	9	16	-3	32	-4	Đã đào xong
	- K21- K51	30	12	-3	32	-4	Đào kênh được 50% k
2	Tuyến QL N1 dọc TTLG	42					
	K0- K12(H.Ngự - T. Hồng	12	7	6.5			Ở lộ 30, đã XD xong
	K12- K21(T. Hồng- Cái Cá	9	7	6,5-6,0			BP XD năm 2001-200
	K21- K42(Cái Cái - K. 28)	21	Chưa thành tuyế		7	6- 5,5	
3	Cống kiểm soát lũ						
	Cống 2/9		Chưa có		60	-3.5	Đề nghị lập D.án NCK
	Cống Khang Chiến		Chưa có		60	-3.5	Đề nghị lập D.án NCK
	C. Bình Thành		Chưa có		40	-3.5	Đề nghị lập D.án NCK
	C. Thống Nhất		Chưa có		60	-3.5	Đề nghị lập D.án NCK
4	5 cống ngăn lũ, lấy nước		Chưa có		10	-3.5	Đề nghị lập D.án NCK

4. CERTAIN POLICIES ON INFRASTRUCTURE FOR FLOOD CONTROL

1. In December 1995, the Ministry of Water Resources (and now is Ministry of Agriculture and Rural Development) has submitted the “Orientation on flood protection in CuuLong River Delta”. The detail proposal on this document is basement for the Prime Minister to release the Decision 99/TTg in which request the Ministry of Agriculture and Rural Development to study the basic options for water resources development in order to set up the Strategy on flood protection in Cuu Long river Delta (CLRD).

4. CERTAIN POLICIES ON INFRASTRUCTURE FOR FLOOD CONTROL

- In 21/6/1999, The PM has approved the project on "Flood protection and flood water utilization in CLRD plan until 2010". In this project, the purposes and measurements applied for 3 large regions in CLRD including Long Xuyen Quadrangle, Dong Thap Muoi and the area between Tien and Hau river are clearly defined.
- *Through this flood planning project, a series* of flood controlling structures have been constructed in floodplains to protect rice, crops and fruit trees, especially in Long Xuyen Quadrangle.

4. CERTAIN POLICIES ON INFRASTRUCTURE FOR FLOOD CONTROL

Existing structures such as rubber dam of Trà Sư, Tha La, Vĩnh Tế canal, flood drainage system along west sea, Tân Thành-Lò Gạch canal, floodways in the south of Nguyen Van Tiep canal and ring dyke protecting towns of Châu Đốc, Tân Hồng, Tân Hưng, Vĩnh Hưng, Mộc Hoá, residnetal quarters in 7 communes…, embankment protecting fruit tree gardens in Tiền Giang, Vình Long, Cần Thơ..., highways of No. 1, 30, 80, 91... have been upgraded to survive 2000 floods. These above mentioned structures have confirmed the efficiency of flood controlling measures which have been proposed in the project.

5. INFRASTRUCTURE IS NEEDED ON FLOOD PROTECTION:

- The construction of infrastructure can not catch up with technical and production requirements. The quality of infrastructure is low so the annual repair and maintenance are costly and waste.

-Lack of operation and management procedures; coordination and cooperation between different sectors and localities and suitable monitoring on development. The sense of responsibility, obedience and maintenance of structures of local people is not good which is reflected in some damaged structures.

- The investment is scattered and limited which can be explained by the financial situation of the country and people.

5. INFRASTRUCTURE IS NEEDED ON FLOOD PROTECTION:

- Construction of flood control structures to ensure national food security, accelerate agriculture economic growth and rural development in modern way.
- There should be efficiency studies and assessments of different types of production; studies, investigation and measurement of the flow influence regarding its discharge and water level under the effects of flood control structure and impacts of environmental, economy and socio-cultural aspects.
- There should be more investments in the proper operation, exploitation and management to enhance the investment efficiency. The establishment of criteria, specifications and policies for management and investment should be done for the flood control system in Cuu Long River Delta.

6. WHAT ARE THE DIFFICULT ISSUES ON FLOOD MANAGEMENT?

1. Strongly push all related activities on this field. The big finance should be more invested to this project because of the its important role on contributing the food production to the country and for export to other country. Constructing many hydraulic works in the area should spend much money. - Call for international support on implementing all activities concerning to construction and finance management.
2. It is needed to organize the monitoring system including mechanism and staffs to assess the progress of the implementing process. A steering Board should be establish to harmonize the project activities with other development project in the region.

6. WHAT ARE THE DIFFICULT ISSUES ON FLOOD MANAGEMENT?

3. It is needed to conduct more study to predict of the total flood discharge from the upstream in order to have active measurements on having effective plan on flood water ultilisation and management.

4. The cooperation with International Mekong River Commission shoul be maintain to have latest information of water using situation of upstream country of Mekong River.

SOME MAIN FEATURES OF FLOOD CONTROLING PLAN IN CUU LONG (LOWER MEKONG) RIVER BASIN IN VIETNAM

THANK YOU VERY MUCH!

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