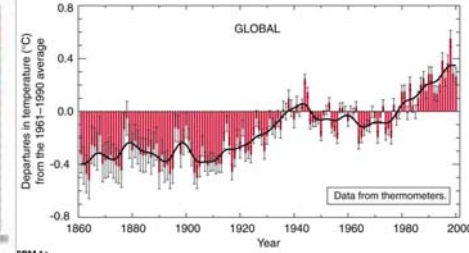
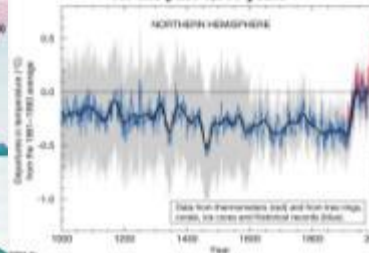


Introduction to Hydro-Meteorological Activities In Vietnam



MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

ADMINISTRATIVE AGENCIES

Dept. of International Cooperation

Dept. of Planning

Dept. of Science and Technology

Dept. of Legislation

Dept. of Finance

Dept. of Emulation-Commendation

Dept of Organization and Personnel

Inspectorate of Ministry

Administrative Office

Representative Office in Ho Chi Minh City

General Dept. of Seas and Islands

General Dept. of Environment

General Dept. of Land Management

Dept. of Geology and Minerals

Dept. of Water Resources Management

Dept. of Information Technology

Dept. of Meteorology, Hydrology and Climate Change

Dept. of Survey and Mapping

PUBLIC SERVICES

National Hydro-Meteorological Services

Center for WR Planning and Investigation

National Remote Sensing Center

Natural Resources and Environment Newspaper Agency

Natural Resources and Environment Magazine Agency

Viet Nam National Mekong Committee

Standing Office Office for Council for Evaluation of Mineral Reserves

Office of National Steering Committee on overcoming consequences of toxic chemicals by US During the war in Vietnam

INSTITUTES AND COLLEGES

Institute of Strategy and Policy on Natural Resources and Environment

Institute of Hydrometeorology and Environment

Science Institute of Survey and Mapping

Science Institute of Geology and Mineral Resources

Hanoi College for Natural Resources and Environment

Ho Chi Minh City College for Natural Resources and Environment

Central Regional College for Natural Resources and Environment

ENTERPRISES

Aerial photo-topography Company

Cadastre and Engineering Survey Company

Joint Stock Company of Consultancy Service and Technology Development for Natural Resources and Environment

Cartographic Publishing House

Cartographic Publishing House

Viet Nam Environmental and Hydro-meteorological Equipment JSC

Viet Nam Environment Protection Fund

1. Dep. of Hydro-Meteorology and Climate Change

- Providing advising and assisting the Minister in managing and governing in the areas of meteorology, hydrology,
- Coordination of activities related to climate change, and protection of ozone layer

2. National Hydro-Meteorological Services

- Operate the National Hydro-meteorological Observation Network.
- Provide hydro-meteorological forecasts and warnings.

3. Institute for Meteorology, Hydrology and Environment

- R&D in meteorology, hydrology, oceanography, water resources, environment and climate change.
- Training and education.

Vietnam is one of the most disaster prone countries

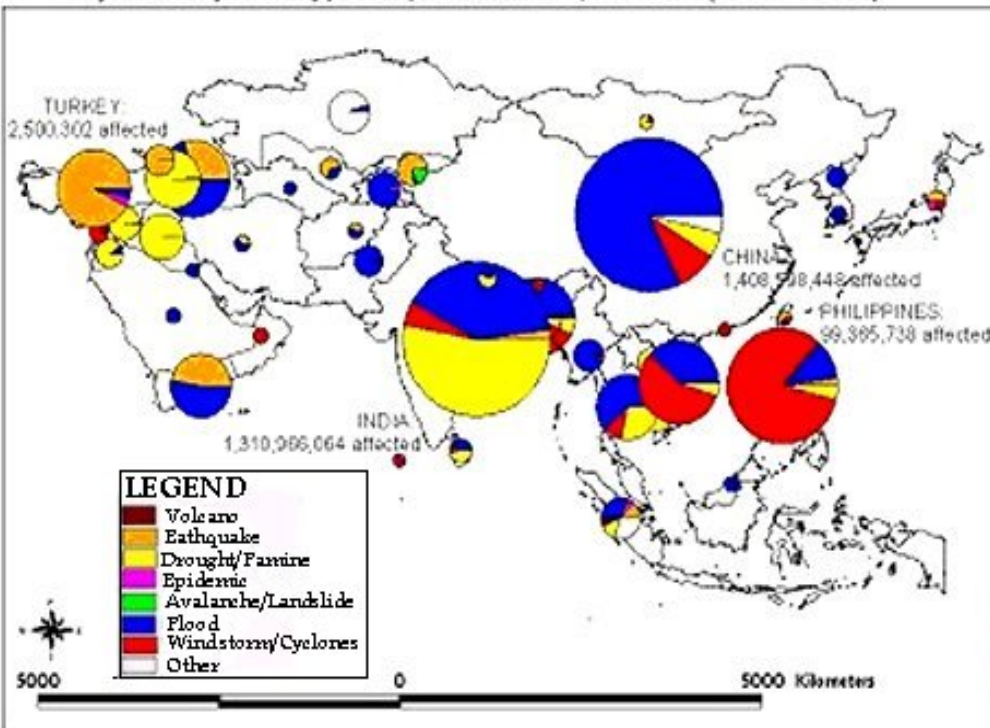
Total area: 329,560 sq. km

Coastline: 3444 km

Located in the tropical monsoon region

Suffers from natural disasters:
tropical cyclones, storm surge, heavy rain, flood, flash flood, drought, etc.

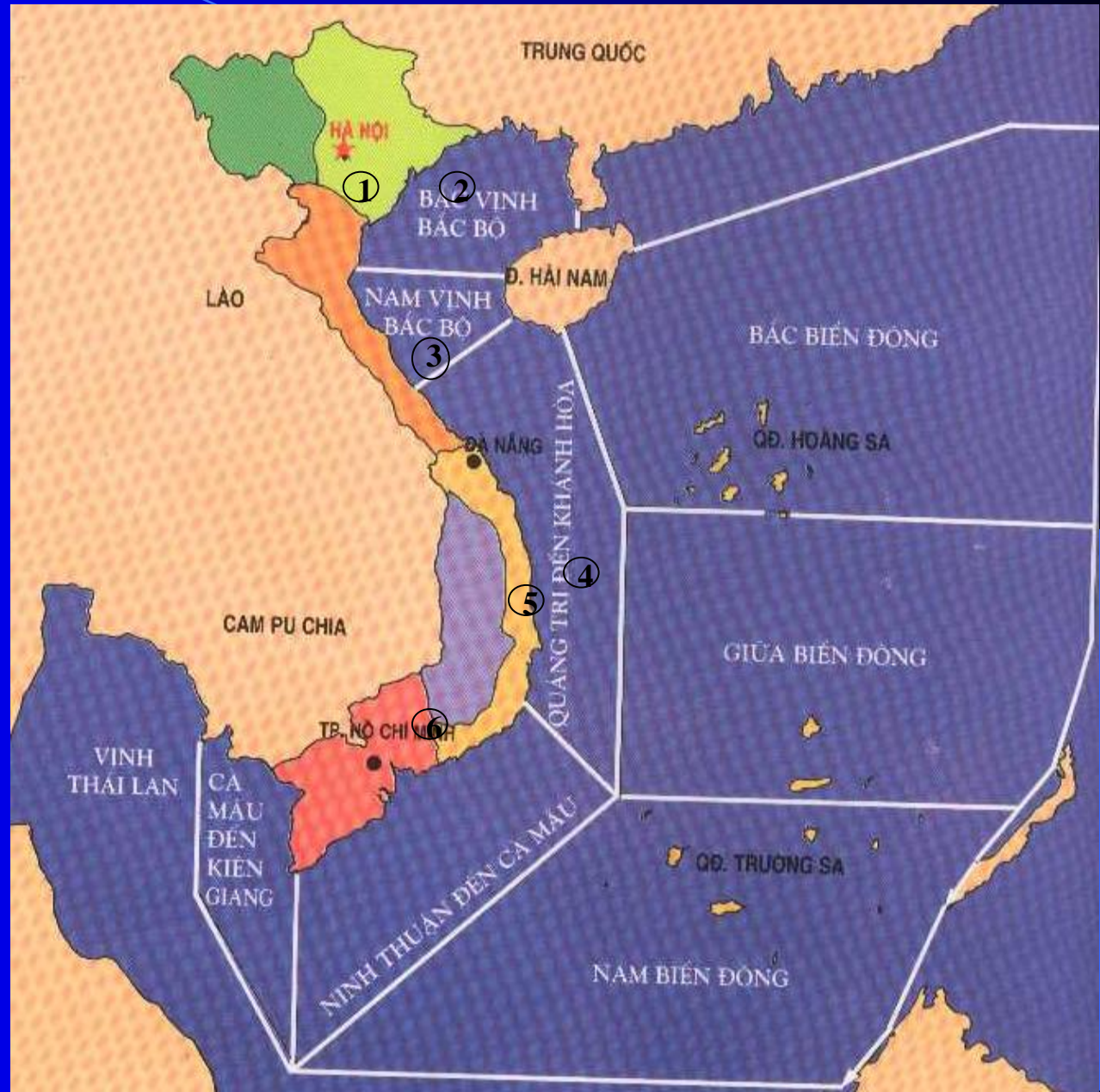
Distribution of people affected by natural disasters, by country and type of phenomena, in Asia (1975-1999)



EM-DAT: The OFDA/CRED International Disaster Database
(<http://www.cred.be> ; email: cred@epid.ucl.ac.be)

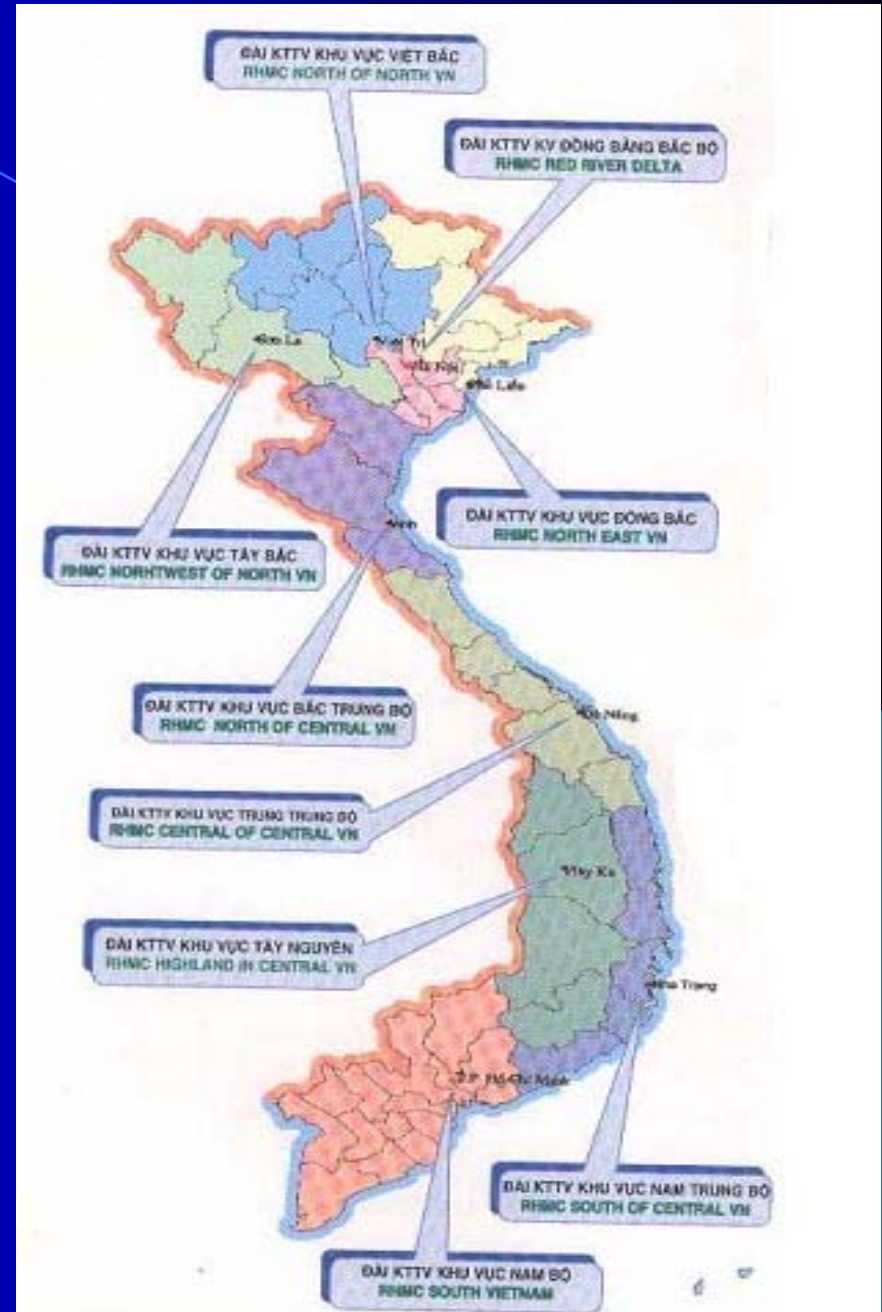
Area of responsibility on Hydro-Met forecasts

- ① The North west
- ② The northeast
- ③ The north of central VN
- ④ The south of central vn
- ⑤ central High land
- ⑥ The southern region



Regional and Provincial Office

- 9 Regional Hydro-Met. Centers
- 54 Provincial Hydro-Meteorological Centers
- Observation station networks

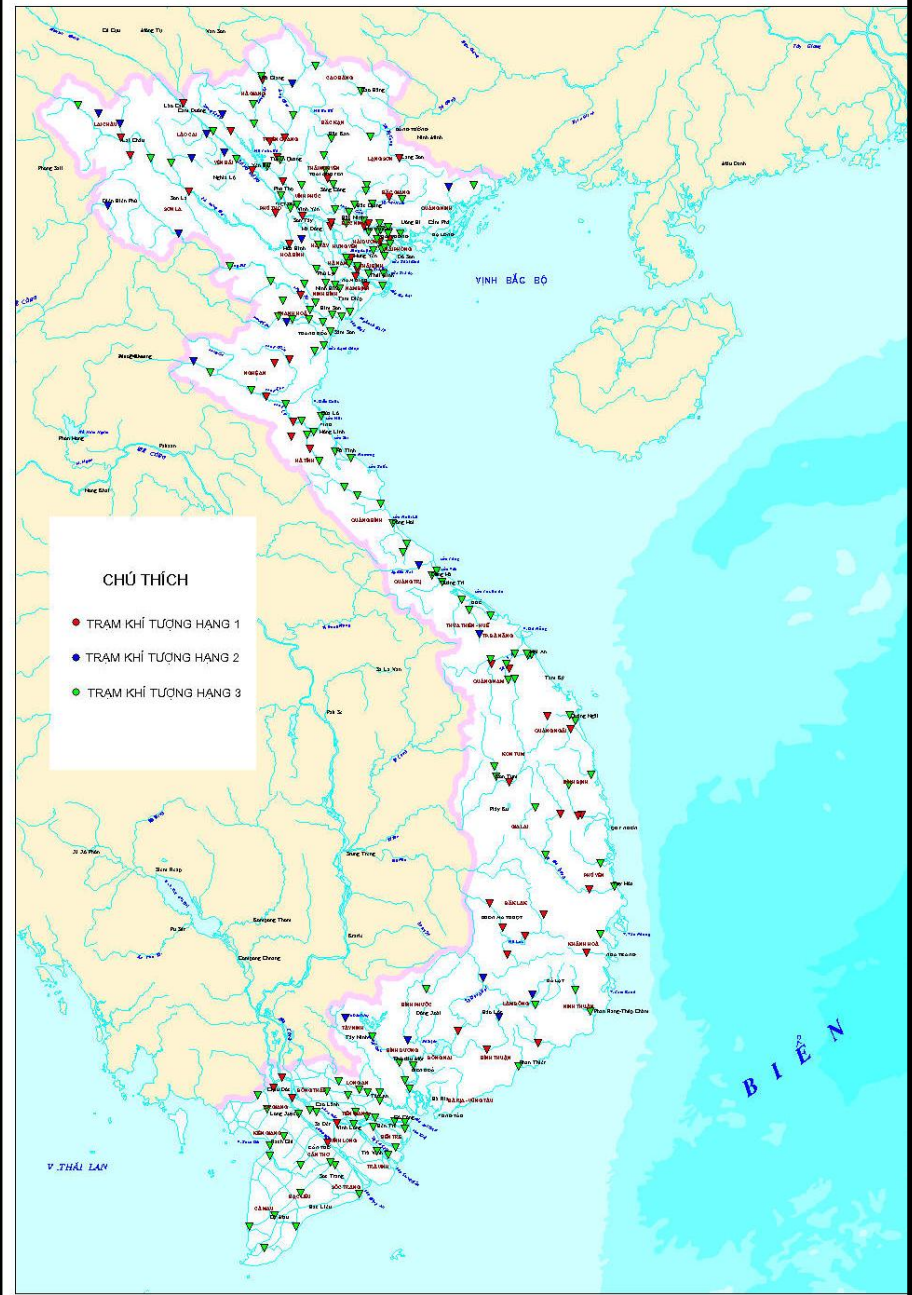


Hydro-meteorological Network

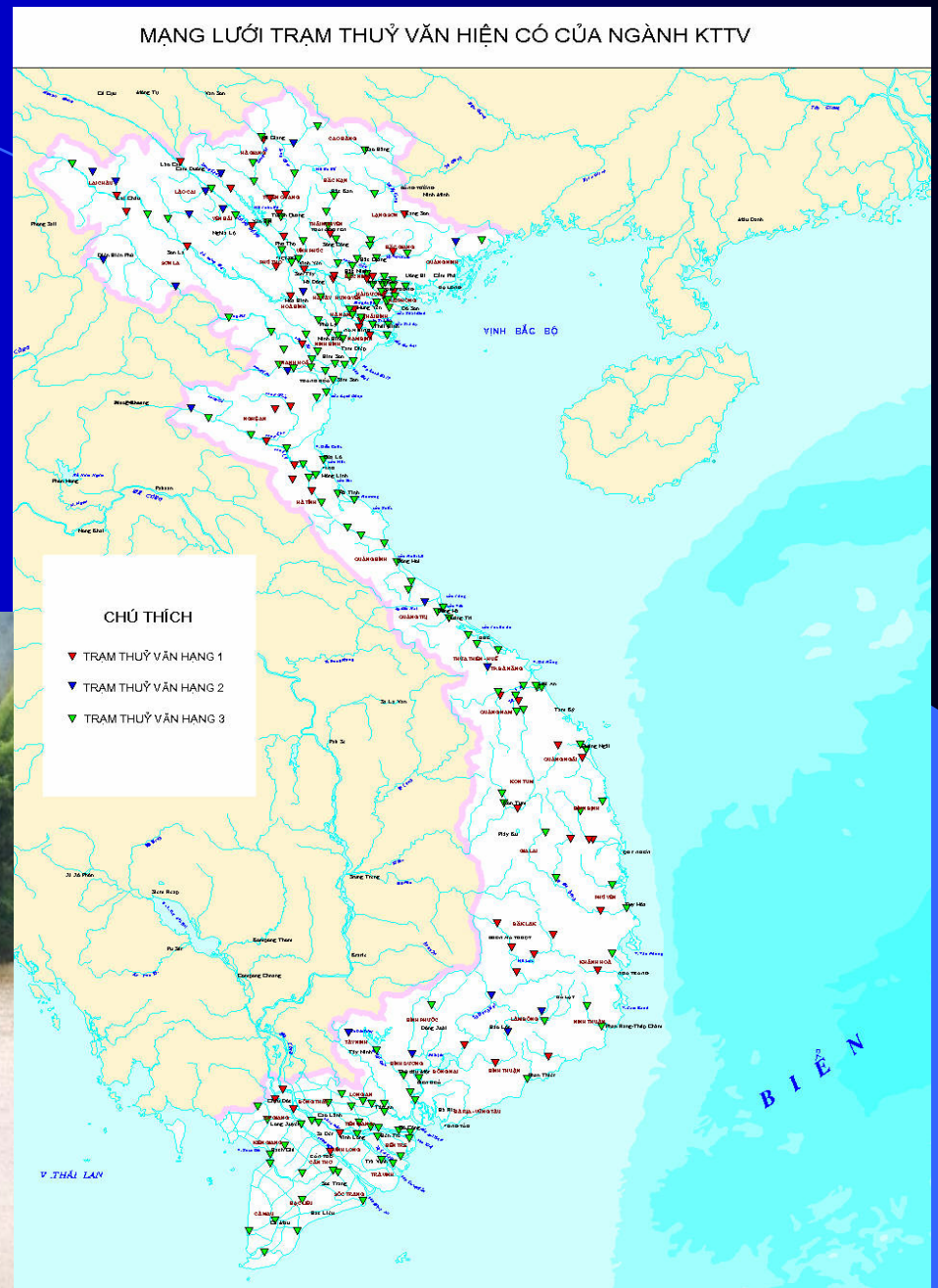
- Surface Met. Stations: 174
- Rain gauge: 764
- Radiation: 13



MẠNG LƯỚI TRẠM KHÍ TƯỢNG HIỆN CÓ CỦA NGÀNH KTTV

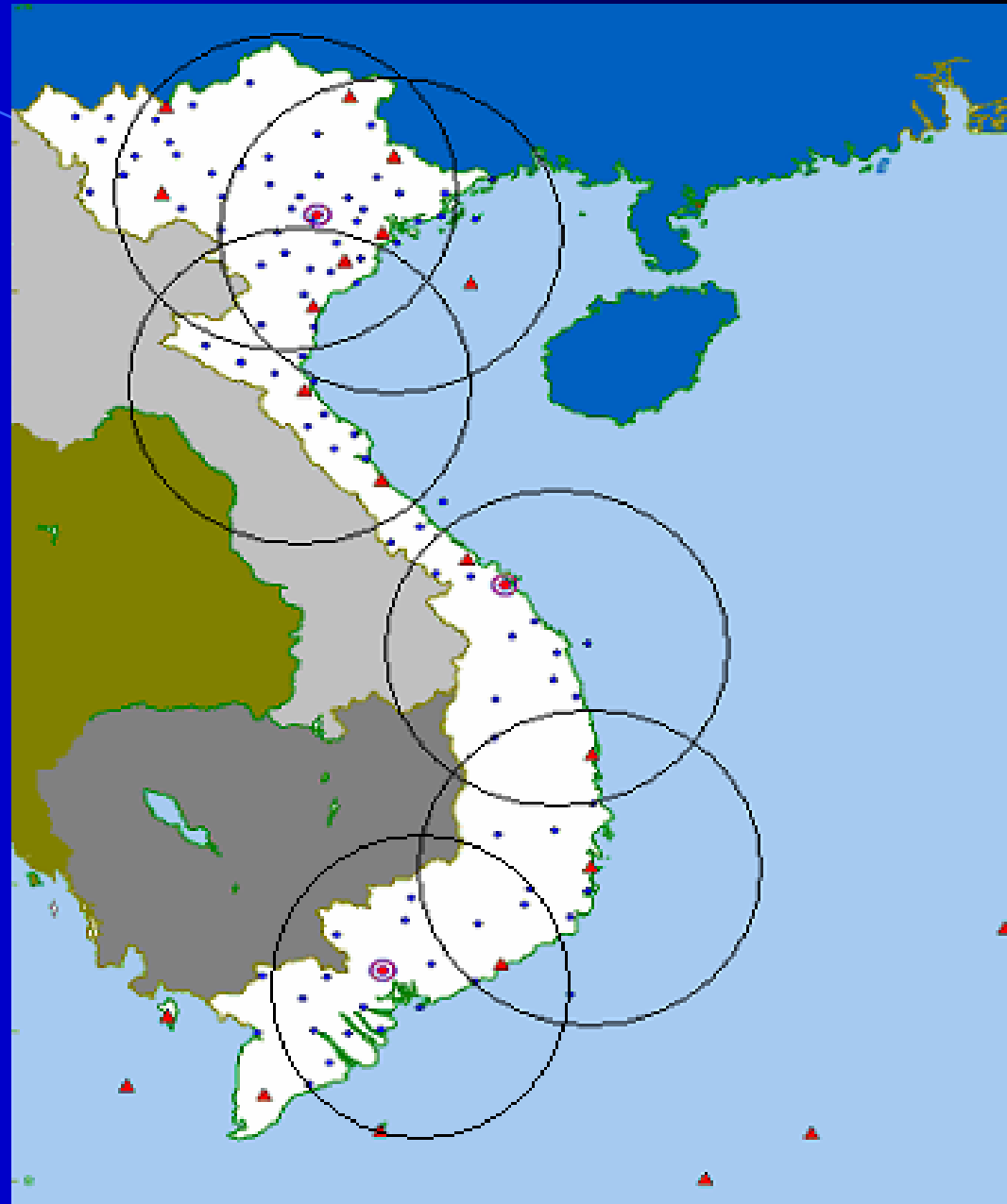


- Hydrological Stations: 248



Upper Air Observation

- Radiosonde stations: 5
- Wind-gauge by theodolite: 8
- Ozone and UV : 3
- Weather radars: 6



Satellite Receiving Station



MTSAT
NOAA Polar orbiting Satellite
FY-2
Received through Internet



Marine Hydro-Meteorological Observation: 17 Stations

Calibration system and Environmental labs

- Calibration system
 - Temperature;
 - Humidity;
 - Air pressure;
 - Radiation;
 - Wind speed;
 - Flow speed;
 - Rainfall.



**Env. labs : 3 in the North,
Central and South Viet Nam**

Tele-communication system

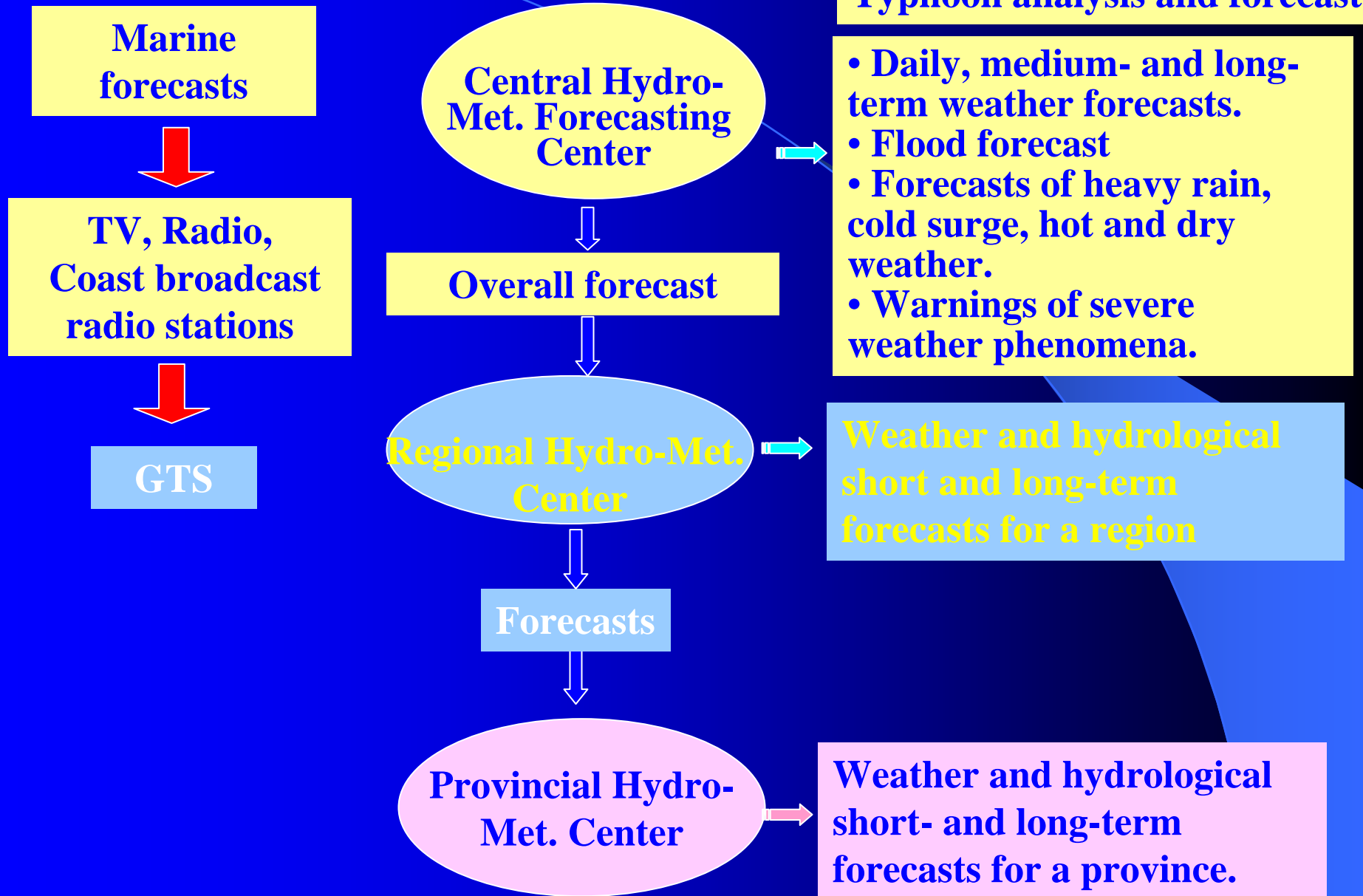
International

- Hanoi - Moscow: 100 bauds
- Hanoi - Beijing: 75 bauds
- Hanoi - Bangkok: 1200 bps
- PCVSAT: Hanoi - Beijing: 9600bps

Domestic

- Telephone line/mobile phone/SSB radio
- WAN
- Through TV signal: MetTV

Functions of each forecasting level



Limitations

Observation Network

- Network density
- Equipment and measuring method

Forecasting

- Technology
- Products

Data processing and storage

Services

**Plan for Improvement and
Modernization**

International Cooperation



International Organization

- WMO
- UNDP
- GEF
- ADB
- UNEP
- UNFCCC
- WORLD BANK
- MRC
- IHP/UNESCO

Bilateral

- AUSTRALIA
- CHINA
- DENMARK
- GERMANY
- JAPAN
- LAO PDR
- NETHERLANDS
- NORWAY
- RUSSIAN
- SWEDEN
- THAILAND
- UK
- USA
- ...

POST GRADUATE EDUCATION

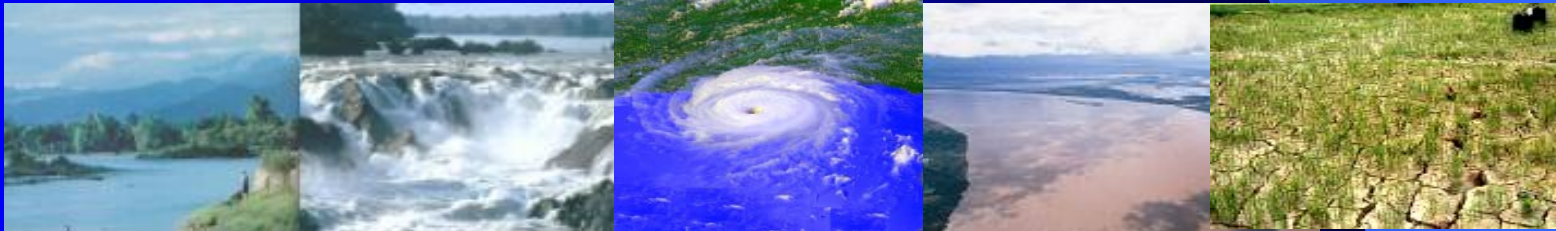
Ph.D. Program in:

- Atmospheric physics,
- Meteorology,
- Climatology,
- Hydrology,
- Hydraulics
- Water resources,
- River and coast training,
- Marine hydrology, and
- Lithography, marine chemistry.

32 Ph.D. graduated
Currently 10 Ph.D. students



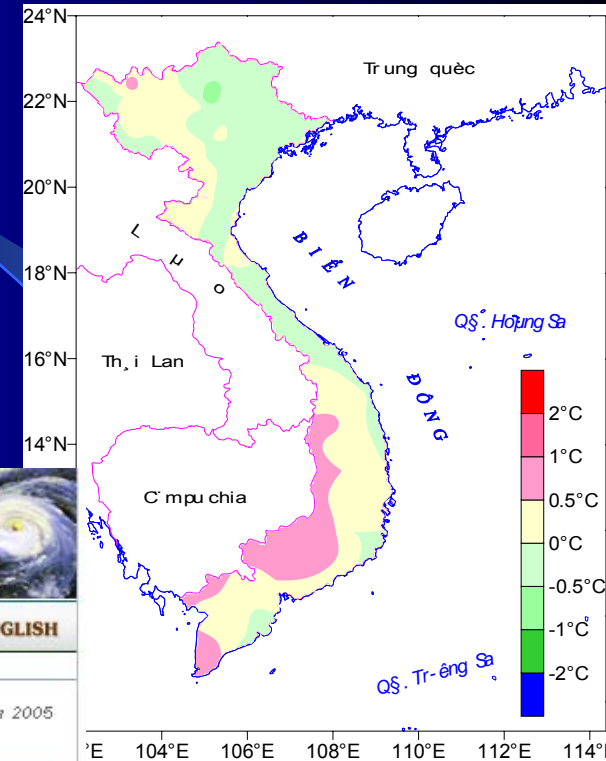
RESEARCH AND DEVELOPMENT



Meteorology, Climatology and Agro-meteorology

CLIMATE OUTLOOK

- Reporting and Informing climate is a regular professional work of IMHEN. Climate outlook for 3 months is sent to relevant agencies and posted in the Institute's website: <http://www.imh.ac.vn>



bạn đang ở trang chủ » tin chuyên ngành » thông báo và dự báo khí hậu » thông báo và dự báo khí hậu số 5 -2005

Thông báo và dự báo : Số 5 Thứ hai, ngày 20 tháng 06 năm 2005

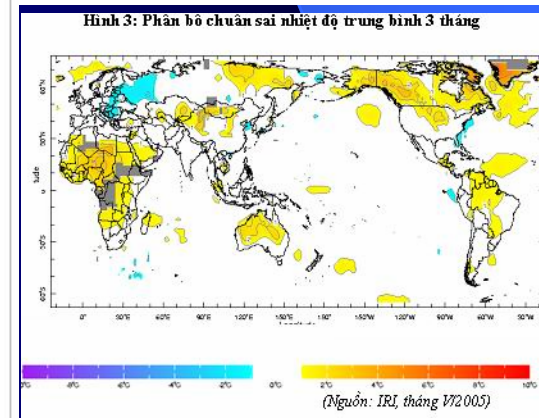
- Tìm kiếm**
-
- Tìm kiếm nâng cao**
- Giới thiệu**
- Lãnh đạo viện
 - Chức năng nhiệm vụ
 - Thành tựu nghiên cứu
 - Các đơn vị trực thuộc
 - Hợp tác quốc tế
 - Thông tin liên hệ
- Tin tức - sự kiện**
- Các hoạt động
 - Thông tin KHKT

Diễn biến khí hậu ba tháng: II. III. IV.
Diễn biến trên thế giới và khu vực
Diễn biến ở Việt Nam

Dự báo khí hậu ba tháng: VI. VII. VIII.
Nhận định chung về diễn biến trên thế giới và khu vực.
Dự báo ở Việt Nam

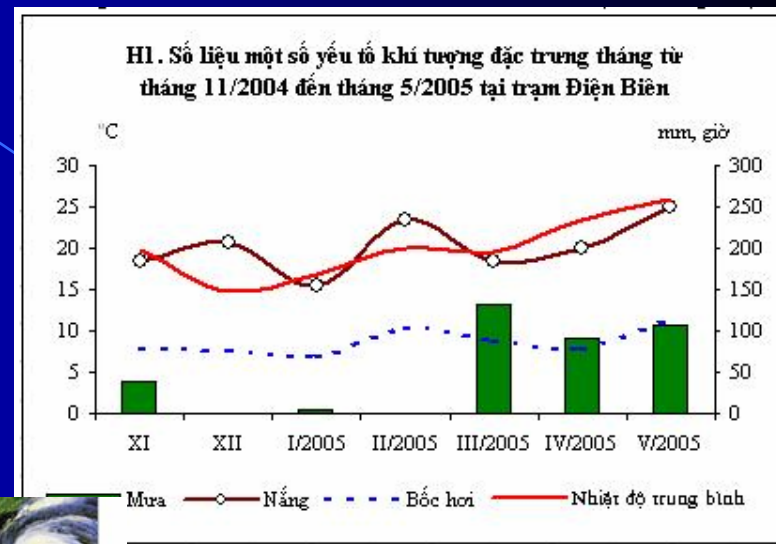
Danh sách các tệp tin đính kèm

| các tệp tin kèm theo | tải về |
|----------------------|-------------------------------------|
| Phần 1 số 5 -2005 | <input checked="" type="checkbox"/> |
| Phần 2 số 5 -2005 | <input checked="" type="checkbox"/> |



AGRO-METEOROLOGICAL OUTLOOK AND CROP YIELD FORECAST

- Reporting agro-meteorology and forecasting crop yield is regular professional work of IMHEN. The outputs are sent to relevant agencies and posted in the Institute's website: <http://www.imh.ac.vn>



bạn đang ở trang chủ » tin chuyên ngành » thông báo ktnn » năm 2005 » thông báo khí tượng nông nghiệp tháng v/2005

Thứ hai, ngày 20 tháng 06 năm 2005

Thông báo Khí tượng Nông nghiệp tháng V/2005.

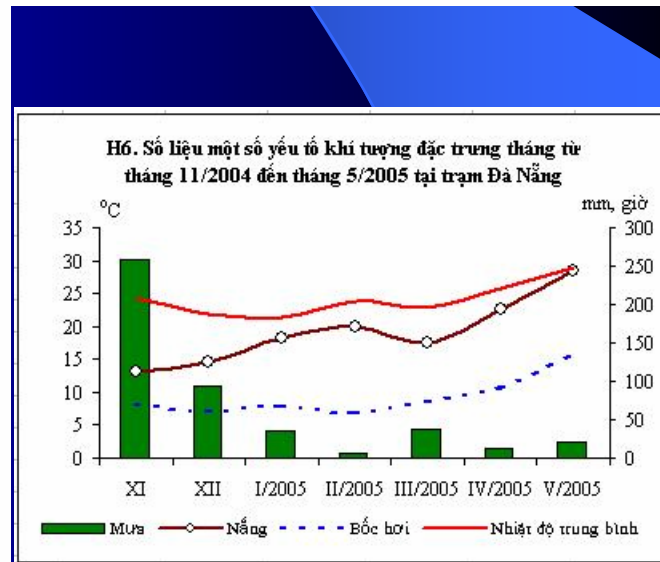
A. TÓM TẮT TÌNH HÌNH KHÍ TƯỢNG NÔNG NGHIỆP THÁNG V/2005

Điều kiện khí tượng trong tháng V/2005 tương đối thuận lợi cho sản xuất nông nghiệp. Ở Miền Bắc, khu vực Tây Nguyên và Nam Bộ đã bắt đầu mùa mưa, lượng mưa tăng đáng kể hơn so với tháng trước, đủ nước dưỡng lúa. Ở phía Bắc nền nhiệt và số giờ nắng ở các nơi đều tăng so với tháng trước và so với trung bình nhiều năm, tạo điều kiện thuận lợi cho lúa chín. Ở hầu hết các nơi thuộc Nam Trung Bộ đã bắt đầu có mưa làm dịu bớt các đợt hạn hán kéo dài suốt 5 tháng qua.

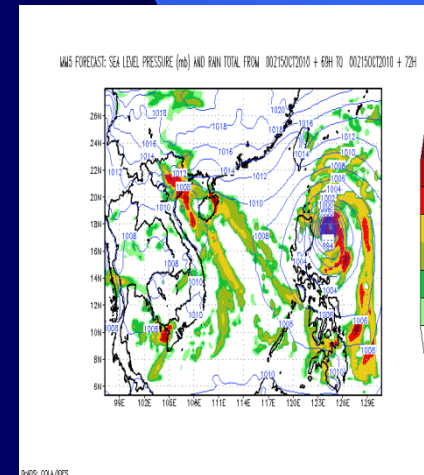
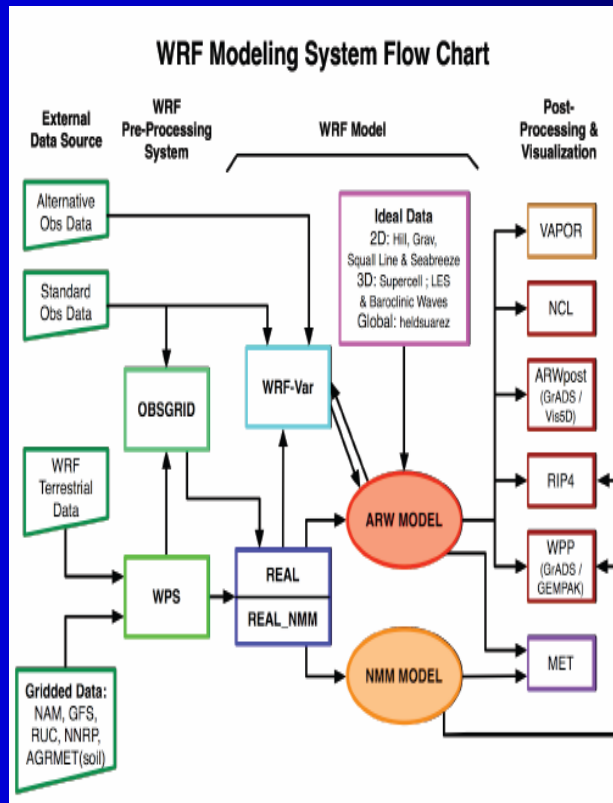
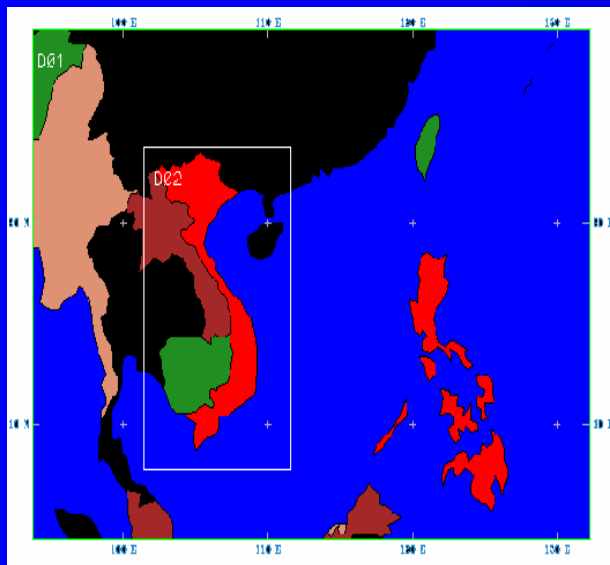
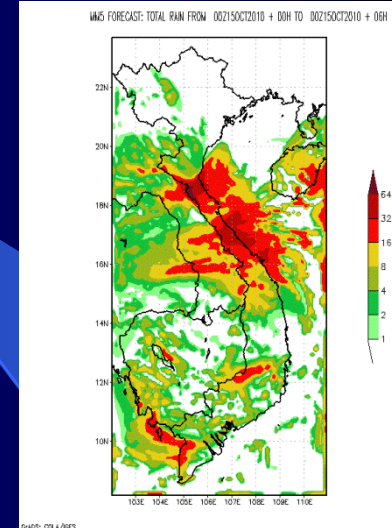
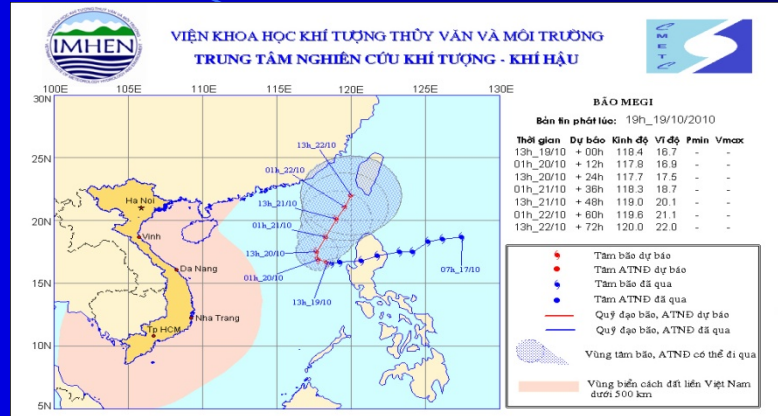
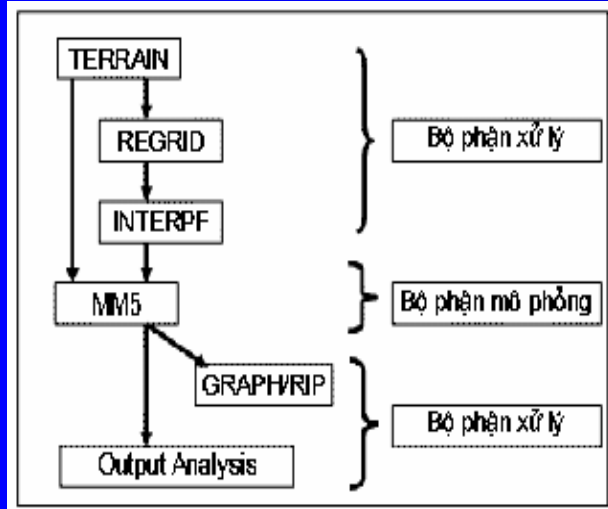
I. Tình hình khí tượng tháng V/2005

Đã bắt đầu bước vào mùa mưa nên lượng mưa tháng V đã tăng hơn tháng trước đặc biệt là khu vực Tây Nguyên, Nam Bộ. Khu vực Nam Trung Bộ lượng mưa tuy còn ít nhưng đã phần nào hạn chế được trình trạng hạn hán đang kéo dài. Nhiệt độ ở hầu hết các nơi đều cao hơn giá trị TBNN, còn số giờ nắng tăng và độ ẩm thấp hơn TBNN. Các đợt gió tây khô nóng, đông xuất hiện nhiều, đặc biệt ở phía Bắc đã có các cơn dông gây mưa với cường độ lớn trong thời gian ngắn.

Một số đặc trưng khí tượng tháng V/2005 được thể hiện trên bảng 1 - 9 và hình 1 - 9

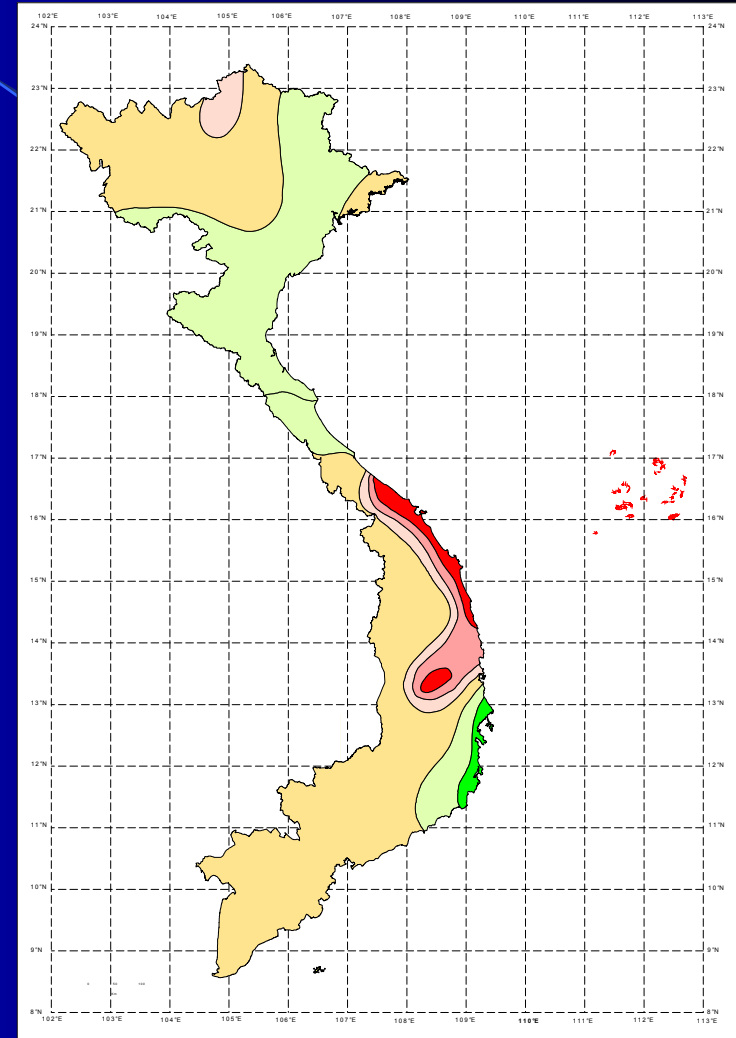


APPLICATION NUMERICAL MODEL FOR WEATHER FORECAST



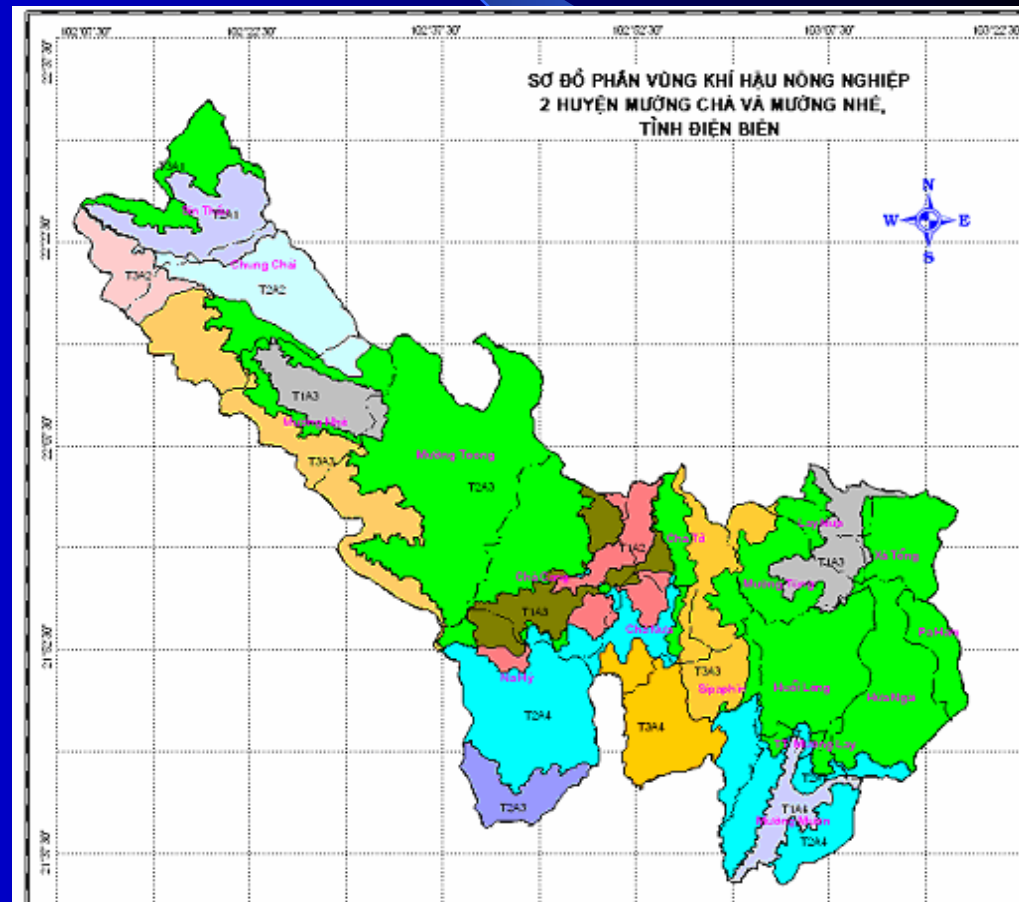
Impact of ENSO to Weather, Climate, Environment, and Socio-Economy of Vietnam

- Results show that in almost El Nino events, rainfall in every regions is less than average level, especially in El Nino events 68/70, 76/77 and 79.
- El Nino event 82/83 caused rainfall deficiency in Central Highlands, Central and Southern provinces, in contrast to Northern area where experienced heavily rainfall. Whereas, El Nino 97/98 caused rainfall reduction in Central and Northern part, at the same time considerable rainfall increase in Northern floodplain.
- During El Nino time, North Central Coast was the most affected area while North West part was the least.



Investigation, Assessment of Agro-climate for Resettlement for Hydropower Project

- Investigation and surveys on climate, micro agricultural climate, hydrology in two resettlement areas.
- Study relationship among plant, live stocks and characteristic of land and climate in resettlement areas.
- Estimate water demands for domestic and production uses, water balance for pre and post water resources development.



Inventory, Assessment of Climate Resources of Vietnam

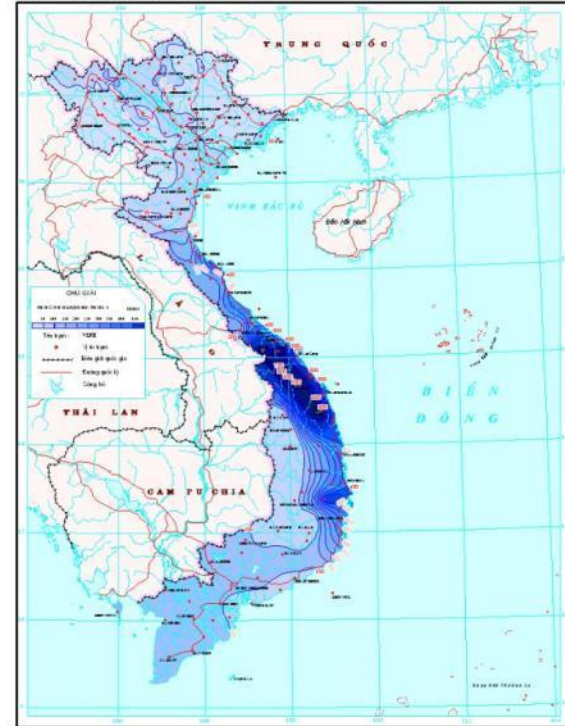
NHIỆT ĐỘ KHÔNG KHÍ TRUNG BÌNH NĂM



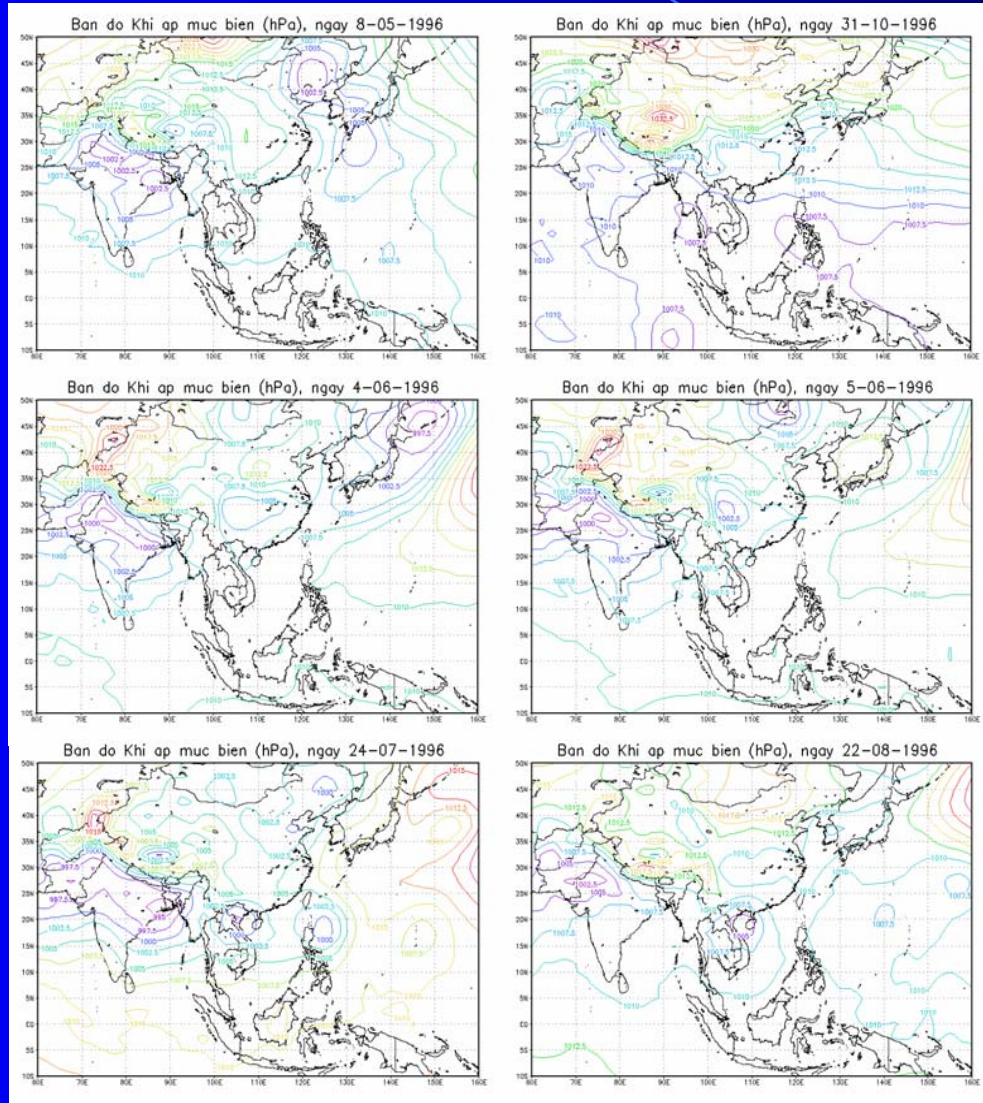
HOA GIÓ THÁNG VII



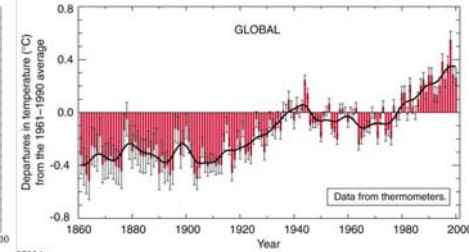
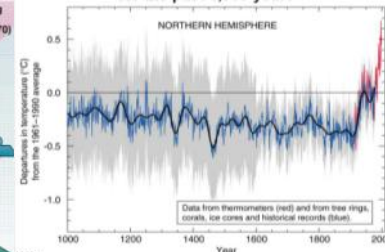
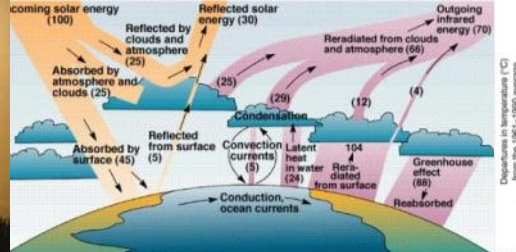
LƯỢNG MƯA TRUNG BÌNH THÁNG XI



East Asia Monsoon and Summer Rainfall in Yunan Province-China and North Vietnam



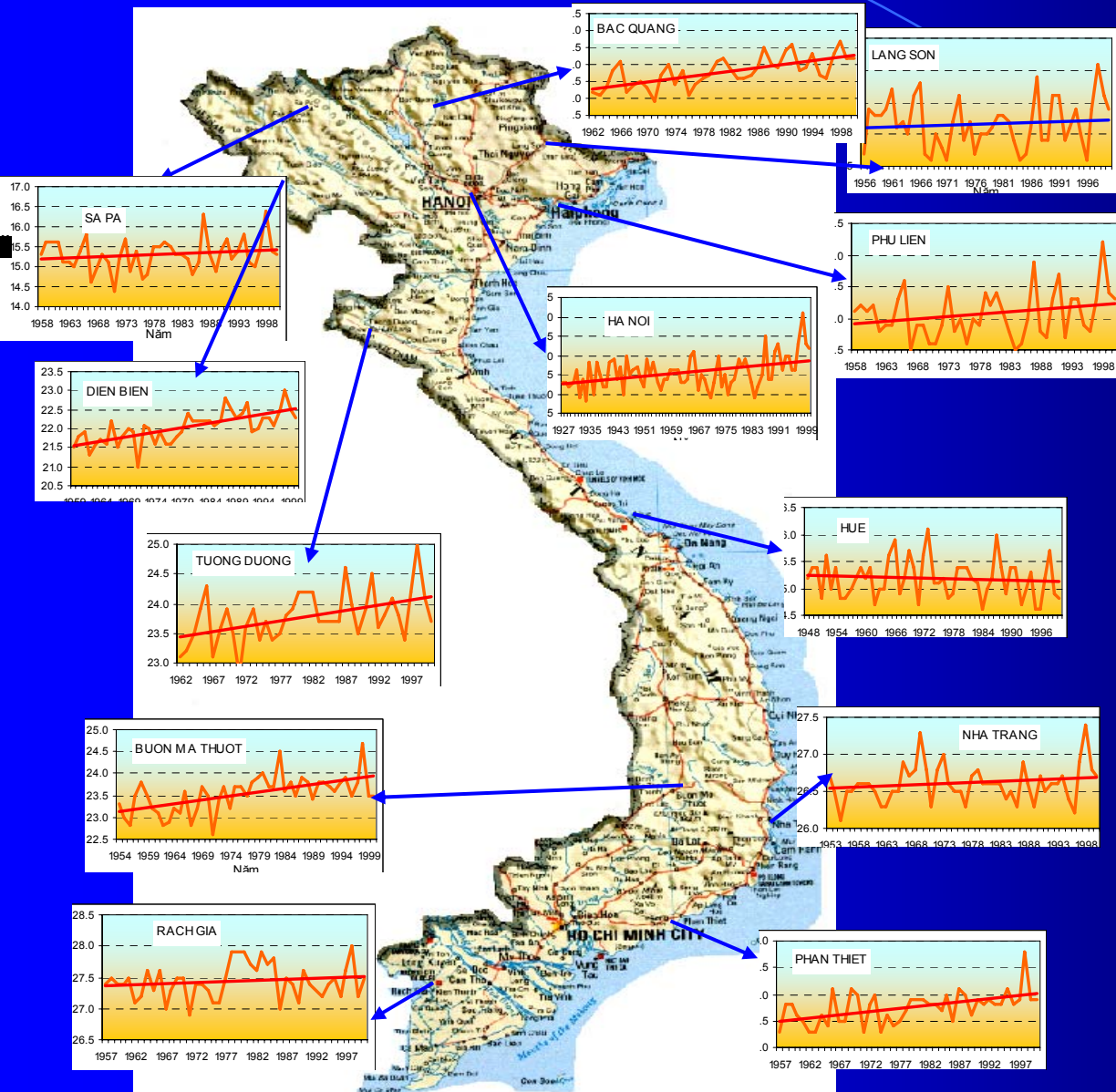
Climate Change Impact and Adaptation Studies



Vulnerable Area



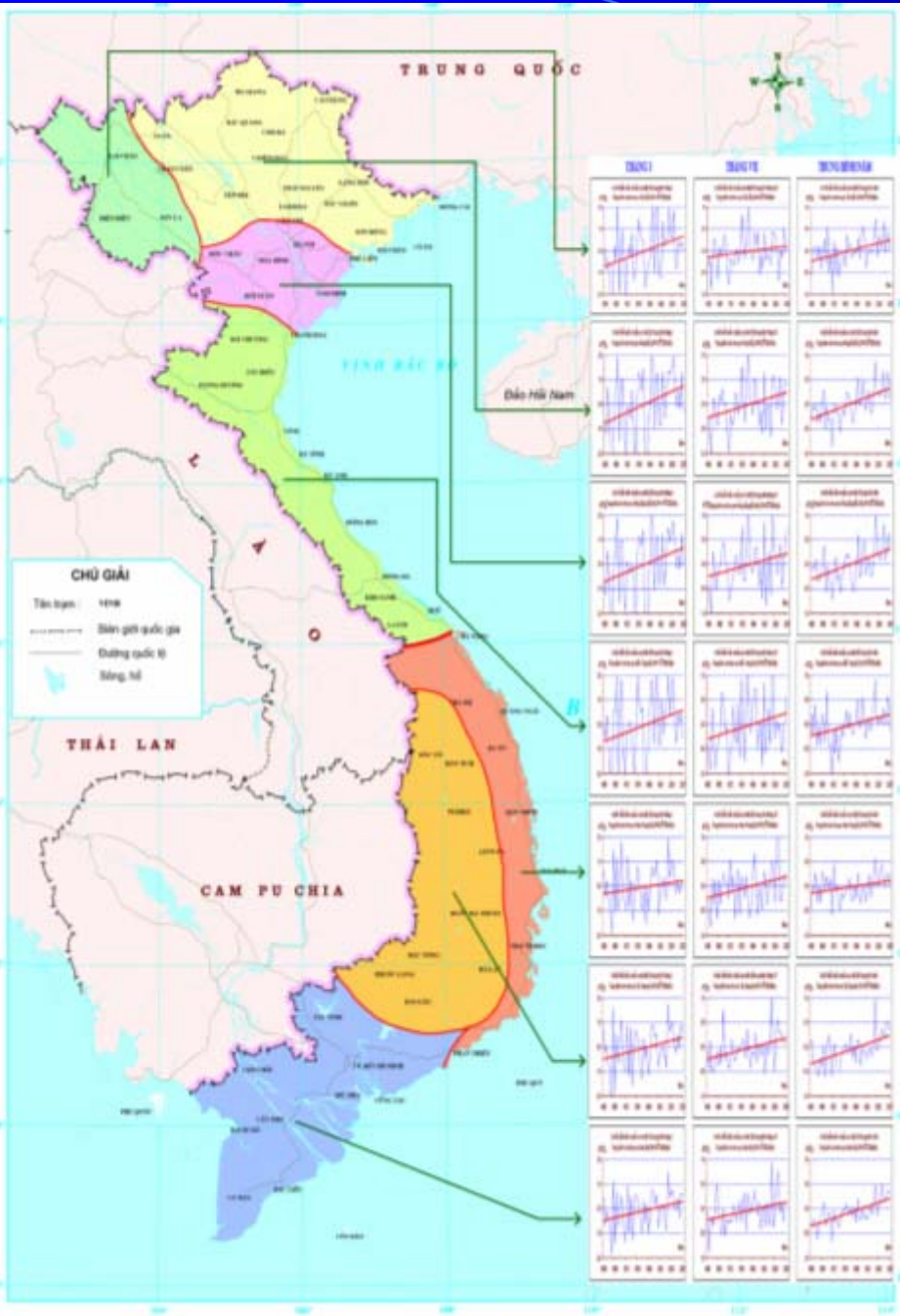
CLIMATE CHANGE IN VIET NAM



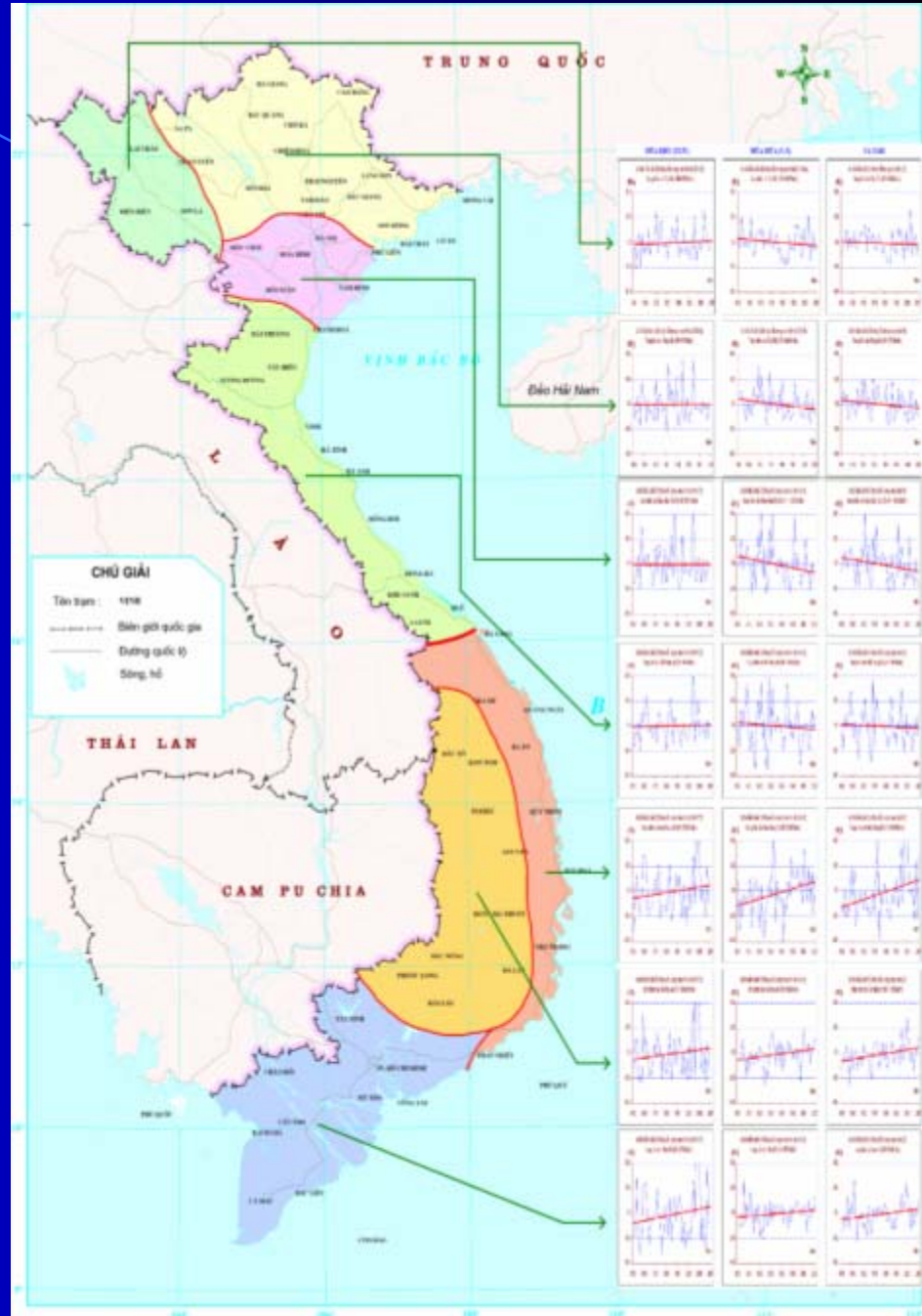
Temperature

Over the past 50 years, annual average temperature has increased about 0.5°C.

Changes in temperature



Changes in rainfall



Current Status of CC in Vietnam

- 1) Number of drizzle days decreases significantly;
- 2) Frequency of cold front in the North decreases significantly in the past three decades;
- 3) Number of cold spell decreases.

| Decade | Average number of drizzle days in Ha Noi |
|-------------|--|
| 1961 - 1970 | 29,7 |
| 1971 - 1980 | 35,8 |
| 1981 - 1990 | 28,7 |
| 1991 - 2000 | 14,5 |

| Decade | (T_{avr} day $< 15^{\circ}\text{C}$) | Prolong (day) | (T_{tvr} day $< 13^{\circ}\text{C}$) | Prolong (day) |
|-------------|--|---------------|--|---------------|
| 1961 - 1970 | 26,6 | 26 | 11,7 | 16 |
| 1971 - 1980 | 29,7 | 25 | 13,5 | 14 |
| 1981 - 1990 | 29,8 | 16 | 17,0 | 10 |
| 1991 - 2000 | 20,4 | 16 | 7,3 | 10 |

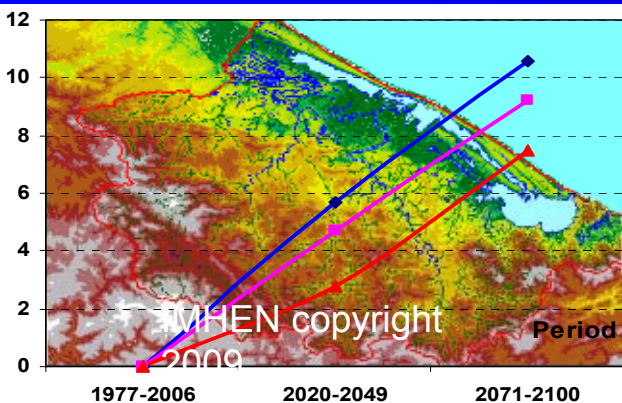
Current Status of CC in Vietnam

- Off-season extreme rainfall events occur more frequently. More profound is events in November 2008 in Ha Noi and surround.
- Number of hot wave is more in 1991 - 2000, especially in the Central and South.

| Station | 19hrs 30/10/08 to 1hrs 1/11/08 |
|-----------|-----------------------------------|
| Ha Noi | 408 |
| Ha Dong | 572 |
| Hung Yen | 158 |
| Hai Duong | - |
| Hoa Binh | 129 |
| Bac Giang | 136 |
| Hiep Hoa | 186 |

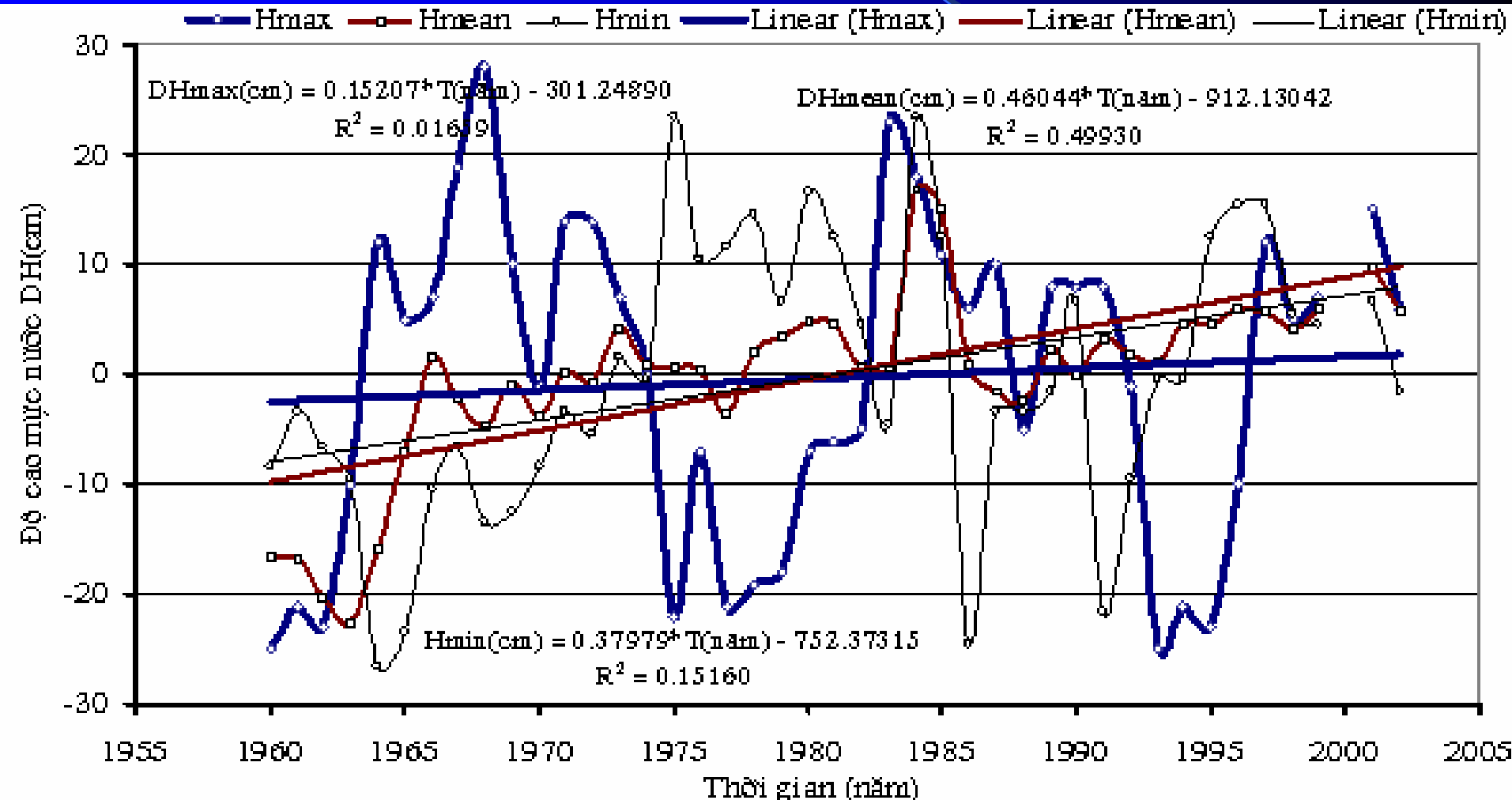
Current Status of CC in Vietnam

- Rainfall increases in rainy season (Sep. to Nov.)
- More heavy rainfalls causing severe floods which occur more frequently in the Central and Southern VN.
- Rainfall decreases in dry season (Jul., Aug.).
- Drought happen every year in most regions of the country.
- CC already caused severe natural disaster, especially typhoons, floods and droughts.



Current Status of CC in Vietnam

Change in Sea Level Hon Dau Station



National Target Program to Respond to Climate Change

Identify the extent of CC in VN due to global CC and assess CC impacts on sector, area and locality

Identify measures to respond to CC

Promote scientific and technological activities to establish the scientific and practical basis for CC response measures

Consolidate and enhance organisational structure, institutional capacity and the development and implementation of policies to respond to CC

Enhance public awareness, responsibility & participation; and develop human resources to respond to CC

Promote international cooperation to obtain external support in response to CC

Mainstream CC issues into socio-economic, sectoral and local development strategies, plans and planning

Develop and implement action plans of ministries, sectors and localities to respond to CC

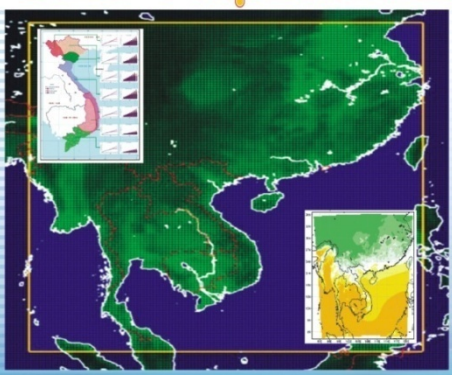
- Assess CC impacts on sectors and regions.
- Develop feasible action plans to respond to CC in short and long-term to ensure sustainable development of VN,
- Take opportunities to develop towards a low-carbon economy,
- Join international efforts in mitigating CC and protecting the climatic system.

CLIMATE CHANGE SCENARIOS FOR VIET NAM

To provide basic information assessing CC impacts and to develop action plans for responding CC

BỘ TÀI NGUYÊN VÀ MÔI TRƯỜNG

Kịch bản BIẾN ĐỔI KHÍ HẬU, NƯỚC BIỂN DÂNG CHO VIỆT NAM

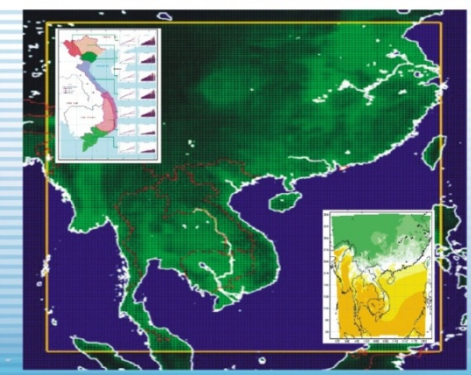


Hà Nội, tháng 6 - 2009



MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT

CLIMATE CHANGE, SEA LEVEL RISE SCENARIOS FOR VIET NAM

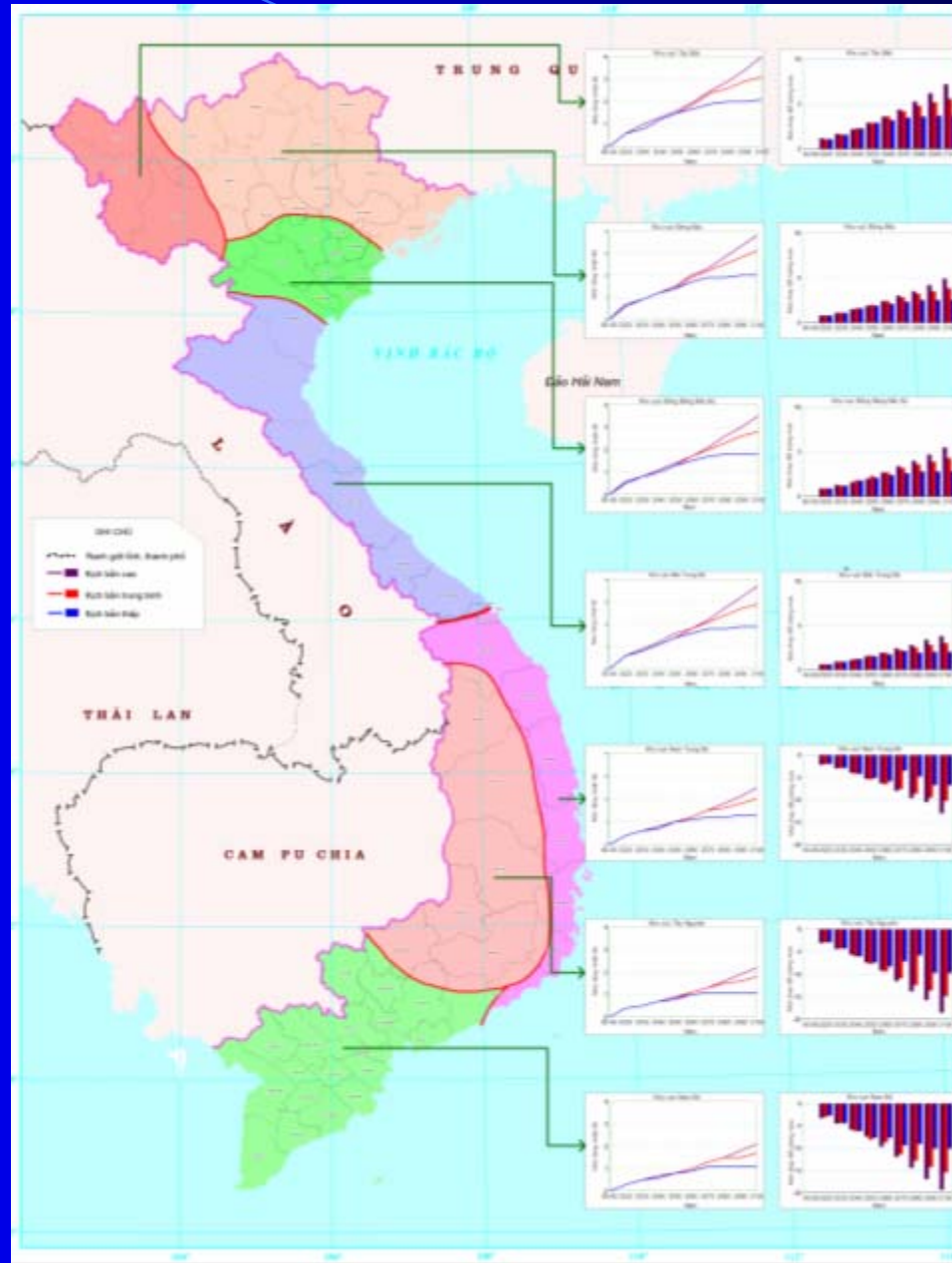


Hanoi, June - 2009

Climate Change Scenarios for Viet Nam

Changes scenarios were developed for:

- 1) Low emission scenario (B1)
- 2) Medium emission scenario (B2)
- 3) High emission scenario (A2)



Northwest

Northeast

Northern

North Central

South
Central

Central
Highlands

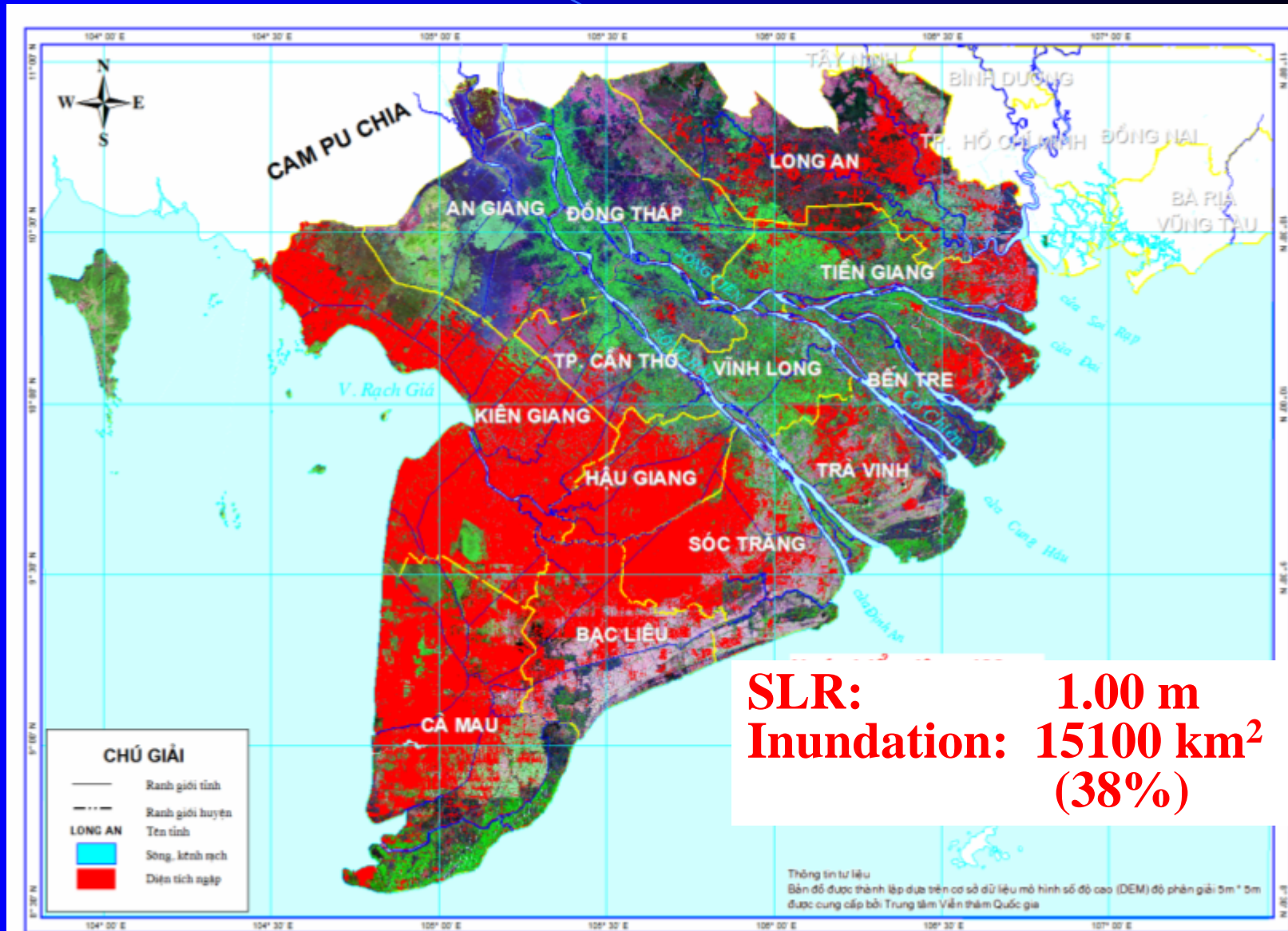
Southern

Sea Level Rise Scenarios

- By mid of the 21st century sea level is expected to increase about 30cm
- Sea level would rise about 75cm by the end of 21st century compared to the period of 1980 - 1999.

| SLR Scenario | Decades in the 21 Century | | | | | | | | |
|--------------|---------------------------|------|------|------|------|------|------|------|------|
| | 2020 | 2030 | 2040 | 2050 | 2060 | 2070 | 2080 | 2090 | 2100 |
| Low (B1) | 11 | 17 | 23 | 28 | 35 | 42 | 50 | 57 | 65 |
| Medium (B2) | 12 | 17 | 23 | 30 | 37 | 46 | 54 | 64 | 75 |
| High (A1FI) | 12 | 17 | 24 | 33 | 44 | 57 | 71 | 86 | 100 |

Inundation Map of Mekong River Delta, SLR 1.0 m



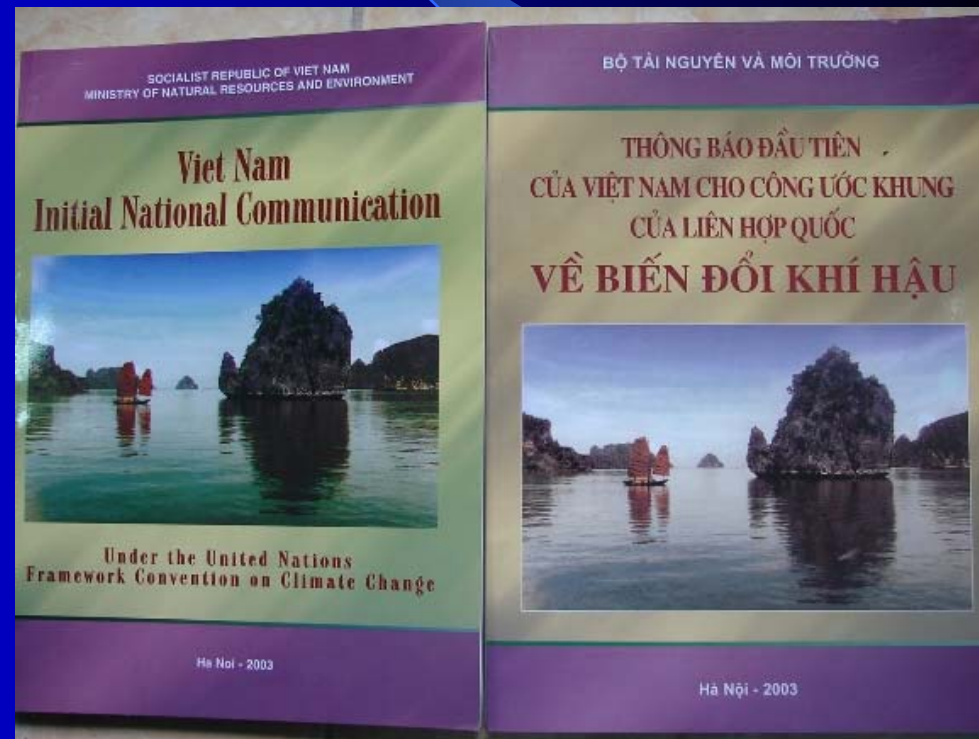
*Basing on
DEM
(5 x 5 m)
Provided
by
National
Remote
Sensing
Center,
MONRE*

Vietnam National Communication

Funding: GEF/UNEP

Implementing: IMHEN

- Main objective is to enable the country to harmonize and uptake the previous results, fill in gaps, further enhance its scientific and technical capacity, so that the country can prepare the reporting of its Initial National Communication.
- The Vietnam Initial National Communication report was submitted to UNFCCC Secretariat in 2003.

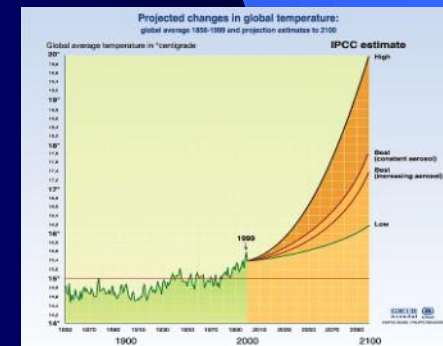
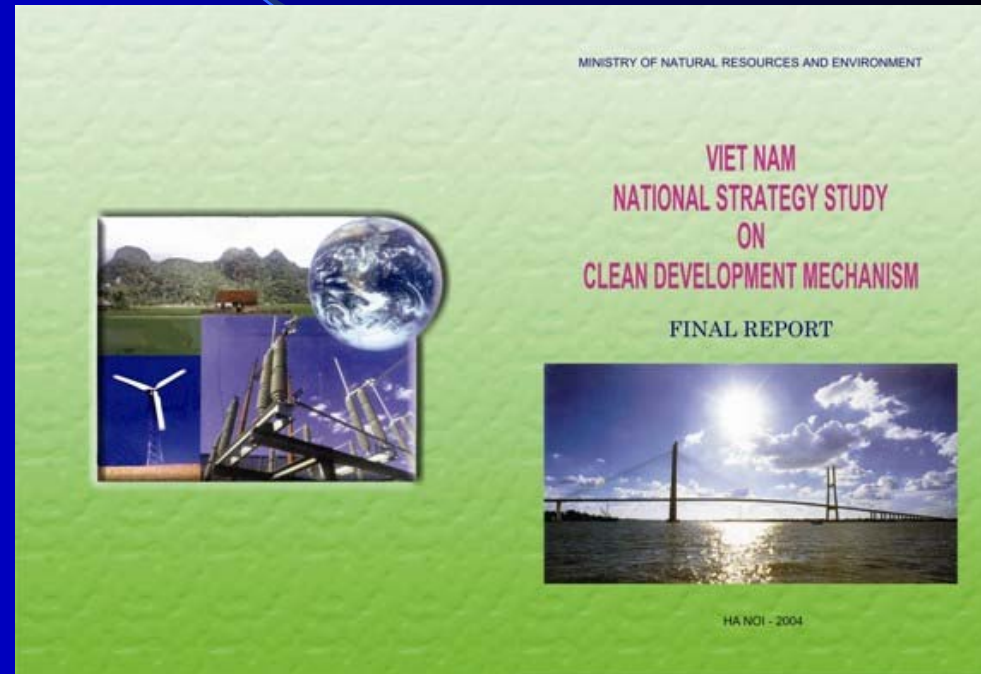


Vietnam National Strategy Study on Clean Development Mechanism

Funding: WB

Implementing: IMHEN


- Current CDM policy status;
- GHG abatement potential in Vietnam;
- CDM market opportunities for Vietnam;
- Analysis of institutional set-up and institutional requirements;
- Implementing CDM: criteria and approval processes;
- Realisation of CDM opportunities in Vietnam;
- Summary of Vietnam's National CDM Strategy.

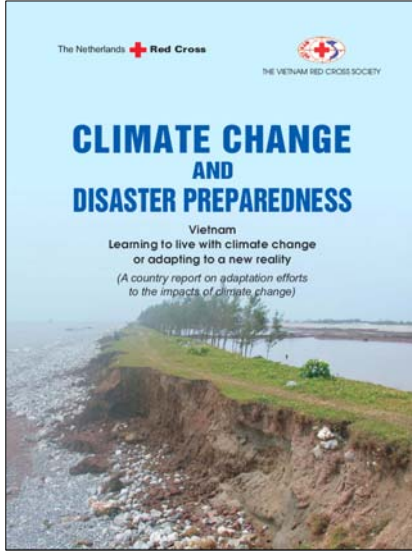


Preparedness for Disasters Related to Climate Change

*Funding: Netherlands Red Cross, Implementing: Vietnam Red Cross
Participating: IMHEN*

- Objective is to strengthen the most vulnerable people communities in the disaster-prone areas to climate change and disasters to response and adapt to these disasters.

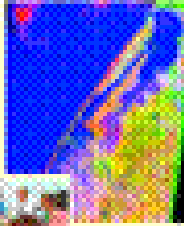
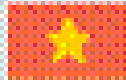
 The Vietnam Red Cross Society
Supported by The Netherlands Red Cross



Preparedness for Disasters related to Climate Change



VIETNAM



Climate change impacts in the river basin and adaptation in the coastal district Phung Thuy.



Problem statement

Climate change is causing higher sea levels, salt water and increasing rainfall through a global warming. It has a serious impact on food, livelihoods and incomes for rural farmers through erosion, flooding and drought.

Results

- In river basin, the erosion and sediment impact to all levels of water users.
- Increased vulnerability to climate change impact, poor infrastructure quality, health and livelihoods.
- Sea level rise and salt water impact to all levels of water users.
- Reduced income through the erosion, drying drought.
- Development of a water user group (WUG) in Phung Thuy.
- Increased agricultural and production.
- Sea level rise, higher level income.
- In river basin, the erosion in the area can be gradually reduced through independent building, education and support.



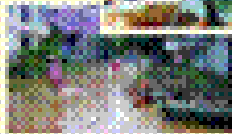
Background
 Phung Thuy is a coastal district in the river basin of the Red River in Vietnam. The district is one of the most vulnerable to climate change impacts through erosion, flooding and drought.

Project Objectives
 To improve the livelihoods of the people in the river basin through the development of a water user group (WUG) in Phung Thuy.

Key Activities
 To develop a water user group (WUG) in Phung Thuy through the development of a water user group (WUG) in Phung Thuy.

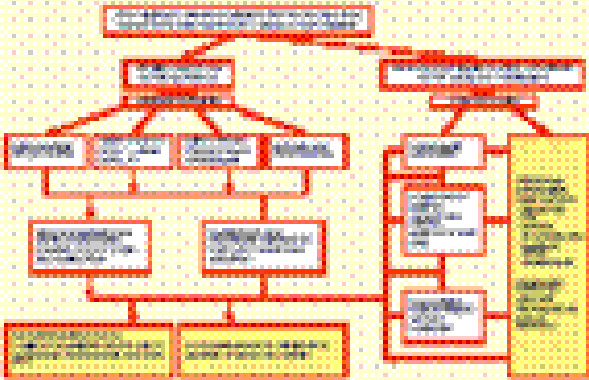
Key Results
 Increased agricultural and production. Sea level rise, higher level income.

- Increased agricultural and production.
- Sea level rise, higher level income.
- Reduced income through the erosion, drying drought.
- Development of a water user group (WUG) in Phung Thuy.
- Increased agricultural and production.
- Sea level rise, higher level income.



Adaptation policy

From the policy, the government has developed a policy to support the people through the development of a water user group (WUG) in Phung Thuy.



www.nicap.net

Climate Change Impacts in a River Basin and Adaptation in its Coastal District

Funded by: The Netherlands



DANISH INTERNATIONAL
DEVELOPMENT AGENCY

MINISTRY OF NATURAL
RESOURCES AND ENVIRONMENT



VIETNAM INSTITUTE OF
METEOROLOGY, HYDROLOGY AND ENVIRONMENT



BENEFITS ON CLIMATE CHANGE ADAPTATION FROM SMALL AND MEDIUM SCALE HYDROPOWER PLANTS: SYNERGIES AND TRADE-OFFS WITH RURAL DEVELOPMENT



Objective:
Win-win-win benefits from small and medium scale hydropower plants are under implementation for the benefit of both rural development, climate change adaptation and climate change mitigation.

- The outputs of the projects are:
- *Assessed Climate Change in Lao Cai*
 - *The Power Sector in Lao Cai*
 - *Environmental Aspects*
 - *The effect of hydropower projects on mitigation and adaptation of climate change*
 - *Rural Development Aspects*

Time implementation
1 October 2006 to 30 September 2008

Implementing Agency: Vietnam Institute of Meteorology,
Hydrology and Environment
Supporting Agency: Embassy of Denmark in Viet Nam

Benefits on Climate Change Adaptation from Small and Medium Scale Hydropower Plants: Synergies and Trade- offs with Rural Development

Funded by: DANIDA



Study:
*Climate and disaster check of Danish sector
programs in Vietnam*



Objective

To analyse and assess how climate change and linked disaster can impact on the success of Danish development assistance; and to provide initial recommendations on what can be done about it

Output:

A screening of the extent to which sector programs and components in the DANIDA supported project portfolio are vulnerable to climate change, climate variability and disasters;

A classification of DANIDA – supported programs, components and projects within climate risk prone areas and sectors as

follows:

- low risk
- medium risk
- high risk

Suggestions for concrete actions that could be taken by DANIDA and Vietnam to reduce climate and disaster risk within projects, programs, sectoral and national policies and plans with DANIDA involvement



Climate Change and Disaster Check of Danish Sector Program in Viet Nam

Funded by: DANIDA

Sea Level Rise Impacts



Backgrounds



Phuquoc – Potentially impacted Island by SLR

Vietnam has more than 3260km shore line with two fertile deltas of Red River Delta and Mekong River Delta. There are 24 coastal provinces, including large

cities such as Ha Long, Hue, Da Nang, Qui Nhon, Nha Trang, Phan Thiet, Vung Tau. The most fertile agricultural lands, with about 50% of the population, are located on the low-lying Red River and the Mekong River Deltas.

Objectives:

- ⇒ Increase the knowledge on the SLR in Vietnam
- ⇒ Study SLR adaptation measures for the local and most vulnerable communities
- ⇒ Propose to the Vietnam government the strategies towards reasonable utilization of the resources of the coastal areas.



The Project Objects

Vulnerability Studies

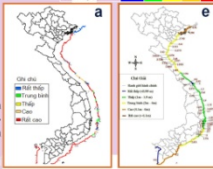


map from satellite images for the PSA; Compute flood inundation (under the conditions of storm surge combining with high tide

different SLR scenarios for the PSA; Digitally map potential inundation areas on the 1:10,000 maps for the PSA; Assemble Morphologic Vulnerability Index for Vietnam and PSA.

Analyze the data and research documents to evaluate of the status of Vietnamese coastal erosion and the mechanism of coastal erosion for the selected coasts; Study occurring frequency of storm surge when the storm landed in Vietnamese coast, and the corresponding storm surge height in the past; Perform computations to determine regime of sediment dynamics and coastal morphological change in the PSA; Digitally map the potential inundation areas on the 1:100,000 maps for the Vietnam coastal zones; Develop high resolution topographic

break or monsoon wind setup combining with high tide) in



Coastal Vulnerability Index

Sea Level Trend for the last half century



Pilot Study Area (Thua Thien Hue Province)

Next Steps:

- ⇒ Vulnerability Indices:
 - ◆ Erosion
 - ◆ Salinity Intrusion
 - ◆ Ecosystem And Mangrove
- ⇒ Cost Benefit Analysis of adaptation measures
- ⇒ Risk Analysis and Management
- ⇒ Propose Adaptation Measures to the Government



Sea Water Level Rise Scenarios and possible disaster risk reduction in Vietnam

Funded by: DANIDA



MINISTRY OF NATURAL RESOURCES AND ENVIRONMENT
VIETNAM INSTITUTE OF METEOROLOGY, HYDROLOGY AND ENVIRONMENT

Vietnam
UNDP



CBCC
Capacity Building for Climate Change Project



Project "Strengthening National Capacities to Respond to Climate Change in Vietnam, Reducing Vulnerability and Controlling GHG Emissions"

Development Goal

To minimize the vulnerability of the populations and landscapes of Vietnam through appropriate measures of adaptation and mitigation

Project Objectives

Policy and Planning

- Mainstreaming of CC issues into socio-econoc, sector and local development strategies, plans and planning
- Strengthen the capacities of organizations, institutions to develop policies and strategies on climate change
- Development of action plans of Ministries, sectors and localities to respond to climate change
- Development and implement pilot projects of the NTP
- Enhancement of international cooperation



Information and research

- Assessment of climate change extent and impacts in Viet Nam
- Identification of measures to respond to climate change
- Development of a science and technology program on climate change
- Awareness raising and human resources development



Measures and investments

- Strengthen the capacities of organizations and institutions to develop legal documents and mechanisms to respond to climate change



Expected outcomes

Project Objective 1: Policy and Planning

- Improved institutional framework for NTP implementation
- Improved CC mainstreaming in national policies and action plans
- Improved CC mainstreaming in provincial action plans and project implementation

Project Objective 2: Information and Research

- CC scenarios
- CC impact and vulnerability
- CC response measures
- CC research programmes
- CC awareness raising

Project Objective 3: Measures and Investments

- CC adaptation
- CC mitigation



Time: 2009-2012

Locations: Hanoi, Can Tho, Binh Dinh and Ninh Thuan

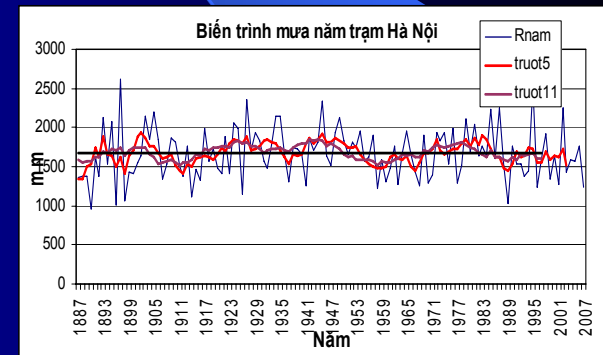
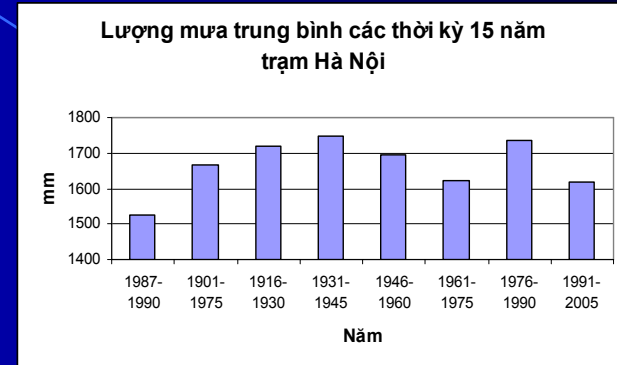


Strengthening National Capacities to Respond to Climate Change in Viet Nam, Reducing Vulnerability and Controlling GHG Emissions

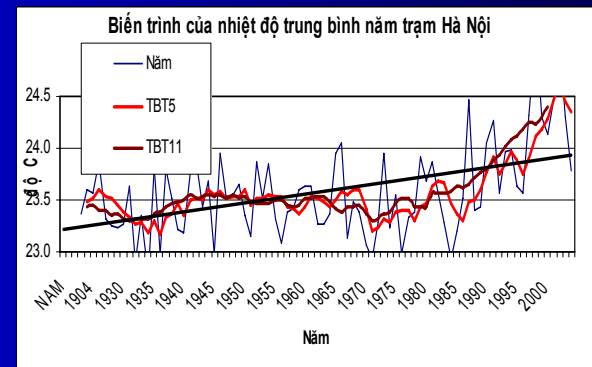
Funded by: UNDP

Impact of Climate change to natural conditions and resources – Strategic measures of adaptation and mitigation for socio-economic sustainable development in Vietnam

1. Assessment methodologies for Climate change status in Vietnam



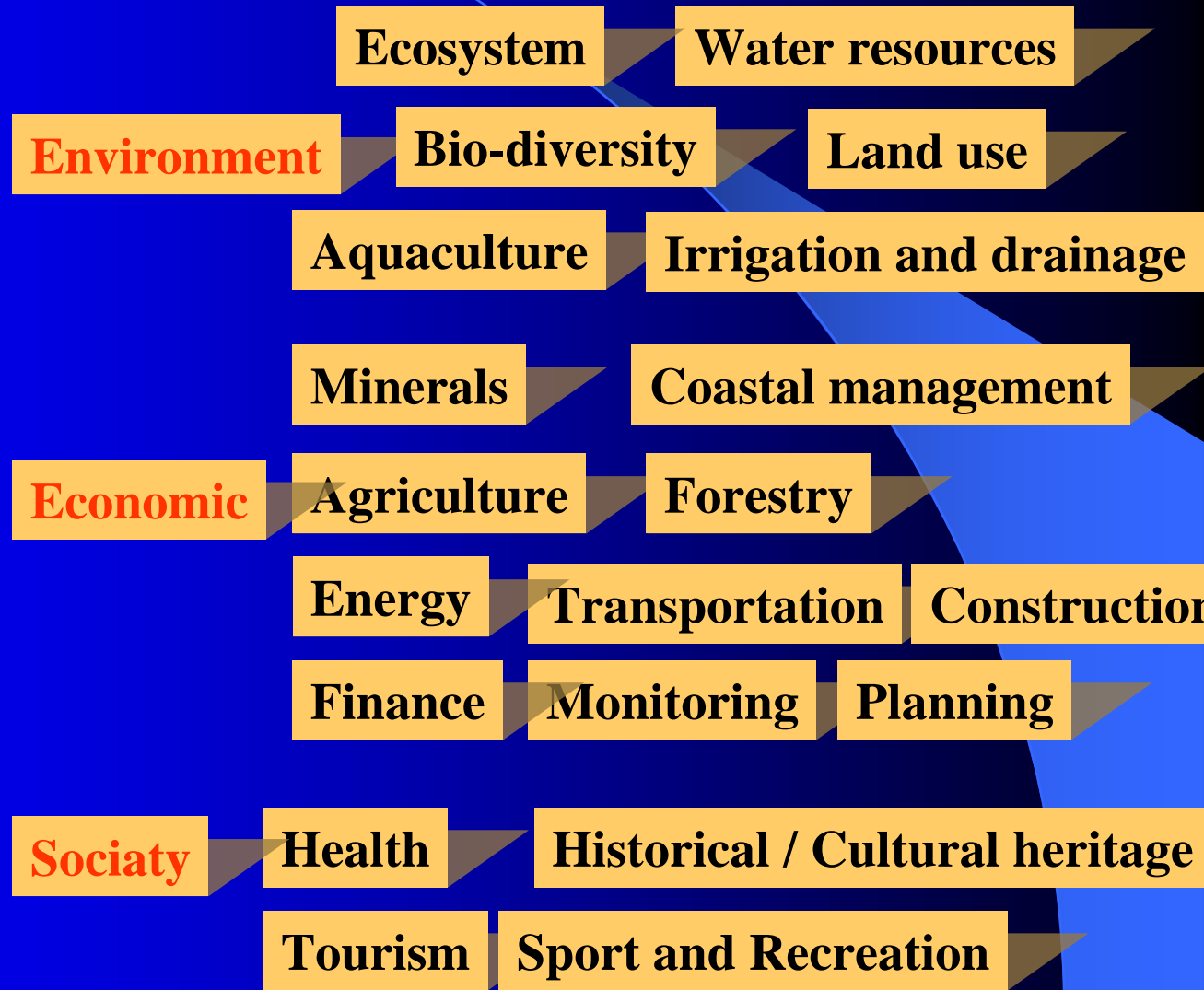
2. Regional climate change scenarios for Vietnam in 21st century



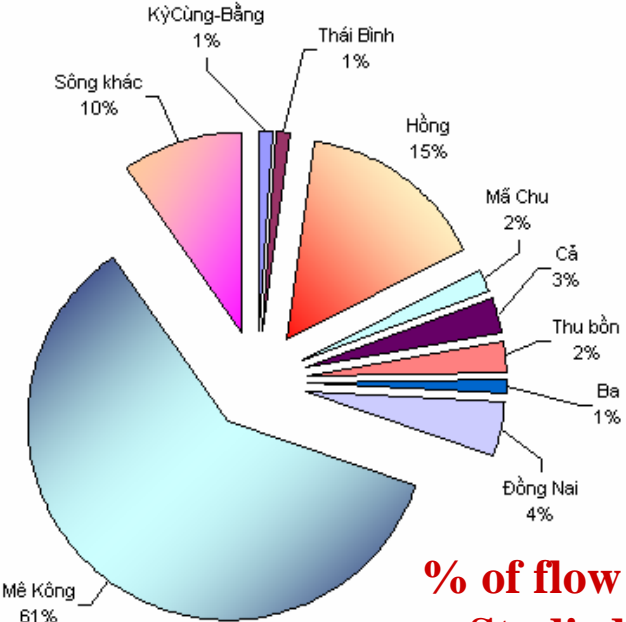
Legal and regulatory aspects of vulnerability to Climate change in Vietnam



In 17 researched areas



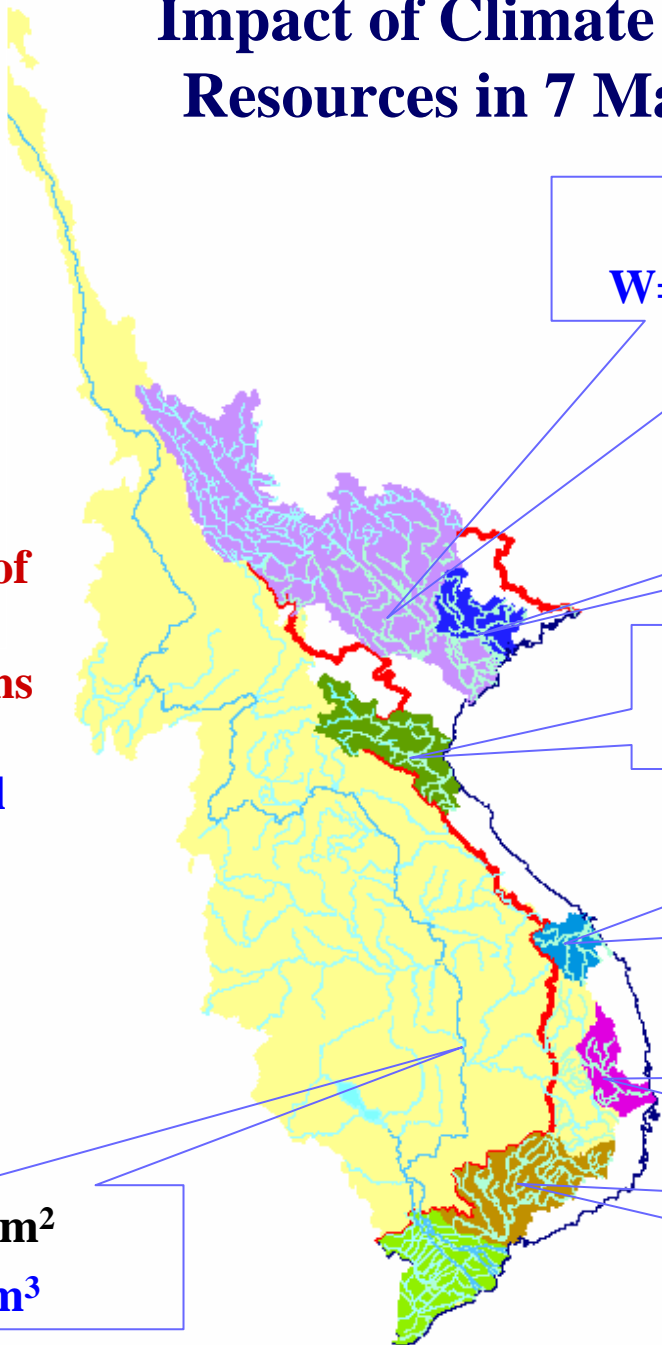
Impact of Climate Change on Water Resources in 7 Major River Basins



% of flow of Studied River Basins



% of total flow of Studied River Basin



F = 155.000 km²
W=127 km³/ 78,6 km³

F = 15.180 km²
W=9,7 km³/ 9,7 km³

F = 27.200 km²
W=23,1 km³/ 18,6 km³

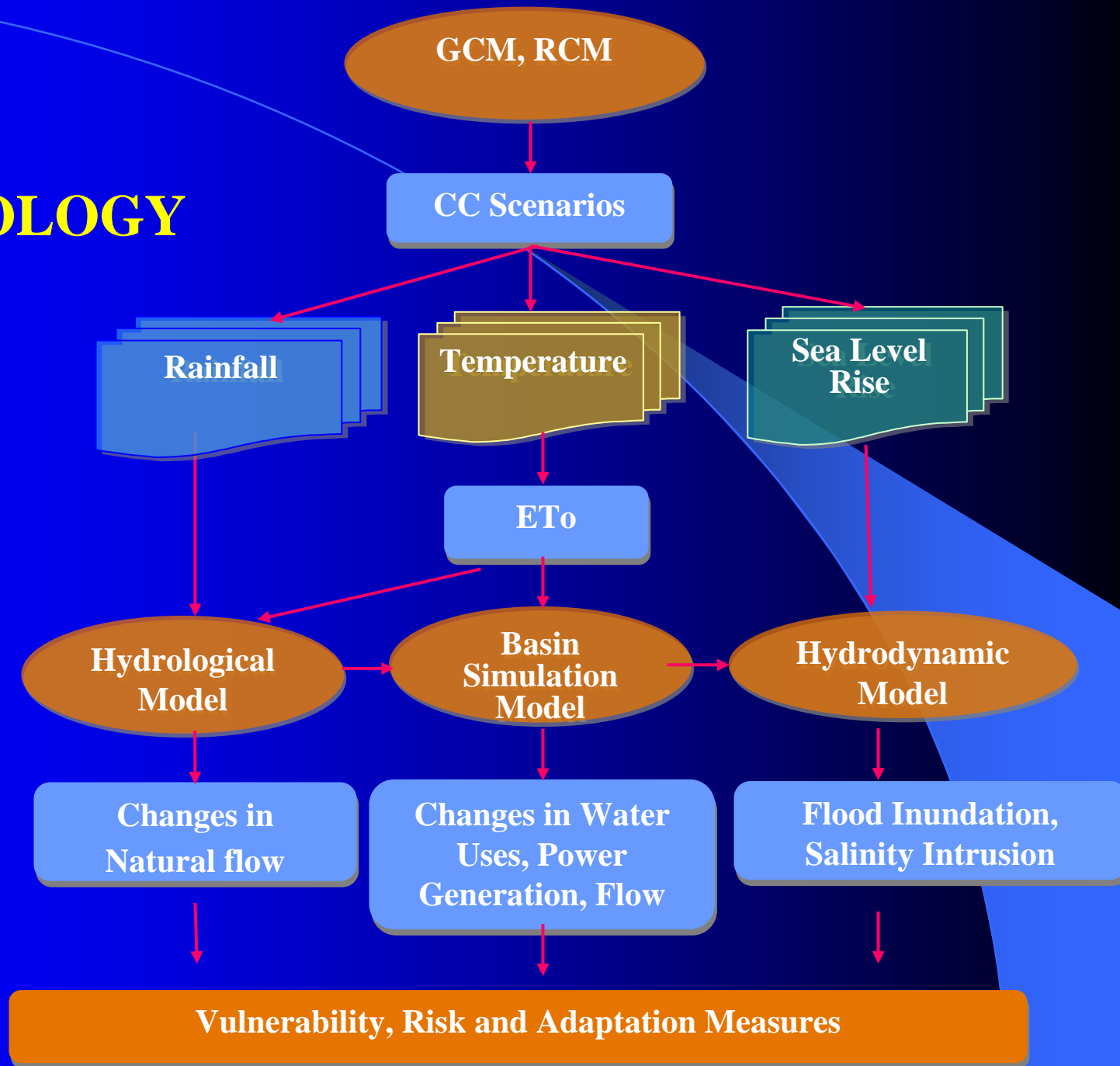
F = 10.350km²
W=20,4 km³/20,4 km³

F = 13.900m²
W=9,9 km³/9,9 km³

F = 44.100m²
W=36,3km³/33,3 km³

F=79.500km²
W=500 km³

METHODOLOGY





Khu vực: Rừng sau khai thác